APPENDIX B

Test Boring and Monitoring Well Installation Reports

TEST BORING REPORT

Boring No. B-4031

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Stearns Drilling

File No. 49017
Sheet No. 1 of 1
Start May 15, 2003
Finish May 15, 2003
Driller M. Hefferan
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 7,847
E 8,162

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	NA	Rig Make & Model: CME-LC-60
Inside Diameter (in.)	4 1/4	2.0	NA	Bit Type: Cutting Head Drill Mud: None
Hammer Weight (lb.)	NA	140	-	Casing: NA
Hammer Fall (in.)	NA	30	-	Hoist/Hammer: Winch Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		NA	0.0 1.0	NO WELL INSTALLED	759.0		-CONCRETE-										
	ND	S-1 12	1.0 2.0		758.0	SP	Loose, tan, fine SAND mps: 1.3 cm, no odor, moist. - FILL-					100					
	ND	S-2 14	2.0 4.0		756.0	ML	Soil sample S-1 B031-051503-1725 collected from 0.0 to 2.0 feet. Soft, black and gray, sandy SILT, mps: 2.5 cm, no odor, moist. -FILL-		5	5		30	60				
	ND	NA	4.0 5.0		755.5 755.0		-CONCRETE- No Recovery										
5	7.2	S-3 19	5.0 7.0		753.0	ML	Stiff, gray and brown SILT, mps: 1.2 cm, no odor, moist . -GLACIAL TILL- Soil sample S-2 B031-051503-1750 collected from 6.0 to 7.0 feet.					10	90				
	5.1	S-4 18	7.0 9.0		751.3		Soil sample S-3 B031-051503-1805 collected from 7.0 to 9.0 feet.										
10	3.9	S-5 15	9.0 11.0		751.0 749.0	SP	Loose, tan, fine SAND, mps: <1 mm , no odor, wet. -GLACIAL TILL- Water present at 8.75 feet. GW sample B031-051503-1830 and MS/MSD collected from 8.0 to 10.0 feet. Note: No monitoring well set. -Bottom of Exploration at 11.0 feet.					100					

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	11.0
Rock Cored (lin. ft.)	-
Samples	S 1-3, GW 1

Boring No. B-4031

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4032

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 19, 2002
Finish November 19, 2002
Driller C. Donovan
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.5		-CONCRETE-										
	2	S-1 40	0.0 4.0				Interbedded yellow-brown SAND and olive-gray CLAY. Backfill and coal/asphalt present. -FILL-										
	10				757.5	CL	Yellow-brown CLAY with some sand, moist.					10	90				
5		S-2 46	4.0 8.0														
	28				753.0	SP-SM	Yellow-brown SAND, moist.					90	10				
		S-3 42	8.0 12.0	NO WELL INSTALLED													
	5				750.5		Wet at 9.5 feet.										
10					748.0												
	8	S-4 38	12.0 16.0			CL	Yellow-brown CLAY, moist.						100				
	ND				746.0												
15					744.0		-Bottom of Exploration at 16.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	16
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4032

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4033

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 20, 2002
Finish November 20, 2002
Driller C. Donovan
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.5		-CONCRETE-										
		S-1 46	0.0 4.0	NO WELL INSTALLED		SP-CL	Interbedded layers of SAND and CLAY, some gravel.										
					757.0	CL	Yellow-brown CLAY, moist.					5	95				
5		S-2 48	4.0 8.0														
					752.5	SP	Yellow-brown SAND.					95	5				
		S-3 46	8.0 12.0				Wet at 9.0 feet.										
10					748.0	CL	Gray-brown CLAY, moist.						100				
							-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4033

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4034

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 20, 2002
Finish November 20, 2002
Driller C. Donovan
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		S-1 40	0.0 4.0	NO WELL INSTALLED	759.5		-CONCRETE-										
					759.0	SP	Yellow-brown SAND					95	5				
						CL	Dark brown, sandy CLAY, moist.					30	70				
					757.0												
						CL	Yellow-brown CLAY, moist.					5	95				
5		S-2 48	4.0 8.0														
		S-3 46	8.0 12.0		751.5	SP-SM	Yellow-brown SAND, moist. Wet at 9.0 feet.					90	10				
10																	
		S-4 42	12.0 16.0		747.5	CL	Gray-brown CLAY, moist.						100				
15					744.0		-Bottom of Exploration at 16.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	16
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4034

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4041

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 8, 2003
Finish May 8, 2003
Driller D. Pino
H&A Rep. F. Palatka

Elevation 760.0
Datum Estimated

Location
N 7,617
E 7,760

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.5		-CONCRETE-										
	7.0	S-1 34	0.0 4.0	NO WELL INSTALLED		CL	Gray, sandy, lean CLAY, mps: 1 mm, moist.					30	70	N	L	L	L
							Soil sample S-1 4041A collected at approximately 1.5 feet.										
	28						Broken concrete from 3.5' to 3.75' and black SAND from 3.75' to 3.87'										
	12	S-2 42	4.0 8.0														
5						CL	Gray, sandy, lean CLAY, moist.					40	60	N	L	L	L
	7.0						Same except less sand, tan. Soil sample S-2 4041B collected at approximately 6.5 feet.										
	3.0	S-3 48	8.0 12.0														
10					749.5		Soil sample S-3 4041C collected at approximately 10.0 feet.										
						SM	Yellow-brown, silty SAND, mps < 1 mm, wet.					80	20	R	L	N	N
					748.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12.0
Rock Cored (lin. ft.)	-
Samples	S 1-3, GW 1

Boring No. B-4041

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4081

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 14, 2002
Finish November 14, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 7,915
E 7,864

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	0.7	S-1 24	1.0 5.0			SP	Loose, tan, fine SAND, mps: 2.5 cm, no odor, moist.					100					
	0.6						-FILL-										
5					754.5												
	0.5	S-2 48	5.0 9.0			ML	Stiff, brown SILT with sand, mps: 2.5 cm, no odor, moist.					15	85				
	0.5			NO WELL INSTALLED	751.0		-GLACIAL TILL-										
	ND	S-3 41	9.0 13.0			SP	Dense, tan, fine SAND, mps <1mm, no odor, moist to wet. -GLACIAL TILL-					100					
10					749.0		Water at 10.0 feet.										
	ND					ML	Stiff, tan SILT, mps: 1.3 cm, no odor, moist. -GLACIAL TILL-					10	90				
					747.0		-Bottom of Exploration at 13.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples GP-1, GP-3, GW

Boring No. B-4081

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4082

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 14, 2002
Finish November 14, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 7,881
E 7,892

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	0.2	S-1 30	1.0 5.0			SP	Loose, tan, fine SAND, mps: 2.5 cm, no odor, moist.					100					
	0.1						-FILL-										
5	0.1	S-2 38	5.0 9.0				Same as 1 to 5 feet. -FILL-					100					
					753.0												
	0.1			NO WELL INSTALLED		ML	Soft, brown SILT with sand, mps: 2.5 cm, no odor, moist.					20	80				
	0.1	S-3 46	9.0 13.0				-GLACIAL TILL-										
10					749.5												
	0.1					SP	Loose, tan, fine SAND, mps <1mm, no odor, wet. -GLACIAL TILL- Water at 10.5 feet.					100					
					747.0		-Bottom of Exploration at 13.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	13.0
Rock Cored (lin. ft.)	-
Samples	GP-1, GP-3, GW

Boring No. B-4082

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4083

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 8, 2003
Finish May 8, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location N 7,938 E 7,865

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.5		-CONCRETE-										
	ND	S-1 40	0.0 4.0	NO WELL INSTALLED		SP	Yellow-brown, poorly-graded SAND, trace silt, mps < 1 mm, moist.					95	5	N	L	N	N
					757.5	CL	Dark brown, lean CLAY. Color is black from 2.5' to 2.75' becoming dark brown.					10	90	N	L	M	L
	ND	S-2 46	4.0 8.0				Same except color changes to yellow-brown, moist.										
5																	
	ND	S-3 48	8.0 12.0														
10					749.0	SM	Silty SAND, wet. GW sample S-1 4083D collected at approximately 11.5 feet.					80	20				
					748.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	Well Diagram	Summary
O Open End Rod	Riser Pipe	Overburden (lin. ft.) 12.0
T Thin Wall Tube	Screen	Rock Cored (lin. ft.) -
U Undisturbed Sample	Filter Sand	Samples GW 1
S Split Spoon	Cuttings	**Boring No.** B-4083
G Geoprobe	Grout	
	Concrete	
	Bentonite Seal	

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4084

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 7, 2003
Finish May 7, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location N 7,881 E 7,855

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 24	0.0 4.0	NO WELL INSTALLED	759.0		-CONCRETE-										
						SW-SC	Brown, well-graded SAND with clay and gravel, mps: 35 mm, moist. Soil sample S-1 4084A collected at approximately 1.5 feet.	5	15	10	10	50	10	N	L	N	N
	ND	S-2 32	4.0 8.0														
5					754.0	CL	Olive-gray, lean CLAY with sand, mps: 2 mm, moist.				5	10	85	N	L	L	L
	ND	S-3 40	8.0 12.0				Soil sample S-3 4084B collected at approximately 8.0 feet.										
10					749.5	ML	Yellow-brown, sandy SILT, mps < 1 mm, wet.					30	70	R	L	N	N
					748.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	S 1-2, GW-1

Boring No. B-4084

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4091

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 6, 2002
Finish November 6, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 8,082
E 7,671

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED			-CONCRETE-										
					759.0												
	3.7	S-1 20	1.0 3.0			ML	Soft, brown SILT with sand, no odor, moist mps: 6.4 mm. -GLACIAL TILL-					20	80				
					757.0												
							Closed Rod. No Sample from 3 to 9 feet.										
5																	
					751.0												
	ND	S-2 22	9.0 11.0			SP	Loose, brown, fine SAND, mps <1 mm, no odor, wet. -GLACIAL TILL-					100					
10					749.0												
	ND	S-3 24	11.0 13.0			SP	Loose, gray, fine SAND, mps <1 mm, no odor, wet. -GLACIAL TILL- Water at 13.0 feet. -Bottom of Exploration at 13.0 feet.-					100					
					747.0												

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples GP-1, GP-2, GP-3

Boring No. B-4091

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4092

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 6, 2002
Finish November 6, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 8,045
E 7,717

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	3.6	S-1 12	1.0 3.0			ML	Fairly stiff, gray-brown, sandy SILT, mps <1 mm no odor, moist. -FILL-					30	70				
					757.0		No Sample taken.										
5					754.0												
	4.7	S-2 24	6.0 8.0	NO WELL INSTALLED		ML	Stiff, tanish gray SILT, mps <1 mm, slight hydrocarbon odor, moist. -GLACIAL TILL-					10	90				
					752.0												
	4.3	S-3 18	8.0 10.0			SM	Soft, gray-brown, silty SAND, mps <1 mm, no odor, wet. -GLACIAL TILL- Water at 10.0 feet										
10					750.0		-Bottom of Exploration at 10.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	10.0
Rock Cored (lin. ft.)	-
Samples	GP-1, GP-2, GP-3

Boring No. B-4092

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4093

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 6, 2002
Finish November 6, 2002
Driller P. Orsi
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,191 E 7,772

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	ND	S-1 18	1.0 3.0			ML	Stiff, dark gray to black SILT, mps: 6.3 mm, no odor, moist. -GLACIAL TILL-					10	90				
					757.0		No sample taken from 3 to 6 feet.										
5					754.0												
	4.7	S-2 22	6.0 8.0	NO WELL INSTALLED		ML	Stiff, tan and gray SILT, mps <1 mm, no odor, moist. -GLACIAL TILL-					5	95				
	ND	S-3 20	8.0 10.0		751.0	SP	Dense, tan, fine SAND, mps <1 mm, no odor, moist. Water at 10.0 feet.					100					
10					750.0		-Bottom of Exploration at 10.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	10.0
Rock Cored (lin. ft.)	-
Samples	GP-1, GP-2, GP-3

Boring No. B-4093

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4094

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 14, 2002
Finish November 14, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,094 E 7,776

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	7.6	S-1 26	1.0 5.0			ML	Fairly stiff, brown and black SILT, mps: 2.5 cm, no odor, moist.					10	90				
	1.9						-FILL-										
5		S-2 46	5.0 9.0		754.5												
	0.8			NO WELL INSTALLED		ML	Stiff, brown and tan SILT, mps: 1.3 cm, no odor, moist.					5	95				
							-GLACIAL TILL-										
	0.1																
		S-3 24	9.0 11.0				Same as 5.5 to 8.0 feet.										
10					750.0												
	2.0					SP	Dense, tan, fine SAND, mps< 1 mm, no odor, wet. Water at 10.0 feet					100					
	0.3				749.0		-GLACIAL TILL-										
							-Bottom of Exploration at 11.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 11.0
Rock Cored (lin. ft.) -
Samples GP-1, GW-3

Boring No. B-4094

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4095

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 8, 2003
Finish May 8, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location N 8,146 E 7,668

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0																	
		S-1 48	0.0 4.0		759.3		-CONCRETE-										
	ND					CL	Yellow-brown, lean CLAY, mps < 1 mm, moist.					10	90	N	M	L	L
							Soil sample S-1 4095A collected at approximately 1.5 feet.										
	ND	S-2 48	4.0 8.0				Soil sample S-2 4095B collected at approximately 6.5 feet.										
5																	
				NO WELL INSTALLED	752.0		-Bottom of Exploration at 8.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 8.0
Rock Cored (lin. ft.) -
Samples S 1-2

Boring No. B-4095

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4096

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 8, 2003
Finish May 8, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location N 8,107 E 7,654

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.5		-CONCRETE-										
	ND	S-1 48	0.0 4.0			CL	Yellow-brown, lean CLAY with sand, mps: 2 mm, moist.				10	10	80	N	M	L	L
							Soil sample S-1 4096A collected at approximately 1.0 feet.										
	ND	S-2 48	4.0 8.0														
5							Soil sample S-2 4096B collected at approximately 7.0 feet.										
				NO WELL INSTALLED	752.0		-Bottom of Exploration at 8.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	8.0
Rock Cored (lin. ft.)	-
Samples	S 1-2

Boring No. B-4096

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4097

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 8, 2003
Finish May 8, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location N 8,017 E 7,655

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		S-1 36	0.0 4.0		759.3		-CONCRETE-										
	1.0					SP	Tan, poorly-graded SAND, mps < 1 mm, dry.					95	5	N	L	N	N
	7.0				758.0												
						CL	Olive-gray, lean CLAY, some sand, mps < 1 mm, moist. Soil sample S-1 4097A collected at approximately 2.0 feet.					10	90	N	M	L	L
	5.0																
	5.0	S-2 36	4.0 8.0				Same except color changes to light brown.										
5							Soil sample S-2 4097B collected at approximately 7.0 feet.										
				NO WELL INSTALLED	752.0		-Bottom of Exploration at 8.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	8.0
Rock Cored (lin. ft.)	-
Samples	S 1-2

Boring No. B-4097

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4111

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: May 5, 2004
Finish: May 5, 2004
Driller: B. Graham, D. Gardenhouse
H&A Rep.: G. Laird
Elevation
Datum Estimated
Location Executive Garage
N 8,166
E 7,539

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: CME-750
Inside Diameter (in.)	4 1/4	4 1/4	-	Bit Type: Cutting Head Drill Mud: None
Hammer Weight (lb.)	-	140	-	Casing: Auger
Hammer Fall (in.)	-	30	-	Hoist/Hammer: Winch Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2 3 4 3	ND	S-1 12	0.0 2.0			ML	Soft, dark brown SILT, mps: 1 mm, no odor, moist. -TOP SOIL-					10	90				
	3 3 3 3	ND	S-2 12	2.0 4.0		2.0	ML	Soft, yellow brown SILT, mps: 1/4 in., no odor, moist. -FILL-					10	90				
5	2 3 4 5	ND ND	S-3 18	4.0 6.0		4.0	ML	Soft, yellow brown and gray mottled, elastic SILT, mps: 1/4 in., no odor, moist. -GLACIAL TILL- 2 in. seam of black ash/slag at 5 ft.					10	90				
	1 1 3 5	ND	S-4 20	6.0 8.0				Similar to above except more moist. Similar to above except yellow brown.										
	3 4 6 9	ND	S-5 24	8.0 10.0				Similar to above.										
10	4 7 12 13	ND	S-6 24	10.0 12.0														
						11.5	SM	Soft, light brown, silty SAND, mps: 1 mm, no odor, wet.					60	40				
						12.0		-GLACIAL TILL- -Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
Overburden (lin. ft.) 12.0
Rock Cored (lin. ft.) -
Samples -

Boring No. B-4111

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4141

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 11, 2002
Finish November 11, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 8,756
E 7,883

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED			-CONCRETE-										
					759.0												
	ND	S-1 32	1.0 5.0			SP	Loose, brown foundry SAND, mps< 1mm, no odor, moist.					50	50				
					757.5		-FILL-										
	ND					ML	Soft, tan SILT with sand, mps: 1.3 cm, no odor, moist.					20	80				
							-GLACIAL TILL-										
5	0.8	S-2 22	5.0 9.0														
	0.5																
	6.2	S-3 22	9.0 13.0				Same as 2.5' to 5.0'					20	80				
10	13.1											20	80				
					747.0												
	8.1	S-4 44	13.0 17.0			SP	Loose, tan, fine SAND, mps <1mm, no odor, wet.					100					
							Water at 13.0 feet.										
15	4.0						-GLACIAL TILL-										
					743.0		-Bottom of Exploration at 17.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	17.0
Rock Cored (lin. ft.)	-
Samples	GP-2,GP-3,FD/GP-2

Boring No. B-4141

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4142

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 11, 2002
Finish November 11, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 8,781
E 7,894

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	0.3	S-1 40	1.0 5.0	NO WELL INSTALLED		SP	Loose, black foundry SAND, mps : 1.3 cm, no odor, moist.					50	50				
	0.5						-FILL-										
5		S-2 40	5.0 9.0		754.0		Same as 1 to 5 feet.				50	50					
	0.5					ML	Soft, brown SILT with sand, mps: 1.3 cm, no odor, moist.					25	75				
	1.5						-GLACIAL TILL-										
	0.8	S-3 47	9.0 13.0				Same as 5 to 9 feet.					25	75				
10	1.6					ML	No water encountered.										
					747.0		-Bottom of Exploration at 13.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples GP-2, GP-3

Boring No. B-4142

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4143

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 11, 2002
Finish November 11, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 8,832
E 7,887

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				759.0		-CONCRETE-										
	0.3	S-1 40	1.0 5.0		SP	Loose, black, foundry SAND, mps: 2.5 cm, no odor, moist.				50	50					
	0.4					-FILL-										
5		S-2 47	5.0 9.0													
	0.9					Same as 1 to 5 feet.				50	50					
	0.4			752.0	ML	Stiff, brown and gray mottled, sandy SILT, mps: < 6.4 mm, no odor, moist.					30	70				
10	1.3	S-3 45	9.0 13.0			-GLACIAL TILL-										
				748.0		Same as 8 to 10 feet.										
	0.6			747.0	SP	Loose, tan, fine SAND, mps< 1mm, no odor, moist. -GLACIAL TILL-										
						No water encountered. -Bottom of Exploration at 13.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples GP-2, GP-3, FD

Boring No. B-4143

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4161

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 7, 2002
Finish November 1, 0702
Driller P. Orsi
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location
N 8,957
E 8,252

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-CONCRETE-										
					758.8												
	ND	S-1 22	1.3 5.3			SP	Loose, black foundry SAND, mps< 1 mm, no odor, moist. -FILL-					100					
5					754.8												
	ND	S-2 48	5.3 9.3			ML	Stiff, brown, sandy SILT, mps: 6.3 mm, no odor, moist. -GLACIAL TILL-					30	70				
					751.3												
	ND					ML	Soft, brown and black, sandy SILT, mps: 1.2 cm, no odor, wet. -GLACIAL TILL-					30	70				
		S-3 48	9.3 13.3														
10					748.8												
	ND					SP	Loose, tan, fine SAND, mps< 1mm, no odor, moist. -GLACIAL TILL-					100					
	ND	S-4 48	13.3 17.3				Same as 11.25 to 13.25 feet.										
15	ND						Water encountered at 15.25 feet. -GLACIAL TILL-					100					
					742.8												
							-Bottom of Exploration at 17.25 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 17.25
Rock Cored (lin. ft.) -
Samples GP-1, GP-3, GP-4

Boring No. B-4161

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4162

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 7, 2002
Finish November 7, 2002
Driller P. Orsi
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,947 E 8,251

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-CONCRETE-										
					758.8												
	ND	S-1 32	1.3 5.3		758.3	SP	Loose, black foundry SAND, mps< 1 mm, no odor, moist.					100					
					757.5	ML	-FILL-					5	95				
	ND						Stiff, tan SILT, mps< 1 mm, no odor, moist. -GLACIAL TILL-										
5					754.8												
	ND	S-2 48	5.3 9.3			ML	Stiff, tan, sandy SILT, mps: 2.5 cm, no odor, moist. -GLACIAL TILL-					35	65				
	ND	S-3 45	9.3 13.3				Same as 5.25 to 9.25 feet.					35	65				
10					749.3												
	ND					SP	Loose, tan, fine SAND, mps< 1 mm, no odor, moist. -GLACIAL TILL-										
		S-4 45	13.3 17.3		746.3												
	ND					ML	Fairly stiff, gray- brown, sandy SILT, mps: 6.4 mm, no odor, moist. -GLACIAL TILL- Water encountered at 16.25 feet.					50	50				
15					742.8		-Bottom of Exploration at 17.25 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 17.25
Rock Cored (lin. ft.) -
Samples GP-1, GP-3, GP-4

Boring No. B-4162

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4163

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 7, 2002
Finish November 7, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 8,930
E 8,251

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					758.8		-CONCRETE-										
	ND	S-1 18	1.3 5.3			SP	Loose, black and brown foundry SAND, mps< 1 mm, no odor, moist. -FILL-					100					
5					754.8												
	ND	S-2 46	5.3 9.3			ML	Stiff, tan, sandy SILT, mps: 1.3 cm, no odor, moist. -GLACIAL TILL-					30	70				
	ND	S-3 44	9.3 13.3				Same as 5.25 to 9.25 feet.					50	50				
10				NO WELL INSTALLED	749.3												
	ND					SP	Fairly dense, tan, fine SAND, mps< 1 mm, no odor, moist. -GLACIAL TILL-					100					
					746.8												
	ND	S-4 47	13.3 17.3			SM	Dense, gray, silty SAND, mps< 1 mm, no odor, moist. -GLACIAL TILL-					80	20				
15							Water encountered at 15.25 feet.										
					742.8		-Bottom of Exploration at 17.25 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 17.25
Rock Cored (lin. ft.) -
SamplesEB,GP-1,GP-3,GP-4

Boring No. B-4163

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4168

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 2
Start May 5, 2003
Finish May 5, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 756.5
Datum Estimated
Location N 10,048 E 7,870

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 28	0.0 4.0	NO WELL INSTALLED	756.0		-TOPSOIL-										
						ML	Gray-brown, SILT with sand, mps < 1 mm, moist.					10	90	N	L	N	L
	ND	S-2 40	4.0 8.0		752.5	SP-SM	Light brown, poorly-graded SAND with silt, mps < 1 mm, moist.					90	10	N	L	N	L
5					751.0	CL	Light brown, lean CLAY with sand, mps < 1 mm, moist.					10	90	N	L	L	N
					749.0	SP	Yellow-brown, poorly-graded SAND, mps < 1 mm, moist. Water present at 8.5 feet. GW sample GW-3 4168D collected at approximately 9.0 feet.					95	5	N	L	L	N
	ND	S-3 42	8.0 12.0		746.5	CL	Gray-brown, lean CLAY, mps < 1 mm, moist. 4" silt lens.						100	N	M	M	
10					745.5	SP-SM	Yellow-brown to gray-brown, poorly-graded SAND with silt, mps < 1 mm, wet. GW sample GW-4 4168E collected at approximately 12.0 feet.					90	10	R	L	N	N
	ND	S-4 48	12.0 16.0		743.5	CL	Gray-brown, lean CLAY, mps < 1 mm, moist.						100	N	M	H	
15																	
	ND	S-5 46	16.0 20.0				Same except some fine sand, mps: 3 mm.										
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	32.0
Rock Cored (lin. ft.)	-
Samples	GW 1-3

Boring No. B-4168

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. **B-4168**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	S-6 40	20.0 24.0													
				734.5	ML	Gray-brown SILT, mps < 1 mm, wet.						100	R	L	N	N
	ND	S-7 46	24.0 28.0													
25						Soil sample GW -7 4168F collected at approximately 26.5 feet.										
				729.5		Soil sample GW-7 4168F collected at approximately 26.5 feet.										
				728.5	CL	Gray-brown lean CLAY, some silt, moist.						100	N	M	L	L
	ND	S-8 36	28.0 32.0		SP	Gray-brown, poorly-graded SAND, some fine gravel, mps: 4.75 mm, wet.		10	75	5	5	5				
30				726.5	SM	Sand changes to silty SAND, mps < 1 mm, wet.					80	20	R	L	N	L
				724.5		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4169

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 5, 2003
Finish May 5, 2003
Driller D. Pino
H&A Rep. F. Palatka

Elevation 756.5
Datum Estimated

Location
N 10,048
E 7,888

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 30	0.0 4.0	NO WELL INSTALLED	755.5	OL/OH	Dark brown, organic SOIL, moist. -TOPSOIL-					10	90				
					753.0	SC	Dark brown, clayey SAND becoming yellow-brown, mps < 1 mm, moist.					70	30				
	ND	S-2 48	4.0 8.0		752.5	CL	Yellow-brown, sandy CLAY, mps < 1 mm, moist.					30	70	L	L	L	L
5					749.5	SM	Silty SAND, mps < 1 mm, moist. Water present at 8.5 GW sample GW-3 4169D collected at approximately 8.0 feet.					85	15				
	ND	S-3 46	8.0 12.0		747.0												
					746.5	CL	Gray-brown, lean CLAY, moist.						100	N	M	H	H
10						SM	Gray-brown, silty SAND, mps. < 1 mm, wet.					85	15				
	ND	S-4 42	12.0 16.0		742.5												
						CL	Gray-brown, lean CLAY, mps < 1 mm, moist.						100	N	M	H	H
15							Same except more sand.					15	85				
	ND	S-5 47	16.0 20.0				Same except less sand, some fine gravel.		5			5	90				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 32.0
Rock Cored (lin. ft.) -
Samples GW 1-3

Boring No. B-4169

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **B-4169**
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	S-6 35	20.0 24.0			Soil sample S-6 4169E collected at approximately 22.0 feet. Same except more silt, wet.										
				733.0	ML	Gray-brown SILT, mps < 1 mm, wet.						100	R	L	L	L
	ND	S-7 38	24.0 28.0			Soil sample S-7 4169F collected at approximately 26.5 feet.										
25	ND	S-8 38	28.0 32.0	728.0	CL	Gray-brown, silty CLAY, mps < 1 mm, moist.						100	S	L	L	L
				727.0	SP	Coarse, poorly-graded SAND, some gravel, mps 19 mm, wet.		10	75	5	5	5				
30				726.0	ML	Gray-brown SILT, some sand, mps: 2 mm, moist.				5	5	90	N	L	L	L
				724.5		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4170

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 6, 2003
Finish May 6, 2003
Driller D. Pino
H&A Rep. F. Palatka

Elevation 756.5
Datum Estimated

Location
N 10,048
E 7,910

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 36	0.0 4.0	NO WELL INSTALLED	755.5	OL/ OH	Dark brown, TOPSOIL with roots, moist. -TOPSOIL-					20	80				
					754.5	SM	Light brown, silty SAND, mps < 1 mm, moist.					80	20				
						SP	Yellow-brown, poorly-graded SAND, mps: 1 mm, moist.					95	5				
	ND	S-2 46	4.0 8.0		751.5	SP											
5						CL	Gray-brown, lean CLAY with sand, mps < 1 mm, moist.					20	80	N	L	M	M
					749.5	SC	Tan, clayey SAND, mps < 1 mm, moist.					80	20	N	L	N	L
	ND	S-3 46	8.0 12.0			SC											
10					746.5	SM	Gray-brown, silty SAND, mps < 1 mm, wet. Water present at 10.0 feet. GW sample S-3 4170D collected at approximately 10.0 feet.					80	20				
	ND	S-4 46	12.0 16.0			SM											
					742.5	CL	Gray-brown, lean CLAY, some fine gravel, mps: 19 mm, moist.		5				95	N	M	H	H
15	ND	S-5 46	16.0 20.0			CL											
						CL	Same except more sand.										
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 32.0
Rock Cored (lin. ft.) -
Samples GW 1-3

Boring No. B-4170

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **B-4170**
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	S-6 10	20.0 24.0		ML	Gray-brown SILT, some sand, mps < 1 mm, wet. GW sample S-6 4170E collected at approximately 20.0 feet.					5	95	R	L	N	N
	ND	S-7 24	24.0 28.0		ML											
25				728.5												
	ND	S-8 44	28.0 32.0	728.0	CL	Gray-brown, lean CLAY, some silt, moist.						100	S	L	L	L
					SW	Gray-brown, well-graded SAND, some gravel, interbedded silt pockets, mps: 19 mm, wet.		10	60	10	15	5				
30				725.5												
					ML	Gray-brown SILT with sand, mps < 1 mm, moist.				10	10	80	N	M	N	L
				724.5		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4171

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 9, 2003
Finish May 9, 2003
Driller D. Pino
H&A Rep. F. Palatka

Elevation 790.0
Datum Estimated

Location
N 9,172
E 7,766

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					789.5		-CONCRETE-										
	1.0	S-1 40	0.0 4.0	NO WELL INSTALLED		CL	Dark brown, silty, lean CLAY, some sand from 0.5 to 0.75', mps: 3 mm, moist. Color changes to yellow-brown at 1.0 '. Soil sample S-1 4171A collected at approximately 0.5 feet.				5	5	90	N	L	L	L
	1.0																
5	3.0	S-2 46	4.0 8.0														
	2.0				782.5												
	7.0	S-3 42	8.0 12.0			SP-SM	Yellow-brown, poorly-graded SAND with silt, mps < 1 mm, dry to moist. Occasionally dry. Soil sample S-3 4171 collected at approximately 8.0 feet.					90	10	N	L	N	N
10	2.0																
	1.0	S-4 46	12.0 15.0				Same as above.										
	ND				775.0												
15		S-5 44	15.0 19.0			CL	Light brown CLAY lens from 15.5' to 15.83'. Same as above.										
	2.0				773.0		Light brown CLAY lens from 17.5' to 17.83'. Soil sample S-5 4171C collected at approximately 17.5 feet. Water present at 18.0 feet. GW sample GW-5 4171D collected at approximately 18.5 feet.										
					771.0		-Bottom of Exploration at 19.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	19.0
Rock Cored (lin. ft.)	-
Samples	S 1-3, GW 1

Boring No. B-4171

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4181

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 12, 2002
Finish November 12, 2002
Driller P. Orsi
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 9,501 E 7,506

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED			-CONCRETE-										
					759.0												
	ND	S-1 40	1.0 5.0			SP	Loose, tan, fine SAND, mps: 2.5 cm, no odor, moist. -FILL-					100					
					756.0												
	ND					ML	Stiff, tan, SILT with sand, mps< 1mm, no odor, moist. -GLACIAL TILL-					20	80				
5					754.5												
	ND	S-2 45	5.0 9.0			SP	Loose, tan, fine SAND, mps< 1mm, no odor, moist. -GLACIAL TILL-					100					
	0.3	S-3 48	9.0 13.0				Same as 9 to 13 feet. Water encountered at 10.0 feet.					100					
10																	
	ND	S-4 48	13.0 17.0				Same as 13 to 17 feet.					100					
15																	
	ND	S-5 48	17.0 21.0				Same as 17 to 21 feet.					100					
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 21.0
Rock Cored (lin. ft.) -
Samples GP-1,GP-3,GP-5,FD

Boring No. B-4181

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. **B-4181**
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
					739.0		-Bottom of Exploration at 21.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4182

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 12, 2002
Finish November 13, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 9,585
E 7,518

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED			-CONCRETE-										
					759.0												
	0.3	S-1 36	1.0 5.0			ML	Stiff, tan SILT with sand, mps: 1.3 cm, no odor, moist.					20	80				
							-FILL-										
5	ND	S-2 44	5.0 9.0				Same as 1 to 5 feet.					20	80				
					754.0												
	ND					SP	Loose, tan, fine SAND, mps: 1.3 cm, no odor, moist.					100					
							-GLACIAL TILL-										
	ND	S-3 46	9.0 13.0				Same as 6 to 9 feet.					100					
10																	
	ND	S-4 40	13.0 17.0				Same as 6 to 9 feet.					100					
15																	
	ND	S-5 40	17.0 21.0				Same as 6 to 9 feet.					100					
20							Water encountered at 20.0 feet.										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 21.0
Rock Cored (lin. ft.) -
Samples GP-1,GP-3,GP-5,MSD

Boring No. B-4182

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **B-4182**
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
					739.0		-Bottom of Exploration at 21.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4183

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 12, 2002
Finish November 12, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 9,549
E 7,469

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-CONCRETE-										
					759.0												
	ND	S-1 40	1.0 5.0			ML	Stiff, brown SILT with sand, mps: 1.9 cm, no odor, moist.					15	85				
							-FILL-										
5		S-2 44	5.0 9.0														
					753.5												
	ND			NO WELL INSTALLED		SP	Loose, tan, fine SAND, mps< 1mm, no odor, moist.					100					
							-GLACIAL TILL-										
	ND	S-3 48	9.0 13.0				Same as 6.5 to 9 feet.					100					
10																	
	ND	S-4 40	13.0 17.0				Same as 6.5 to 9 feet.					100					
15																	
	ND	S-5 46	17.0 21.0				Same as 6.5 to 9 feet.					100					
20							Water encountered at 20.0 feet.										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 21.0
Rock Cored (lin. ft.) -
Samples EB,GP-1,GP-3,GP-5

Boring No. B-4183

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **B-4183**
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
					739.0		-Bottom of Exploration at 21.0 feet.										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4211

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 13, 2002
Finish November 13, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 9,805
E 7,839

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED			-CONCRETE-										
					759.0												
	1.4	S-1 32	1.0 5.0			ML	Soft, brown, sandy SILT, mps: 6.4 mm, no odor, moist. -FILL-					50	50				
	1.8																
5					754.5												
	0.4	S-2 42	5.0 9.0			ML	Stiff, tan and gray SILT with sand, mps: 1.3 cm, slight hydrocarbon odor, moist. -FILL-					25	75				
	6.7																
		S-3 47	9.0 13.0		750.5												
10	16.4					SP	Loose, grayish tan, fine SAND, mps< 1 mm, hydrocarbon odor, moist. -FILL-					100					
					747.5												
	13.4				747.0	ML	Stiff, gray-brown SILT, mps: 6.4 mm, hydrocarbon odor, moist. -FILL- No water encountered. -Bottom of Exploration at 13.0 feet.-					10	90				

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples EB,GP-1,GP-3

Boring No. B-4211

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4213

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 13, 2002
Finish November 13, 2002
Driller P. Orsi
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 9,782 E 7,849

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED			-CONCRETE-										
					759.0												
	18.1	S-1 30	1.0 5.0			SP	Loose, black foundry SAND, mps: 2.5 cm, hydrocarbon odor, moist. -FILL-					100					
					756.0												
	12.2					ML	Fairly stiff, brown, sandy SILT, mps< 1 mm, hydrocarbon odor, moist.					50	50				
5	9.5	S-2 45	5.0 9.0				-FILL-										
	7.3						-FILL-					50	50				
	8.5	S-3 35	9.0 13.0				Same as 3 to 5 feet.					50	50				
10	10.5						Same as 3 to 5 feet.										
	9.0	S-4 38	13.0 17.0				Same as 3 to 5 feet. No water encountered.					50	50				
15							-FILL-										
					743.0		-Bottom of Exploration at 17.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 17.0
Rock Cored (lin. ft.) -
Samples GP-1, GP-3, GP-4

Boring No. B-4213

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4214

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 13, 2002
Finish November 13, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 9,764
E 7,840

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	2.5	S-1 24	1.0 5.0			SP	Loose, tan, fine SAND, mps< 1 mm, no odor, moist. -FILL-					100					
	4.0				757.0												
5	6.2	S-2 33	5.0 9.0				Same as 1 to 5 feet except gray at 7 feet with a hydrocarbon odor.					100					
	8.2																
	11.7	S-3 33	9.0 13.0				Same as 5 to 9 feet.					100					
10					749.0												
	8.1					ML	Stiff, brown, sandy SILT, mps: 2.5 cm, hydrocarbon odor, moist. -FILL-					50	50				
	3.8	S-4 48	13.0 17.0				Same as 11 to 13 feet.										
15	3.0						No water encountered.					50	50				
					743.0		-Bottom of Exploration at 17.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	17.0
Rock Cored (lin. ft.)	-
Samples	GP-1, GP-2, GP-3

Boring No. B-4214

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4215

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 14, 2002
Finish November 14, 2002
Driller P. Orsi
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 9,769 E 7,834

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	1.9	S-1 24	1.0 5.0			SP	Loose, tan, fine SAND, mps< 1 mm, slight hydrocarbon odor, moist. -FILL-					100					
	11.1																
5	13.1	S-2 40	5.0 9.0		754.0		Same as 1 to 5 feet.					100					
	35.0			NO WELL INSTALLED		ML	Stiff, brown, sandy SILT, mps: 2.5 cm, hydrocarbon odor, moist. -FILL-					35	65				
	37.0	S-3 48	9.0 13.0		750.5	SP	Dense, gray-brown, fine SAND, mps< 1 mm, hydrocarbon odor, moist. -FILL-					100					
10					748.0												
	19.1				747.0	ML	Stiff, brown SILT, mps: 6.4 mm, hydrocarbon odor, moist. -FILL-					5	95				
	18.1	S-4 47	13.0 17.0			SP	Stiff, gray-brown, fine SAND, mps< 1 mm, hydrocarbon odor, moist. -FILL-					100					
15					744.0												
	4.5				743.0	ML	Stiff, gray-brown SILT, mps< 1 mm, slight hydrocarbon odor, moist. -FILL-										
							-Bottom of Exploration at 17.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	17.0
Rock Cored (lin. ft.)	-
Samples	GP-1,GP-2,GP-3,EB

Boring No. B-4215

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4231

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 6, 2002
Finish November 6, 2002
Driller D. Pino
H&A Rep. F. Palatka

Elevation 760.0
Datum Estimated

Location
N 9,744
E 8,461

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

NO WELL INSTALLED

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				759.7		-CONCRETE-										
		S-1 30	0.0 4.0		SP-SM	Yellow-brown SAND, moist.					90	10				
		S-2 32	4.0 8.0													
5				752.0												
		S-3 30	8.0 12.0		CL	Yellow-brown, sandy CLAY, moist.					20	80				
10				750.0	SP	Yellow-brown SAND, moist.					95	5				
						Wet at 11.6 feet.										
		S-4 44	12.0 16.0			Same except trace medium SAND.				5	90	5				
15						Rust color staining at 15 feet.										
		S-5 32	16.0 20.0			Same except dark brown/black, moist.										
				743.0												
				742.5	SP	Coarse SAND with fine gravel.		10	60	10	10	10				
					CL	Gray and brown CLAY and silt, moist.										
20				740.0		-Bottom of Exploration at 20.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 20.0
Rock Cored (lin. ft.) -
Samples

Boring No. B-4231

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4232

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 7, 2002
Finish November 7, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location N 9,758 E 8,510

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				759.8		-CONCRETE-										
	ND	S-1 24	0.0 4.0		SP	Yellow-brown SAND.					95	5				
						Wet at 3.0 feet.										
				756.0												
	ND	S-2 40	4.0 8.0													
5																
				752.0												
	ND	S-3 24	8.0 12.0							5	90	5				
						Wet at 11.0 feet.										
10																
				748.0												
	ND	S-4 6	12.0 14.0													
		S-5 12	14.0 17.0													
15																
				744.0												
	ND				SP	Coarse, brown/black SAND.		10	10		75	5				
		S-6	17.0 20.0													
				742.0												
	ND				CL	Gray-brown CLAY, moist. 3" silt lens.										
				740.0		-Bottom of Exploration at 20.0 feet.-										
20																

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	20.0
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4232

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4233

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 13, 2002
Finish November 13, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location N 9,860 E 8,500

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.5		-CONCRETE-										
	ND	S-1 24	0.0 4.0	NO WELL INSTALLED		SP	Yellow-brown SAND, moist.					95	5				
5		S-2 40	4.0 12.0														
	ND	S-3	8.0 12.0			SP	Yellow-brown, fine SAND, some medium and coarse SAND, moist.			10	10	95	5				
10							Wet at 10.5 feet.										
	ND	S-4	12.0 16.0				4" lens of coarse SAND and fine gravel at 12.0 feet.										
15																	
	ND	S-5	16.0 20.0				Color changes to gray-brown.										
20					740.0												

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 23.0
- Rock Cored (lin. ft.) -
- Samples

Boring No. B-4233

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. **B-4233**
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	S-6	20.0 23.0			CL	Gray-brown CLAY, moist.					5	95				
					737.0		-Bottom of Exploration at 23.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4251

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 7, 2002
Finish November 7, 2002
Driller D. Pino
H&A Rep. F. Palatka

Elevation 757.5
Datum Estimated

Location
N 9,264
E 8,562

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					757.3		-CONCRETE-										
	ND	S-1 42	0.0 4.0	NO WELL INSTALLED		CL	Yellow-brown CLAY, moist, black staining present.					5	95				
					753.5												
	ND	S-2 48	4.0 8.0			SP	Poorly-graded SAND, moist.				85	5	10				
5																	
	ND	S-3 48	8.0 12.0				At 9 feet, 3" lens of broken concrete, brick, backfill.										
10					746.5		Same except gray-brown.										
	ND	S-4	12.0 16.0		744.5	ML	Gray-brown CLAY. Wet at 13.5 feet.						100				
15					741.5		-Bottom of Exploration at 16.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	16.0
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4251

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4252

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 7, 2002
Finish November 7, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 757.5
Datum Estimated
Location N 9,252 E 8,551

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					757.2		-CONCRETE-										
	ND	S-1 36	0.0 4.0			CL	Yellow-brown CLAY, moist, some staining present.		10	10	10	65	5				
5	15.0	S-2 48	4.0 8.0	NO WELL INSTALLED	750.5		At 7 feet, 4" lens with concrete, backfill.										
10		S-3 48	8.0 12.0														
	ND	S-4 46	12.0 16.0		743.5	ML	Gray-brown, clayey SILT. Wet at 14.5 feet.						100				
15					741.5		-Bottom of Exploration at 16.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	16.0
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4252

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4253

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 7, 2002
Finish November 7, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 757.5
Datum Estimated
Location N 9,234 E 8,545

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					757.3		-CONCRETE-										
		S-1 36	0.0 4.0	NO WELL INSTALLED		SP	Gravel, concrete, some staining present. -FILL-		10	10	60	10	5				
	ND				755.5	CL	Yellow-brown CLAY, moist.				5		95				
		S-2 48	4.0 8.0														
5	ND				751.5		Same, but more SAND.				5	20	75				
		S-3 46	8.0 12.0		748.5												
	8.0					SP	Fine SAND, black stained.			5	5	90					
10					745.5												
	ND	S-4	12.0 16.0			SP	Becoming yellow-brown SAND, wet.			15	10	70	5				
					743.5	ML	Gray-brown, clayey SILT, wet.										
15					741.5		-Bottom of Exploration at 16.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	16.0
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4253

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4254

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 8, 2002
Finish November 8, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 757.5
Datum Estimated
Location N 9,243 E 8,563

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					757.3		-CONCRETE-										
	ND	S-1 44	0.0 4.0	NO WELL INSTALLED		CL	Yellow-brown CLAY, moist. -FILL-					5	95				
					753.5												
		S-2 48	4.0 8.0				Same as above.										
5																	
					749.5												
	ND	S-3 48	8.0 12.0				Same as above.										
10																	
					745.5												
	ND	S-4 48	12.0 16.0				Same except gray-brown.					5	95				
					743.5												
						ML	Gray-brown SILT.						100				
15							Wet at 14.5 feet.										
					741.5												
							-Bottom of Exploration at 16.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	16.0
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4254

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4255

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 8, 2002
Finish November 8, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 757.5
Datum Estimated
Location N 9,246 E 8,556

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					757.3		-CONCRETE-										
	ND	S-1 24	0.0 4.0	NO WELL INSTALLED		SP	Dark brown SAND with black staining, moist.			15	10	70	5				
					753.5												
	ND	S-2 48	4.0 8.0			CL	Yellow-brown CLAY, moist.				5	5	90				
5																	
	ND	S-3 24	8.0 12.0		748.5		Same as above, 6" trace sand lens at 9.0 feet, moist. Sample collected from CLAY.			50	10	35	5				
10																	
					745.5												
	ND	S-4 48	12.0 16.0			SP	Dark brown SAND, moist.			10	10	55	5				
					743.5												
	ND					ML	Gray-brown SILT.						100				
15							Wet at 15 feet.										
					741.5		-Bottom of Exploration at 16.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	16.0
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4255

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4261

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 6, 2003
Finish May 6, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 755.5
Datum Estimated
Location N 8,232 E 8,374

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					755.3		-CONCRETE-										
	ND	S-1 36	0.0 4.0	NO WELL INSTALLED	754.9	SP	Yellow-brown, poorly-graded SAND, mps < 1 mm, moist.					95	5				
						CL	Olive-gray, lean CLAY, some sand, mps < 1 mm, moist.					10	90	N	L	L	L
							Soil sample S-1 4261A collected at approximately 1.5 feet.										
					751.5												
	98	S-2 48	4.0 8.0														
5							Soil sample S-2 4161B collected at approximately 5.5 feet.										
	72																
	28	S-3 48	8.0 12.0				Same as above.										
							Soil sample S-3 4261C collected at approximately 9.5 feet.										
10	8				745.5	SP-SM	Brown, poorly-graded SAND, some silt, mps < 1 mm, wet.					90	10	R	L	N	N
					743.5		-Bottom of Exploration at 12.0 feet.										
15																	
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 12.0
- Rock Cored (lin. ft.) -
- Samples S 1-3

Boring No. B-4261

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-42610

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 7, 2003
Finish May 7, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 755.8
Datum Estimated
Location N 8,292 E 8,466

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					755.1		-CONCRETE-										
	0.2	S-1 30	0.0 4.0	NO WELL INSTALLED		CL	Dark brown, lean CLAY, some sand, mps < 1 mm, moist.					5	95	N	L	L	L
							Soil sample S-1 42610A collected at approximately 2.0 feet.										
	0.1						Same except color changes to yellow-brown.										
	0.5	S-2 48	4.0 8.0														
5							Soil sample S-2 42610B collected at approximately 6.0 feet.										
	0.4																
		S-3 42	8.0 12.0				Soil sample S-3 42610C collected at approximately 8.0 feet.										
	0.5				746.8	SP-SM	Gray-brown, poorly-graded SAND with silt, mps < 1 mm, wet.					90	10	R	L	N	N
10					744.8												
	1.5				743.8	ML	Gray-brown SILT, mps < 1 mm, moist.						100	N	L	N	N
							-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12.0
Rock Cored (lin. ft.)	-
Samples	S 1-3

Boring No. B-42610

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-42611

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 6, 2003
Finish May 6, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 755.7
Datum Estimated
Location N 8,187 E 8,432

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				755.5		-CONCRETE-										
	ND	S-1 46	0.0 4.0		CL	Light brown, lean CLAY, mps < 1 mm, moist. Soil sample S-1 42611A collected at approximately 1.5 feet.					10	90	N	L	L	L
				751.7												
	ND	S-2 42	4.0 8.0		SP	Light brown, poorly-graded SAND, trace silt, mps < 1 mm, wet.					95	5	N	L	M	L
5																
	ND	S-3 48	8.0 12.0			Soil sample S-3 42611C collected at approximately 10.0 feet.										
10				745.2												
	ND				SP-SM	Light brown, SAND, some silt, mps < 1 mm, wet.					90	10	R	L	N	N
				743.7		-Bottom of Exploration at 12.0 feet.-										

NO WELL INSTALLED

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 12.0
Rock Cored (lin. ft.) -
Samples S 1-3

Boring No. B-42611

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-42612

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 26, 2004
Finish: March 26, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 8,391
E 8,429

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0								CONCRETE										
			G-1 33	0.0 5.0		0.5	SP	Medium dense, yellow brown, poorly graded SAND, mps: 0.75 cm, no odor, moist.			10	45	40	5				
		0.2				2.0	CL	Medium stiff, blackish gray, sandy lean CLAY, mps: 2.5 cm, pertrochemical odor, moist.		5	5	15	10	65				
		67.1																
		4.7																
5			G-2 18	5.0 10.0	NO WELL INSTALLED	5.0	SM	Loose, gray black, clayey, silty SAND, mps: 1 mm, petrochemical odor, wet.				10	75	15				
		6.7																
		76.8				9.5	CL	Stiff, red gray, lean CLAY, mps: 2 mm, slight odor, moist.					10	90				
10			G-3 54	10.0 15.0														
		15.5																
		5.4																
		37.5																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/26/04					5.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. B-42612

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4262

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 6, 2003
Finish May 6, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 756.0
Datum Estimated
Location N 8,225 E 8,462

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				755.8		-CONCRETE-										
	ND	S-1 36	0.0 4.0		CL	Black, lean CLAY with sand, mps < 1 mm, moist. Soil sample S-1 4262A collected at approximately 1.5 feet.					15	85	N	L	L	L
	ND	S-2 36	4.0 8.0			Similar to above, except color changes to olive-green and less sand, mps < 1 mm.					5	95	N	L	L	L
5	0.4					Soil sample S-2 4262B collected at approximately 6.5 feet.										
		S-3 48	8.0 12.0			Soil sample S-3 4262C collected at approximately 9.0 feet.										
				746.5	SP-SM	Gray-brown, poorly-graded SAND, with silt, mps < 1 mm, wet.					90	10	R	L	N	N
10	2.9			745.5												
				744.0		-Bottom of Exploration at 12.0 feet.-										
15																
20																

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12.0
Rock Cored (lin. ft.)	-
Samples	S 1-3

Boring No. B-4262

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4263

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 6, 2003
Finish May 6, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 756.2
Datum Estimated
Location N 8,288 E 8,571

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.5	S-1 48	0.0 4.0		CL	Tan, lean CLAY with sand, some concrete and gravel, mps: 19 mm, moist. Soil sample S-1 4263A collected at approximately 1.5 feet.		5		5	10	80	N	L	L	L
	2.3	S-2 48	4.0 8.0	752.2	CL	Yellow-brown, lean CLAY with sand, mps < 1 mm, moist. Soil sample S-2 4263B collected at approximately 6.0 feet.					10	90	N	L	M	M
5	3.3	S-3 48	8.0 12.0			Soil sample S-3 4263C collected at approximately 10.0 feet.										
10				746.2	SP-SM	Light brown, poorly-graded SAND with silt, wet.					90	10	R	L	N	N
				744.2		-Bottom of Exploration at 12.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 12.0
- Rock Cored (lin. ft.) -
- Samples S 1-3

Boring No. B-4263

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4264

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 7, 2003
Finish May 7, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 755.0
Datum Estimated
Location N 8,339 E 8,381

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		S-1 24	0.0 4.0	754.3		-Concrete										
	0.1				CL	Dark brown to black, lean CLAY, some sand, mps < 1 mm, moist. Color changes to yellow-brown at 1.0 foot. Soil sample S-1 4264A collected at approximately 1.5 feet.					10	90	N	L	L	L
	0.1															
	0.1	S-2 48	4.0 8.0													
5																
	0.1															
	0.2	S-3 48	8.0 12.0			Soil sample S-3 4264B collected at approximately 8.0 feet.										
10				744.5												
	0.2				SP-SM	Gray-brown, poorly-graded SAND with silt, mps < 1 mm, wet. Soil sample S-3 4264C collected at approximately 10.0 feet.					90	10	R	L	N	N
				743.0		-Bottom of Exploration at 12.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12.0
Rock Cored (lin. ft.)	-
Samples	S 1-3

Boring No. B-4264

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4265

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 7, 2003
Finish May 7, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 755.5
Datum Estimated
Location N 8,330 E 8,469

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					754.8		-CONCRETE-										
	4.0	S-1 48	0.0 4.0		754.3	SP	Yellow-brown, poorly-graded SAND.					95	5	N	L	N	N
						CL	Soil sample S-1 4265A collected at approximately 1.0 foot. Black, lean CLAY for 4 inches, becoming olive-gray, mps < 1 mm.					10	90	N	L	L	L
	2.0																
		S-2 40	4.0 8.0														
5	1.0						Soil sample S-2 4265B collected at approximately 6.0 feet.										
	0.5																
		S-3 44	8.0 12.0	NO WELL INSTALLED			Soil sample S-3 4265C collected at approximately 8.5 feet.										
	1.0				746.5	SP-SM	Olive-gray, poorly-graded SAND, with silt, mps < 1 mm, wet.					90	10	R	L	N	N
10					745.0												
	1.0					ML	Olive-gray SILT, moist.						100	N	L	N	N
					743.5		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12.0
Rock Cored (lin. ft.)	-
Samples	S 1-3

Boring No. B-4265

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4266

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 6, 2003
Finish May 6, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 752.6
Datum Estimated
Location N 8,234 E 8,568

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 42	0.0 4.0	NO WELL INSTALLED		CL	Tan, lean CLAY with sand and gravel, mps : 17 mm, moist. Soil sample S-1 4266A collected at approximately 1.5 feet.		10	5	5	15	65	N	L	L	L
5	ND	S-2 46	4.0 8.0			CL	Color changes to yellow-brown, less gravel and sand, mps: 2 mm, moist. Soil sample S-2 4266B collected at approximately 6.0 feet.				5	5	90	N	M	L	L
	ND	S-3 44	8.0 12.0		743.6	SP-SM	Yellow-brown, poorly-graded SAND with silt, mps < 1 mm, wet. Soil sample S-3 4266C collected at approximately 9.5 feet.					90	10	R	L	N	N
10					740.6		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 12.0
Rock Cored (lin. ft.) -
Samples S 1-3

Boring No. B-4266

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4267

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 6, 2003
Finish May 6, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 752.9
Datum Estimated
Location N 8,434 E 8,374

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					752.7		-CONCRETE-										
	ND	S-1 36	0.0 4.0	NO WELL INSTALLED		SP	Brown, poorly-graded SAND with gravel, mps: 3 mm, moist.	10	10	75	5						
					750.9												
						CL	Yellow-brown, lean CLAY, mps < 1 mm, moist. Soil sample S-1 4267A collected at approximately 2.0 feet.					10	90	N	M	L	L
	ND	S-2 48	4.0 8.0				Soil sample S-2 4267B collected at approximately 6.0 feet.										
5					746.4												
						SP-SM	Yellow-brown, poorly-graded SAND with silt, mps < 1 mm, wet.					90	10	R	L	L	N
					744.9		-Bottom of Exploration at 8.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 8.0
- Rock Cored (lin. ft.) -
- Samples S 1-3

Boring No. B-4267

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4268

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 6, 2003
Finish May 6, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 752.4
Datum Estimated
Location N 8,438 E 8,481

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				751.9		-CONCRETE-										
	0.3	S-1 36	0.0 4.0		CL	Black, sandy, lean CLAY, mps: 1 mm, moist. Soil sample S-1 4268A collected at approximately 2.0 feet.					30	70	N	L	L	N
	ND				CL	Olive-brown, sandy, lean CLAY, mps < 1 mm, moist.					30	70	N	L	L	L
	ND	S-2 48	4.0 8.0													
5																
	ND	S-3 42	8.0 12.0			Lens of sand and gravel. Color changes to light brown. Soil sample S-3 4268B collected at approximately 8.0 feet. Soil sample S-3 4268C collected at approximately 10.0 feet.										
10				741.9												
	0.7				SP-SM	Light brown, poorly-graded SAND with silt, mps < 1 mm, wet.					90	10	R	L	N	N
				740.4		-Bottom of Exploration at 12.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12.0
Rock Cored (lin. ft.)	-
Samples	S 1-3

Boring No. B-4268

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4269

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 6, 2003
Finish May 6, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 752.4
Datum Estimated
Location N 8,430 E 8,551

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 42	0.0 4.0	NO WELL INSTALLED		CL	Light brown to yellow-brown, sandy, lean CLAY, some fine gravel, mps: 15 mm, moist. Soil sample S-1 4269A collected at approximately 2.0 feet.		5	5	5	15	70	N	L	L	L
5	ND	S-2 47	4.0 8.0				Same except color changes to yellow-brown at 7.0 feet. Soil sample S-2 4269B collected at approximately 7.0 feet.										
10	ND	S-3 46	8.0 12.0				Soil sample S-3 4269C collected at approximately 10.0 feet.										
					741.9	SP-SC	Yellow-brown, poorly-graded SAND with clay, mps < 1 mm, wet.					90	10	R	L	N	N
					740.4		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
Overburden (lin. ft.) 12.0
Rock Cored (lin. ft.) -
Samples S 1-3

Boring No. B-4269

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-42710

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 13, 2002
Finish November 13, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 756.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1	0.0 4.0	NO WELL INSTALLED		CL	Yellow-brown CLAY, moist.				5	5	90				
		S-2	4.0 8.0														
5	ND				749.5	SP-SM	Yellow-brown, fine SAND, moist to wet.					90	10				
		S-3	8.0 12.0				Wet at 8.0 feet.										
	ND				746.5	CL	Yellow-brown CLAY, moist.						100				
10					745.0	ML	Gray-brown SILT, moist.						100				
					744.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-42710

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4271

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 8, 2002
Finish November 8, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 756.0
Datum Estimated
Location N 8,146 E 8,533

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				755.6		-CONCRETE-										
	ND	S-1 32	0.0 4.0		SP-SC	Yellow-brown SAND with some clay lenses interbedded.					90	10				
	ND	S-2 32	4.0 8.0		SP	Yellow-brown, fine SAND, dry to moist.					95	5				
5																
	ND	S-3 40	8.0 12.0													
				746.5												
10				745.5		Wet at 9.5 feet.										
					ML	Gray-brown SILT. Water collected at 9.5 to 10.5 feet.						100				
				744.0		-Bottom of Exploration at 12.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4271

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4272

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 8, 2002
Finish November 8, 2002
Driller D. Pino
H&A Rep. F. Palatka

Elevation 756.2
Datum Estimated

Location
N 8,244
E 8,594

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 44	0.0 4.0	NO WELL INSTALLED		SP	Yellow-brown SAND, moist.				5	95	5				
					753.2	SC	Olive-gray, clayey SAND, moist.					75	25				
					752.2												
	ND	S-2 46	4.0 8.0			CL	Light brown CLAY, moist.										
5																	
	ND	S-3 46	8.0 12.0		747.7	SM	Wet at 8.5 feet. Olive SAND with some silt. Color changes to yellow-brown at 10.5 feet.					80	20				
10					744.7												
					744.2	ML	Gray-brown SILT. -Bottom of Exploration at 12.0 feet.-						100				

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4272

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4273

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 11, 2002
Finish November 11, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 756.8
Datum Estimated
Location N 8,308 E 8,553

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 42	0.0 4.0	NO WELL INSTALLED		SP	Yellow-brown SAND, moist.				5	90	5				
					752.8												
	ND	S-2 40	4.0 8.0				Same as above.										
5																	
		S-3 40	8.0 12.0														
					747.3												
10	ND						Wet at 9.5 feet.										
							Color changes to gray-brown at 10.5 feet.										
					745.8	ML	Gray-brown SILT, moist.						100				
					744.8		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4273

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4274

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 11, 2002
Finish November 11, 2002
Driller D. Pino
H&A Rep. F. Palatka

Elevation 756.2
Datum Estimated

Location
N 8,574
E 8,363

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 46	0.0 4.0	NO WELL INSTALLED	755.7	OL/ OH	-TOPSOIL-										
						SC	Yellow-brown, clayey SAND, moist.				5	65	30				
5	ND	S-2 42	4.0 8.0		750.2	CL	Yellow-brown CLAY, moist.					30	70				
					748.7	SP	Yellow-brown SAND, moist.				15	80	5				
		S-3 43	8.0 12.0				Wet at 9.0 feet.										
10	ND				746.2	ML	Gray-brown SILT, moist.						100				
					744.2		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4274

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4275

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 11, 2002
Finish November 11, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 752.4
Datum Estimated
Location N 8,425 E 8,540

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 44	0.0 4.0	NO WELL INSTALLED		SC	Yellow-brown, clayey SAND, moist.				5	65	35				
					749.4	CL	Brown CLAY, moist.					5	95				
					748.4												
	ND	S-2 48	4.0 8.0			SP-SC	Yellow-brown SAND with CLAY.				5	85	10				
5					745.4	CL	Brown CLAY, moist.					5	95				
	ND	S-3 45	8.0 12.0		743.4	SP	Wet at 9.0 feet. Yellow-brown SAND, wet.					95	5				
10					741.4	ML	Gray-brown SILT, moist.					95	5				
					740.4		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4275

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4276

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 12, 2002
Finish November 12, 2002
Driller D. Pino
H&A Rep. F. Palatka

Elevation 756.0
Datum Estimated

Location
N 8,448
E 8,588

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 36	0.0 4.0	NO WELL INSTALLED		CL	Yellow-brown interbedded layers of SAND and CLAY, moist.				10	30	60				
					752.0												
	ND	S-2 46	4.0 8.0				Same as above.										
5					749.0	SP	Yellow-brown SAND, moist.					95	5				
		S-3 47	8.0 12.0				Wet at 8.5 feet.										
					746.5												
10	ND					ML	Gray-brown SILT, moist.						100				
					744.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4276

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4277

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 12, 2002
Finish November 12, 2002
Driller D. Pino
H&A Rep. F. Palatka

Elevation 756.0
Datum Estimated

Location
N 8,482
E 8,568

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 44	0.0 4.0	NO WELL INSTALLED		CL	Interbedded layers of sand and CLAY, moist.				10	30	60				
					752.0												
	ND	S-2 48	4.0 8.0			CL	Yellow-brown CLAY, moist.					5	95				
5					748.5												
						SC	Yellow-brown, clayey SAND, moist. Wet at 8.5 feet.					85	15				
		S-3 42	8.0 12.0														
					746.5												
10	ND					ML	Gray-brown SILT, moist.						100				
					744.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4277

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4278

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 12, 2002
Finish November 12, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 756.0
Datum Estimated
Location N 8,552 E 8,587

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 38	0.0 4.0		CL	Yellow-brown CLAY with interbedded layers of sand, moist.				5	25	70				
	ND	S-2 48	4.0 8.0	752.0		Same as above.										
5				748.5	SP-SM	Yellow-brown SAND with some silt. Wet at 9.0 feet.					90	10				
	ND	S-3 48	8.0 12.0	746.5	CL	Gray-brown CLAY, moist.					5	95				
10				745.0	ML	Gray-brown SILT, moist.						100				
				744.0		-Bottom of Exploration at 12.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 12
- Rock Cored (lin. ft.) -
- Samples

Boring No. B-4278

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4279

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 20, 2002
Finish November 20, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 756.0
Datum Estimated
Location N 8,573 E 8,566

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 42	0.0 4.0	NO WELL INSTALLED		SC	Yellow-brown SAND with interbedded layers of clay, moist.				5	65	30				
					752.0												
	ND	S-2 48	4.0 8.0			CL	Yellow-brown, sandy CLAY.					20	80				
5					748.0												
	ND	S-3	8.0 12.0			SM	Yellow-brown SAND with silt. Wet at 9.5 feet.					80	20				
					746.0												
10						CL	Gray-brown CLAY, moist.					5	95				
					744.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4279

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4311

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 8, 2002
Finish November 8, 2002
Driller P. Orsi
H&A Rep. G. Laird
Elevation 759.0
Datum Estimated
Location N 8,717 E 7,505

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 24	0.0 4.0	NO WELL INSTALLED		SP	Loose, brown medium SAND, mps: 1.3 cm, no odor, moist to wet. -FILL-				80	20					
					755.0												
	ND	S-2 20	4.0 8.0				Same as above, except wet. Water encountered at 5.0 feet				80	20					
5					751.0												
	ND	S-3 47	8.0 12.0				Same as above.										
					750.0		-FILL-										
	ND					SP	Loose, tan, fine SAND, mps< 1mm, no odor, wet -GLACIAL TILL-					100					
10					747.0		Bottom of Exploration at 12.0 feet										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	GP-1, GP-2, GP-3

Boring No. B-4311

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4351

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 8, 2003
Finish May 8, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location N 7,980 E 8,028

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.7		-CONCRETE-										
	ND	S-1 38	0.0 4.0			CL	Yellow-brown, lean CLAY, moist.						100	N	M	H	S
							Soil sample S-1 G51A collected at approximately 1.5 feet.										
					756.0		-Bottom of Exploration at 4.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	4.0
Rock Cored (lin. ft.)	-
Samples	S 1

Boring No. B-4351

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4352

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 8, 2003
Finish May 8, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location N 7,971 E 8,011

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.7		-CONCRETE-										
	ND	S-1 42	0.0 4.0			CL	Yellow-brown, lean CLAY, some fine sand, mps < 1 mm, moist. Soil sample S-1 4352 collected at approximately 1.5 feet.					5	95	N	M	M	M
					756.0		-Bottom of Exploration at 4.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	4.0
Rock Cored (lin. ft.)	-
Samples	S 1

Boring No. B-4352

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4353

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 8, 2003
Finish May 8, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location N 7,989 E 8,011

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.7		-CONCRETE-										
	ND	S-1 36	0.0 4.0	NO WELL INSTALLED		SP-SM	Dark brown, poorly-graded SAND, some silt, moist. Becoming yellow-brown at 1.0 feet. Soil sample S-1 G53A collected at approximately 1.5 feet.				5	90	5				
					757.5	CL	Yellow-brown CLAY, moist.						100				
					756.0		-Bottom of Explorationat 4.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 4.0
Rock Cored (lin. ft.) -
Samples S 1

Boring No. B-4353

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4371

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 6, 2002
Finish November 6, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 754.6
Datum Estimated
Location N 9,752 E 8,281

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type		GP		Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)		1 7/8		Bit Type:
Hammer Weight (lb.)			-	Drill Mud: None
Hammer Fall (in.)			-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					754.1		-6" CONCRETE-										
		S-1 36	0.0 4.0	NO WELL INSTALLED		SP	Gray-brown SAND, staining at 2.0 feet, brick and backfill at 4.0 feet. Some water present at 4.0 feet.				20	70	10				
		S-2 48	4.0 8.0		749.6												
5					748.6	CL	Olive-brown CLAY, moist					5	95				
					746.6	SP	Yellow-brown, fine SAND with no staining, moist.					95	5				
		S-3 48	8.0 10.0			SP	Becoming gray-brown, fine SAND, moist. Wet at 9.5 feet.					95	5				
10					744.6		-Bottom of Exploration at 10.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 10
- Rock Cored (lin. ft.) -
- Samples

Boring No. B-4371

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4451

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 8, 2002
Finish November 8, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 7,980
E 8,028

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	ND	S-1 32	1.0 5.0			SP	Loose, black and tan foundry SAND, mps: 6.4 mm, no odor, moist. -FILL-				30	70					
5					755.0												
	ND	S-2 48	5.0 9.0			ML	Stiff, brown, sandy SILT, mps: 1.3 cm, no odor, moist. -GLACIAL TILL-					30	70				
	4.1	S-3 46	9.0 13.0	NO WELL INSTALLED			Same as 4 to 8 feet, except hydrocarbon odor present.					40	60				
10	4.9						Water at 12.75 feet										
					747.0		-Bottom of Exploration at 13.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples GP-1, GP-2, GP-3

Boring No. B-4451

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4452

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 8, 2002
Finish November 8, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 7,971
E 8,011

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	ND	S-1 40	1.0 5.0			SP	Loose, black and tan foundry SAND, mps: 6.4 mm, no odor, moist. -FILL-				40	60					
	ND				755.5	ML	Soft, brown, sandy SILT, mps< 1 mm, no odor, moist. -GLACIAL TILL-					50	50				
5		S-2 44	5.0 9.0	NO WELL INSTALLED													
	0						Same as 4.5 to 8 feet.					50	50				
	2.7	S-3 47	9.0 13.0				Same except hydrocarbon odor present. -GLACIAL TILL-					50	50				
10					749.0												
	3.8					SP	Soft, tan, fine SAND, mps< 1 mm, no odor, wet. -GLACIAL TILL- Water at 10.0 feet.					100					
					747.0		-Bottom of Exploration at 13.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples GP-1, GP-2, GP-3

Boring No. B-4452

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4453

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 11, 2002
Finish November 11, 2002
Driller P. Orsi
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 7,989
E 8,011

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	0.4	S-1 44	1.0 5.0			SP	Loose, black and tan foundry SAND, mps< 1 mm, no odor, moist.				50	50					
	1.8				757.0		-FILL-										
5	35.0	S-2 47	5.0 9.0	NO WELL INSTALLED	755.0	ML	Stiff, brown SILT and sand, mps: 1.3 cm, slight hydrocarbon odor, moist.					25	75				
	9.9						-GLACIAL TILL-										
	8.2	S-3 48	9.0 13.0				Same as 5 to 9 feet.					25	75				
10					749.0												
	4.5					SP	Fairly dense, tan and gray, fine SAND, mps< 1 mm, slight hydrocarbon odor, wet.					100					
					747.0		-GLACIAL TILL-										
							Water at 11.0 feet.										
							-Bottom of Exploration at 13.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples FD,GP-1,GP-2,GP-3

Boring No. B-4453

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4454

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 8, 2003
Finish May 8, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location N 7,955 E 8,009

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.5		-CONCRETE-										
	ND	S-1 36	0.0 4.0	NO WELL INSTALLED		SP	Black, poorly-graded SAND, mps < 1 mm, moist. Soil sample S-1 G54A collected at approximately 1.0 feet.					95	5	N	L	N	N
					757.0	CL	Tan, lean CLAY, some sand, mps: 4 mm, moist.				5	5	90	N	M	M	M
	ND	S-2 48	4.0 8.0				Soil sample S-2 G54B collected at approximately 6.0 feet.										
5																	
	ND	S-3 47	8.0 12.0														
					750.5	SP-SM	Light brown, poorly-graded SAND, with silt, mps < 1 mm, wet. Soil sample S-3 G54C collected at approximately 9.0 feet.					90	10	R	L	N	N
10					749.0	CL	Yellow-brown, lean CLAY, some silt, mps < 1 mm, moist.						100	N	L	L	L
					748.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12.0
Rock Cored (lin. ft.)	-
Samples	S 1-3

Boring No. B-4454

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. B-4455

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 8, 2003
Finish May 8, 2003
Driller D. Pino
H&A Rep. F. Palatka

Elevation 760.0
Datum Estimated

Location
N 7,968
E 7,994

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.5		-CONCRETE-										
	ND	S-1 40	0.0 4.0	NO WELL INSTALLED		SP	Yellow-brown, poorly-graded SAND, trace silt, mps < 1 mm, moist.					95	5	N	N	N	N
					756.5	CL	Dark brown, lean CLAY, some sand, mps < 1 mm, moist.					10	90	N	M	M	M
5	ND	S-2 48	4.0 8.0				Same except color changes to yellow-brown.										
					752.0												
	ND	S-3 46	8.0 12.0			SP-SM	Tan, poorly-graded SAND with silt, mps < 1 mm, wet.					90	10	R	L	N	N
					750.0												
10	1.0					CL	Yellow-brown, lean CLAY, mps < 1 mm, moist.					5	95	N	M	H	M
					748.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 12.0
Rock Cored (lin. ft.) -
Samples S 1-3

Boring No. B-4455

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B-4481

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 14, 2002
Finish November 14, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.5	OL/OH	-TOPSOIL-				5	10	85				
	ND	S-1 46	0.0 4.0	NO WELL INSTALLED		SC	Brown, clayey SAND, moist, backfill material present.				10	75	15				
					757.0												
	ND					CL	Yellow-brown CLAY with sand, moist.				5	15	80				
		S-2 48	4.0 8.0														
5					753.0												
	ND					SM	Yellow-brown, fine, silty SAND, moist. Wet at 8.5 feet.					80	20				
		S-3	8.0 12.0														
10					749.5												
	1.8					ML	Gray-brown SILT with some clay.						100				
					748.5												
					748.0	CL	Gray-brown CLAY with some silt.						100				
							-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4481

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4482

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 14, 2002
Finish November 14, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		S-1 45	0.0 4.0	NO WELL INSTALLED	759.0	OL/ OH	-TOPSOIL-										
	ND				758.0	SC	Dark brown, clayey SAND, backfill present, moist.				10	70	20				
					757.0	CL	Yellow-brown CLAY with some sand, moist.					20	80				
						SM	Light brown, fine SAND with silt.					80	20				
		S-2 46	4.0 8.0		755.0												
5	ND					CL	Yellow-brown CLAY, moist.					5	95				
					753.5												
	ND					SP-SM	Yellow-brown, fine SAND with some silt, moist.					90	10				
		S-3 46	8.0 12.0														
10					749.5												
						CL	Yellow-brown CLAY with interbedded silt layers.					5	95				
					748.5												
					748.0		Same except gray-brown and no sand.						100				
							-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. B-4482

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4483

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 14, 2002
Finish November 14, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 760.0
Datum Estimated
Location

	Casing	Sampler	Barrel
Type	-	GP	-
Inside Diameter (in.)	-	1 7/8	-
Hammer Weight (lb.)	-	-	-
Hammer Fall (in.)	-	-	-

Drilling Equipment and Procedures
Rig Make & Model: Truck-mounted Geoprobe
Bit Type:
Drill Mud: None
Casing: N/A
Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		S-1 42	0.0 4.0	NO WELL INSTALLED	759.4	OL/ OH	-TOPSOIL-										
						SC	Light brown SAND with clay. Concrete fragments from 3.5 to 4.0 feet.				5	75	20				
					756.0												
		S-2 46	4.0 8.0			CL	Yellow-brown, sandy CLAY, moist.				10	30	60				
5					753.5												
						SP	Yellow-brown, fine SAND, moist. Wet at 9.0 feet.					90	5				
		S-3 48	8.0 12.0		751.0												
10	2.8				750.0	CL	Gray-brown CLAY with silt, moist.					5	95				
					748.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (lin. ft.) 12
Rock Cored (lin. ft.) -
Samples

Boring No. B-4483

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4501

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 30, 2004
Finish: March 30, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 8,434
E 7,933

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		0.5	G-1 32	0.0 5.0	NO WELL INSTALLED			CONCRETE										
						1.0	SL	Medium dense, light brown, clayey SAND, mps: 2 cm, no odor, moist.			10	25	25	40				
		8.2				3.5	CL	Stiff, light brown, lean CLAY, mps: 1 mm, no odor, moist.					5	95				
						4.5	CL	Stiff, gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
5		2.7	G-2 60	5.0 10.0														
		2.2						8 ft.: Color change to light brown.										
		4.1																
10		28.7	G-3 60	10.0 15.0		10.0	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet.					85	15				
						12.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
		26.1				12.5	SM	Medium dense, red gray, silty SAND, mps: 1 mm, no odor, wet.				5	80	15				
		25.4				14.5	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/30/04				15.0	10.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. B-4501

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4502

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 30, 2004
Finish: March 30, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 8,458
E 7,982

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 27	0.0 5.0	NO WELL INSTALLED			CONCRETE										
		0.9				1.0	CL	Very soft, brown, lean CLAY, mps: 1 mm, no odor, moist.					10	90				
		1.2				2.0	SW	Loose, tan, well graded SAND, mps: 3 mm, no odor, dry. -Foundry SAND?-	5	5	30	50	10					
						4.0	CL	Stiff, olive brown, lean CLAY, mps: 0.5 mm, no odor, moist. 4.5 ft.: Color change to light brown.					10	90				
5		1.4	G-2 60	5.0 10.0														
		1.0																
		1.4																
10			G-3 60	10.0 15.0														
		42.8				10.5	SM	Medium dense, light brown, silty SAND, mps: 0.5 mm, no odor, wet.					85	15				
						12.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
		28.8				13.0	SM	Medium dense, red gray, silty SAND, mps: 1 mm, no odor, wet.				5	80	15				
						14.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					10	90				
		12.7																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/30/04				15.0	10.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. B-4502

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4503

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 30, 2004
Finish: March 30, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 8,366
E 7,925

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 46	0.0 5.0	NO WELL INSTALLED			CONCRETE										
		0.4				1.0	SP	Medium dense, yellow brown, poorly graded SAND, mps: 1.5 cm, no odor, moist.			5	35	55	5				
		0.3				2.0	CL	Stiff, yellow brown, lean CLAY, mps: 1 mm, no odor, moist. 2.5 ft.: Seam of tan SAND, and piece of coarse gravel. 3.0 ft.: Color change to brown.					10	90				
5		0.3	G-2 60	5.0 10.0				5.5 ft.: Color change to light brown with red gray mottling.										
		0.9																
		4.8																
10		28.3	G-3 60	10.0 15.0		10.0	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
						12.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
		57.6				13.0	SP	Medium dense, red gray, poorly graded SAND, mps: 1 mm, no odor, wet.				75	20	5				
		13.4				14.5	SM-SC	Medium dense, red gray, clayey/silty SAND, mps: 0.5 mm, no odor, wet.				5	60	35				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/30/04				15.0	10.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. B-4503

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. B-4504

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 30, 2004
Finish: March 30, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 8,388
E 7,894

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					NO WELL INSTALLED			CONCRETE										
						1.0		VOID										
			G-1 57	3.0 8.0		3.0	SW	Loose, brown, well graded SAND, mps: 1.5 cm,	5	5	30	50	10					
		0.8				4.0	CL	Stiff, light brown, lean CLAY with red gray mottling, mps: 5 mm, no odor, moist. 5.0 ft.: Seam of slag.					10	90				
5		1.4																
		1.0	G-2 60	8.0 13.0														
10		4.9																
						11.0	SM	Medium dense, olive brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
		27.7				12.5	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
		25.2	G-3 24	13.0 15.0		13.0	SM	Medium dense, red gray, silty SAND, mps: 0.5 mm, no odor, wet. (some clay in cutting shoe).					85	15				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/30/04				15.0	11.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. B-4504

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4001

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 10, 2001
Finish September 10, 2001
Driller K. Eagan
H&A Rep. A. Correll

Elevation 756.1
Datum Estimated

Location
N 9,366
E 7,389

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1	0.0 4.0	NO WELL INSTALLED	755.1	ML	Grass over black sandy SILT, organic material present, trace gravel, moist to dry.		5			15	80				
	ND				752.1	ML	Yellow-brown, sandy SILT with gravel, dry.		10			15	75				
	ND	G-2	4.0 8.0			ML	Soil Sample: GP-4001/G-2, 6-7 ft.		10			15	75				
5					749.1												
	ND					SP	Yellow-brown, poorly-graded SAND, moist.				40	60					
		G-3	8.0 12.0														
10					744.1												
	ND	G-4	12.0 16.0			SP					40	60					
15					740.1												
	ND	G-5	16.0 20.0			SP	Soil Sample: GP-4001/G-5, 16-17 ft.				40	60					
					737.1												
20	ND					SP	Water at 19.0 feet.				40	60					

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	36
Rock Cored (lin. ft.)	-
Samples	G-2, G-5

Boring No. GP-4001

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4001**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6	20.0 24.0		SP	GW Sample: GP-4001/GW-1, 20-21 ft.										
				732.1												
	ND	G-7	24.0 28.0		SP	Yellow-brown, poorly-graded SAND, wet.				40	60					
25																
		G-8	28.0 30.0													
				726.1												
30	ND	G-9	30.0 33.0		SP	Yellow-brown, poorly-graded SAND, wet. GW Sample: GP-4001/GW-2, 31-32 ft.				40	60					
				723.1												
	ND	G-10	33.0 36.0		SP					40	60					
35																
				720.1		-Bottom of Exploration at 36.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4002

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 11, 2001
Finish September 11, 2001
Driller K. Eagan
H&A Rep. A. Correll
Elevation 756.1
Datum Estimated
Location N 9,297 E 7,389

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 38	0.0 4.0	NO WELL INSTALLED	755.1	ML	Grass over black, sandy SILT with gravel, moist.		10		10	10	70				
	ND				752.1	ML	Brown, sandy SILT with gravel, moist.		10			15	75				
5	ND	G-2 48	4.0 8.0			ML	Soil Sample: GP-4002/G-2, 6-7 ft.		10			15	75				
	ND	G-3 48	8.0 12.0		748.6	SP	Yellow-brown, fine to medium grained SAND, moist.				30	70					
10	ND	G-4 48	12.0 16.0		744.1	SP					30	70					
15	ND	G-5 48	16.0 20.0		740.1	SP	Soil Sample: GP-4002/G-5, 16-17 ft.				30	70					
20	ND				736.6		Yellow-brown, fine to medium SAND, wet.				30	70					

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G-2, G-5

Boring No. GP-4002

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4002**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6 48	20.0 24.0			SP	Water at 19.5 feet. GW Sample: GP-4001/GW-1, 20-21 ft.										
					732.1												
	ND	G-7 48	24.0 27.0			SP	Yellow-brown, fine to medium SAND, wet.				30	70					
25																	
					729.1												
	ND	G-8 48	27.0 30.0			SP	GW Sample: GP-4002/GW-2, 31-32 ft.				30	70					
					726.1												
30							-Bottom of Exploration at 30.0 feet-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4003

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 11, 2001
Finish September 11, 2001
Driller K. Eagan
H&A Rep. A. Correll

Elevation 756.1
Datum Estimated

Location
N 9,507
E 7,389

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 42	0.0 4.0	NO WELL INSTALLED	755.1		Grass over black, sandy SILT with gravel, moist.		10			15	75				
	ND				752.1	ML	Yellow-brown, sandy SILT with gravel, moist.		10			15	75				
	ND	G-2 48	4.0 8.0			SP	Yellow-brown, poorly-graded SAND, moist.		10		15	75					
5					749.1		Soil Sample: GP-4003/G-2, 6-7 ft.										
	ND					SP				15	85						
		G-3 48	8.0 12.0														
10					744.1												
	ND	G-4 48	12.0 16.0			SP	Yellow-brown, poorly-graded SAND, moist.			15	85						
15					740.1												
	ND	G-5 48	16.0 20.0			SP	Soil Sample: GP-4003/G-5, 16-17 ft.			15	85						
					737.1												
	ND					SP	Yellow-brown, poorly-graded SAND, wet. Water at 19.0 feet.			15	85						
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G-2, G-5

Boring No. GP-4003

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4003**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6 48	20.0 24.0			SP	GW Sample: GP-4003/GW-1, 20-21 ft.										
					732.1												
	ND	G-7 48	24.0 28.0			SP	Yellow-brown, poorly-graded SAND, wet.			15	85						
25																	
					728.1												
	ND	G-8	28.0 30.0			SP	GW Sample: GP-4003/GW-2, 31-32 ft.			15	85						
30					726.1		-Bottom of Exploration at 30.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4004

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 11, 2001
Finish September 11, 2001
Driller K. Eagan
H&A Rep. A. Correll

Elevation 756.1
Datum Estimated

Location
N 9,684
E 7,389

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 45	0.0 4.0	NO WELL INSTALLED	755.1	ML	Grass over black, sandy SILT, with gravel, moist.		10			15	75				
	ND				752.1	ML	Yellow-brown, sandy SILT with gravel, moist.		10			15	75				
5	ND	G-2 48	4.0 8.0			ML	Soil Sample: GP-4004/G-2, 6-7 ft.		10			15	75				
	ND				749.1	SP	Yellow-brown, poorly-graded SAND, moist.				40	60					
10		G-3 48	8.0 12.0														
	ND	G-4 48	12.0 16.0		744.1	SP					40	60					
15	ND	G-5	16.0 20.0		740.1	SP	Soil Sample: GP-4004/G-5, 16-17 ft.				40	60					
20	ND				737.1	SP	Yellow-brown, poorly-graded SAND, wet. Water at 19.0 feet.				40	60					

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G-2, G-5

Boring No. GP-4004

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4004
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6	20.0 24.0		SP	GW Sample: GP-4004/GW-1, 20-21 ft.										
				732.1												
	ND	G-7	24.0 27.0		SP	Yellow-brown, poorly-graded SAND, wet.				40	60					
25																
						GW Sample: GP-4004/GW-2, 31-32 ft.										
				726.1		-Bottom of Exploration at 30.0 feet.-										
30																
		G-8	37.0 40.0													

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4005

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 12, 2001
Finish September 12, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll
Elevation 756.1
Datum Estimated
Location N 9,782 E 7,389

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 47	0.0 4.0	NO WELL INSTALLED		ML	Grass over black-brown, sandy, SILT with gravel, dry.		10				90				
					754.1	ML	Black-brown, sandy SILT with gravel, dry.		10				90				
		G-2 48	4.0 8.0														
5	ND				750.1	SP	Yellow-brown, fine to medium grained, poorly-graded SAND, moist.				30	70					
							Soil Samples: GP-4005/G-2 and MS/MSD-1, 6-7 ft.										
		G-3 48	8.0 12.0														
10					744.1												
	ND	G-4 48	12.0 16.0			SP					30	70					
15							Soil Sample: GP-4005/G-5, 16-17 ft.										
		G-5 48	16.0 20.0														
	ND				738.1	SP	Yellow-brown, fine to medium grained SAND, wet. Water at 18.0 feet.				30	70					
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	30
Rock Cored (lin. ft.)	-
Samples	G-2, G-5, MS/D

Boring No. GP-4005

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4005
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6 48	20.0 24.0		SP	GW Sample: GP-4005/GW-1, 20-21 ft.										
				733.1												
	ND				SP	Same as above, becoming coarser grained SAND.			15	30	55					
		G-7 48	24.0 27.0													
25																
				729.1												
	ND	G-8 48	27.0 30.0		SP	Yellow-brown, fine to coarse SAND, wet.			15	30	55					
						GW Sample: GP-4005/GW-2, 31-32 ft.										
				726.1												
30						-Bottom of Exploration at 30.0 feet-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4006

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 12, 2001
Finish September 12, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll

Elevation 756.1
Datum Estimated

Location
N 9,732
E 7,423

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 40	0.0 4.0	NO WELL INSTALLED		ML	Grass over black sandy SILT with gravel, dry.		10			20	70				
	ND				753.6		2.5-3.25 feet - Crushed gravel and concrete layer.										
	ND				752.9	ML	Black sandy SILT with gravel, dry.		15			15	70				
		G-2 48	4.0 8.0														
5					750.3												
	ND					SP	Yellow-brown, fine to medium grained, poorly-graded SAND, moist. Soil Sample: GP-4006/G-2 and Dup-1, 6-7 ft.				30	70					
		G-3 48	8.0 12.0														
10					744.1												
	ND	G-4 48	12.0 16.0			SP	Yellow-brown, fine to medium grained, poorly-graded SAND, moist. Soil Sample: GP-4006/G-5, 16-17 ft.				30	70					
15																	
		G-5 48	16.0 20.0														
					738.1												
	ND					SP	Yellow-brown, fine to medium grained, poorly-graded SAND, moist. GW Sample: GP-4006/GW-1, 20-21 ft.				30	70					
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G-2, G-5, D-1

Boring No. GP-4006

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4006
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6 48	20.0 24.0			SP											
					732.1												
	ND	G-7 48	24.0 27.0			SP	Yellow-brown, fine to medium grained, poorly-graded SAND, moist.				30	70					
25																	
							GW Sample: GP-4006/GW-2, 31-32 ft.										
		G-8 48	27.0 30.0														
					726.1												
30							-Bottom of Exploration at 30.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. GP-4006

TEST BORING REPORT

Boring No. GP-4007

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 12, 2001
Finish September 12, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll

Elevation 759.0
Datum Estimated

Location
N 9,644
E 7,423

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		G-1 48	0.0 4.0	NO WELL INSTALLED		ML	Grass over brown, sandy SILT with gravel, dry to moist.		5			15	80				
	1.4				757.0	ML			5			15	80				
	5.6	G-2 30	4.0 8.0		755.0	ML	Brown, sandy SILT with gravel, dry to moist.										
5					753.0	SP	Yellow-brown, fine to medium, poorly-graded SAND, moist. Soil Sample: GP-4007/G-2, 6-7 ft.				25	75					
		G-3 33	8.0 12.0														
10	2.3				749.0	SP					25	75					
		G-4 46	12.0 16.0														
	4.0				745.0	SP	Yellow-brown, fine to medium, poorly-graded SAND, moist.				25	75					
15							Soil Sample: GP-4007/G-5, 16-17 ft.										
		G-5 48	16.0 20.0														
	1.7				741.0 740.5	SP	Same as above except becoming coarser grained SAND at 18.0 feet.				25	75					
20						SP	Yellow-brown, poorly-graded SAND, wet. Water at 18.5 feet.			10	15	75					

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G-2, G-5

Boring No. GP-4007

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4007**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6 48	20.0 24.0		SP	GW Sample: GP-4007/GW-1, 20-21 ft.										
	2.0			737.0	SP				10	15	75					
		G-7 48	24.0 27.0													
25	1.1			733.5	SP	Yellow-brown, poorly-graded SAND, wet.			10	15	75					
		G-8 48	27.0 30.0													
	1.5			730.5	SP	GW Sample: GP-4007/GW-2, 31-32 ft.			10	15	75					
30				729.0		-Bottom of Exploration at 30.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4008

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 13, 2001
Finish September 13, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll
Elevation 756.1
Datum Estimated
Location N 9,560 E 7,423

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 47	0.0 4.0	NO WELL INSTALLED	755.1	ML	Grass over black, sandy SILT with gravel, moist.		10			15	75				
	ND					ML	Yellow-brown to brown, sandy SILT with gravel, moist to dry.		10			20	70				
		G-2 34	4.0 8.0														
5					750.1												
	ND					SP	Yellow-brown, fine to medium grained, poorly-graded SAND, moist. Soil Sample: GP-4008/G-2, 6-7 ft.				30	70					
		G-3 36	8.0 12.0														
10					744.1												
	ND	G-4 42	12.0 16.0			SP	Soil Sample: GP-4008/G-5, 16-17 ft.				30	70					
15																	
		G-5 48	16.0 20.0		739.1												
	ND					SP	Yellow-brown, fine to medium grained poorly-graded SAND, wet. Water at 17.0 feet.				30	70					
20							GW Sample: GP-4008/GW-1, 20-21 ft.										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G-2, G-5

Boring No. GP-4008

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4008**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6 48	20.0 24.0			SP											
		G-7 48	24.0 27.0														
25					729.1												
	ND	G-8 48	27.0 30.0			SP	Yellow-brown, fine to medium grained, poorly-graded SAND, wet.				30	70					
							GW Sample: GP-4008/GW-2, 31-32 ft.										
30					726.1		-Bottom of Exploration at 30.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4009

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 13, 2001
Finish September 13, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll

Elevation 756.1
Datum Estimated

Location
N 9,333
E 7,423

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 42	0.0 4.0	NO WELL INSTALLED	755.1	ML	Grass over black, sandy SILT with gravel, moist.		10			15	75				
	ND					ML	Brown, sandy SILT with gravel, moist.		10		20	70					
	ND	G-2 41	4.0 8.0		751.1												
5	ND					SP	Yellow-brown, fine to medium grained, poorly-graded SAND, moist.				30	70					
							Soil Sample: GP-4009/G-2, 6-7 ft.										
	ND	G-3 47	8.0 12.0		746.6	SP	* Pinecone and two pieces of fine gravel at 9.5 feet.				30	70					
10							Soil Sample: GP-4009/G-5, 16-17 ft.										
		G-4 48	12.0 16.0														
15																	
	ND	G-5 48	16.0 20.0		739.1	SP	Yellow-brown, fine to medium grained, poorly-graded SAND, wet.				30	70					
							GW Sample: GP-4009/GW-1, 20-21 ft.										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G-2, G-5

Boring No. GP-4009

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4009**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6 48	20.0 24.0			SP											
					732.1												
	ND	G-7 36	24.0 27.0			SP	Yellow-brown, fine to medium grained, poorly-graded SAND, wet.				30	70					
25																	
					729.1												
	ND	G-8 36	27.0 30.0			SP	GW Sample: GP-4009/GW-2, 31-32 ft.				30	70					
					726.1		-Bottom of Exploration at 30.0 ft.-										
30																	

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4010

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 13, 2001
Finish September 13, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll
Elevation 756.1
Datum Estimated
Location N 9,431 E 7,423

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 42	0.0 4.0	NO WELL INSTALLED	755.1	ML	Grass over black, sandy SILT with gravel, moist.		10			20	70				
	ND					ML	Brown, sandy SILT with gravel, moist.		5			10	85				
5		G-2 41	4.0 8.0		750.6												
	1.7				750.1	SP	Yellow-brown, fine to medium grained, poorly-graded SAND, moist. Soil Sample: GP-4010/G-2, 6-7 ft.				30 30	70 70					
	ND	G-3 47	8.0 12.0		748.1	SP					30	70					
10																	
	ND	G-4 48	12.0 16.0		744.1	SP					30	70					
15																	
	ND	G-5 48	16.0 20.0		740.1	SP	Water at 16.75 feet. Yellow-brown, fine to medium grained, poorly-graded SAND, moist. Soil Sample: GP-4010/G-5, 16-17 ft.				30	70					
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G-2, G-5

Boring No. GP-4010

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. **GP-4010**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6 48	20.0 24.0			SP	GW Sample: GP-4010/GW-1, 20-21 ft.										
					732.1												
	ND	G-7 36	24.0 27.0			SP	Yellow-brown, fine to medium grained, poorly-graded SAND, moist.				30	70					
25																	
					729.1												
	ND	G-8 36	27.0 30.0			SP	GW Sample: GP-4010/GW-2, 31-32 ft.				30	70					
					726.1												
30							-Bottom of Exploration at 30.0 feet.										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4011

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 1
Start September 13, 2001
Finish September 13, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll
Elevation 759.0
Datum Estimated
Location N 7,595 E 8,544

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 48	0.0 4.0	NO WELL INSTALLED		ML	Grass over brown, sandy SILT with gravel, moist. Trace coal fragments, black staining present 4.0 - 5.0 feet.		10			15	75				
					755.0												
5	ND	G-2 48	4.0 8.0			ML	Brown to red-brown, sandy SILT with gravel, moist. Black staining present from 6.0 to 7.0 feet. Trace coal fragments. Soil Sample: GP-4011/G-2, 6-6.5 ft.		15			15	70				
					752.0												
	ND					SP	Yellow-brown to gray, fine, poorly-graded SAND, moist.					100					
		G-3 48	8.0 12.0														
					749.3												
10	ND				748.8		Red-brown, sandy SILT with gravel, moist.		10			15	75				
	ND					MH	Gray, sandy, elastic SILT with gravel, moist.		5			10	85				
		G-4 48	12.0 16.0														
15					743.0												
	ND	G-5 48	16.0 20.0			MH	Note: GW not recoverable. Soil Sample: GP-4011/G-5, 18-18.5 ft.		5			10	85				
					739.5												
20	ND					SM	Gray, silty SAND, wet.					60	40				

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 21
Rock Cored (lin. ft.) -
Samples G-2, G-5

Boring No. GP-4011

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4011**
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
		G-6	20.0		738.5												
	ND	12	21.0		738.0	MH	Gray, sandy, elastic SILT with gravel, moist. -Refusal at 21.0 feet.-		5			30	65				

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4012

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 13, 2001
Finish September 13, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll
Elevation 759.0
Datum Estimated
Location N 7,596 E 8,466

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 44	0.0 4.0	NO WELL INSTALLED	758.0	ML	Grass over black, sandy SILT with gravel, dry. Trace coal fragments 1 to 2.5 feet.		10			25	65				
	ND				756.5	ML	Yellow to brown, sandy SILT with gravel, dry. Black staining present 3.8 to 4 feet. Spark plug insulators 5.0 to 6.0 feet. Soil Sample: GP-4012/G-2, 6-6.5 ft.		10			15	75				
		G-2 48	4.0 8.0		754.0												
5					752.0												
	ND					ML	Yellow-brown, red-brown, gray-brown mottled, sandy SILT with gravel, moist.		5			20	75				
		G-3 36	8.0 12.0		750.0												
	ND					SP	Yellow-brown, fine, poorly-graded SAND, wet. GW Sample: GP-4012/GW-1, 9-10 ft.						100				
10					748.5												
	ND					CL	Gray, lean CLAY, moist.						100	N	M	H	H
		G-4 48	12.0 16.0														
15					743.0												
	ND	G-5 14	16.0 20.0			CL-ML	Gray, sandy, lean CLAY, moist. Soil Sample: GP-4012/G-5, 19-20 ft.						100	N	M	H	H
20					739.2												

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 26
Rock Cored (lin. ft.) -
Samples G-2, G-5, MS/D, D-2

Boring No. GP-4012

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. **GP-4012**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	G-6	20.0		738.5	SC	Gray, clayey SAND, wet.				30	30	40				
	ND	48	24.0			SP	Gray, poorly-graded SAND, wet. GW Sample: GP-4012/GW-2 and Dup-3, 22-23 ft.			30	70					
					735.0												
	ND	G-7	24.0 26.0			CL	Gray, sandy, lean CLAY, moist.				10	90					
25					733.0												
							-Bottom of Exploration at 26.0 feet.										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

HALEY & ALDRICH

Boring No. GP-4013

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 17, 2001
Finish September 17, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll
Elevation 759.0
Datum Estimated
Location N 7,676 E 8,470

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 40	0.0 4.0	NO WELL INSTALLED		ML	Grass over brown, sandy SILT with gravel, dry.		10			20	70				
	ND				756.5		Tree roots at 2.5 feet and black staining 2.5 to 3.0 feet.		10			20	70				
		G-2 48	4.0 8.0				Brown, sandy SILT with gravel, dry.										
5					752.0												
	ND					ML	Yellow-brown, sandy SILT with gravel, moist.		10			30	60				
					750.7												
	ND	G-3 48	8.0 12.0		750.0	SP	Yellow to brown, poorly-graded, fine SAND, moist. Black stained sand from 8.3 to 8.7 feet. Soil Sample: GP-4013/G-3, 8.3-8.7 ft.					100					
	ND						Water at 9.0 - 11.0 feet.										
10					747.8												
	ND					MH	Gray, sandy, elastic SILT with gravel, moist.		5			30	65				
		G-4 36	12.0 16.0														
15					743.0												
	ND	G-5 48	16.0 20.0			MH			5			30	65				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G-3, G-6

Boring No. GP-4013

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4013
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6 48	20.0 24.0	738.0	MH											
	ND				CL	Gray, sandy, lean CLAY with gravel.		5			10	85				
						Soil Sample: GP-4013/G-6, 21-22 ft.										
						Note: GW not recoverable.										
		G-7 48	24.0 28.0													
25				732.7												
	ND					26.3 to 26.5 gray, fine to coarse SAND lens, moist.		5			10	85				
		G-8 18	28.0 30.0													
30				729.0		-Bottom of Exploration at 30.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4014

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017
Sheet No. 1 of 2
Start September 17, 2001
Finish September 17, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll
Elevation 759.0
Datum Estimated
Location N 7,674 E 8,533

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 46	0.0 4.0	758.0	ML	Grass over brown, sandy SILT with gravel, dry.		10			20	70				
	ND			757.0	SM	Brown, red-brown, yellow-brown, silty SAND with gravel, dry to moist.		20	20	20	20	20				
	ND				MH	Brown, yellow-brown, olive-gray, sandy, elastic SILT with gravel, moist.		10			15	75				
		G-2 48	4.0 8.0			Same as above. Soil Sample: GP-4014/G-2, MS/MSD-3, 6-7 ft.										
5				751.3	SM	Brown, red-brown, olive-gray, silty SAND, wet					60	40				
	ND	G-3 48	8.0 12.0	749.8	SP	Yellow-brown, fine to medium grained, poorly-graded SAND, wet. Water at 9.2 feet. GW Sample: GP-4014/GW-1, 10-11 ft.				40	60					
10	ND			747.1	MH	Gray, sandy, elastic SILT, moist.					10	90				
	ND	G-4 40	12.0 16.0													
15		G-5 48	16.0 20.0			Soil Sample: GP-4014/G-5, 17-18 ft.										
	ND			740.0	SM	Gray, silty SAND, moist to wet.				40	45	15				
20																

NO WELL INSTALLED

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 28
Rock Cored (lin. ft.) -
Samples G-2, G-5, MS/D

Boring No. GP-4014

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4014**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6 48	20.0 24.0			SM											
	ND				738.0		Same as above except less silt, wet.				45	50	5				
							GW Sample: GP-4014/GW-2, 22-23 ft.										
							Gray, silty SAND, moist to wet.										
		G-7 39	24.0 28.0														
25																	
					732.3												
	ND					ML	Gray, sandy, elastic SILT, moist.					10	90				
					731.0		-Bottom of Exploration at 28.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4023

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017-013
Sheet No. 1 of 1
Start September 19, 2001
Finish September 19, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll
Elevation -
Datum
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 34	0.0 4.0	NO WELL INSTALLED		ML	Grass over brown sandy SILT with gravel, moist. Coal fragments present and gravel at 0.75 to 1.5 feet and 3.0 to 4.0 feet.	5	10			30	55				
5	ND	G-2 41	4.0 8.0			ML	Black staining present 3.8 to 4.0 feet. Soil Sample: GP-4023/G-2, Dup-4, 6-7 ft.	5	10			30	55				
	ND				7.6 8.2	SP	Yellow-brown, poorly graded, fine SAND, wet.					100					
	ND ND	G-3 48	8.0 12.0		8.5	CH CH	Yellow-brown, sandy fat CLAY, moist. Brown, red-brown, sandy fat CLAY, moist.					5 15	95 85	N	M	H	H
10		G-4 48	12.0 15.9		13.5												
	ND					MH	Red-brown and gray mottled, sandy elastic SILT, moist.					15	85	S	M	M	M
15	ND				15.4 16.0	ML	Gray sandy SILT, moist. Refusal due to obstruction. Offset approximately 5.0 feet to the Northwest. -Refusal at 15.9 feet.-					5	95				

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	15.9
Rock Cored (lin. ft.)	-
Samples	G-2, D-4

Boring No. GP-4023

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4023a

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017-013
Sheet No. 1 of 2
Start September 19, 2001
Finish September 19, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll
Elevation -
Datum
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED			Used closed piston sampler to probe to 16.0 feet to begin sampling.										
5																	
10																	
15					16.0												
	ND	G-1 48	16.0 20.0			MH	Red-brown and gray mottled, sandy elastic SILT, moist. Soil Sample: GP-4023a/G-1, 17-18 ft.					10	90				
					18.9												
	ND					SP-SM	Gray, poorly graded SAND with silt, moist.				40	50	10				
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.)	30
Rock Cored (lin. ft.)	-
Samples	G-1

Boring No. GP-4023a

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. **GP-4023a**
File No. 49017-013
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-2 48	20.0 24.0		SP-SM											
	ND			21.3	SP-SM	Gray, poorly graded SAND with silt, wet. Water at 21.5 feet. GW-Sample: GP-4023a/GW-1, 22-23 ft.				40	50	10				
	ND	G-3 48	24.0 28.0	24.0	SP-SM	Gray, poorly graded SAND with silt, wet.				40	50	10				
25																
	ND	G-4 20	28.0 30.0	27.8	ML	Gray sandy SILT, moist, becoming moist to dry.					5	95				
30				30.0		-Bottom of Exploration at 30.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

HALEY & ALDRICH

Boring No. GP-4024

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017-013
Sheet No. 1 of 2
Start September 20, 2001
Finish September 20, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll
Elevation -
Datum
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 47	0.0 4.0	NO WELL INSTALLED	0.8	ML	Grass over dark brown, sandy SILT with gravel, moist.		10			20	70				
	ND				2.2	ML	Same, except becoming yellow-brown, dry. Coal fragments.		10			30	60				
	ND					ML	Red-brown, gray-brown, and red-yellow sandy SILT with gravel, moist.	5	10			20	65				
5		G-2 48	4.0 8.0				Soil Sample: GP-4024/G-2, 5.2-5.5 ft. Black staining and coal fragments present.										
	ND				6.2	SP-SM	Yellow-brown, poorly graded SAND with SILT moist.					85	15				
	ND	G-3 48	8.0 12.0		7.8	ML	Red-yellow, gray, and yellow-brown sandy SILT with gravel, moist.		5			10	85				
10					11.8												
	ND	G-4 39	12.0 16.0			ML	Gray, sandy SILT with gravel, moist.		5			10	85				
	ND				14.1												
					14.6	SP-SM	Brown, poorly graded SAND with SILT, wet.					75	25				
15	ND					MH	Gray, sandy elastic SILT, moist.					10	90	S	L	M	M
					16.0												
	ND	G-5 42	16.0 20.0			ML	Gray, sandy SILT with gravel, moist. Soil Sample: GP-4024/G-5, 17-18 ft.		10			10	80				
					19.0												
	ND					SP	Gray, poorly graded SAND, wet. Water at 19.0 feet.				15	85					
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	28
Rock Cored (lin. ft.)	-
Samples	G-2

Boring No. GP-4024

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. **GP-4024**
File No. 49017-013
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-6 36	20.0 24.0			SP	GW Sample: GP-4024/GW-1, 21-22 ft.										
					22.9												
					23.1	ML	Silt lens at 22.9 feet to 23.1 feet.										
	ND				23.5	SP MH	Gray sandy elastic SILT with gravel, moist.		5			5	90				
		G-7 35	24.0 28.0														
25																	
					28.0		-Bottom of Exploration at 28.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

HALEY & ALDRICH

Boring No. GP-4025

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017-013
Sheet No. 1 of 2
Start September 20, 2001
Finish September 20, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll
Elevation -
Datum
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	G-1 48	0.0 4.0	NO WELL INSTALLED		SP-SM	Grass over brown, poorly graded SAND with silt and gravel, moist to dry.		10			80	10				
					1.5												
	ND				2.0	SP-SM	Brown poorly graded SAND with silt and coarse gravel, moist to dry.	25	10			60	5				
	ND																
					3.0	SP-SM											
	ND				4.0	SP	Black stained, poorly graded SAND with gravel, moist.		10			90					
	ND	G-2 48	4.0 8.0			MH	Brown becoming yellow-brown and gray mottled sandy elastic SILT, moist.					10	90	S	M	L	M
5																	
					8.1												
	ND	G-3 48	8.0 12.0		8.2		Same, except wet at 8.1 feet to 8.2 feet.					10	90	S	M	L	M
10																	
					10.5												
	ND					MH	Gray elastic SILT with gravel, moist.		5				95	S	H	L	M
		G-4 8	12.0 16.0				Gray sandy elastic SILT with gravel, wet. *Limited recovery, switch to closed piston system for next sample.										
15																	
					16.0												
	ND	G-5 35	16.0 20.0			SP	Gray, poorly graded SAND with silt, wet. GW Sample: GP-4025/GW-1, 17-18 ft.				5	90	5				
					19.8												
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 27.5
Rock Cored (lin. ft.) -
Samples None to lab.

Boring No. GP-4025

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. **GP-4025**
File No. 49017-013
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	G-6 48	20.0 24.0		MH	Gray, sandy elastic SILT with gravel, moist.		5			10	85				
				22.7	SP	Fine to coarse grained sand pocket 22.7 feet to 23.7 feet, wet.										
				23.7	MH	Gray, sandy elastic SILT with gravel, moist.										
	ND	G-7	24.0 27.5	24.5	SP-SM	Gray, poorly graded SAND with silt, wet.				15	50	35				
25						GW Sample: GP-4025/GW-2, 25-26 ft.										
				27.5		-Refusal at 27.5 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\TEST\LOGSTEST2.GPJ Mar 4, 03

TEST BORING REPORT

Boring No. GP-4028a

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017-013
Sheet No. 1 of 1
Start September 21, 2001
Finish September 21, 2001
Driller K. Eagan, P. Orsi
H&A Rep. A. Correll
Elevation -
Datum
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	NA	1 7/8	NA	Bit Type: Macrocore
Hammer Weight (lb.)	NA	NA	-	Drill Mud: -
Hammer Fall (in.)	NA	NA	-	Casing: -
				Hoist/Hammer: NA NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							Used closed piston system to bore down to 8.0 feet. First sample 8.0 feet to 12.0 feet. See Test Boring Report for GP-4028 for 0.0 to 8.0 feet.										
5																	
				NO WELL INSTALLED	8.0												
	ND	G-1 48	8.0 12.0			ML	Gray sandy SILT with gravel, moist.		10			20	70				
10					10.0												
	ND					ML	Brown, red-yellow, red-brown, sandy SILT with gravel, moist.		10			20	70				
	ND				11.0	ML	Brown sandy SILT with gravel.		5			25	70				
		G-2 42	12.0 16.0														
					14.5												
15	ND						Gray, sandy SILT, becoming wet.					20	80				
					16.0												
	ND	G-3 37	16.0 20.0			SM	Gray, silty SAND, wet.					80	20				
					18.0												
	ND					SM	Black silty SAND, wet.					90	10				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 27
Rock Cored (lin. ft.) -
Samples None to lab.

Boring No. GP-4028a

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\TEST\LOGSTEST2.GPJ Mar 4, 03

TEST BORING REPORT

HALEY & ALDRICH

Boring No. GP-4028a
File No. 49017-013
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G-4 31	20.0 24.0			SM											
					24.0												
	ND	G-5 29	24.0 27.0			SM	Black silty SAND, wet.					90	10				
25							GW Sample: GP-4028a/GW-1, Dup-5, 25-26 ft.										
					27.0		-Bottom of Exploration at 27.0 feet.										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\TEST\LOGSTEST2.GPJ Mar 4, 03

TEST BORING REPORT

Boring No. GP-4101

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Fibertec Env. Services

File No. 49017
Sheet No. 1 of 2
Start May 7, 2002
Finish May 7, 2002
Driller E. Dephouse
H&A Rep. F. Palatka

Elevation 756.1
Datum Estimated

Location
N 9,191
E 7,096

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Geoprobe 5400
Inside Diameter (in.)	NA	1 5/8	NA	Bit Type: NA
Hammer Weight (lb.)	NA	NA	-	Drill Mud: None
Hammer Fall (in.)	NA	NA	-	Casing: NA
				Hoist/Hammer: NA, NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 48	0.0 4.0	NO WELL INSTALLED		OH	-TOPSOIL-										
					755.1												
	ND					CL	Light brown, silty CLAY, moist.					5	95				
	ND	S-2 48	4.0 8.0			CL	Yellow-brown CLAY, some mottling, moist.					5	95				
5																	
		S-3 48	8.0 12.0														
					746.6												
	ND					SP-SM	Yellow-brown, poorly-graded SAND, wet.					70	30				
10					745.1												
	ND					CL	Medium stiff, dark brown CLAY, moist.						100	L	M	L	M
		S-4 48	12.0 16.0														
	ND					CL	Gray-brown, silty CLAY, moist.						100	L	L	H	L
15																	
	ND	S-5 36	16.0 20.0			CL	Same, except 3.0 in. sand lens present at 17.0 feet.						100	L	L	H	L
					737.6												
	ND					ML	Gray-brown SILT, wet.						100				
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	32.0
Rock Cored (lin. ft.)	-
Samples	NA

Boring No. GP-4101

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4101**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20				735.6												
	ND	S-6 48	20.0 24.0		SM	Gray-brown, silty SAND, wet.					60	40				
						4.0 inch medium-grained sand lens.										
				733.6		Groundwater sample GW-1 was taken from a depth of 20'-22'										
	ND				ML	Gray-brown, clayey SILT, moist.					5	95				
				732.6												
	ND				SM	Light brown, silty SAND, moist.				40	40	20				
		S-7 46	24.0 28.0	731.6												
	ND				CL	Gray-brown CLAY, moist.						100				
25																
				729.1												
	ND				SM	Gray-brown, silty SAND, wet.					60	40				
						Groundwater sample GW-2 was taken from a depth of 26'-28'										
		S-8 28	28.0 32.0													
30																
				724.1		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4102

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Fibertec Env. Services

File No. 49017
Sheet No. 1 of 2
Start May 8, 2002
Finish May 8, 2002
Driller E. Dephouse
H&A Rep. F. Palatka

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Geoprobe 5400
Inside Diameter (in.)	NA	1 5/8	NA	Bit Type: NA
Hammer Weight (lb.)	NA	NA	-	Drill Mud: None
Hammer Fall (in.)	NA	NA	-	Casing: NA
				Hoist/Hammer: NA, NA

Elevation 756.1
Datum Estimated

Location
N 9,269
E 7,097

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							No soils logged for location. Groundwater samples collected only.										
5																	
10				NO WELL INSTALLED													
15																	
			19.0				NOTE: Groundwater sample GW-1 was taken from a depth of 19'-21'										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 32.0
Rock Cored (lin. ft.) -
Samples NA

Boring No. GP-4102

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4102**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
25																	
30			30.0				NOTE: Groundwater sample GW-2 was taken from a depth of 30'-32'										
					724.1		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4103

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Fibertec Env. Services

File No. 49017
Sheet No. 1 of 2
Start May 7, 2002
Finish May 7, 2002
Driller E. Dephouse
H&A Rep. F. Palatka

Elevation 756.2
Datum Estimated

Location
N 9,361
E 7,096

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Geoprobe 5400
Inside Diameter (in.)	NA	1 5/8	NA	Bit Type: NA
Hammer Weight (lb.)	NA	NA	-	Drill Mud: None
Hammer Fall (in.)	NA	NA	-	Casing: NA
				Hoist/Hammer: NA, NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 48	0.0 4.0	NO WELL INSTALLED	755.2		-ASPHALT-										
	ND					CL	Yellow-brown, silty CLAY with mottling, moist.					5	95				
	ND	S-2 48	4.0 8.0			CL	Same, with more sand.					10	90				
5					748.2												
	ND	S-3 48	8.0 12.0			SM	Yellow-brown, silty SAND, wet.			5	30	30	35				
					746.7												
10	ND					ML	Yellow-brown, SILT, some fine sand, moist.					25	75				
					745.7												
	ND					CL	Stiff, dark brown, silty CLAY, moist.						100				
	ND	S-4 48	12.0 16.0			CL	Medium stiff, gray-brown CLAY, moist.					10	90				
15					740.2												
	ND	S-5 48	16.0 20.0			SM	Gray-brown, very fine-grained SAND with silt, interbedded clay lenses, wet. NOTE: Groundwater sample GW-1 was taken from a depth of 17'-19'					60	40				
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	32.0
Rock Cored (lin. ft.)	-
Samples	NA

Boring No. GP-4103

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4103**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	S-6 42	20.0 24.0			SM	Same, more fine-grained sand.					65	35				
	ND	S-7 40	24.0 28.0			SM	Gray-brown, silty SAND, wet.				10	60	30				
25	ND					SM	Same, with more fine sand.					70	30				
	ND	S-8 30	28.0 32.0			SM	Gray-brown, silty SAND, wet.				5	70	25				
							NOTE: Groundwater sample GW-2 was taken from a depth of 30'-32'										
30					724.2		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4104

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Fibertec Env. Services

File No. 49017
Sheet No. 1 of 2
Start May 8, 2002
Finish May 8, 2002
Driller E. Dephouse
H&A Rep. F. Palatka
Elevation 756.2
Datum Estimated
Location N 9,442 E 7,096

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Geoprobe 5400
Inside Diameter (in.)	NA	1 5/8	NA	Bit Type: NA
Hammer Weight (lb.)	NA	NA	-	Drill Mud: None
Hammer Fall (in.)	NA	NA	-	Casing: NA
				Hoist/Hammer: NA, NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 42	0.0 4.0	NO WELL INSTALLED	755.2		-ASPHALT-										
	ND					CL	Stiff to medium stiff, yellow-brown CLAY, with sand, mottling, moist.					15	85				
	ND	S-2 47	4.0 8.0			CL						15	85				
5					748.7												
	ND				748.2	SM	Yellow-brown silty SAND, moist.					90	10				
	ND	S-3 48	8.0 12.0		747.7	CL	Yellow-brown CLAY, moist.					10	90				
	ND				747.2	ML	Dark brown SILT, organic odor.						100				
	ND					SM	Yellow-brown, poorly-graded, fine-grained silty SAND, moist.					60	40				
10	ND	S-4 38	12.0 16.0			SM	Same, becoming wet at 14'					60	40				
					741.2												
15	ND					SM	Yellow-brown, poorly-graded SAND with silt, wet.					80	20				
		S-5 42	16.0 20.0				NOTE: Groundwater sample GW-1 was taken from a depth of 17'-19'										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
5/14/02	1845	~ 3.0	36.1		16.1

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 32.0
Rock Cored (lin. ft.) -
Samples NA

Boring No. GP-4104

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4104**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	S-6 44	20.0 24.0		SM	Yellow-brown, fine-grained, silty SAND, wet.					60	40				
	ND			734.2	SM	Gray-brown, fine-grained, silty SAND, wet.					80	20				
				732.2												
	ND	S-7 14	24.0 28.0		SM	Gray-brown SAND, wet.					80	20				
25						NOTE: Poor Recovery										
				729.2												
	ND				SP-SM	Gray-brown, medium-grained SAND, some silt, wet.				40	50	10				
		S-8	28.0 32.0			NOTE: Groundwater sample GW-2 was taken from a depth of 30'-32'										
30																
				724.2		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4105

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Fibertec Env. Services

File No. 49017
Sheet No. 1 of 2
Start May 7, 2002
Finish May 7, 2002
Driller E. Dephouse
H&A Rep. F. Palatka

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Geoprobe 5400
Inside Diameter (in.)	NA	1 5/8	NA	Bit Type: NA
Hammer Weight (lb.)	NA	NA	-	Drill Mud: None
Hammer Fall (in.)	NA	NA	-	Casing: NA
				Hoist/Hammer: NA, NA

Elevation 756.2
Datum Estimated
Location
N 9,562
E 7,091

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 36	0.0 4.0	NO WELL INSTALLED	755.7	OH	-ASPHALT-										
	ND					CL	Stiff, yellow-brown, CLAY, some mottling and organic material, moist.						100				
5	ND	S-2 48	4.0 8.0			CL	Same with some sand.				10	5	85				
	ND				749.7	SM	Yellow-brown, medium-grained, silty SAND, wet.				20	60	20				
		S-3 48	8.0 12.0		746.7												
10	ND					SM	Yellow-brown, silty, fine SAND, moist.					80	20				
		S-4 36	12.0 16.0		742.7												
	ND					SM	Same, becoming wet.					80	20				
15	ND				740.7	SM	Yellow-brown, medium-grained silty SAND, moist.				10	70	20				
		S-5 38	16.0 20.0		738.7												
	ND					SP-SM	Yellow-brown, poorly-graded SAND with silt, wet. NOTE: Groundwater sample GW-1 was taken from a depth of 17'-19'				5	85	10				
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	32.0
Rock Cored (lin. ft.)	-
Samples	NA

Boring No. GP-4105

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4105**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		S-6 42	20.0 24.0		SP-SM											
				732.2												
	ND	S-7 42	24.0 28.0	731.7	SP-SM	Same, becoming medium- and course-grained SAND with silt.				5	85	10				
25	ND				SM	Yellow-brown, silty SAND, wet.			10	30	30	30				
	ND	S-8 44	28.0 32.0		SM	Yellow-brown, silty SAND, wet.					80	20				
30					SM	Yellow-brown, silty SAND, wet. NOTE: Groundwater sample GW-2 was taken from a depth of 30'-32'					70	30				
				724.2		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4106

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Fibertec Env. Services

File No. 49017
Sheet No. 1 of 2
Start May 7, 2002
Finish May 7, 2002
Driller E. Dephouse
H&A Rep. F. Palatka

Elevation 756.2
Datum Estimated

Location
N 9,690
E 7,091

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Geoprobe 5400
Inside Diameter (in.)	NA	1 5/8	NA	Bit Type: NA
Hammer Weight (lb.)	NA	NA	-	Drill Mud: None
Hammer Fall (in.)	NA	NA	-	Casing: NA
				Hoist/Hammer: NA, NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 40	0.0 4.0	NO WELL INSTALLED	755.2	OH	-TOPSOIL-		10	10		60	20				
	ND					CL	Medium stiff, yellow-brown CLAY with fine sand, some mottling, moist.					15	85				
	ND	S-2 48	4.0 8.0			CL						15	85				
5					749.2												
	ND					SP-SM	Yellow-brown, poorly-graded SAND with silt, moist.					90	10				
		S-3 36	8.0 12.0														
10																	
	ND	S-4 36	12.0 16.0			SP-SM	Same with some medium-grained sand.				5	85	10				
15																	
	ND	S-5 36	16.0 20.0			SP-SM	Yellow-brown, poorly-graded SAND with silt, moist.				5	85	10				
							NOTE: Groundwater sample GW-1 was taken from a depth of 17'-19'										
							Water present at 19.0 feet.										
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	32.0
Rock Cored (lin. ft.)	-
Samples	NA

Boring No. GP-4106

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4106
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	S-6 40	20.0 24.0		SP-SM					5	85	10				
	ND			733.7	SP-SM	Yellow-brown, poorly-graded SAND, wet.				40	50	10				
		S-7 40	24.0 28.0													
25																
	ND	S-8 44	28.0 32.0	727.2	SP-SM	Same, becoming gray-brown.				40	50	10				
30						NOTE: Groundwater sample GW-2 was taken from a depth of 30'-32'										
				724.2		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4107

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Fibertec Env. Services

File No. 49017
Sheet No. 1 of 2
Start
Finish
Driller E. Dephouse
H&A Rep. F. Palatka
Elevation 757.3
Datum Estimated
Location
N 9,954
E 7,522

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Geoprobe 5400
Inside Diameter (in.)	NA	1 5/8	NA	Bit Type: NA
Hammer Weight (lb.)	NA	NA	-	Drill Mud: None
Hammer Fall (in.)	NA	NA	-	Casing: NA
				Hoist/Hammer: NA, NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 38	0.0 4.0	NO WELL INSTALLED	756.3	OH	-TOPSOIL-				5	45	50				
	0.8				753.3	CL	Yellow-brown CLAY with sand, moist.				5	15	80				
	1.1	S-2 30	4.0 8.0		749.3	SP	Yellow-brown, poorly-graded SAND, moist.					95	5				
5	0.7	S-3 24	8.0 12.0			SP	Same as above.					95	5				
10	0.5					SP	Same, becoming coarser grained.				10	85	5				
		S-4 24	12.0 16.0														
15	0.2	S-5	16.0 20.0			SP	Water at 15.75 feet. Note: Low recovery. NOTE: Groundwater sample GW-1 was taken from a depth of 17'-19'					95	5				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 32.0
Rock Cored (lin. ft.) -
Samples NA

Boring No. GP-4107

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4107
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		S-6 24	20.0 24.0		SP											
				735.3												
	ND				SP-SM	Gray-brown, poorly-graded SAND with silt, wet.				15	75	10				
		S-7	24.0 28.0													
25																
				729.3												
	ND	S-8	28.0 32.0		SW	Gray-brown, well-graded SAND, wet. NOTE: Groundwater sample GW-2 was taken from a depth of 30'-32'			20	40	35	5				
30																
				725.3		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4108

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Fibertec Env. Services

File No. 49017
Sheet No. 1 of 2
Start May 14, 2002
Finish May 14, 2002
Driller E. Dephouse
H&A Rep. F. Palatka

Elevation 757.1
Datum Estimated

Location
N 9,954
E 7,656

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Geoprobe 5400
Inside Diameter (in.)	NA	1 5/8	NA	Bit Type: NA
Hammer Weight (lb.)	NA	NA	-	Drill Mud: None
Hammer Fall (in.)	NA	NA	-	Casing: NA
				Hoist/Hammer: NA, NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 42	0.0 4.0	NO WELL INSTALLED	756.1	OH	-TOPSOIL-				5	50	45				
	0.6				753.1	CL	Yellow-brown, sandy CLAY, some mottling, moist.				5	25	70				
5	0.5	S-2 46	4.0 8.0		749.6	CL					5	25	70				
	0.8	S-3 40	8.0 12.0		745.1	SM	Yellow-brown, fine-grained, silty SAND.					70	30				
10	0.8	S-4 36	12.0 16.0		743.6	ML	Water present at 12.0 feet. Yellow-brown, sandy SILT, wet.					20	80				
	ND				743.1	SM	Brown, silty SAND, wet.					80	20				
	0.7					SM	Gray-brown SILT lens from 14.0' to 14.3'.					65	35				
15							Gray-brown, silty SAND, wet.										
		S-5 36	16.0 20.0				NOTE: Groundwater sample GW-1 was taken from a depth of 17'-19'										
20					737.1												

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 32.0
Rock Cored (lin. ft.) -
Samples NA

Boring No. GP-4108

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4108
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	S-6	20.0 24.0		SM	Same, becoming coarser grained and wet. NOTE: Poor recovery				20	60	20				
				733.1												
	ND	S-7	24.0 28.0		SP- SM	Gray-brown SAND with some silt, wet. NOTE: Poor recovery				25	65	10				
25																
				729.1												
	ND	S-8	28.0 32.0		SP	Well-graded SAND with gravel and some silt. Note: Poor recovery. NOTE: Groundwater sample GW-2 was taken from a depth of 29'-31'		15	10	20	45	10				
30																
				725.1		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4109

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Fibertec Env. Services

File No. 49017
Sheet No. 1 of 2
Start May 14, 2002
Finish May 14, 2002
Driller E. Dephouse
H&A Rep. F. Palatka
Elevation 756.8
Datum Estimated
Location N 9,954 E 7,783

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Geoprobe 5400
Inside Diameter (in.)	NA	1 5/8	NA	Bit Type: NA
Hammer Weight (lb.)	NA	NA	-	Drill Mud: None
Hammer Fall (in.)	NA	NA	-	Casing: NA
				Hoist/Hammer: NA, NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 48	0.0 4.0	754.8	OH	Dark brown TOPSOIL with organic material, moist.				10	45	45				
	0.7				CL	Stiff, yellow-brown CLAY with sand, some mottling, moist.				5	10	85				
5		S-2 47	4.0 8.0	750.3												
	2.7				SP-SM	Yellow-brown SAND with silt, wet. NOTE: Groundwater sample GW-1 was taken from a depth of 6'-8'					80	20				
10		S-3 48	8.0 12.0	746.3												
	8.5				CL	Very stiff, gray-brown CLAY, moist.				10	5	85	N	M	L	
	3.9	S-4 45	12.0 16.0	744.8	CL					10	5	85	N	M	L	
15				740.8												
	4.0	S-5 42	16.0 20.0		MH	Gray-brown SILT, wet.					5	95	R	-	-	-
20				736.8												

NO WELL INSTALLED

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 32.0
Rock Cored (lin. ft.) -
Samples NA

Boring No. GP-4109

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4109**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	1	S-6 42	20.0 24.0			MH						5	95	R	-	-	-
					732.8												
	0.6	S-7 6	24.0 28.0			MH	Gray-brown SILT, wet. NOTE: Poor recovery					5	95	R	-	-	-
25																	
		S-8 36	28.0 32.0														
					727.8												
	ND					SW-SM	Gray-brown, well-graded SAND with silt, wet. NOTE: Groundwater sample GW-2 was taken from a depth of 29'-31'			30	30	30	10				
30																	
					725.8												
	ND					CL	Very stiff, gray-brown CLAY with sand, moist.				10	5	85	N	H	L	-
					724.8		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4110

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Fibertec Env. Services

File No. 49017
Sheet No. 1 of 2
Start May 13, 2002
Finish May 14, 2002
Driller E. Dephouse
H&A Rep. F. Palatka
Elevation 756.6
Datum Estimated
Location N 9,954 E 7,937

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Geoprobe 5400
Inside Diameter (in.)	NA	1 5/8	NA	Bit Type: NA
Hammer Weight (lb.)	NA	NA	-	Drill Mud: None
Hammer Fall (in.)	NA	NA	-	Casing: NA
				Hoist/Hammer: NA, NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1	0.0 4.0	755.6	OH	Dark brown TOPSOIL with organic material, moist.				10	40	50				
	ND			752.6	CL	Medium stiff, yellow-brown, mottled, sandy CLAY, moist.				10	20	70				
5	8	S-2	4.0 8.0	749.6	CL	Same, becoming gray-brown in color.				10	20	70				
	1				SM	Gray-brown, silty SAND, wet. NOTE: Groundwater sample GW-1 was taken from a depth of 9'-11'					65	35				
10		S-3	8.0 12.0	745.9												
	ND			745.6	CL	Gray-brown CLAY lens, moist.										
	ND			744.6	SP	Gray-brown SAND with silt, wet.					75	25				
15	1.5	S-4	12.0 16.0	740.6	CL	Medium stiff, gray-brown CLAY, moist.					5	95	N	M	M	M
	1.5	S-5 38	16.0 20.0	738.6	CL	Becoming gray-brown sandy CLAY, moist.					30	70				
	ND			737.1	CL	Medium stiff, gray-brown CLAY, moist.					5	95				
20	0.6					Gray-brown SILT, wet.							R	-	N	N

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	32.0
Rock Cored (lin. ft.)	-
Samples	NA

Boring No. GP-4110

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4110**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		S-6 48	20.0 24.0		MH	Note: Interbedded saturated layers of silt and clayey-silt.										
25		S-7 46	24.0 28.0													
	ND			730.6	CL	Stiff, gray-brown CLAY, moist.					5	95				
	ND	S-8 42	28.0 32.0	728.6 728.1	MH	Gray-brown SILT, wet.					5	95	R	-	N	N
	ND				SP-SM	Gray-brown SAND with silt, wet. NOTE: Groundwater sample GW-2 was taken from a depth of 28.5'-30.5'					80	20				
30	ND			726.6	CL	Medium coarse SAND lens from 30 to 30.5 feet. Very stiff, gray-brown CLAY with medium-grained sand, moist.				15	5	80				
				724.6		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4111

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Fibertec Env. Services

File No. 49017
Sheet No. 1 of 2
Start May 13, 2002
Finish May 13, 2002
Driller E. Dephouse
H&A Rep. F. Palatka
Elevation 756.4
Datum Estimated
Location N 9,954 E 8,041

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Geoprobe 5400
Inside Diameter (in.)	NA	1 5/8	NA	Bit Type: NA
Hammer Weight (lb.)	NA	NA	-	Drill Mud: None
Hammer Fall (in.)	NA	NA	-	Casing: NA
				Hoist/Hammer: NA, NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 36	0.0 4.0	NO WELL INSTALLED	755.4	OH	TOPSOIL with organic material, moist.										
	3				753.4	CL	Medium stiff, dark brown CLAY with sand, moist.					10	90				
	4					CL	Yellow-brown CLAY with mottling, moist.					5	95				
5		S-2 48	4.0 8.0		748.4												
	2	S-3 48	8.0 12.0			SP-SM	Yellow-brown, poorly-graded SAND with silt, wet. NOTE: Groundwater sample GW-1 was taken from a depth of 8'-10'					90	10				
10	ND					SP-SM	Same, becoming gray-brown, wet.					90	10				
	3	S-4 36	12.0 16.0		744.4	SP-SM						90	10				
	ND				742.4	CL	Stiff, gray-brown CLAY, moist.					5	95	N	M	M	
15	2	S-5 38	16.0 20.0		740.4	CL						5	95	N	M	M	
	ND				737.4	MH	Gray-brown SILT, wet.					5	95				
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	32.0
Rock Cored (lin. ft.)	-
Samples	NA

Boring No. GP-4111

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4111**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		S-6 46	20.0 24.0		MH											
				733.9												
	ND			733.4	CL	Gray-brown CLAY, moist.						100				
	ND				CL	Interbedded layers of silt and clay from 23.0 to 28.0 feet.						100				
				732.4												
	ND	S-7 40	24.0 28.0			NOTE: Groundwater sample GW-2 was taken from a depth of 26'-28'										
25																
				728.4												
	ND	S-8 42	28.0 32.0		SM	Gray-brown, silty SAND. Interbedded silt layers throughout.				10	70	20				
				726.4												
30	ND				CL	Very stiff, gray-brown CLAY with fine medium-grained sand, moist.				10	15	75	-	H	L	M
				724.4												
						-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4112

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Fibertec Env. Services

File No. 49017
Sheet No. 1 of 2
Start May 13, 2002
Finish May 13, 2002
Driller E. Dephouse
H&A Rep. F. Palatka

Elevation 756.2
Datum Estimated

Location
N 9,954
E 8,141

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	G	NA	Rig Make & Model: Geoprobe 5400
Inside Diameter (in.)	NA	1 5/8	NA	Bit Type: NA
Hammer Weight (lb.)	NA	NA	-	Drill Mud: None
Hammer Fall (in.)	NA	NA	-	Casing: NA
				Hoist/Hammer: NA, NA

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 44	0.0 4.0	NO WELL INSTALLED	755.7	OH	TOPSOIL with organic material.										
	ND					CL	Stiff, brown CLAY, moist. Note: Some mottling from 3.0' to 5.0'.										
	ND	S-2 48	4.0 8.0		752.2	CL											
5					749.7												
	ND					SM	Light brown, silty SAND.					75	25				
	ND	S-3 48	8.0 12.0		748.2	SM	Same, becoming gray-brown. NOTE: Groundwater sample GW-1 was taken from a depth of 9'-11'					75	25				
10					744.2												
	ND	S-4 48	12.0 16.0			SM	Gray-brown silty SAND.					75	25				
					741.7												
15	ND					CL	Stiff, gray-brown CLAY, moist.				5	5	90	N	L	H	H
	ND	S-5 45	16.0 20.0		739.2	CL	Same, contains some gravel.	5	5				90				
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 31.0
Rock Cored (lin. ft.) -
Samples NA

Boring No. GP-4112

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4112
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		S-6 45	20.0 24.0		CL											
				734.2												
	ND				MH	Gray-brown, clayey SILT, wet.					5	95	S	L	L	L
		S-7 40	24.0 28.0													
25																
				730.2												
	ND			729.7	SM	Gray-brown, silty SAND, wet.				10	70	20				
	ND				CL	Gray-brown CLAY with silt and sand, moist.					20	80	N	L	L	L
				728.2												
	ND	S-8 30	28.0 32.0		CL	Very stiff CLAY with medium- to coarse-grained sand, moist.			5	5		90	R	H		H
						NOTE: Groundwater sample GW-2 was taken from a depth of 29'-31'										
30																
				725.2												
						-REFUSAL AT 31.0 FEET.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4114

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 18, 2002
Finish November 18, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 756.9
Datum Estimated
Location N 9,957 E 7,721

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-Mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 46	0.0 4.0	NO WELL INSTALLED	756.4	CL	-TOP SOIL- Yellow-brown sandy CLAY, moist.					15	85				
		S-2	4.0 8.0														
5	5				751.4	SP	Yellow-brown SAND fine-grained, moist.					95	5				
	54				750.4	CL	Yellow-brown CLAY, moist.					5	95				
		S-3	8.0 12.0				Color changes to gray-brown around 9.0 feet.										
10	22000	S-4	12.0 16.0				Brown fluid present at 12.0 feet. Took photograph of sleeve showing smearing.										
15	150				741.4	ML	Gray-brown SILT with some clay.					5	95				
	40	S-5	16.0 20.0				Wet at 17.5 feet.										
20					736.9		-Bottom of Exploration at 20.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 20.0
Rock Cored (lin. ft.) -
Samples

Boring No. GP-4114

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4114**
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4114B

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 18, 2002
Finish November 18, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 756.8
Datum Estimated
Location N 9,957 E 7,721

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-Mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 48	0.0 4.0	NO WELL INSTALLED	756.3	OL/OH	-TOP SOIL-				5	15	80				
						CL	Yellow-brown, sandy CLAY.										
	0.5	S-2 48	4.0 8.0		751.8												
5	8.0				750.8	SP	Yellow-brown SAND.					95	5				
	16						4" lens, wet.										
	30																
	50	S-3 48	8.0 12.0				Same, but color changes to gray-brown, fine and medium sand present, moist.			5	5	90					
10	110						Containing more fine sand, moist.				10	90					
	2																
	70	S-4 48	12.0 16.0														
					742.3												
15	42					ML	Gray-brown SILT, wet.						100				
		S-5 42	16.0 20.0														
					738.8												
						SM	Gray-brown, silty SAND, fine-grained, wet.					70	30				
							-Bottom of Exploration at 20.0 feet.-										
20					736.8												

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	20.0
Rock Cored (lin. ft.)	-
Samples	

Boring No. GP-4114B

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4115

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 18, 2002
Finish November 18, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 757.5
Datum Estimated
Location N 9,874 E 7,781

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-Mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					756.9	OL/OH	-TOPSOIL-										
	ND	S-1 42	0.0 4.0	NO WELL INSTALLED		CL	Yellow-brown, sandy CLAY, moist.					30	70				
					753.5												
	ND	S-2 48	4.0 8.0				Same, except less sand.					5	95				
5					751.5												
	ND				751.0	SP	Yellow-brown SAND, moist.					95	5				
	ND					CL	Light brown CLAY, moist.					5	95				
		S-3 46	8.0 12.0														
10					747.5												
					747.0	ML	6" lens of SILT, moist.						100				
	ND					SP	Light brown SAND, moist.					95	5				
		S-4 46	12.0 16.0														
15																	
	ND	S-5 46	16.0 20.0		741.0		Wet at 16.5 feet.										
							Color changes to gray-brown at approximately 18 feet.										
							-Bottom of Exploration at 20.0 feet.-										
20					737.5												

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	20.0
Rock Cored (lin. ft.)	-
Samples	

Boring No. GP-4115

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4116

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 19, 2002
Finish November 19, 2002
Driller D. Pino
H&A Rep. F. Palatka
Elevation 757.5
Datum Estimated
Location N 9,873 E 7,648

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-Mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					756.9	OL/OH	-TOPSOIL-										
	ND	S-1 47	0.0 4.0	NO WELL INSTALLED			Dark brown TOPSOIL, some brick fragments.										
						CL	Yellow-brown CLAY, moist.				5	5	90				
		S-2 48	4.0 8.0														
5					751.5												
	ND					SP	Yellow-brown SAND, moist.					95	5				
		S-3	8.0 12.0														
10					747.0												
	1					SP	Same, except becoming light brown.					95	5				
		S-4	12.0 16.0														
	2											95	5				
					743.0												
15	10					SP	Wet at 14.5 feet.					95	5				
							No sample obtained.										
	9	S-5	16.0 20.0									95	5				
20					737.5		-Bottom of Exploration at 20.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	20.0
Rock Cored (lin. ft.)	-
Samples	

Boring No. GP-4116

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. **GP-4116**
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20							Note: Advanced augers to 27.5 feet.										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4118

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 18, 2002
Finish November 18, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 756.1
Datum Estimated
Location N 9,715 E 7,478

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-CONCRETE-										
					755.1												
	11	S-1 40	1.0 5.0			ML	Very stiff, brown and black SILT, mps: 2.5 cm, no odor, moist.					10	90				
							-FILL-										
	2.8																
5	1.6	S-2 46	5.0 9.0				Same as 1 to 3 feet.					10	90				
					749.6												
	5.1					SP	Loose, tan, fine SAND, mps< 1mm, no odor, moist.					100					
							-GLACIAL TILL-										
	2.0	S-3 38	9.0 13.0	NO WELL INSTALLED			Same as 6.5 to 9.0 feet.					100					
10	1.8																
	2.8	S-4 40	13.0 17.0			SP	Same as 6.5 to 9 feet.					100					
15	5.0																
	6.7	S-5 34	17.0 21.0				Same as 6.5 feet to 9 feet.					100					
					737.6												
	10.1					SM	Loose, brown, silty SAND, mps: 1.3 cm, no odor, wet.					70	30				
							-GLACIAL TILL-										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30.0
Rock Cored (lin. ft.) -
Samples GW 1

Boring No. GP-4118

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4118**
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20						SM	Water at 18.5 feet.										
					735.1												
	NA						Soil not characterized. Sample collected at 28 to 30 feet.										
25																	
30					726.1												
							-Bottom of Exploration at 30.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4119

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 18, 2002
Finish November 18, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,081 E 7,814

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	5.0	S-1 38	1.0 5.0			ML	Medium stiff, blackish brown SILT, mps: 1.3 cm, hydrocarbon odor(oil), moist.					10	90				
							-FILL-										
	16.8																
5		S-2 46	5.0 9.0		754.5												
	1.1					SP	Dense, brown, fine SAND, mps< 1mm, hydrocarbon odor(oil), moist.					90	10				
	11.5																
		S-3 44	9.0 13.0														
10	54.1						Same as 5.5 to 10 feet.					10	90				
							-GLACIAL TILL-										
					748.0												
	60.2					SP	Loose, brown, fine SAND, mps< 1mm, no odor, wet.					100					
					747.0		-GLACIAL TILL-										
							Water at 12.0 feet.										
							-Bottom of Exploration at 13.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	13.0
Rock Cored (lin. ft.)	-
Samples	GW 1

Boring No. GP-4119

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4120

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 19, 2002
Finish November 19, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,051 E 7,823

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	95.1	S-1 44	1.0 5.0			ML	Very stiff, brown and black SILT with some sand, mps: 2.5 cm, no odor, moist.					20	80				
	36.9						-FILL-										
5		S-2 46	5.0 9.0				Same as 1 to 3 feet.					20	80				
					753.5												
	41.2					ML	Very stiff, tan and gray SILT, mps: 1.3 cm, no odor, moist to wet.					10	90				
	41.7						-GLACIAL TILL-										
	12.5	S-3 48	9.0 13.0				Same as 6.5 to 8.0 feet					10	90				
10					749.0												
	1.1					SP	Dense, tan, fine SAND, mps< 1mm, no odor, moist to wet. -GLACIAL TILL- Water at 12.0 feet.					100					
					747.0		-Bottom of Exploration at 13.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	13
Rock Cored (lin. ft.)	-
Samples	GP-1, GW

Boring No. GP-4120

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4121

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 19, 2002
Finish November 19, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,072 E 7,856

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	24.1	S-1 40	1.0 5.0	NO WELL INSTALLED		ML	Very stiff, brown and black SILT, mps: 2.5 cm, no odor, moist.					10	90				
	169.5						-FILL-										
							Some staining at 4.0 feet.										
					755.0		Same as 1 to 3 feet.										
5		S-2 48	5.0 9.0		754.5							10	90				
	155.4					ML	Very stiff, grayish tan SILT, mps: 1.3 cm, no odor, moist.					10	90				
	131.8						-GLACIAL TILL-										
	34.7	S-3 48	9.0 13.0				Same as 5.5 to 7 feet.										
10					749.5												
	6.7					SP	Dense, tan, fine SAND, mps< 1mm, no odor, wet.					100					
							-GLACIAL TILL-										
							Water at 11.0 feet.										
					747.0		-Bottom of Exploration at 13.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples GP-1, GW

Boring No. GP-4121

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4122

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 19, 2002
Finish November 19, 2002
Driller R. Vining
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 8,104
E 7,836

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	1.3	S-1 34	1.0 5.0	NO WELL INSTALLED		ML	Very stiff, brown SILT, mps: 2.5 cm, no odor, moist. -FILL-					5	95				
	0.8																
5		S-2 48	5.0 9.0		754.0		Same as 1 to 3 feet.					5	95				
	0.4					ML	Very stiff, gray and brown, SILT, mps: 1.3 cm, no odor, moist. -GLACIAL TILL-					5	95				
	0.4																
	0.7	S-3 48	9.0 13.0				Same as 6 to 8 feet.					5	95				
10					749.5												
	0.4					SP	Loose, tan, fine SAND, mps< 1mm, no odor, wet. -GLACIAL TILL- Water at 10.5 feet.					100					
					747.0		-Bottom of Exploration at 13.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples GP-1, GW

Boring No. GP-4122

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4123

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 19, 2002
Finish November 19, 2002
Driller R. Vining
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 8,065
E 7,869

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	9.8	S-1 41	1.0 5.0	NO WELL INSTALLED		ML	Very stiff, brown and black SILT, mps: 6.4 mm, no odor, moist. -FILL-					10	90				
	5.8																
5					754.5												
	9.4	S-2 48	5.0 9.0			ML	Very stiff, brown and gray SILT, mps: 6.4 mm, no odor, moist. -GLACIAL TILL-					10	90				
	2.0																
		S-3 46	9.0 13.0		750.0												
10	5.2					SP	Dense, tan, fine SAND, mps< 1mm, no odor, wet. Water at 10.0 feet. -GLACIAL TILL- -Bottom of Exploration at 13.0 feet.-					100					
	0.1				747.0												

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples GP-1, GW

Boring No. GP-4123

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4124

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 20, 2002
Finish November 20, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,023 E 7,815

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	--	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	2.1	S-1 32	1.0 5.0	NO WELL INSTALLED		ML	Very stiff, black and brown SILT, mps: 6.4 mm, no odor, moist.					10	90				
	1.8						-FILL-										
5		S-2 48	5.0 9.0		754.5												
	0.9					ML	Very stiff, brown and gray SILT, mps: 1.3 cm, no odor, moist.					5	95				
	0.6						-GLACIAL TILL-										
	0.3	S-3 48	9.0 13.0				Same as 5.5 to 8 feet.					5	95				
10					749.0												
	0.5					SP	Water at 11.0 feet. Dense, tan, fine SAND, mps< 1mm, no odor, wet. -GLACIAL TILL-					100					
					747.0		-Bottom of Exploration 13.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary
Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples GP-1, GW

Boring No. GP-4124

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4125

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 20, 2002
Finish November 20, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,034 E 7,856

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	0.4	S-1 16	1.0 5.0			SP	Fairly dense, tan and brown, fine SAND, mps: 2.5 cm, no odor, moist.					100					
	ND						-FILL-										
5					754.5												
	ND	S-2 48	5.0 9.0			ML	Very stiff, tan and gray SILT, mps: 1.3 cm, no odor, moist. -GLACIAL TILL-					5	95				
		S-3 48	9.0 13.0	NO WELL INSTALLED													
10	ND						Same as 5.5 to 10 feet					5	95				
					748.0												
	ND					SP	Dense, tan, fine SAND, no odor, wet. Water at 12.0 feet.					100					
					747.0		Bottom of Exploration at 13.0 feet										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 13.0
Rock Cored (lin. ft.) -
Samples GP-1, GP-3

Boring No. GP-4125

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4126

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 20, 2002
Finish November 20, 2002
Driller R. Vining
H&A Rep. G. Laird

Elevation 760.0
Datum Estimated

Location
N 8,064
E 7,885

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	26.7	S-1 40	1.0 5.0			ML	Very stiff, brown and black SILT, mps: 2.5 cm, organic odor, moist.					10	90				
	252.6						-FILL-										
5		S-2 46	5.0 9.0		754.5												
	158.7					ML	Very stiff, olive-tan SILT, mps: 6.4 mm, organic odor, moist.					5	95				
	38.9			NO WELL INSTALLED			-GLACIAL TILL-										
	415.5	S-3 48	9.0 13.0				Same as 5.5 to 7.0 feet.					5	95				
10	13.0						Same as 5.5 to 7.0 feet Same except tan. No water encountered.										
					747.0		-Bottom of Exploration at 13.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 13
Rock Cored (lin. ft.) -
Samples GP-1, GP-3

Boring No. GP-4126

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4131

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017-013
Sheet No. 1 of 1
Start November 19, 2002
Finish November 19, 2002
Driller C. Donovan
H&A Rep. F. Palatka
Elevation -
Datum
Location Building #4111

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type: Macrocore
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.5		-CONCRETE-										
	ND	S-1 44	0.0 4.0	NO WELL INSTALLED		CL	Olive brown CLAY with sand and gravel, moist.		5	5	5	5	80				
					4.0												
	1	S-2	4.0 8.0			CL	Yellow brown CLAY with some fine gravel, moist.		5			5	90				
5					8.0												
	25	S-3	8.0 12.0			SP	Yellow brown, poorly-graded SAND.					95	5				
10	90				10.0		Wet at 9.5 feet.										
		S-4	12.0 16.0		13.0												
	110						Gray brown silty CLAY, moist.						100				
15					16.0		-Bottom of Exploration at 16.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 16
- Rock Cored (lin. ft.) -
- Samples

Boring No. GP-4131

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4132

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017-013
Sheet No. 1 of 1
Start November 19, 2002
Finish November 19, 2002
Driller C. Donovan
H&A Rep. F. Palatka
Elevation -
Datum
Location Building #4111

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type: Macrocore
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.5		-CONCRETE-										
		S-1 40	0.0 4.0		1.0		Yellow brown SAND, backfill present.										
	2				1.5		Olive gray CLAY, backfill present.										
					2.0		Tan SAND, backfill present.										
					2.5		Black COAL/ASPHALT, backfill present.										
	10					CL	Yellow brown CLAY with some sand, moist.					10	90				
		S-2 46	4.0 8.0														
5																	
					7.0												
	28					SP-SM	Yellow brown poorly-graded SAND, moist.					90	10				
		S-3 42	8.0 12.0	NO WELL INSTALLED													
	5				9.5		Wet at 9.5 feet.										
10																	
					12.0												
	8	S-4 38	12.0 16.0			CL	Yellow brown CLAY, moist.						100				
					14.0												
	ND																
15																	
					16.0		-Bottom of Exploration at 16.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	16
Rock Cored (lin. ft.)	-
Samples	

Boring No. GP-4132

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4133

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017-013
Sheet No. 1 of 1
Start November 20, 2002
Finish November 20, 2002
Driller C. Donovan
H&A Rep. F. Palatka
Elevation -
Datum
Location Building #4111

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type: Macrocore
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.5		-CONCRETE-										
		S-1 46	0.0 4.0	NO WELL INSTALLED		SP/SC	Interbedded layers of SAND with clay, and some gravel.										
					3.0	CL	Yellow brown CLAY, moist.					5	95				
		S-2 48	4.0 8.0														
5					7.5	SP	Yellow brown, poorly-graded SAND.					95	5				
		S-3 46	8.0 12.0				Wet at 9.0 feet.										
10					11.5												
					12.0	CL	Gray brown CLAY, moist.						100				
							-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. GP-4133

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4134

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental Corp.

File No. 49017-013
Sheet No. 1 of 1
Start November 20, 2002
Finish November 20, 2002
Driller C. Donovan
H&A Rep. F. Palatka
Elevation -
Datum
Location Building #4111

	Casing	Sampler	Barrel
Type	-	GP	-
Inside Diameter (in.)	-	1 7/8	-
Hammer Weight (lb.)	-	-	-
Hammer Fall (in.)	-	-	-

Drilling Equipment and Procedures

Rig Make & Model: Truck-mounted Geoprobe
Bit Type: Macrocore
Drill Mud: None
Casing: Direct Push
Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		S-1 40	0.0 4.0	NO WELL INSTALLED	0.5		-CONCRETE-										
					1.0	SP	Yellow brown, poorly-graded SAND.					95	5				
						CL	Dark brown sandy CLAY, moist.					30	70				
					3.0	CL	Yellow brown CLAY, moist.					5	95				
5		S-2 48	4.0 8.0														
		S-3 46	8.0 12.0		8.5	SP-SM	Yellow brown, poorly-graded SAND, moist. Wet at 9.0 feet.					90	10				
10																	
		S-4 42	12.0 16.0		12.5	CL	Gray brown CLAY, moist.						100				
15					16.0		-Bottom of Exploration at 16.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 16
Rock Cored (lin. ft.) -
Samples

Boring No. GP-4134

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4141

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 20, 2002
Finish November 20, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,354 E 7,981

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	0.8	S-1 28	1.0 5.0			ML	Very stiff, brown SILT, mps: 1.3 cm, no odor, moist. -FILL-					10	90				
	0.5				757.0	SP	Fairly dense, black SLAG, mps: 6.4 mm, no odor, moist. -FILL-				50	50					
5	0.3	S-2 48	5.0 9.0	NO WELL INSTALLED	755.0	ML	Very stiff, light brown SILT, mps: 1.3 cm, slight organic odor, moist. -GLACIAL TILL-					5	95				
	0.8																
	4.6	S-3 48	9.0 13.0														
10	6.8				747.5												
					747.0	SP	Fairly dense, gray with black staining, fine SAND, mps< 1mm, slight organic odor, moist. -GLACIAL TILL- Product encountered at 9 to 13 feet. -Bottom of Exploration at 13.0 feet.-					100					

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	13
Rock Cored (lin. ft.)	-
Samples	

Boring No. GP-4141

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4142

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 20, 2002
Finish November 20, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,408 E 7,993

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	0.4	S-1 34	1.0 5.0			ML	Very stiff, brown SILT, mps: 1.3 cm, no odor, moist.					10	90				
	0.3					ML	-FILL-										
		S-2 48	4.0 8.0		755.0												
5	0.3					ML	Very stiff, brown SILT, mps: 2.5 cm, no odor, moist.					10	90				
							-GLACIAL TILL-										
	0.2					ML											
	0.4	S-3 48	8.0 12.0			ML	Same as 5 to 7 feet -GLACIAL TILL-										
10	1.2					ML	Product encountered from 8 to 12 feet.					10	90				
					748.0		-Bottom of Exploration at 12.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	-

Boring No. GP-4142

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4143

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 20, 2002
Finish November 20, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,354 E 7,938

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED	759.0		-CONCRETE-										
	0.2	S-1 14	1.0 5.0			ML	Very stiff, brown SILT, mps: 1.3 cm, no odor, moist. -FILL-					10	90				
	0.4	S-2 48	4.0 8.0		755.0	ML											
5	0.4						Very stiff, brown SILT, mps: 1.3 cm, no odor, moist. -GLACIAL TILL-					10	90				
	0.7	S-3 48	8.0 12.0				Same as 5 to 8 feet.					10	90				
10	0.9					ML	-Bottom of Exploration at 12.0 feet.-										
					748.0												

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram	
	Riser Pipe
	Screen
	Filter Sand
	Cuttings
	Grout
	Concrete
	Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. GP-4143

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4144

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 21, 2002
Finish November 21, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,432 E 7,997

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	0.1	S-1 30	1.0 5.0			SP	Soft, light brown, fine SAND, mps: 1.3 cm, no odor, moist.		2		3	95					
	ND						-FILL-										
		S-2 20	4.0 8.0		755.5												
	0.2				755.0		-CONCRETE-										
5	0.5			NO WELL INSTALLED		ML	Very stiff, brown SILT, mps< 1 mm, no odor, moist. -GLACIAL TILL-					5	95				
	0.2	S-3 28	8.0 12.0				Same as 5 to 8 feet.										
10	0.4						Traces of product around 10.0 feet.					5	95				
					748.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 12
- Rock Cored (lin. ft.) -
- Samples

Boring No. GP-4144

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4145

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 20, 2002
Finish November 20, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,415 E 8,016

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	0.4	S-1 39	1.0 5.0			ML	Very stiff, brown SILT, mps < 1 mm, no odor, moist.					10	90				
	0.2						-FILL-										
		S-2 40	4.0 8.0		755.5												
	0.2					ML	Very stiff, gray and brown SILT, mps: 6.4 mm, no odor, moist.					5	95				
5	0.1			NO WELL INSTALLED			-GLACIAL TILL-										
	0.2	S-3 24	8.0 10.0			ML	Same as 4.5 to 6.0 feet, except product encountered at 9.5 feet.										
10					750.0		-Bottom of Exploration at 10.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	10
Rock Cored (lin. ft.)	-
Samples	

Boring No. GP-4145

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4146

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 21, 2002
Finish November 21, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,326 E 7,980

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-CONCRETE-										
					759.0												
	0.5	S-1 32	1.0 5.0			ML	Very stiff, brown SILT, mps: 2.5 cm, no odor, moist.					10	90				
	0.3					ML	-FILL- Some brick fragments at 3.75 feet.										
		S-2 48	4.0 8.0		755.5												
	0.2					ML	Very stiff, brown and gray SILT, mps: 1.3 cm, no odor, moist.					5	95				
5	0.2						-FILL-										
	0.2	S-3 48	8.0 12.0	NO WELL INSTALLED			Same as 4.5 to 8 feet.					10	90				
10	7.8						Product encountered at 11.0 feet.										
					748.0												
	1.4	S-4 48	12.0 16.0			SP	Dense, tan, fine SAND, mps< 1mm, no odor, moist.					100					
							-GLACIAL TILL-										
	0.3					SP	Water at 12.0 feet.										
15																	
					744.0		-Bottom of Exploration at 16.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 16
Rock Cored (lin. ft.) -
Samples

Boring No. GP-4146

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4147

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 21, 2002
Finish November 21, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,329 E 7,932

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	2.2	S-1 29	1.0 5.0			ML	Very stiff, brown SILT, mps: 2.5 cm, no odor, moist.					10	90				
	1.3				756.0	ML	-FILL-										
		S-2 0	4.0 8.0				No recovery from 4 to 8 feet.										
5					752.0												
	0.1	S-3 48	8.0 12.0			ML	Very stiff, brown and gray SILT, no odor, moist.					5	95				
10	ND				748.0	ML	-GLACIAL TILL-										
							-Bottom of Exploration at 12.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 12
- Rock Cored (lin. ft.) -
- Samples

Boring No. GP-4147

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4148

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 21, 2002
Finish November 21, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,435 E 7,932

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					759.0		-CONCRETE-										
	0.4	S-1 24	1.0 5.0			SP	Fairly dense, tan, fine SAND, mps< 1mm, no odor, moist.					100					
	0.4					SP	-FILL-										
					756.0												
	0.9	S-2 48	4.0 8.0			ML	Very stiff, brown and gray SILT, mps: 1.3 cm, no odor, moist.					10	90				
5							-GLACIAL TILL-										
	0.7																
	1.6	S-3 48	8.0 12.0				Same as 4 to 8 feet.					10	90				
10	24.1					ML											
					749.0												
						SP	Dense, gray, fine SAND, mps< 1mm, no odor, wet.					100					
					748.0		-GLACIAL TILL-										
							-Bottom of Exploration at 12.0 feet.-										

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. GP-4148

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4149

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 21, 2002
Finish November 21, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,389 E 8,013

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-CONCRETE-										
					759.0												
	2.2	S-1 31	1.0 5.0			ML	Soft, brown SILT, mps: 2.5 cm, no odor, moist.					10	90				
	0.8						-FILL- Pieces of brick fragments also present.										
					756.0												
	0.5	S-2 48	4.0 8.0			ML	Very stiff, brown SILT, mps: 6.3 mm, no odor, moist.					5	95				
5							-GLACIAL TILL-										
	0.2																
	0.1	S-3 48	8.0 12.0	NO WELL INSTALLED		ML	Same as 4 to 8 feet.					5	95				
10	0.1					ML											
					748.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. GP-4149

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4150

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 21, 2002
Finish November 21, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,299 E 7,979

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-CONCRETE-										
					759.0												
	ND	S-1 4	1.0 5.0			GP	Loose, brown GRAVEL, mps: 3.8 cm, no odor, moist, spark plugs throughout. -FILL-		100								
					756.0												
	ND	S-2 41	4.0 8.0			ML	Very stiff, brown SILT, mps: 6.4 mm, no odor, moist. -GLACIAL TILL-					10	90				
5																	
	0.2	S-3 37	8.0 12.0				Same as 4 to 8 feet.					10	90				
10	0.7					ML											
					748.5		Water at 11.5 feet.										
					748.0	SP	Dense, brown, fine SAND, mps< 1mm, no odor, wet. -GLACIAL TILL- -Bottom of Exploration at 12.0 feet.-					100					

NO WELL INSTALLED

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. GP-4150

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4151

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 21, 2002
Finish November 21, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,448 E 8,021

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-CONCRETE-										
					759.0												
	ND	S-1 31	1.0 5.0			ML	Very stiff, brown SILT, mps: 2.5 cm, no odor, moist. -FILL-					10	90				
					756.0												
	ND	S-2 48	4.0 8.0			ML	Very stiff, brown SILT, mps: 1.3 cm, no odor, moist. -GLACIAL TILL-					5	95				
5																	
	ND	S-3 40	8.0 12.0	NO WELL INSTALLED		ML	Same as 4 to 8 feet.					10	90				
10							Water at 11.5 feet.										
					748.5												
	ND				748.0	SP	Dense, gray, fine SAND, mps < 1 mm, no odor, wet. -GLACIAL TILL- -Bottom of Exploration at 12.0 feet.-					100					

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 12
Rock Cored (lin. ft.) -
Samples

Boring No. GP-4151

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4152

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start November 21, 2002
Finish November 21, 2002
Driller R. Vining
H&A Rep. G. Laird
Elevation 760.0
Datum Estimated
Location N 8,330 E 8,014

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Track-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: NA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-CONCRETE-										
					759.0												
	ND	S-1 28	1.0 5.0			ML	Soft, brown SILT with brick fragments, mps: 6.4 mm, no odor, moist. -FILL-					20	80				
					755.5												
5	ND	S-2 41	4.0 8.0			ML	Very stiff, gray SILT, mps: 1.3 cm, no odor, moist. -GLACIAL TILL-					5	95				
	ND	S-3 48	8.0 12.0	NO WELL INSTALLED		ML	Same as 4.5 to 8 feet, except color changes to tan at 10.0 feet.					5	95				
10					748.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification	
O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12
Rock Cored (lin. ft.)	-
Samples	

Boring No. GP-4152

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4161

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Stearns Drilling

File No. 49017-022
Sheet No. 1 of 1
Start February 24, 2003
Finish February 24, 2003
Driller R. Christensen
H&A Rep. D. Nostrant
Elevation 756.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	GP	NA	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	NA	1.5	NA	Bit Type: Macrocore Drill Mud: None
Hammer Weight (lb.)	NA	NA	-	Casing: Direct Push
Hammer Fall (in.)	NA	NA	-	Hoist/Hammer: NA Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 60	0.0 5.0	NO WELL INSTALLED		ML	Gray, brown and olive SILT with sand, mps: 5 mm, no odor, damp, trace rootlets. -FILL-				10	10	80				
					752.0	ML	Gray to brown and yellow-brown mottled, sandy SILT, mps < 1 mm, no odor, damp. -LACUSTRINE-				5	25	70				
5	ND	S-2 60	5.0 10.0		748.2	SP-SM	Gray to brown, poorly-graded SAND with silt, mps: 1 mm, no odor, moist. -LACUSTRINE- Note: Soil sample G61A collected from 10.0 to 11.0 feet.				5	85	10				
10	1.1	S-3 60	10.0 15.0		743.2	MH	Gray to brown, elastic SILT with sand, mps: 1 mm, no odor, damp. -LACUSTRINE-					20	80				
15	ND	S-4 60	15.0 20.0		736.7	SP-	Gray to brown, poorly-graded SAND with silt, mps < 1mm, no odor, wet.					90	10				
20					736.0												

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G61A, G61D, G61E

Boring No. GP-4161

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4161**
File No. 49017-022
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	2.3	S-5 60	20.0 25.0	734.9	SM	-LACUSTRINE- Note: Groundwater sample G61E collected from 19.0 to 22.0 feet.										
					ML	Gray to brown SILT with sand, mps < 1 mm, no odor, moist. -LACUSTRINE-					20	80				
25	2.3	S-6 60	25.0 30.0	731.0	SP-SM	Gray to brown, poorly-graded SAND with silt, mps. < 1 mm, no odor, wet. -LACUSTRINE- Note: Groundwater sample G61D collected from 25.0 to 28.0 feet.					85	15				
				727.6	SW	Gray to brown, well-graded SAND with gravel, mps: 10 mm, no odor, wet. -LACUSTRINE-		40	20	20	20					
30				726.0		-Bottom of Exploration at 30.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4162

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Stearns Drilling

File No. 49017-022
Sheet No. 1 of 1
Start February 25, 2003
Finish February 25, 2003
Driller R. Christensen
H&A Rep. D. Nostrant
Elevation 756.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	GP	NA	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	NA	1.5	NA	Bit Type: Macrocore Drill Mud: None
Hammer Weight (lb.)	NA	NA	-	Casing: Direct Push
Hammer Fall (in.)	NA	NA	-	Hoist/Hammer: NA Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 60	0.0 5.0	NO WELL INSTALLED		ML	Brown SILT with sand, mps: 5 mm, no odor, damp. -FILL-		10	5	5	20	60	S			
					751.7		Gray to brown and yellow-brown mottled, sandy SILT, mps < 1 mm, no odor, damp to moist. -LACUSTRINE-					30	70				
5	ND	S-2 60	5.0 10.0				Moist to wet at 8.5 feet.										
	ND				746.8	SP-SM	Gray to brown, poorly-graded SAND with silt, mps < 1 mm, no odor, wet. -LACUSTRINE-				10	80	10				
10	ND	S-3 59	10.0 15.0		745.7	MH	Gray to brown elastic SILT with sand, mps < 1 mm, no odor, damp. -LACUSTRINE-										
15	ND	S-4 58	15.0 20.0														
					737.3	ML	Gray to brown SILT, mps < 1 mm, no odor, damp to moist. -LACUSTRINE-					5	95				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 33.5
Rock Cored (lin. ft.) -
Samples 7G

Boring No. GP-4162

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. **GP-4162**
File No. 49017-022
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		S-5 60	20.0 25.0	735.2	ML											
	ND				ML	Gray to brown SILT with sand, mps. < 1 mm, no odor, wet. -LACUSTRINE-					15	85				
	ND			732.3	SP	Gray-brown, poorly-graded SAND, mps < 1 mm, no odor, wet. -LACUSTRINE-			30	65	5					
25		S-6 60	25.0 30.0													
	1.2				SW	Gray to brown, well-graded SAND with gravel, mps: 6 mm, no odor, wet. -LACUSTRINE-		20	25	25	25	5				
30		S-7 42	30.0 33.5	724.9												
	ND				SM	Gray to brown, silty SAND with gravel, mps: 10 mm, no odor, damp. -GLACIAL TILL-		15	15	15	25	30				
				722.5		-Bottom of Exploration at 33.5 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4163

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Stearns Drilling

File No. 49017-022
Sheet No. 1 of 1
Start February 25, 2003
Finish February 25, 2003
Driller R. Christensen
H&A Rep. D. Nostrant
Elevation 756.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	GP	NA	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	NA	1.5	NA	Bit Type: Macrocore Drill Mud: None
Hammer Weight (lb.)	NA	NA	-	Casing: Direct Push
Hammer Fall (in.)	NA	NA	-	Hoist/Hammer: NA Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 60	0.0 5.0	NO WELL INSTALLED		ML	Brown SILT with sand and gravel. -FILL-	5	10	5	5	15	60				
					753.0	ML	Gray-brown and yellow-brown mottled, sandy SILT mps: 2 mm, no odor, damp. -LACUSTRINE-					30	70				
5	1.0	S-2 60	5.0 10.0		750.3	SP	Yellow, poorly-graded SAND, mps. < 1 mm, no odor, damp. -LACUSTRINE- Wet from 7.7 to 8.9 feet. Note: Soil sample G63A collected from 7.7 to 8.8 feet.					95	5				
					747.0	MH	Gray to brown, elastic SILT with sand, mps: 15 mm, no odor, damp. -LACUSTRINE-		15	5	10	10	60				
10	ND	S-3 60	10.0 15.0														
15	ND	S-4 60	15.0 20.0														
					737.3	SM	Gray to brown, silty SAND, mps: < 1 mm., no odor, moist to wet. -LACUSTRINE-					75	25				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 33.0
Rock Cored (lin. ft.) -
Samples G63A, G63D, G63E

Boring No. GP-4163

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4163
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Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	0.6	S-5 60	20.0 25.0			Note: Observed wet conditions beginning at 20.0 feet. Note: Groundwater sample G63E collected from 20.0 to 23.0 feet.										
				732.4												
	ND				SP	Gray to brown, poorly-graded SAND, mps. < 1 mm, no odor, moist to wet. -LACUSTRINE-				5	90	5				
25		S-6 60	25.0 30.0			Note: Groundwater sample G63D collected from 27.0 to 30.0 feet.										
	0.8			726.4	SP	Brown to gray, well-graded SAND, mps: 2 mm, no odor, wet. -LACUSTRINE-			30	30	35	5				
30	ND	S-7 36	30.0 33.0	725.6	SW / SM	Gray to brown, well-graded SAND with gravel, mps: 15 mm, no odor, wet. -LACUSTRINE- Gray to brown, silty SAND with gravel, mps: 7 mm. -GLACIAL TILL-		15	20	30	30	5				
				723.0		-Refusal at 33.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4164

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Stearns Drilling

File No. 49017-022
Sheet No. 1 of 1
Start February 26, 2003
Finish February 26, 2003
Driller R. Christensen
H&A Rep. D. Nostrant
Elevation 756.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	GP	NA	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	NA	1.5	NA	Bit Type: Macrocore Drill Mud: None
Hammer Weight (lb.)	NA	NA	-	Casing: Direct Push
Hammer Fall (in.)	NA	NA	-	Hoist/Hammer: NA Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 60	0.0 5.0		ML	Brown, sandy SILT with gravel, mps: 25 mm, no odor, damp. -FILL-		15	10	10	20	45				
				753.4	ML	Gray-brown and yellow-brown SILT with sand, mps: 10 mm, no odor, damp. -LACUSTRINE-		5		5	10	80				
5	ND	S-2 54	5.0 10.0	749.6	SP	Yellow, poorly-graded SAND, mps. < 1 mm, no odor, damp. -LACUSTRINE- Moist to wet from 7.7 to 9.3 feet. Note: Soil sample G64A collected from 7.7 to 9.3 feet.					95	5				
	ND			746.7	ML	Gray-brown, elastic SILT with sand, no odor, damp. -LACUSTRINE-		10	5	5	10	70				
10	ND	S-3 50	10.0 15.0													
15	ND	S-4 60	15.0 20.0													
				736.6												
20	ND				MH	Gray-brown SILT with sand, mps: < 1 mm, damp to moist.			5	10	10	75				

NO WELL INSTALLED

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 34.0
Rock Cored (lin. ft.) -
Samples G64A, G64D, G64E

Boring No. GP-4164

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4164
File No. 49017-022
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		S-5 60	20.0 25.0	735.0	MH	-LACUSTRINE-										
	0.3				SP	Gray-brown, poorly-graded SAND with silt, mps. < 1 mm, no odor, wet. -LACUSTRINE- Note: Groundwater sample G64E collected from 20.0 to 23.0 feet.				10	65	25				
25	ND	S-6 60	25.0 30.0	731.0	SP	Gray to brown, poorly-graded SAND, mps: 1 mm, no odor, wet. -LACUSTRINE-				5	95					
30	1.9	S-7 48	30.0 33.0	726.0	SW	Gray to brown, well-graded SAND with gravel, mps: 10 mm, no odor, wet. -LACUSTRINE- Note: Groundwater sample G64D collected from 30.0 to 33.0 feet.		15	25	25	30	5				
				722.6	SM	Gray to brown, silty SAND with gravel, mps: 20 mm, no odor, damp to moist. -GLACIAL TILL-	5	10	15	15	30	25				
				721.0		-Refusal at 34.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4165

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Stearns Drilling

File No. 49017-022
Sheet No. 1 of 1
Start February 26, 2003
Finish February 26, 2003
Driller R. Christensen
H&A Rep. D. Nostrant
Elevation 756.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	GP	NA	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	NA	1.5	NA	Bit Type: Macrocore Drill Mud: None
Hammer Weight (lb.)	NA	NA	-	Casing: Direct Push
Hammer Fall (in.)	NA	NA	-	Hoist/Hammer: NA Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		S-1 60	0.0 5.0		SP	Gray to brown, poorly-graded SAND with gravel, mps: 20 mm, no odor, damp to dry. -FILL-	5	15	15	15	30	20				
	0.1			754.3 753.7	ML	Brown SILT with sand, mps: 10 mm, no odor, damp. -FILL-		10	5	5	10	70				
					ML	Gray to brown and yellow-brown, mottled SILT with sand, mps: 10 mm, no odor, damp. -LACUSTRINE-		10	5	5	10	70				
5	ND	S-2 60	5.0 10.0	751.2	SP	Yellow, poorly-graded SAND, mps < 1 mm, no odor, damp. -LACUSTRINE- Note: Soil sample G65A collected from 8.4 to 8.7 feet.					95	5				
10	ND	S-3 60	10.0 15.0	747.1	MH	Gray to brown, elastic SILT with sand, mps: 15 mm, no odor, damp. -LACUSTRINE-		5	5	5	10	75				
15	ND	S-4 60	15.0 20.0					5	5	5	10	75				
				737.4	ML	Gray to brown SILT with sand, mps. < 1 mm, no odor, damp. -LACUSTRINE-					25	75				
20																

NO WELL INSTALLED

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 34.0
Rock Cored (lin. ft.) -
Samples 7G

Boring No. GP-4165

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4165**
File No. 49017-022
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20				735.7												
	2.2	S-5 56	20.0 25.0		SP	Gray to brown, poorly-graded SAND, mps < 1 mm, no odor, wet. -LACUSTRINE- Note: Groundwater sample G65E collected from 20.0 to 23.0 feet.				5	90	5				
25	ND	S-6 60	25.0 30.0							5	95	5				
				726.0												
30	0.9	S-7 48	30.0 35.0		SP	Gray to brown, well-graded SAND, mps: 10 mm, no odor, wet. -LACUSTRINE- Note: Groundwater sample G65D collected from 31.0 to 34.0 feet.		5	10	20	60	5				
				722.5												
				722.0	SW	Gray to brown, well-graded SAND with gravel, mps: 20 mm, no odor, wet. -Refusal at 34.0 feet.-	5	10	25	25	30	5				

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4166

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Stearns Drilling

File No. 49017-022
Sheet No. 1 of 1
Start February 27, 2003
Finish February 27, 2003
Driller R. Christensen
H&A Rep. D. Nostrant
Elevation 756.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	GP	NA	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	NA	1.5	NA	Bit Type: Macrocore Drill Mud: None
Hammer Weight (lb.)	NA	NA	-	Casing: Direct Push
Hammer Fall (in.)	NA	NA	-	Hoist/Hammer: NA Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 60	0.0 5.0	NO WELL INSTALLED		SP-SM	Brown, well-graded SAND with silt and gravel, mps: 15 mm, no odor, damp. -FILL-	10	10	10	15	45	10				
					752.8	ML	Gray-brown and yellow-brown SILT with sand, mps < 2 mm, no odor, damp. LACUSTRINE-			5	5	10	80				
5		S-2 60	5.0 10.0		749.8												
	0.7				748.7	SP	Yellow, poorly-graded SAND, mps < 1 mm, no odor, damp. -LACUSTRINE-					95	5				
						MH	Note: Soil sample G66A collected from 6.2 to 7.3 feet. Gray to brown, elastic SILT with sand, mps: 15 mm, no odor, damp. -LACUSTRINE-		10	5	5	5	75				
10	ND	S-3 60	10.0 15.0														
15	2.2	S-4 60	15.0 20.0		740.8	ML	Gray to brown, sandy SILT, mps < 1 mm, no odor, wet. -LACUSTRINE- Note: Groundwater sample G66F collected from 15.0 to 18.0 feet. Note: Soil sample G66B collected from 16.0 to 17.5 feet.					35	65				
					736.9	SM	Gray to brown, silty SAND, mps < 1 mm, no odor, moist. -LACUSTRINE-					70	30				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 35.0
Rock Cored (lin. ft.) -
Samples 7G

Boring No. GP-4166

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4166**
File No. 49017-022
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	33	S-5 60	20.0 25.0			Note: Groundwater sample G66E collected from 20.0 to 23.0 feet. Note: Soil sample G66C collected from 21.0 to 22.0 feet.										
					SP-SM	Gray to brown, poorly-graded SAND with silt , mps < 1 mm, no odor, wet. -LACUSTRINE-				5	85	10				
25	ND	S-6 60	25.0 30.0	730.5	SP	Gray to brown, poorly-graded SAND, mps: 2 mm, no odor, wet. -LACUSTRINE-			5	20	70	5				
30	2.7	S-7 60	30.0 35.0	726.0	SP	Gray to brown, poorly-graded SAND, mps: 2 mm, no odor, wet. -LACUSTRINE- Note: Groundwater sample G66D collected from 30.0 to 33.0 feet.			5	5	85	5				
				721.8	SW	Gray to brown, well-graded SAND with gravel, mps: 20 mm, no odor, moist. -LACUSTRINE-	5	5	20	25	35	10				
35				721.0		-Bottom of Exploration at 35.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Jul 22, 03

TEST BORING REPORT

Boring No. GP-4167

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Stearns Drilling

File No. 49017-022
Sheet No. 1 of 1
Start February 27, 2003
Finish February 27, 2003
Driller R. Christensen
H&A Rep. D. Nostrant
Elevation 756.0
Datum Estimated
Location

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NA	GP	NA	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	NA	1.5	NA	Bit Type: Macrocore Drill Mud: None
Hammer Weight (lb.)	NA	NA	-	Casing: Direct Push
Hammer Fall (in.)	NA	NA	-	Hoist/Hammer: NA Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 60	0.0 5.0	NO WELL INSTALLED		SP-SM	Brown, well-graded SAND with silt and gravel, mps: 20 mm, no odor, damp. -FILL-	10	15	15	15	35	10				
					752.8	ML	Brown and yellow-brown, mottled SILT with sand. -LACUSTRINE- Note: Soil sample G67A collected from 7.0 to 8.0 feet.					25	75				
5	1.0	S-2 60	5.0 10.0														
					746.7	ML	Gray to brown SILT with sand, mps: 2 mm, no odor, damp. -LACUSTRINE-			5	5	10	80				
10	ND	S-3 60	10.0 15.0		744.5	MH	Gray to brown, elastic SILT with sand, mps < 1 mm, occasional fine sand laminae, no odor, damp. -LACUSTRINE-		5	5	5	15	70				
					742.4	SP	Gray to brown, poorly-graded SAND with silt, mps < 1 mm, no odor, wet. Note: Soil sample G67B collected from 16.0 to 17.0 feet.					90	10				
15	1.7	S-4 60	15.0 20.0														
20					736.0												

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 35
Rock Cored (lin. ft.) -
Samples 7G

Boring No. GP-4167

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4167**
File No. 49017-022
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	S-5 60	20.0 25.0		SP	Gray to brown, poorly-graded SAND, mps: 1 mm, no odor, wet. -LACUSTRINE-				15	80	5				
25	ND	S-6 60	25.0 30.0							15	80	5				
				726.0												
30	2.1	S-7 40	30.0 35.0		SW	Gray brown, well-graded SAND with gravel, mps: 25 mm, no odor, wet. Note: Groundwater sample G67D collected from 31.0 to 34.0 feet. -Bottom of Exploration at 35.0 feet.-										
				721.0												
35																

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4168

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 2
Start May 5, 2003
Finish May 5, 2003
Driller D. Pino
H&A Rep. F. Palatka

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Elevation 756.5
Datum Estimated

Location
N 10,048
E 7,870

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 28	0.0 4.0	NO WELL INSTALLED	756.0		-TOPSOIL-										
						ML	Gray-brown, SILT with sand, mps < 1 mm, moist.					10	90	N	L	N	L
					752.5												
	ND	S-2 40	4.0 8.0			SP-SM	Light brown, poorly-graded SAND with silt, mps < 1 mm, moist.					90	10	N	L	N	L
5					751.0												
						CL	Light brown, lean CLAY with sand, mps < 1 mm, moist.					10	90	N	L	L	N
					749.0												
	ND	S-3 42	8.0 12.0			SP	Yellow-brown, poorly-graded SAND, mps < 1 mm, moist. Water present at 8.5 feet. GW sample GW-3 4168D collected at approximately 9.0 feet.					95	5	N	L	L	N
10					746.5												
						CL	Gray-brown, lean CLAY, mps < 1 mm, moist. 4" silt lens.						100	N	M	M	
					745.5												
	ND	S-4 48	12.0 16.0			SP-SM	Yellow-brown to gray-brown, poorly-graded SAND with silt, mps < 1 mm, wet. GW sample GW-4 4168E collected at approximately 12.0 feet.					90	10	R	L	N	N
					743.5												
						CL	Gray-brown, lean CLAY, mps < 1 mm, moist.						100	N	M	H	
15																	
	ND	S-5 46	16.0 20.0				Same except some fine sand, mps: 3 mm.										
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 32.0
- Rock Cored (lin. ft.) -
- Samples GW 1-3

Boring No. GP-4168

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Oct 3, 03

TEST BORING REPORT

Boring No. **GP-4168**
File No. 49017
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	S-6 40	20.0 24.0													
				734.5	ML	Gray-brown SILT, mps < 1 mm, wet.						100	R	L	N	N
	ND	S-7 46	24.0 28.0													
25						Soil sample GW -7 4168F collected at approximately 26.5 feet.										
				729.5		Soil sample GW-7 4168F collected at approximately 26.5 feet.										
				728.5	CL	Gray-brown lean CLAY, some silt, moist.						100	N	M	L	L
	ND	S-8 36	28.0 32.0		SP	Gray-brown, poorly-graded SAND, some fine gravel, mps: 4.75 mm, wet.		10	75	5	5	5				
30				726.5	SM	Sand changes to silty SAND, mps < 1 mm, wet.					80	20	R	L	N	L
				724.5		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4169

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 5, 2003
Finish May 5, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 756.5
Datum Estimated
Location N 10,048 E 7,888

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 30	0.0 4.0	NO WELL INSTALLED	755.5	OL/ OH	Dark brown, organic SOIL, moist. -TOPSOIL-					10	90				
					753.0	SC	Dark brown, clayey SAND becoming yellow-brown, mps < 1 mm, moist.					70	30				
	ND	S-2 48	4.0 8.0		752.5	CL	Yellow-brown, sandy CLAY, mps < 1 mm, moist.					30	70	L	L	L	L
5					749.5	SM	Silty SAND, mps < 1 mm, moist. Water present at 8.5 GW sample GW-3 4169D collected at approximately 8.0 feet.					85	15				
	ND	S-3 46	8.0 12.0		747.0												
10					746.5	CL	Gray-brown, lean CLAY, moist.						100	N	M	H	H
						SM	Gray-brown, silty SAND, mps. < 1 mm, wet.					85	15				
	ND	S-4 42	12.0 16.0		742.5												
15						CL	Gray-brown, lean CLAY, mps < 1 mm, moist.						100	N	M	H	H
							Same except more sand.					15	85				
	ND	S-5 47	16.0 20.0				Same except less sand, some fine gravel.		5			5	90				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 32.0
Rock Cored (lin. ft.) -
Samples GW 1-3

Boring No. GP-4169

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. **GP-4169**
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	S-6 35	20.0 24.0			Soil sample S-6 4169E collected at approximately 22.0 feet. Same except more silt, wet.										
				733.0	ML	Gray-brown SILT, mps < 1 mm, wet.						100	R	L	L	L
25	ND	S-7 38	24.0 28.0			Soil sample S-7 4169F collected at approximately 26.5 feet.										
	ND	S-8 38	28.0 32.0	728.0	CL	Gray-brown, silty CLAY, mps < 1 mm, moist.						100	S	L	L	L
				727.0	SP	Coarse, poorly-graded SAND, some gravel, mps 19 mm, wet.		10	75	5	5	5				
30				726.0	ML	Gray-brown SILT, some sand, mps: 2 mm, moist.				5	5	90	N	L	L	L
				724.5		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Oct 3, 03

TEST BORING REPORT

Boring No. GP-4170

Project Delphi Flint Dort Highway, USA
Client Delphi Corporation
Contractor Zebra Environmental

File No. 49017
Sheet No. 1 of 1
Start May 6, 2003
Finish May 6, 2003
Driller D. Pino
H&A Rep. F. Palatka
Elevation 756.5
Datum Estimated
Location N 10,048 E 7,910

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	GP	-	Rig Make & Model: Truck-mounted Geoprobe
Inside Diameter (in.)	-	1 7/8	-	Bit Type:
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: N/A
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)		Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND	S-1 36	0.0 4.0	NO WELL INSTALLED	755.5	OL/ OH	Dark brown, TOPSOIL with roots, moist. -TOPSOIL-					20	80				
					754.5	SM	Light brown, silty SAND, mps < 1 mm, moist.					80	20				
						SP	Yellow-brown, poorly-graded SAND, mps: 1 mm, moist.					95	5				
	ND	S-2 46	4.0 8.0		751.5	SP											
5						CL	Gray-brown, lean CLAY with sand, mps < 1 mm, moist.					20	80	N	L	M	M
					749.5	SC	Tan, clayey SAND, mps < 1 mm, moist.					80	20	N	L	N	L
	ND	S-3 46	8.0 12.0			SC											
10					746.5	SM	Gray-brown, silty SAND, mps < 1 mm, wet. Water present at 10.0 feet. GW sample S-3 4170D collected at approximately 10.0 feet.					80	20				
	ND	S-4 46	12.0 16.0			SM											
					742.5	CL	Gray-brown, lean CLAY, some fine gravel, mps: 19 mm, moist.		5				95	N	M	H	H
15	ND	S-5 46	16.0 20.0			CL											
						CL	Same except more sand.										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 32.0
Rock Cored (lin. ft.) -
Samples GW 1-3

Boring No. GP-4170

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Oct 3, 03

TEST BORING REPORT

Boring No. **GP-4170**
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	ND	S-6 10	20.0 24.0		ML	Gray-brown SILT, some sand, mps < 1 mm, wet. GW sample S-6 4170E collected at approximately 20.0 feet.					5	95	R	L	N	N
	ND	S-7 24	24.0 28.0		ML											
25				728.5												
	ND	S-8 44	28.0 32.0	728.0	CL	Gray-brown, lean CLAY, some silt, moist.						100	S	L	L	L
					SW	Gray-brown, well-graded SAND, some gravel, interbedded silt pockets, mps: 19 mm, wet.		10	60	10	15	5				
30				725.5												
					ML	Gray-brown SILT with sand, mps < 1 mm, moist.				10	10	80	N	M	N	L
				724.5		-Bottom of Exploration at 32.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

NEW USCSLIB3_DTR.GLB DELPHI.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Oct 3, 03

TEST BORING REPORT

Boring No. GP-4201

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 18, 2004
Finish: March 18, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,846
E 7,861

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 52	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		0.2				0.7	CL	Stiff, yellow-brown, lean CLAY, mps = 2 mm, no odor, moist.				10	10	80				
						2.0	CL	Stiff, gray, lean CLAY (CL), mps = 1 mm, no odor, moist.					5	95				
		0.4				3.0	CL	Stiff, light brown, lean CLAY (CL), mps = 2 mm, no odor, moist.					5	95				
5			G2 58	5.0 10.0														
		0.5																
		0.6				9.0	SM	Medium dense, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, moist. NOTE: Wet at 10 ft.					85	15				
10			G3 60	10.0 15.0														
		0.6				11.5	ML	Soft, yellow-brown, SILT with sand (ML), mps = 0.5 mm, no odor, wet.					20	80				
		0.3				13.5	CL	Stiff, red-gray, lean CLAY (CL), mps = 0.5 mm, no odor, moist.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/18/04		pH = 6			10.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4201

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4202

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 18, 2004
Finish: March 18, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,850
E 7,816

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 38	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		ND				0.7	CL	Stiff, yellow-brown, lean CLAY, mps = 1 mm, no odor, moist.				10	10	80				
						2.0	CL	Stiff, gray, lean CLAY, mps = 1 mm, no odor, moist.					5	95				
		0.2				3.0	CL	Stiff, light brown, lean CLAY, mps = 1.5 cm, no odor, moist. Red-gray mottling.					5	95				
5			G2 60	5.0 10.0														
		0.2																
		0.2																
						9.5	SM	Medium dense, yellow-brown, silty SAND (SM), no odor, moist. Wet at 10 ft.					85	15				
10			G3 60	10.0 15.0														
		0.3																
						12.5	CL	Stiff, red-gray, lean CLAY (CL), mps = 0.5 mm, no odor, moist.					5	95				
		0.3																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/18/04		pH = 6			10.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4202

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4203

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 18, 2004
Finish: March 18, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,884
E 7,816

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 38	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		0.6				1.0	SP	Loose, light brown, poorly-graded, SAND (SP), mps = 3 mm, no odor, dry.				5	95					
		0.8				4.0	CL	Medium stiff, brown, lean CLAY (CL), mps = 2 mm, no odor, moist.				10	10	80				
5			G2 57	5.0 10.0		5.5	CL	Large concrete fragments at 5 ft. Stiff, light brown, lean CLAY (CL), mps = 3 mm, no odor, moist.										
		0.9																
		2.1																
10			G3 60	10.0 15.0		9.5	SM	Soft, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, wet. Wet at 9.5 ft.					85	15				
		1.0				12.0	ML	Soft, red-gray SILT (ML), mps = 1 mm, no odor, wet.					10	90				
		1.4				13.0	CL	Stiff, red-gray, lean CLAY (CL), mps = 0.5 mm, no odor, moist. Dry seam at 14.5 ft.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/18/04		pH	= 6		9.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4203

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4204

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 19, 2004
Finish: March 19, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,910
E 7,836

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 42	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		1.8				0.5	SP	Medium dense, yellow-brown, poorly-graded SAND (SP), mps = 2 mm, no odor, moist.				10	85	5				
		13.4				4.0	SW	Dense, red-brown, well-graded SAND with gravel (SW), mps = 2.7 cm, no odor, moist.	5	15	20	40	15	5				
5			G2 56	5.0 10.0		5.0	CL	Stiff, light brown, lean CLAY (CL), mps = 1 cm, no odor, moist.			5	5	5	85				
		1.5																
		1.1				9.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 2 mm, no odor, wet.					85	15				
10			G3 58	10.0 15.0		11.0	SM	Loose, red-gray, silty SAND (SM), mps = 0.5 mm, no odor, wet.					60	40				
		0.8				12.0	MH	Soft, clayey elastic SILT (MH), mps = 0.5 mm, no odor, wet.					10	90				
		1.1				13.0	CL	Medium stiff, red-gray, lean CLAY (CL), mps = 0.5 mm, no odor, moist.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/19/04					9.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4204

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4205

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 19, 2004
Finish: March 19, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,954
E 7,818

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1	0.0				-CONCRETE-										
		8.6	52	5.0		0.5	CL	Stiff, dark brown, lean CLAY (CL), mps = 1 cm, petrochemical type odor, moist.					15	85				
		1.4				2.5	CL	Becoming light brown at 2.5 ft.										
5		1.0	G2 55	5.0 10.0		5.0												
		0.7			NO WELL INSTALLED	7.0												
						9.5	SM	Loose, light brown, silty SAND (SM), mps = 1 mm, no odor, moist. NOTE: Water at 10 ft.					85	15				
10			G3	10.0 15.0														
		0.6				11.0	ML	Loose, red-gray SILT (ML), mps = 1 mm, no odor, wet.					5	95				
		1.4				13.5	CL	Medium stiff, red-gray, lean CLAY (CL), mps = 0.5 mm, no odor, moist.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/19/04		pH = 6			10.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4205

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4206

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 19, 2004
Finish: March 19, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,979
E 7,865

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1	0.0	NO WELL INSTALLED			-CONCRETE-										
		ND	48	5.0		0.5	SP	Loose, brown, poorly-graded SAND with cinders and debris (SP), mps = 1.5 cm, no odor, moist.			15	10	75					
						1.5	SP	Loose, yellow-brown, poorly-graded SAND (SP), mps = 0.5 cm, no odor, moist. NOTE: Some clay rich deposits.				70	20	10				
						2.5	CL	Stiff, red-gray, lean CLAY (CL), mps = 5 mm, no odor, moist. Brick fragments at 3 ft.					5	95				
		1.0						Becoming yellow-brown with gray-brown mottling and mps = 1 cm at 4 ft.										
5			G2	5.0														
			57	10.0														
		0.1																
		0.1				9.0	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, moist. NOTE: Wet at 9.5 ft.					85	15				
10			G3	10.0														
				15.0														
		3.0				11.0	ML	Stiff, red-gray SILT (ML), mps = 0.5 mm, no odor, wet.					10	90				
						13.0	CL	Medium stiff, red-gray, lean CLAY (CL), mps = 0.5 mm, no odor, moist.					5	95				
		0.1																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/19/04					9.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4206

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4207

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 19, 2004
Finish: March 19, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,958
E 7,893

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 46	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		0.5				0.5	SP	Loose, dark brown, poorly-graded SAND (SP), mps = 2 cm, no odor, moist. Slag fragments.			5	10	85					
						1.5	SP	Loose, yellow-brown, poorly-graded SAND (SP), mps = 3 mm, no odor, moist. Some clay rich pockets.				70	20	10				
		0.6				3.5	CL	Stiff, light brown, lean CLAY (CL), mps = 1.5 cm, no odor, moist.					5	95				
5			G2 58	5.0 10.0														
		0.6																
		0.6				9.0	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, moist. Wet at 9.5 ft.					85	15				
10			G3 56	10.0 15.0														
		0.6				11.5	ML	Soft, red-gray SILT (ML), mps = 0.5 mm, no odor, wet.					5	95				
		0.6				13.0	CL	Stiff, red-gray, lean CLAY (CL), mps = 0.5 mm, no odor, moist.										
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4207

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4208

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 18, 2004
Finish: March 18, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,929
E 7,891

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 43	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
						1.0	SP	Loose, brown black, poorly-graded SAND (SP), mps = 0.75 cm, no odor, dry.		10			90					
		0.6				1.5	SP	Loose, yellow-brown, poorly-graded SAND (SP), mps = 3 mm, no odor, moist.										
		0.5				3.0	CL	Medium stiff, brown, lean CLAY (CL), mps = 1 mm, no odor, moist.					5	95				
5			G2 60	5.0 10.0				Seam of dark brown fine to coarse grained sand at 6 feet.										
		0.7																
		0.5				9.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 0.5 mm, no odor. Wet at 10 ft.					85	15				
10			G3	10.0 15.0														
		0.5				12.5	ML	Soft, red-gray SILT (ML), mps = 0.5 mm, no odor, wet.					5	95				
						13.0	CL	Medium stiff, red-gray, lean CLAY (CL), mps = 0.5 mm, no odor, moist.					5	95				
		0.5																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/18/04		pH = 5			10.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4208

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4211

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 29, 2004
Finish: March 29, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,811
E 7,860

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 50	0.0 5.0	NO WELL INSTALLED			CONCRETE										
		0.5				0.7	CL	Stiff, light brown, lean CLAY, mps: 2 mm, no odor, moist.					15	85				
						2.0	CL	Becoming dark brown at 2 ft.					15	85				
		0.5				2.5	CL	Becoming yellow brown with red gray mottling at 2.5 ft.					5	95				
5		0.4	G-2 57	5.0 10.0														
		0.1																
		0.2				9.5	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet at 9.5 ft.					85	15				
10			G-3	10.0 15.0														
		ND				11.0	MH	Soft, red gray, plastic SILT, mps: 0.5 mm, no odor, wet.					5	95				
		ND				13.0	CL	Medium stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
15		ND				15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/29/04				15.0	9.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4211

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4212

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 2, 2004
Finish: April 2, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,790
E 7,862

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 42	0.0 5.0	NO WELL INSTALLED			CONCRETE										
		0.7				0.7	SP	Medium dense, light brown, poorly graded SAND, mps: 1.5 mm, no odor, moist.				10	85	15				
		ND				1.5	CL	Stiff, olive brown, lean CLAY, mps: 3 mm, no odor, moist.					5	95				
								4.5 ft.: Black staining.										
5		ND	G-2 58	5.0 10.0														
		ND						7 ft.: End of black staining, becoming yellow brown.										
		ND				9.0	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet.					85	15				
10			G-3 60	10.0 15.0														
		ND				11.5	MH	Medium soft, red gray, SILT, mps: 0.5 mm, no odor, wet.					5	95				
		0.1				12.5	CL	Stiff, red gray, leam CLAY, mps: 0.5 mm, no odor, moist.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/02/04				15.0	9.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4212

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4213

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 5, 2004
Finish: April 5, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,770
E 7,862

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 30	0.0 5.0	NO WELL INSTALLED			CONCRETE										
		ND				0.9	SP	Medium dense, dark brown, poorly graded SAND, mps: 3 mm, no odor, moist.				15	80	5				
		0.1				4.0	CL	Stiff, olive brown, lean CLAY, mps: 2 mm, no odor, moist.					10	90				
5		0.5	G-2 54	5.0 10.0				6 ft.: Slight petrochemical odor.										
		ND						8 ft.: Becoming yellow brown.										
		0.4				9.0	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, moist.					85	15				
10			G-3	10.0 15.0				10.5 ft.: Wet.										
		ND				11.0	MH	Soft, red gray, elastic SILT, mps: 0.5 mm, no odor, wet.					5	95				
		ND				12.5	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
15		ND				15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/05/04				15.0	10.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4213

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4214

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 30, 2004
Finish: March 30, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 8,011
E 7,865

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0								CONCRETE										
			G-1 52	0.0 5.0		0.5	SP	Medium dense, yellow brown, poorly graded SAND, mps: 2 mm, no odor, moist. Some black staining.			5	35	60					
		12.0				2.0	CL	Medium stiff, light brown, lean CLAY, mps: 1.5 cm, no odor, moist. Some slag, some broken pieces of spark plugs, piece of wood at 3 ft.				10	90					
		2.6				3.0	CL	Stiff, dark brown, lean CLAY, mps: 0.5 mm, no odor, moist. 4 ft.: Becoming olive brown with red gray mottling.				5	95					
5		2.0	G-2 60	5.0 10.0	NO WELL INSTALLED													
		0.2																
		0.3				9.0	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet.				85	15					
10			G-3 56	10.0 15.0														
		2.4				11.0	MH	Soft, red gray, elastic SILT, mps: 0.5 mm, no odor, wet.				5	95					
						12.0	CL	Soft, red gray SILT, mps: 0.5 mm, no odor, wet.				5	95					
						13.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.				5	95					
15		0.3				15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/30/04				15.0	9.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4214

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4215

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 5, 2004
Finish: April 5, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,744
E 7,862

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 48	0.0 5.0	NO WELL INSTALLED			CONCRETE										
		0.1				1.0	SP	Medium dense, dark brown, poorly graded SAND, mps: 3 mm, no odor, moist.				15	80	5				
		0.4				4.0	CL	Stiff, olive brown, lean CLAY, mps: 2 mm, slight petrochemical odor, moist.					10	90				
5		0.2	G-2 52	5.0 10.0														
		0.2						8 ft.: Becoming yellow brown.										
		0.2				9.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
10		0.1	G-3 60	10.0 15.0														
						11.5	SM	Medium stiff, red gray, silty SAND, mps: 1 mm, no odor, wet,					80	20				
		0.2				13.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
15		0.5				15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/05/04				15.0	9.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4215

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4216

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 5, 2004
Finish: April 5, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,769
E 7,842

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 48	0.0 5.0	NO WELL INSTALLED			CONCRETE										
		1.0				1.0	SP	Medium dense, dark brown, poorly graded SAND, mps: 2 cm, slag present, no odor, moist.				15	80	5				
		2.2				3.5	CL	Medium dense, yellow brown, silty SAND, mps: 3 cm, no odor, moist. 4 ft.: Petrochem odor.					10	90				
5		24.6	G-2 60	5.0 10.0														
		39.4																
		2.1				8.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, slight petrochem odor, moist. 9.5 ft.: Wet.					85	15				
10		0.3	G-3 60	10.0 15.0														
		0.2				12.5	MH	Soft, red gray, elastic SILT with sand, mps: 0.75 mm, no odor, wet.					20	80				
						13.5	CL	Stiff, red gray, lean CLAY with silt, mps: 0.5 mm, no odor, moist.					5	95				
		0.3				14.0	SP-SM	Medium dense, red gray, poorly graded SAND with silt, mps: 0.5 mm, no odor, moist.					90	10				
15						14.5	CL	Stiff, red gray, silty lean CLAY, mps: 0.5 mm, no odor, moist. -Bottom of Exploration at 15.0 feet.-					5	95				
						15.0												

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
4/5				15.0	9.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4216

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4217

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 6, 2004
Finish: April 6, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,769
E 7,882

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 50	0.0 5.0	NO WELL INSTALLED			CONCRETE										
		0.1				0.9	SP-SC	Medium dense, light brown, poorly graded SAND with clay, mps: 2 mm, no odor, moist.					90	10				
						1.5	CL	Stiff, olive brown, lean CLAY, mps: 1 mm, no odor, moist.					15	85				
		0.2						3-4 ft.: Dark brown staining.										
5		ND	G-2 60	5.0 10.0														
								6 ft.: Becoming yellow brown with red gray mottling.										
		0.1																
		0.1																
						9.5	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, moist. 10 ft.: Wet.					85	15				
10			G-3 60	10.0 15.0														
		0.1				11.5	ML	Medium stiff, red gray, clayey SILT, mps: 0.5 mm, no odor, moist.					5	95				
						12.5	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
		0.1																
15		0.1				15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/06/04				15.0	10.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4217

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4218

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 6, 2004
Finish: April 6, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,825
E 7,878

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 52	0.0 5.0	NO WELL INSTALLED			CONCRETE										
		0.1				0.6	SP-SC	Medium dense, yellow brown, poorly graded SAND with clay, mps: 1 mm, some black staining, no odor, moist.					90	10				
						1.5	CL	Stiff, yellow brown, lean CLAY, mps: 2.5 cm, no odor, moist.					15	85				
		0.2						3-3.5 ft.: Black staining.										
5		ND	G-2 60	5.0 10.0														
		0.1						7 ft.: Becoming yellow brown.										
		0.2				9.0	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, moist. 10 ft.: Wet.					85	15				
10		0.2	G-3	10.0 15.0		11.5	CL	Medium stiff, red gray, silty CLAY, mps: 0.5 mm, no odor, wet.					5	95				
		0.2				12.5	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
15		0.2				15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/06/04				15.0	10.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4218

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4219

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 6, 2004
Finish: April 6, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,826
E 7,896

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 48	0.0 5.0	NO WELL INSTALLED			CONCRETE										
		0.3				0.6	SP	Medium dense, yelow brown, poorly graded SAND, mps: 1 mm, no odor, moist.					95	5				
						1.5	CL	Slag and fine gravel at 1.5 ft. Stiff, yellow brown, lean CLAY with some red gray mottling, mps: 5 mm, no odor, moist.					15	85				
		0.3																
5		0.2	G-2 57	5.0 10.0		5.5	SP-SC	Medium dense, yellow brown, poorly graded SAND with clay, mps: 1.5 mm, no odor, moist.				5	85	10				
						6.0	CL	Stiff, yellow brown, lean CLAY, mps: 1 mm, no odor, moist.										
		0.4																
		0.3										5	15	85				
						9.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
10		0.2	G-3 60	10.0 15.0														
						12.0	MH	Medium stiff, red gray, elastic SILT, mps: 0.5 mm, no odor, wet.					5	95				
		0.3				12.5	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
		0.4																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/06/04				15.0	9.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4219

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4220

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 6, 2004
Finish: April 6, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,843
E 7,879

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 40	0.0 5.0	NO WELL INSTALLED			CONCRETE										
		0.2				0.6	SP-SC	Dense, yellow brown, poorly graded SAND with clay, mps: 1 mm, no odor, moist.					90	10				
		0.3																
						4.0	CL	Stiff, yellow brown, lean CLAY, mps: 3 mm, no odor, moist.					10	90				
5		0.5	G-2 60	5.0 10.0		4.5	GW	Loose, tan, well graded GRAVEL, mps: 3 cm, no odor, dry. -CONCRETE FILL-	30	25	20	10	10	5				
		0.4				5.5	CL	Stiff, yellow brown, lean CLAY, mps: 8 mm, no odor, moist.					15	85				
		0.4																
10			G-3 60	10.0 15.0		10.0	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet.					85	15				
						12.5	MH	Soft, red gray, elastic SILT, mps: 0.5 mm, no odor, wet.					15	85				
		0.4				13.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
		0.4																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/06/04				15.0	10.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4220

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4221

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 14, 2004
Finish: April 14, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,830
E 7,817

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 42	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		ND				0.6	SP	Medium dense, dark brown, poorly graded SAND, mps: 1 mm, no odor, moist.				60	35	5				
5		0.2 ND	G-2 60	5.0 10.0		5.5	CL	Stiff, olive brown, lean CLAY, mps: 4 mm, no odor, moist.					10	90				
		ND						Becoming yellow brown at 7.5 ft.										
10		ND	G-3 60	10.0 15.0		10.0	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, moist. Wet at 10.5 ft.					85	15				
		ND				12.5	ML	Medium stiff, red gray SILT, mps: 0.5 mm, no odor, wet.					5	95				
		ND				14.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/14/04				15.0	10.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3

Boring No. GP-4221

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4222

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 14, 2004
Finish: April 14, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,858
E 7,946

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 30	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		0.2				1.0		Medium dense, brown, poorly graded SAND with some brick fragments, mps: 3.0 cm, no odor, moist.				60	35	5				
						3.5		-CONCRETE-										
						4.1		-FILL-										
5		0.3	G-2 38	5.0 10.0		5.0	SW	Medium dense, gray brown, well graded SAND, mps: 3.2 cm, no odor, moist.		5	10	50	30	5				
		0.2				8.0	CL	Medium stiff, gray, lean CLAY, mps: 1 mm, no odor, moist.					10	90				
		0.3						Becoming yellow brown at 9 ft.										
10		ND	G-3 60	10.0 15.0		10.0	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet.					85	15				
		ND				12.0	ML	Medium stiff, red gray SILT, mps: 0.5 mm, no odor, wet.					5	95				
						13.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
		0.2																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/14/04				15.0	10.0

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3

Boring No. GP-4222

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4223

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 14, 2004
Finish: April 14, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 8,034
E 7,864

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 54	0.0 5.0	NO WELL INSTALLED			CONCRETE-										
						0.5	SP	Medium dense, dark brown, poorly graded SAND, mps: 1 mm, no odor, moist.				60	35	5				
		0.3				1.0	CL	Stiff, gray brown, lean CLAY, mps: 3 cm, no odor, moist.					10	90				
								NOTE: Petrochemical odor in head space.										
		96.7						Becoming light brown at 3.5 ft.										
5		12.6	G-2 60	5.0 10.0														
		366																
		950						Petroleum odor at 9 ft.										
						9.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, moist.					85	15				
10			G-3	10.0 15.0														
		3.1																
						12.0	ML	Medium stiff, red gray SILT, mps: 0.5 mm, no odor, moist.					5	95				
		2.6				13.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
		2.0																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/14/04				15.0	10.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3

Boring No. GP-4223

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4231

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Strearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 17, 2004
Finish: March 17, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,961
E 8,583

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 52	0.0 5.0	NO WELL INSTALLED			-ASPHALT-										
		1.1				0.5	SP	Loose, dark brown, poorly-graded SAND (SP), mps = 1.5 cm, no odor, moist.			25	50	15	10				
						1.5	CL	NOTE: Stained railroad fill, seam of red brick at 1.5 ft. Stiff, yellow, lean CLAY (CL), mps = 1 cm, no odor, wet.					5	95				
		1.1						Becoming yellow-brown at 4 ft.										
5			G2 56	5.0 10.0														
		0.7																
		0.7				8.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor. Wet at 8.5 ft.					85	15				
10			G3 60	10.0 15.0														
		0.8																
		1.1																
						14.0	CL-ML	Stiff, red-gray, lean CLAY (CL-ML), mps = 1 mm, no odor, moist.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
05/17/04					9.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4231

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4232

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 17, 2004
Finish: March 17, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,967
E 8,520

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 50	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		0.8				0.7	SW	Loose, gray-brown, well-graded SAND (SW), mps = 2 cm, no odor, moist.	5	10	15	35	30	5				
						1.2	CL	-CONCRETE- Stiff, yellow-brown, lean CLAY (CL), mps = 1 cm, no odor, wet.					5	95				
		0.9				4.0	SM	Loose, yellow-brown, silty SAND (SM), no odor wet at 4 ft.					85	15				
5			G2 60	5.0 10.0														
		1.3																
		1.7				8.5	ML	Loose, red-gray SILT (ML) with sand, mps = 1 mm, no odor, wet.					15	85				
						9.0	CL	Medium stiff, red gray, lean CLAY with silt and sand (CL), mps = 1 mm, no odor, moist.					15	85				
10			G3 36	10.0 15.0														
						11.5	CL	Stiff, red-gray, lean CLAY (CL), mps = 1 mm, no odor, moist.					5	95				
						13.0		-Bottom of Exploration at 13.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/17/04					4.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4232

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4233

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 15, 2004
Finish: March 15, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,941
E 8,445

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	S	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		ND	G1	0.0	NO WELL INSTALLED			-CONCRETE-										
		ND	24	5.0		0.6	SP	Loose, yellow-brown, poorly-graded SAND (SP), mps = 0.75 cm, no odor, moist.			5	10	85					
								Concrete at 4.0 ft.										
						4.0		-Bottom of Exploration at 4.0 feet.-										
5																		
10																		
15																		

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 1G

Boring No. GP-4233

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4234

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 2
Start: March 16, 2004
Finish: March 16, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,941
E 8,445

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 50	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		0.3				0.5	SC	Loose, brown, clayey SAND (SC), mps = 1 cm, no odor, moist.			10	20	30	40				
		0.3				1.5	CL	Stiff, red-gray, CLAY (CL), mps = 1 mm, no odor, moist. Seam of dark brown, ash-like material and concrete pieces at 2 ft. Becoming yellow-brown at 3 ft.					5	95				
		0.3																
5			G2 60	5.0 10.0				Containing red-gray and dark brown mottling at 5 ft.										
		0.5																
		0.3				7.0	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor. Wet at 7 ft.					85	15				
		0.5																
10			G3	10.0 15.0														
		0.8				11.0	CL	Stiff, red-gray, lean CLAY (CL), mps = 1 cm, no odor, moist.					5	95				
		0.6																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/16/04					11.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4234

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4235

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 15, 2004
Finish: March 15, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,860
E 8,298

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 57	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
						0.5	SP	Medium dense, brown, poorly-graded SAND (SP), mps = 2.5 mm, no odor, moist.			5	10	85					
		ND				1.5	CL	Stiff, red-brown, lean CLAY (CL), mps = 5 mm, no odor, moist.					5	95				
								Becoming light brown at 4 ft.										
5			G2 54	5.0 10.0														
		ND				7.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor. Wet at 7.5 ft.					85	15				
10			G3 60	10.0 15.0														
						12.5	CL	Stiff, red-gray, lean CLAY (CL), mps = 5 mm, no odor, moist.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/15/04					7.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4235

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4236

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 15, 2004
Finish: March 15, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,866
E 8,370

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 45	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		ND				0.6	CL	Stiff, red-gray, lean CLAY (CL), mps = 3 mm, no odor, moist.					5	95				
		ND				1.5	CL	Stiff, yellow with brown, lean CLAY (CL), mps = 2 mm, no odor, moist. Fragments of coal at 4 ft.					5	95				
5			G2 60	5.0 10.0														
		ND				7.0	SP	Medium dense, yellow-brown, poorly-graded SAND (SP), mps = 1 mm, no odor, moist. Fine sand.					90	10				
		ND				8.0	SP	Loose, light brown, poorly-graded SAND (SP), mps = 1 mm, no odor. Wet at 8 ft.				5	85	10				
10		8.5	G3 60	10.0 15.0														
						11.0	CL	Stiff, red-gray, lean CLAY (CL), mps = 1 mm, no odor, moist.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/15/04					8.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4236

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4237

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 18, 2004
Finish: March 18, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,866
E 8,445

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 46	0.0 5.0	NO WELL INSTALLED		OL-OH	Stiff, dark brown, sandy ORGANIC SOIL (OL-OH), mps = 1 mm, no odor, moist.				5	25	70				
		ND				1.0	CL	Stiff, yellow-brown, sandy lean CLAY (CL), mps = 3 mm, no odor, moist.				5	30	65				
						2.0	CL	Stiff, yellow-brown, sandy lean CLAY (CL), mps = 1 cm, no odor, moist.				5	40	55				
		ND				3.0	SM	Loose, yellow-brown, silty SAND (SM), mps = 1.5 cm, no odor, moist.					85	15				
5			G2 48	5.0 10.0														
		0.1																
						7.0	SP	Medium dense, yellow-brown, poorly-graded SAND (SP), mps = 2 mm, no odor, moist.			5	70	15	10				
						7.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, moist. Wet at 8.5 ft					85	15				
		0.1																
10			G3 54	10.0 15.0														
						11.0	CL	Stiff, red-gray, lean CLAY (CL), mps = 3 mm, no odor, moist.					5	95				
		0.6																
		0.6																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/18/04					8.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4237

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4239

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 17, 2004
Finish: March 17, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,888
E 8,583

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 54	0.0 5.0	NO WELL INSTALLED		OL-OH	Soft, dark brown, ORGANIC SOIL, mps = 1 mm, no odor, moist.					15	85				
		0.2				0.5	CL	Medium stiff, brown, lean CLAY with sand (CL), mps = 1 cm, no odor, moist.				10	10	80				
		0.5						Orange tint at 2 ft. Black cinders and slag at 2.5 ft. Becoming dark brown at 3 ft.										
						3.5	SP	Medium dense, yellow-brown, poorly-graded SAND (SP), mps = 2 mm, no odor, moist.				10	80	10				
		0.2				4.0	CL	Stiff, yellow-brown, lean CLAY (CL), mps = 1 mm, no odor, moist.					10	90				
5			G2 60	5.0 10.0														
		0.2																
						7.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, moist. Wet at 8 ft.					85	15				
		0.3				9.0	CL	Stiff, yellow-brown, lean CLAY (CL), mps = 1 mm.					5	95				
10		0.2	G3 48	10.0 15.0				Becoming red-gray at 10 ft.										
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/17/04					8.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4239

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4240

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 16, 2004
Finish: March 16, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,799
E 8,612

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 48	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		0.6				0.5	CL	Medium stiff, light brown, lean CLAY (CL), mps = 1 mm, no odor, moist. Seam of black slag at 2.5 feet.					15	85				
		0.9				2.5	CL	Medium stiff, brown, lean CLAY (CL), mps = 1.75 cm, no odor, moist. Seam of dark brown ash, becoming light brown.					10	90				
5		5.1	G2 60	5.0 10.0														
		22.4				7.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 cm, no odor, moist. Wet at 8 ft.					85	15				
10		60	G3 56	10.0 15.0		11.0	CL	Stiff, red-gray, lean CLAY (CL), mps = 1 mm, no odor, moist.					5	95				
15		0.4				15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/16/04					8.0

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4240

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4241

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 16, 2004
Finish: March 16, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,791
E 8,520

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 56	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		0.7				0.5	CL	Medium stiff, red-yellow, lean CLAY (CL), mps = 1 mm, no odor, moist. Dark seam with mps = 2 cm at 2 feet.					15	85				
		1.3				2.0	CL	Stiff, olive-gray, lean CLAY (CL), mps = 4 cm, no odor, moist.					15	85				
5		ND	G2 60	5.0 10.0		5.5	CL	Becoming light brown.										
		4.3				7.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, wet. Wet at 7.5 ft. NOTE: PID reading of 12.5 ppm questionable as there is no oil sheen visible.					85	15				
		12.5																
10			G3 60	10.0 15.0		11.0	ML	Very soft, red-gray SILT (ML), mps = 1 mm, no odor, wet.					10	90				
		36.5				12.0	CL	Stiff, red-gray, lean CLAY (CL), mps = 1 mm, no odor, moist.					5	95				
		22.3																
15						15.0		Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/16/04					7.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4241

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4242

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 16, 2004
Finish: March 16, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,791
E 8,445

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1	0.0	NO WELL INSTALLED			-CONCRETE-										
		0.3	52	5.0		0.5	CL	Stiff, yellow-brown, lean CLAY (CL), mps = 3 mm, no odor, moist.					10	90				
		0.7				1.5	CL	Stiff, dark brown, lean CLAY and fine sand (CL), some coarse sand and roots, mps = 2 mm, no odor, moist.					15	85				
		0.4				3.5	CL	Medium stiff, gray-brown, lean CLAY (CL), mps = 2 mm, no odor, moist.					5	95				
5			G2	5.0														
		0.3	50	10.0														
		0.4				9.0	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, wet at 9 feet.					85	15				
10			G3	10.0														
		0.4	48	15.0		10.5	CL	Stiff, red-gray, lean CLAY (CL), mps = 1 mm, no odor, moist.					5	95				
		0.3																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/16/04					9.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4242

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4243

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 17, 2004
Finish: March 17, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,791
E 8,295

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 50	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		0.4				0.5	SC	Medium dense, dark brown, clayey SAND with gravel (SC), mps = 3 cm, no odor, moist.	10	20	10	10	10	40				
						1.5	CL	Stiff, light brown, lean CLAY (CL), mps = 1 mm, no odor, moist.					5	95				
		0.5						Becoming gray-brown at 4 ft.										
5			G2 54	5.0 10.0														
		0.3						Seam of dark brown ash, cinder and slag at 6.5 ft.										
						7.5		Seam of olive brown SILT from 7.5-9 ft., moist to wet.										
		0.4				9.0	CL	Stiff, gray brown, lean CLAY (CL), becoming soft at 10.5 ft.					5	95				
10			G3 60	10.0 15.0														
						11.5	CL	Stiff, red-gray, lean CLAY, mps = 1 mm, no odor, moist.					5	95				
		0.3																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/17/04					7.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4243

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4244

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 17, 2004
Finish: March 17, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,710
E 8,297

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 52	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		9.5				0.5	CL	Stiff, light brown, lean CLAY (CL), mps = 2 cm, petroleum odor, moist. Seam of dark brown ash like material at 1.5 ft.					10	90				
						1.5	CL	Stiff, brown, lean CLAY (CL), mps = 2 mm, no odor, moist.					5	95				
		2.2						Seam of dark brown, clayey SAND and slag, organic material at 4 ft.										
5			G2 58	5.0 10.0														
		0.4						Becoming light brown at 6 ft.										
		0.2				8.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, wet at 8.5 ft.					85	15				
10		0.1	G3 60	10.0 15.0														
						12.0	CL	Stiff, red-gray, lean CLAY (CL), mps = 3 mm, no odor, moist.					5	95				
		0.1																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/17/04					8.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4244

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4245

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 16, 2004
Finish: March 16, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 7,716
E 8,370

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 56	0.0 5.0	NO WELL INSTALLED			-CONCRETE-										
		0.1				0.5	CL	Medium stiff, light brown lean CLAY (CL), mps = 1 mm, no odor, moist.					15	85				
		0.1				2.5	CL	Stiff, olive-gray, lean CLAY (CL), mps = 1 mm, no odor, moist. Seam of dark brown slag and ash at 3 ft. Becoming light brown at 3.5 ft.					15	85				
5		0.2	G2 54	5.0 10.0														
		0.5				7.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, wet at 7.5 ft.					85	15				
10		0.3	G3 48	10.0 15.0		11.0	ML	Very soft, red-gray, SILT (ML), mps = 1 mm, no odor, wet.					10	90				
		0.2				12.0	CL	Stiff, red-gray, lean CLAY (CL), mps = 1 mm, moist.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/16/04					7.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3G

Boring No. GP-4245

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4261

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 23, 2004
Finish: March 26, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.1
Datum Estimated
Location
N 9,960
E 7,746

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 59	0.0 5.0	NO WELL INSTALLED		OL-OH	Stiff, dark brown, ORGANIC SOIL (OL-OH), mps = 5 mm, no odor, moist.				10	5	85				
		ND				755.1 1.0	CL	Stiff, yellow-brown, lean CLAY (CL), mps = 5 mm, no odor, moist.					5	95				
		0.6				751.6 4.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, wet.					85	15				
5		0.9	G2 54	5.0 10.0														
		33.4				749.1 7.0	CL	Stiff, light brown, lean CLAY (CL), mps = 5 mm, no odor, moist.					10	90				
		29.7				748.6 7.5	CL	Stiff, red-gray, lean CLAY (CL), mps = 1.5 cm, no odor, moist.					5	95				
10		38.7	G3 36	10.0 15.0														
		167						Granite fragment present at 13 ft., mps = 4 cm.										
15		1.6	G4 36	15.0 18.0		741.1 15.0	MH	Loose, red-gray, elastic SILT (MH), mps = 0.5 mm, no odor, wet.					10	90				
		0.2				738.1 18.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/23/04					4.5, 15.0

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4G

Boring No. GP-4261

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4263

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 23, 2004
Finish: March 23, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.4
Datum Estimated
Location
N 9,953
E 7,738

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	S	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud:	None
Hammer Fall (in.)	-	30	-	Casing:	Direct Push
				Hoist/Hammer:	Winch Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 54	0.0 5.0	NO WELL INSTALLED		OL-OH	Stiff, dark brown, ORGANIC SOIL (OL-OH), mps = 1 mm, no odor, wet.				5	10	85				
		0.2				754.9 1.5	CL	Stiff, yellow-brown, lean CLAY (CL), mps = 2 mm, no odor, moist.					10	90				
		0.8				751.4 5.0												
5		0.5	G2 60	5.0 10.0			SM	Loose, yellow-brown, silty SAND (SM), mps = 0.5 mm, no odor, wet.					85	15				
						749.9 6.5	CL	Stiff, light brown, lean CLAY (CL), mps = 1 mm, no odor, moist.					10	90				
		15.4				749.4 7.0	CL	Stiff, red-gray, lean CLAY (CL), mps = 3 cm, no odor, moist.			5	5	5	85				
		9999																
10			G3 60	10.0 15.0														
		214																
		549																
		380				742.4 14.0	CL	Stiff, red-gray, silty CLAY (CL), mps = 0.5 mm, no odor, moist.				5	5	90				
15		380	G4 36	15.0 18.0		740.9 15.5	MH	Loose, red-gray, elastic SILT (MH), mps = 0.5 mm, no odor, wet.					5	95				
		99				738.4 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/23/04					5.0, 15.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4G

Boring No. GP-4263

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4264

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 22, 2004
Finish: March 22, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.3
Datum Estimated
Location
N 9,958
E 7,738

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 60	0.0 5.0	NO WELL INSTALLED	755.3	OL-OH	Stiff, dark brown, ORGANIC SOIL (OL-OH), mps = 0.5 in., no odor, moist. -TOPSOIL-				5	10	85				
		0.2				1.0	CL	Stiff, light brown, lean CLAY (CL), mps = 1.5 cm, no odor, moist. Red-gray mottling.					5	95				
		0.6																
		0.5				751.8 4.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, moist. Wet at 5.5 ft.					85	15				
5			G2 60	5.0 10.0														
		6.7				749.3 7.0	CL	Stiff, light brown, lean CLAY (CL) with red gray mottling, mps = 5 mm, no odor, moist.					10	90				
		36				748.3 8.0	CL	Stiff, red-gray, lean CLAY (CL), mps = 5 mm, no odor, moist.					5	95				
10			G3 60	10.0 15.0														
		6245																
		2094						Oil sheen present at 13.5 ft. Slight odor, mps = 1 cm.										
15			G4 36	15.0 18.0		740.3 16.0	MH	Soft, red-gray, elastic SILT (MH), mps = 0.5 mm, no odor, wet.					5	95				
		61.9																
		0.6				738.3 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/22/04					5.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4G

Boring No. GP-4264

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4264

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 22, 2004
Finish: March 22, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.3
Datum Estimated
Location
N 9,958
E 7,738

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 60	0.0 5.0	NO WELL INSTALLED	755.3	OL-OH	Stiff, dark brown, ORGANIC SOIL (OL-OH), mps = 0.5 in., no odor, moist. -TOPSOIL-				5	10	85				
		0.2				1.0	CL	Stiff, light brown, lean CLAY (CL), mps = 1.5 cm, no odor, moist. Red-gray mottling.					5	95				
		0.6																
		0.5				751.8 4.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, moist. Wet at 5.5 ft.					85	15				
5			G2 60	5.0 10.0														
		6.7				749.3 7.0	CL	Stiff, light brown, lean CLAY (CL) with red gray mottling, mps = 5 mm, no odor, moist.					10	90				
		36				748.3 8.0	CL	Stiff, red-gray, lean CLAY (CL), mps = 5 mm, no odor, moist.					5	95				
10			G3 60	10.0 15.0														
		6245																
		2094						Oil sheen present at 13.5 ft. Slight odor, mps = 1 cm.										
15			G4 36	15.0 18.0		740.3 16.0	MH	Soft, red-gray, elastic SILT (MH), mps = 0.5 mm, no odor, wet.					5	95				
		61.9																
		0.6				738.3 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/22/04					5.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4G

Boring No. GP-4264

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4265

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 24, 2004
Finish: March 24, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.3
Datum Estimated
Location
N 9,953
E 7,734

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 58	0.0 5.0	NO WELL INSTALLED		OL/ OH	Stiff, dark brown, organic SOIL, mps: 1 cm, no odor, moist.				5	10	85				
		0.4				754.8 1.5	CL	Stiff, yellow brown, lean CLAY, mps: 1 mm, no odor, moist.					10	90				
		1.2				751.3 5.0	SM	Loose, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
5		2.9	G-2 60	5.0 10.0		749.3 7.0	CL	Stiff, red gray, lean CLAY, mps: 1 cm, no odor, moist.					10	90				
		1.4						Seam of medium, black SAND at 8.5 ft.										
		16.8																
10			G-3 54	10.0 15.0														
		902.6						Petrochemical odor, slight oil sheen at 11.5 ft.										
		65.8				742.3 14.0	MH	Medium dense, red gray, clayey, elastic SILT, mps: 1 mm, no odor, wet.					10	90				
15		79.2	G-4 36	15.0 18.0														
		0.5				738.3 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/24/04				18.0	5.0, 14.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4G

Boring No. GP-4265

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4262

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 23, 2004
Finish: March 23, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 758.3
Datum Estimated
Location
N 9,965
E 7,738

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	S	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud:	None
Hammer Fall (in.)	-	30	-	Casing:	Direct Push
				Hoist/Hammer:	Winch Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G1 56	0.0 5.0	NO WELL INSTALLED	757.3 1.0	OL-OH	Stiff, dark brown, ORGANIC SOIL (OL-OH), mps = 5 mm, no odor, moist.				10	10	90				
		0.2					CL	Stiff, yellow-brown, lean CLAY (CL), mps = 5 mm, no odor, moist.					5	95				
		0.6				753.8 4.5	SM	Loose, yellow-brown, silty SAND (SM), mps = 1 mm, no odor, wet.										
5		0.8	G2 60	5.0 10.0		751.8 6.5	CL	Stiff, light brown, lean CLAY (CL), mps = 1 mm, no odor, moist.					10	90				
		49.0				750.8 7.5	CL	Stiff, red-gray, lean CLAY (CL), mps = 0.75 mm, no odor, wet.					10	90				
		1.0					CL	Same as above.										
10		0.4	G3 52	10.0 15.0														
		86.0				743.3 15.0	MH	Loose, red-gray, elastic SILT (MH), mps = 0.5 mm, no odor, wet.					10	90				
15		1220	G4 36	15.0 18.0														
		1.8				740.3 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/23/04					4.5, 15.0

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4G

Boring No. GP-4262

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4266

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 24, 2004
Finish: March 24, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.7
Datum Estimated
Location
N 9,938
E 7,736

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 54	0.0 5.0	NO WELL INSTALLED		OL/OH	Medium stiff, dark brown, organic SOIL, mps: 5 mm, no odor, moist.				5	10	85				
		0.1				755.2 1.5	CL	Stiff, yellow brown, lean CLAY, mps: 8 mm, no odor, moist.					10	90				
		0.1																
5		2.0	G-2 58	5.0 10.0		750.7 6.0	SM	Loose, yellow brown, silty SAND, mps: 2 mm, no odor, wet.					85	15				
		1.4				749.7 7.0	CL	Stiff, red gray, lean CLAY, mps: 1.5 cm, no odor, moist.					10	90				
		29.1																
10		112	G-3 60	10.0 15.0				Medium, gray brown SAND seam at 12.5 ft.										
		29				742.7 14.0	MH	Medium dense, red gray, clayey, elastic SILT, mps: 1 mm, no odor, wet.					10	90				
15		18	G-4	15.0 18.0														
		ND				738.7 18.0		NOTE: PID malfunction due to rain; no odor. -Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/24/04				18.0	6.0, 14.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4G

Boring No. GP-4266

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4267

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Steams Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 24, 2004
Finish: March 24, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan

	Casing	Sampler	Barrel
Type	-	G	-
Inside Diameter (in.)	-	1 7/8	-
Hammer Weight (lb.)	-	-	-
Hammer Fall (in.)	-	-	-

Drilling Equipment and Procedures
Rig Make & Model: 66 DT Track
Bit Type: -
Drill Mud: None
Casing: Direct Push
Hoist/Hammer: - Automatic Hammer

Elevation 756.4
Datum Estimated

Location
N 9,954
E 7,718

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		ND	G-1 52	0.0 5.0	NO WELL INSTALLED	754.9 1.5	OL/OH	Stiff, dark brown, organic SOIL, mps: 1 cm, no odor, moist.				5	10	85				
		ND				751.9 4.5	GL	Stiff, yellow brown, lean CLAY, mps: 3 mm, no odor, moist.					10	90				
5		ND	G-2 60	5.0 10.0		750.4 6.0	SM	Loose, yellow brown, silty SAND, mps: 2 mm, no odor, wet.					85	15				
		ND				749.9 6.5	CL	Stiff, yellow brown, lean CLAY, mps: 1 cm, no odor, moist.					5	95				
				-			CL	Stiff, red gray, lean CLAY, mps: 2 cm, no odor, moist. Petrochemical odor at 9.0 ft.					10	90				
10		375	G-3 54	10.0 15.0		743.4 13.0	MH	Soft, red gray, clayey, elastic SILT, mps: 0.5 mm, no odor, wet.					15	85				
15		0.2	G-4	15.0 18.0														
		27.2																
		0.5				738.4 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/24/04				18.0	4.5, 13.0

Sample Identification
O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4G

Boring No. GP-4267

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4268

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 24, 2004
Finish: March 24, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.4
Datum Estimated
Location
N 9,959
E 7,755

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 59	0.0 5.0	NO WELL INSTALLED		OL/ OH	Stiff, dark brown, organic SOIL, mps: 3 mm, no odor, moist.				5	10	85				
		2.0				754.9 1.5	CL	Stiff, yellow brown, lean CLAY, mps: 1.5 cm, no odor, moist.					10	90				
		2.8				752.4 4.0	CL	Stiff, yellow brown, lean CLAY, mps: 0.75 cm, no odor, moist. Some gray mottling.					15	85				
5		4.0	G-2 60	5.0 10.0		750.9 5.5	SM	Loose, yellow brown, silty SAND, mps: 2 cm, no odor, wet.					85	15				
		10.8				749.4 7.0	CL	Stiff, yellow brown, lean CLAY, mps: 0.75 cm, no odor, moist.				5	10	85				
		419				748.9 7.5	CL	Stiff, red gray, lean CLAY, mps: 1.5 cm, no odor, moist.				5	10	85				
10		11.6	G-3 48	10.0 15.0														
		3.0				741.9 14.5	MH	Soft, red gray, clayey SILT with sand, mps: 0.5 mm, no odor, wet.					15	85				
15		3.0	G-4 36	15.0 18.0														
		2.6				738.4 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/24/04				18.0	5.5, 14.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4G

Boring No. GP-4268

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4269

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 25, 2004
Finish: March 25, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 757.0
Datum Estimated
Location
N 9,923
E 7,735

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 48	0.0 5.0	NO WELL INSTALLED	756.0 1.0	OL/OH	Medium stiff, dark brown, organic SOIL, mps: 1 cm, no odor, moist.				5	10	85				
						755.0 2.0	SC	Medium dense, yellow brown, clayey SAND, mps: 4 mm, no odor, moist.				15	45	40				
							CL	Medium stiff, dark brown, lean CLAY, mps: 3 mm, no odor, moist. Becoming yellow brown at 2.5 ft.				5	10	85				
5			G-2 60	5.0 10.0		751.5 5.5	SM	Loose, yellow brown, silty SAND, mps: 2 mm, no odor, wet.					85	15				
						751.0 6.0	CL	Stiff, yellow brown, lean CLAY, mps: 0.5 mm, no odor, moist.					10	90				
						750.0 7.0	CL	Stiff, red gray, lean CLAY, mps: 2 cm, no odor, moist.				5	10	85				
10			G-3 14	10.0 15.0				Limestone cobble blocked sleave, preventing full recovery.										
15			G-4 36	15.0 18.0		742.0 15.0	MH	Very soft, red gray, elastic SILT with sand, mps: 0.5 mm, no odor, wet.				5	20	75				
						739.0 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/25/04				18.0	5.5, 15.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4G

Boring No. GP-4269

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4270

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 25, 2004
Finish: March 25, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.2
Datum Estimated
Location
N 9,964
E 7,722

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		ND	G-1 58	0.0 5.0	NO WELL INSTALLED		OL/ OH	Medium stiff, dark brown, organic SOIL, mps: 2 mm, no odor, moist.				5	10	85				
		ND				754.7 1.5	CL	Stiff, yellow brown, lean CLAY, mps: 6 mm, no odor, moist.				5	10	85				
						752.2 4.0	SM	Loose, yellow brown, silty SAND, mpsL 1 mm, no odor, wet.					85	15				
5		2.5	G-2 60	5.0 10.0														
						750.2 6.0	CL	Stiff, yellow brown, lean CLAY, mps: 7 mm, no odor, moist.					15	85				
		79.2				749.2 7.0	CL	Stiff, red gray, lean CLAY, mps: 2 cm, no odor, moist.					10	90				
		0.1																
10			G-3 60	10.0 15.0														
		0.2				742.2 14.0	MH	Soft, red gray, clayey, elastic SILT, no odor, wet.					15	85				
		ND																
15			G-4 36	15.0 18.0				Similar to above except less clay.										
		0.1				738.2 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/25/04				18.0	4.0, 14.0

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4

Boring No. GP-4270

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4271

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 25, 2004
Finish: March 25, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.2
Datum Estimated
Location
N 9,964
E 7,755

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		ND	G-1 56	0.0 5.0	NO WELL INSTALLED		OL/ OH	Stiff, red gray, organic SOIL, mps: 2 mm, no odor, moist.				5	10	85				
		0.8				754.7 1.5	CL	Stiff, yellow brown, lean CLAY, mps: 1 mm, no odor, moist.					10	90				
5		0.8	G-2 60	5.0 10.0		751.7 4.5	SM	Loose, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
		27.7				749.2 7.0	CL	Stiff, red gray, lean CLAY, mps: 2 cm, no odor, moist.				5	10	85				
		136																
10		51.5	G-3 57	10.0 15.0														
		0.5				742.2 14.0	ML	Medium stiff, red gray, clayey SILT, mps: 1 mm, no odor, moist.					10	90				
15		0.2	G-4 36	15.0 18.0		740.7 15.5	MH	Loose, red gray, elastic SILT, mps: 0.5 mm, no odor, wet.					10	90				
		0.2				738.2 18.0		-Bottom of Exploration at 18.0 feet.										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/25/04				18.0	4.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4

Boring No. GP-4271

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4272

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 25, 2004
Finish: March 25, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.4
Datum Estimated
Location
N 9,953
E 7,743

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 56	0.0 5.0	NO WELL INSTALLED	755.4	OL/OH	Medium, dark brown, organic SOIL, mps: 1 mm, no odor, moist.					10	90	S	L		
		1.5				1.0 754.4	CL	Medium stiff, light brown, lean CLAY, mps: 5 mm, no odor, moist.				5	15	80				
		1.6				2.0	CL	Stiff, yellow brown, lean CLAY, mps: 0.5 mm, no odor, moist. 4.5 ft.: Gray mottling.					10	90				
5		3.2	G-2 60	5.0 10.0		750.9 5.5	SM	Loose, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet.					85	15				
		27.5				749.4 7.0	CL	Stiff, light brown, lean CLAY, mps: 1 mm, no odor, moist.					10	90				
		999.9				748.9 7.5	CL	Stiff, red gray, lean CLAY, mps: 1 cm, no odor, moist.				5	10	85				
10		154	G-3 60	10.0 15.0		746.4 10.0	SP	Loose, yellow brown, poorly graded SAND, mps: 1 mm, petrochemical odor, moist.				10	90					
		999.9				744.4 12.0	CL	Stiff, red gray, lean CLAY, mps: 1.5 cm, petrochemical odor, moist.				5	10	85				
15		999.9	G-4 36	15.0 18.0		740.9 15.5	MH	Soft, red gray, elastic SILT, mps: 0.5 mm, no odor, wet.					10	90				
		20.2				738.4 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/25/04				18.0	5.5, 15.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4

Boring No. GP-4272

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4273

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 26, 2004
Finish: March 26, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.6
Datum Estimated
Location
N 9,939
E 7,749

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 30	0.0 5.0	NO WELL INSTALLED	755.6 1.0	OL/ OH	Medium stiff, dark brown, organic SOIL, mps: 2 mm, no odor, moist.				5	10	85				
		0.2					SP	Medium dense, yellow brown, poorly graded SAND, mps: 1 cm, no odor, moist.				10	75	15				
		0.4																
5		0.5	G-2 54	5.0 10.0				5.5 ft.: Wet.										
		0.2				749.6 7.0	CL	Stiff, red gray, lean CLAY, mps: 7 mm, no odor, moist.				5	10	85				
		0.3																
10		ND	G-3 60	10.0 15.0														
		0.2				742.6 14.0	ML	Soft, red gray, elastic SILT, mps: 4 cm, no odor, moist.					10	90				
15		ND	G-4 36	15.0 18.0		740.6 16.0	MH	Soft, red gray, elastic SILT, mps: 1 mm, no odor, wet.					10	90				
		ND				738.6 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/26/04				18.0	5.5, 16.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4

Boring No. GP-4273

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4274

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 26, 2004
Finish: March 26, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.3
Datum Estimated
Location
N 9,959
E 7,764

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		ND	G-1 54	0.0 5.0	NO WELL INSTALLED		OL/ OH	Medium stiff, dark brown, organic SOIL, mps: 3 mm, no odor, moist.				5	10	85				
		ND				754.8 1.5	CL	Stiff, yellow brown, lean CLAY, mps: 2 mm, no odor, moist.				10	10	80				
5			G-2 60	5.0 10.0		750.8 5.5		5 ft.: Wet.										
		5.3				748.8 7.5	SM	Loose, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
		168					CL	Stiff, red gray, lean CLAY, mps: 1 mm, no odor, moist.					10	90				
10		8.9	G-3 36	10.0 15.0														
		4.9																
		ND				741.8 14.5	ML	Soft, red gray, clayey SILT, mps: 1 mm, no odor, moist.					10	90				
15		ND	G-4	15.0 18.0		740.8 15.5		Becoming soft, red gray, clayey SILT, mps: 1 mm, no odor, wet at 15.5 ft.					10	90				
						738.3 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/26/04				18.0	5.0, 15.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4

Boring No. GP-4274

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4275

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 31, 2004
Finish: March 31, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.1
Datum Estimated
Location
N 9,959
E 7,770

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 54	0.0 5.0	NO WELL INSTALLED		OL/ OH	Medium stiff, dark brown, organic SOIL, mps: 2 cm, no odor, moist.				5	10	85				
		0.3				754.6 1.5	CL	Medium stiff, yellow brown, lean CLAY, mps: 1 mm, no odor, moist.					10	90				
		0.2																
5		0.3	G-2 60	5.0 10.0		751.1 5.0	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
		0.8				748.6 7.5	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
		127																
10			G-3 60	10.0 15.0														
		0.4																
		0.3				742.1 14.0	ML	Medium stiff, red gray, clayey SILT, mps: 0.5 mm, no odor, moist.					5	95				
15		0.3	G-4	15.0 18.0		740.6 15.5	MH	Medium stiff, red gray, elastic SILT, mps: 0.5 mm, no odor, wet.					5	95				
		0.3				738.1 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/31/04				18.0	5.0, 15.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 4

Boring No. GP-4275

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4276

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 31, 2004
Finish: March 31, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.4
Datum Estimated
Location
N 9,944
E 7,787

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 54	0.0 5.0	NO WELL INSTALLED		OL/OH	Medium stiff, dark brown, organic SOIL, mps: 2 cm, no odor, moist.				5	10	85				
		0.4				754.9 1.5	CL	Stiff, light brown, lean CLAY, mps: 2 mm, no odor, moist.					10	90				
						754.4 2.0	SP	Medium dense, yellow brown, poorly graded SAND, mps: 3 mm, no odor, moist.					75	25				
		0.4				753.9 2.5	CL	Stiff, yellow brown, lean CLAY with red gray mottling, mps: 2 mm, no odor, moist.					10	90				
5		0.4	G-2 60	5.0 10.0		751.4 5.0	SP	Medium dense, yellow brown, poorly graded SAND, mps: 2 mm, no odor, moist.					75	25				
						750.4 6.0	CL	Stiff, gray brown, lean CLAY, mps: 4 mm, no odor, moist.					10	90				
		0.5				749.9 6.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
		14.3				747.9 8.5		Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					10	90				
10		0.7	G-3 48	10.0 14.0														
		0.5				742.4 14.0		-Bottom of Exploration at 14.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/31/04				14.0	6.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 14.0
Rock Cored (lin. ft.) -
Samples 3

Boring No. GP-4276

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4277

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 31, 2004
Finish: March 31, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 9,937
E 7,716

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 48	0.0 5.0	NO WELL INSTALLED		OL/ OH	Soft, dark brown, organic SOIL, mps: 3 mm, no odor, moist.				5	10	85				
		0.4				1.0	CL	Soft yellow brown, lean CLAY, mps: 3 mm, no odor, moist.					15	85				
		0.4																
5		0.5	G-2 36	5.0 8.0				6 ft.: Brick fragment.										
		66.4						7 ft.: Limestone cobble.										
						7.5	CL	Stiff, red gray, lean CLAY, mps: 2 mm, no odor, moist.					10	90				
		90.0	G-3 20	8.0 10.0														
10		14.2	G-4 24	10.0 12.0														
						12.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/31/04				12.0	

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 12.0
Rock Cored (lin. ft.) -
Samples 4

Boring No. GP-4277

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4278

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 31, 2004
Finish: March 31, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.3
Datum Estimated
Location
N 9,959
E 7,720

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 53	0.0 5.0	NO WELL INSTALLED		OL/ OH	Medium stiff, dark brown, organic SOIL, mps: 1 cm, no odor, moist.				5	10	85				
		0.4				754.8 1.5	CL	Medium stiff, yellow brown, lean CLAY, mps: 7 mm, no odor, moist.					10	90				
		5.0				751.8 4.5	SM	Medium dense, yellow brown, silty SAND, mps: 2 mm, no odor, wet.					85	15				
5		0.5	G-2 36	5.0 8.0		750.3 6.0	CL	Stiff, yellow brown, lean CLAY, mps: 1 cm, no odor, moist.					10	90				
		110				749.3 7.0	CL	Stiff, red gray, lean CLAY, mps: 3 cm, no odor moist.					10	90				
		18.7	G-3 21	8.0 10.0		746.3		9.5 ft.: Becoming siltier.										
10						10.0		-Bottom of Exploration at 10.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/31/04				10.0	4.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 10.0
Rock Cored (lin. ft.) -
Samples 3

Boring No. GP-4278

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4279

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 31, 2004
Finish: March 31, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.8
Datum Estimated
Location
N 9,928
E 7,756

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 48	0.0 5.0	NO WELL INSTALLED	755.8 1.0	OL/ OH	Medium stiff, dark brown, organic SOIL, mps: 1 mm, no odor, moist.				5	10	85				
		0.5					CL	Medium stiff, light brown, lean CLAY, mps: 2 cm, no odor, moist.					10	90				
		0.5																
5		0.5	G-2 36	5.0 8.0		750.8 6.0	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
		0.4				749.3 7.5	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.										
		0.5	G-3 20	8.0 10.0		746.8 10.0		-Bottom of Exploration at 10.0 feet.-										
10																		

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/31/04				10.0	6.0

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 10.0
- Rock Cored (lin. ft.) -
- Samples 3

Boring No. GP-4279

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4280

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 1, 2004
Finish: April 1, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Elevation 756.1
Datum Estimated
Location
N 9,960
E 7,710

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		ND	G-1 48	0.0 5.0	NO WELL INSTALLED	755.1	OL/OH	Medium stiff, dark brown, organic SOIL, mps: 2 mm, no odor, moist.				5	10	85				
		0.2				1.0	CL	Stiff, yellow brown, lean CLAY, mps: 1 cm, no odor, moist.										
		ND				751.6 4.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
5			G-2 36	5.0 8.0		750.6 5.5	CL	Stiff, yellow brown, lean CLAY, mps: 1.5 cm, no odor, moist.			5	5	10	80				
		0.1				748.1												
		ND	G-3	8.0 10.0		8.0	CL	Stiff, red gray, lean CLAY, mps: 2 mm, no odor, moist.			5	5	5	85				
10						746.1 10.0		-Bottom of Exploration at 10.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/01/04				10.0	4.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 10.0
Rock Cored (lin. ft.) -
Samples 3

Boring No. GP-4280

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4281

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 1, 2004
Finish: April 1, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.3
Datum Estimated
Location
N 9,953
E 7,742

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		ND	G-1 54	0.0 5.0	NO WELL INSTALLED		OL/ OH	Medium stiff, dark brown, organic SOIL, mps: 2 mm, no odor, moist.				5	10	85				
						754.8 1.5	CL	Stiff, yellow brown, lean CLAY with red gray mottling, mps: 2.5 cm, no odor, moist.					10	90				
		0.1																
5		0.1	G-2 60	5.0 10.0		751.3 5.0	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
						749.8 6.5	CL	Stiff, red gray, lean CLAY, mps: 1.5 cm, no odor, moist.					5	95				
		463																
		195.6																
10			G-3 60	10.0 15.0														
		9949																
		3080																
						741.8 14.5	MH	Soft, red gray, elastic SILT, mps: 0.5 mm, no odor, wet.					5	95				
15			G-4 12	15.0 16.0														
						740.3 16.0		-Bottom of Exploration at 16.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/01/04				16.0	5.0, 14.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.)	16.0
Rock Cored (lin. ft.)	-
Samples	4

Boring No. GP-4281

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4282

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 1, 2004
Finish: April 1, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 755.8
Datum Estimated
Location
N 9,964
E 7,772

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 54	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 2 mm, no odor, moist.				5	10	85				
		0.2				754.3 1.5	CL	Stiff, yellow brown, lean CLAY, some red gray mottling, mps: 1.5 cm, no odor, moist.					10	90				
		7.0																
5		1.5	G-2 36	5.0 8.0		750.3 5.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
		2.2				748.3 7.5	CL	Stiff, red gray, lean CLAY, mps: 1 mm, no odor, moist.					10	90				
		26.8	G-3 24	8.0 10.0		745.8 10.0		-Bottom of Exploration at 10.0 feet.-										
10																		

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/01/04				10.0	5.5

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 10.0
- Rock Cored (lin. ft.) -
- Samples 3

Boring No. GP-4282

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4283

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 1, 2004
Finish: April 1, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Elevation 756.6
Datum Estimated
Location
N 9,942
E 7,758

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 57	0.0 5.0	NO WELL INSTALLED	755.6	OL/OH	Medium stiff, dark brown, organic SOIL, mps: 2 mm, no odor, moist.				5	10	85				
		0.2				1.0	CL	Medium stiff, yellow brown, lean CLAY, mps: 1.5 cm, no odor, moist.					10	90				
		0.8				751.6												
5		1.5	G-2 36	5.0 8.0		5.0	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
		0.4				748.6												
			G-3 24	8.0 10.0		8.0	CL	Stiff, red gray, lean CLAY, mps: 1 cm, no odor, moist.					10	90				
		0.6				746.6												
10						10.0		-Bottom of Exploration at 10.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/01/04				10.0	5.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 10.0
Rock Cored (lin. ft.) -
Samples 3

Boring No. GP-4283

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4284

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 1, 2004
Finish: April 1, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.4
Datum Estimated
Location
N 9,944
E 7,769

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 53	0.0 5.0	NO WELL INSTALLED		OL/ OH	Loose, brown, sandy organic SOIL, mps: 1 mm, no odor, moist.				5	50	45				
		4.0				754.9 1.5	CL	Medium stiff, yellow brown, lean CLAY, mps: 1 cm, no odor, moist.					10	90				
		0.5																
5		ND ND	G-2 36	5.0 8.0		750.9 5.5	CL	Soft, yellow brown, sandy lean CLAY, mps: 1 mm, no odor, wet.					30	70				
		ND				749.9 6.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
		41.0	G-3 24	8.0 10.0		748.4 8.0	CL	Stiff, red gray, lean CLAY, mps: 2 mm, no odor, moist.					10	90				
10		13.0	G-4 24	10.0 12.0		744.4 12.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/01/04				12.0	5.5

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 12.0
- Rock Cored (lin. ft.) -
- Samples 4

Boring No. GP-4284

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4285

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 1, 2004
Finish: April 1, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.3
Datum Estimated
Location
N 9,954
E 7,726

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 56	0.0 5.0	NO WELL INSTALLED		OL/OH	Medium stiff, dark brown, organic SOIL, mps: 1 mm, no odor, moist.				5	10	85				
		0.3				754.8 1.5	CL	Medium stiff, yellow brown, lean CLAY, some red gray mottling, mps: 2 mm, no odor, moist.					10	90				
		1.3																
5		9.5	G-2 36	5.0 8.0		750.8 5.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
						749.8 6.5	CL	Stiff, yellow brown, lean CLAY, mps: 3 mm, no odor, moist.					10	90				
		128				749.3 7.0	CL	Stiff, red gray, lean CLAY, mps: 8 mm, no odor, moist.				5	10	85				
			G-3 22	8.0 10.0														
		449																
10			G-4 22	10.0 12.0														
		131																
			G-5 23	12.0 14.0														
		1.2				742.8 13.5	ML	Medium stiff, red gray, clayey SILT, mps: 0.5 mm, no odor, wet.					5	95				
						742.3 14.0		-Bottom of Exploration at 14.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/01/04				14.0	5.5, 13.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.)	14.0
Rock Cored (lin. ft.)	-
Samples	5

Boring No. GP-4285

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4286

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 7, 2004
Finish: April 7, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.2
Datum Estimated
Location
N 9,958
E 7,728

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 60	0.0 5.0	NO WELL INSTALLED	755.2	OL/OH	Stiff, dark brown, organic SOIL, mps: 1 mm, no odor, moist.					15	85				
		0.1				1.0	CL	Stiff, yellow brown, lean CLAY, some red gray mottling, mps: 1 cm, no odor, wet.					10	90				
		0.6				751.7 4.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
5		0.7	G-2 36	5.0 8.0		749.7 6.5	CL	Stiff, yellow brown, lean CLAY, mps; 5 mm, no odor, moist.					5	95				
		254				748.7 7.5	CL	Stiff, red gray, lean CLAY, mps: 1 cm, no door, moist.					10	90				
		149	G-3 24	8.0 10.0														
10			G-4 20	10.0 12.0														
		3708																
			G-5 22	12.0 14.0														
		55.2				742.5 13.8	ML	Medium stiff, red gray, clayey SILT, mps: 0.5 mm, no odor, wet.					10	90				
						742.2 14.0		-Bottom of Exploration at 14.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/07/04				14.0	4.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 14.0
Rock Cored (lin. ft.) -
Samples 5

Boring No. GP-4286

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4287

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 7, 2004
Finish: April 7, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Elevation 756.2
Datum Estimated
Location
N 9,964
E 7,715

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 56	0.0 5.0	NO WELL INSTALLED	755.2 1.0	OL/OH	Medium stiff, dark brown, organic SOIL, mps: 1 mm, no odor, moist.					15	85				
		0.2					CL	Stiff, yellow brown, lean CLAY, some red gray mottling, mps: 1 cm, no odor, moist.					10	90				
		0.8				752.2 4.0	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
5		0.3	G-2 36	5.0 8.0		750.2 6.0	CL	Stiff, yellow brown, lean CLAY, mps: 2 cm, no odor, moist.					5	95				
		146				749.2 7.0	CL	Stiff, red gray, lean CLAY, mps: 1 cm, no odor, moist.					10	90				
		0.8	G-3 24	8.0 10.0		746.2 10.0		-Bottom of Exploration at 10.0 feet.-										
10																		

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/07/04				10.0	4.0

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 10.0
- Rock Cored (lin. ft.) -
- Samples 3

Boring No. GP-4287

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4288

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 7, 2004
Finish: April 7, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.3
Datum Estimated
Location
N 9,954
E 7,710

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 60	0.0 5.0	NO WELL INSTALLED	755.3	OL/OH	Medium stiff, brown, organic SOIL, mps: 1 mm, no odor, moist.					15	85				
		0.3				1.0	CL	Stiff, yellow brown, lean CLAY, some red gray mottling, mps: 5 mm, no odor, moist.					10	90				
		0.9				751.8 4.5	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet.					85	15				
5		0.7	G-2 36	5.0 8.0		750.3 6.0	CL	Stiff, yellow brown, lean CLAY, mps: 3 mm, no odor, moist.					5	95				
		1409				749.3 7.0	CL	Stiff, red gray, lean CLAY, mps: 7 mm, no odor, moist.					10	90				
		390	G-3 24	8.0 10.0														
10		571	G-4 22	10.0 12.0		744.3 12.0	MH	Medium stiff, red gray, clayey SILT, mps: 0.5 mm, no odor, wet.					5	95				
		478	G-5 21	12.0 14.0		742.8 13.5	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
						742.3 14.0		-Bottom of Exploration at 14.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/07/04				14.0	4.5, 12.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 14.0
Rock Cored (lin. ft.) -
Samples 5

Boring No. GP-4288

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4289

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 7, 2004
Finish: April 7, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.0
Datum Estimated
Location
N 9,959
E 7,780

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 58	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 1 mm, no odor, moist.					15	85				
		0.5				754.5 1.5	CL	Stiff, yellow brown, lean CLAY with some red gray mottling, mps: 2 cm, no odor, moist.					10	90				
		0.7																
5		0.4	G-2 36	5.0 8.0		750.5 5.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
						748.5 7.5	CL	Stiff, red gray, lean CLAY, mps: 7 mm, no odor, moist.					10	90				
		16.2	G-3 24	8.0 10.0														
		63.4						Cobble at 9 ft. Becoming siltier at 9.5 ft.										
10			G-4 24	10.0 12.0		745.5 10.5	SP-SM	Soft, red gray, poorly graded SAND with silt, mps: 0.5 mm, no odor, wet.					90	10				
		0.5				745.0 11.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
						744.0 12.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/07/04				12.0	5.5, 10.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.)	12.0
Rock Cored (lin. ft.)	-
Samples	4

Boring No. GP-4289

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4290

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 8, 2004
Finish: April 8, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Elevation 756.1
Datum Estimated
Location
N 9,953
E 7,773

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		ND	G-1 60	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 1 mm, no odor, moist.				5	10	85				
						754.6 1.5												
		ND					CL	Medium stiff, yellow brown, lean CLAY with some red gray mottling, mps: 3 mm, no odor, moist.					5	95				
5						751.1 5.0												
			G-2 36	5.0 8.0			SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet.					85	15				
		0.1				748.6 7.5												
							CL	Stiff, red gray, lean CLAY, mps: 4 mm, no odor, moist.					10	90				
			G-3 19	8.0 10.0														
		36.6																
10			G-4 21	10.0 12.0														
		0.4																
						744.1 12.0		-Bottom of Exploration at 12.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/08/04				12.0	5.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 12.0
Rock Cored (lin. ft.) -
Samples 4

Boring No. GP-4290

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4291

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 8, 2004
Finish: April 8, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.4
Datum Estimated
Location
N 9,952
E 7,764

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 60	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 1 mm, no odor, moist.`				5	10	85				
		0.1				754.9 1.5	CL	Medium stiff, yellow brown, lean CLAY some red gray mottling, mps: 3 mm, no odor, moist.					5	95				
		0.1																
5		0.2	G-2 36	5.0 8.0		751.4 5.0	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet.					85	15				
		0.2				748.9 7.5	CL	Stiff, red gray, lean CLAY, mps: 4 mm, no odor, moist.					10	90				
		0.3	G-3 18	8.0 10.0		746.4 10.0		-Bottom of Exploration at 10.0 feet.-										
10																		

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/08/04				10.0	5.0

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 10.0
- Rock Cored (lin. ft.) -
- Samples 3

Boring No. GP-4291

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4292

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 8, 2004
Finish: April 8, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.9
Datum Estimated
Location
N 9,933
E 7,730

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 60	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 1 mm, no odor, moist.				5	10	85				
		0.2				755.9 1.0	CL	Medium stiff, yellow brown, lean CLAY, mps: 4 mm, no odor, moist.					5	95				
		0.1																
5		0.1	G-2 36	5.0 8.0		751.9 5.0	SM	Medium dense, yellow brown, silty SAND, mps: 1.5 mm, no odor, wet.					85	15				
		1.3				749.4 7.5	CL	Stiff, red gray, lean CLAY, mps: 2 mm, no odor, wet.					10	90				
			G-3 20	8.0 10.0														
		0.3				746.9		Seam of medium SAND at 9.5 ft.										
10						10.0		-Bottom of Exploration at 10.0 feet.-										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/08/04				10.0	5.0

Sample Identification
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (lin. ft.) 10.0
- Rock Cored (lin. ft.) -
- Samples 3

Boring No. GP-4292

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4293

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 8, 2004
Finish: April 8, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.3
Datum Estimated
Location
N 9,954
E 7,702

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		ND	G-1 57	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 3 mm, no odor, moist.				5	10	85				
		0.5				754.8 1.5	CL	Medium stiff, yellow brown, lean CLAY, mps: 2 mm, no odor, moist.					5	95				
5		0.2	G-2 36	5.0 8.0		751.8 4.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
		13.3				750.8 5.5	CL	Medium stiff, yellow brown, lean CLAY, mps: 2 mm, no odor, moist.					10	90				
		3.1	G-3 19	8.0 10.0		748.8 7.5	CL	Stiff, red gray, lean CLAY, mps: 2 mm, no odor, moist.					10	90				
10						746.3 10.0		-Bottom of Exploration at 10.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/08/04				10.0	4.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 10.0
Rock Cored (lin. ft.) -
Samples 3

Boring No. GP-4293

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4294

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 8, 2004
Finish: April 8, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.8
Datum Estimated
Location
N 9,937
E 7,710

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 60	0.0 5.0	NO WELL INSTALLED	755.8 1.0	OL-OH	Medium stiff, dark brown, organic SOIL, mps: 1 mm, no odor, moist.					5	95				
		0.5					CL	Medium stiff, dark brown, lean CLAY with some red gray mottling, mps: 1 mm, no odor, moist.										
		0.4																
5		0.7	G-2 36	5.0 8.0		751.3 5.5	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet.					85	15				
						750.3 6.5	CL	Stiff, yellow brown, lean CLAY, mps: 7 mm, no odor, moist.					10	90				
		265						Becoming red gray at 7.5 ft.										
			G-3 12	8.0 10.0														
		1682																
10			G-4 16	10.0 12.0														
		489																
			G-5 14	12.0 14.0														
		1120				743.3 13.5	ML	Medium stiff, red gray, clayey SILT, mps: 0.5 mm, no odor, wet.					5	95				
			G-6 14	14.0 16.0														
15		906																
			G-7 18	16.0 18.0														
		3.4				738.8 18.0		-Bottom of Exploration at 18.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/08/04				18.0	5.5, 13.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 18.0
Rock Cored (lin. ft.) -
Samples 7

Boring No. GP-4294

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4295

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 15, 2004
Finish: April 15, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 757.1
Datum Estimated
Location
N 9,926
E 7,727

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 57	0.0 5.0	NO WELL INSTALLED	756.1 1.0	OL-OH	Medium stiff, dark brown, organic SOIL, mps: 2 mm, no odor, moist.				5	10	85				
		ND					CL	Stiff, yellow brown, lean CLAY with red gray mottling, mps: 1 cm, no odor, moist.					10	90				
5			G-2 36	5.0 8.0		751.6 5.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
		ND				750.1 7.0	CL	Stiff, yellow brown, lean CLAY, mps: 3 mm, no odor, moist.					10	90				
		0.6				749.1 8.0	CL	Stiff, red gray, lean CLAY with sand, mps: 2.5 cm, no odor, moist.					15	85				
		34.7	G-3 16	8.0 10.0														
10			G-4 24	10.0 12.0														
		0.1				745.1 12.0		Seam of medium, gray brown SAND at 11 ft.										
								-Bottom of Exploration at 12.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/15/04				12.0	5.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 12.0
Rock Cored (lin. ft.) -
Samples 4

Boring No. GP-4295

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4296

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 15, 2004
Finish: April 15, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 757.1
Datum Estimated
Location
N 9,924
E 7,715

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 48	0.0 5.0	NO WELL INSTALLED	756.1 1.0	OL-OH	Medium stiff, dark brown, organic SOIL, mps: 1 mm, no odor, moist.				5	10	85				
		0.1					CL	Medium stiff, brown, lean CLAY with sand, mps: 1 mm, no odor, moist.					15	85				
		0.1					CL	Stiff, yellow brown, lean CLAY, mps: 3 mm, no odor, moist.					10	90				
5		0.2	G-2 36	5.0 8.0		752.1 5.0	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, wet.					85	15				
		22.2				750.6 6.5	CL	Stiff, yellow brown, lean CLAY, mps: 2 mm, no odor, moist. Becoming red gray at 7.5 ft., mps: 2 cm.					15	85				
		3.5	G-3 18	8.0 10.0														
10			G-4	10.0 12.0		747.1 10.0		-Bottom of Exploration at 10.0 feet.-										
			G-5	12.0 14.0														

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/15/04				10.0	5.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 10.0
Rock Cored (lin. ft.) -
Samples 3

Boring No. GP-4296

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4297

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 15, 2004
Finish: April 15, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 757.1
Datum Estimated
Location
N 9,924
E 7,704

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 58	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 1 mm, no odor, moist.				5	10	85				
		0.2				756.1 1.0	CL	Stiff, yellow brown, lean CLAY with some red gray mottling, mps: 3.5 cm, no odor, moist.					10	90				
		0.4																
5		2.0	G-2 36	5.0 8.0		752.1 5.0	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet.					85	15				
						751.1 6.0	CL	Stiff, yellow brown, lean CLAY, mps: 1 mm, no odor, moist.					5	95				
		23.2				749.1		Petrochemical ordor at 7.5 ft.										
		333	G-3 22	8.0 10.0		8.0	CL	Stiff, red gray, lean CLAY with sand, mps: 3 cm, no odor, moist.					15	85				
10			G-4 21	10.0 12.0		747.1 10.0	SP	Medium dense, tan, poorly graded SAND, mps: 8 mm, petrochemical odor, moist.					5	95				
		1272				745.6 11.5	ML	Medium stiff, light brown, SILT with sand, mps: 0.5 mm, no odor, wet.					20	80				
		234	G-5 23	12.0 14.0		745.1 12.0	SP	Medium dense, tan, poorly graded SAND, mps: 0.5 mm, petrochemical odor, wet.					95	5				
15		172	G-6 24	14.0 16.0		743.1 14.0	SP	Medium dense, red gray, poorly graded SAND with silt, mps: 0.5 mm, no odor, wet.					90	10				
		156	G-7 20	16.0 18.0		740.1 17.0	SP	Medium dense, red gray, poorly graded SAND, mps: 1 mm, no odor, wet.					90	10				
20		199	G-8 12	18.0 20.0														

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/15/04				27.0	5.0, 11.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 27.0
Rock Cored (lin. ft.) -
Samples 10

Boring No. GP-4297

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4297
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20			G-9 12	20.0 22.0			SP	Medium dense, red gray, poorly graded SAND, mps: 1 mm, no odor, wet.					90	10				
		186																
			G-10	22.0 27.0														
		14.7																
25		0.6																
		1.1				730.1 27.0		-Bottom of Exploration at 27.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4298

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 15, 2004
Finish: April 15, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.5
Datum Estimated
Location
N 9,944
E 7,699

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 54	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 1 mm, no odor, moist.				5	10	85				
		1.0				755.0 1.5	CL	Stiff, yellow brown, lean CLAY, mps: 2 mm, no odor, moist.					10	90				
		1.4				752.0 4.5	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, wet.					85	15				
5		2.3	G-2 36	5.0 8.0		751.0 5.5	CL	Stiff, yellow brown, lean CLAY, mps: 2.5 cm, no odor, moist.					5	95				
		24.4						Becoming red gray at 7.5 ft.										
		754	G-3 24	8.0 10.0														
10		1473	G-4 20	10.0 12.0		745.5 11.0	ML	Stiff, red gray SILT, mps: 0.5 mm, no odor, moist.					5	95				
		9999	G-5 22	12.0 14.0				Wet at 12 ft.										
15		147	G-6 60	14.0 19.0		741.0 15.5	SP	Medium dense, red gray, poorly graded SAND, mps: 1 mm, no odor, wet.					90	10				
		12.3																
		3.0				737.5 19.0		-Bottom of Exploration at 19.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/15/04				19.0	4.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.)	19.0
Rock Cored (lin. ft.)	-
Samples	6

Boring No. GP-4298

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4299

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 15, 2004
Finish: April 15, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 757.2
Datum Estimated
Location
N 9,903
E 7,698

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 60	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL.				5	10	85				
		2.6				754.2 3.0												
		7.2					CL	Medium stiff, yellow brown, lean CLAY, mps: 7 mm, no odor, moist.					10	90				
5		9.3	G-2 36	5.0 8.0														
		17.2				749.2 8.0												
		48.5	G-3 15	8.0 10.0			SP	Medium dense, tan, poorly graded SAND, mps: 0.5 mm, no odor, moist.					10	90				
10		98.8	G-4 24	10.0 12.0														
		53.3	G-5 19	12.0 14.0														
			G-6 18	14.0 16.0		742.7 14.5		Wet at 14.5 ft.										
15		351					SP	Dense, light brown, poorly graded SAND, mps: 1 mm, no odor, wet.					85	15				
		229	G-7 48	16.0 21.0														
		284				738.2 19.0	SP	Dense, red gray, poorly graded SAND, mps: 1 mm, no odor, wet.				10	80	10				
20																		

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/15/04				21.0	14.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 21.0
Rock Cored (lin. ft.) -
Samples 7

Boring No. GP-4299

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4299
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20							SP											
		28.4				736.2		Dense, red gray, poorly graded SAND, mps: 1 mm, no odor, wet.				10	80	10				
						21.0		-Bottom of Exploration at 21.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4301

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 7, 2004
Finish: April 7, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 10,139
E 7,979

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 45	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 2 mm, no odor, moist.				5	15	80				
		0.3				1.0	SP	Medium dense, yellow brown, poorly graded SAND, mps: 1.5 cm, no odor, moist.		5	5	75	10	5				
		0.4				2.0	CL	Stiff, dark brown, lean CLAY with sand, mps: 2 mm, no odor, moist.			5	5	5	85				
						3.5	CL	Stiff, yellow brown, lean CLAY with some red gray mottling, mps: 5 mm, no odor, moist.					10	90				
5		0.4	G-2 60	5.0 10.0														
		0.3				7.5	SM	Medium dense, yellow brown, silty SAND, mps: 0.5 mm, no odor, moist.					85	15				
		0.3						Wet at 9 ft.										
10		0.3	G-3 60	10.0 15.0														
		0.3				12.0	SP	Medium dense, red gray, poorly graded SAND, mps: 1 mm, no odor, wet.				50	45	5				
15		0.3	G-4 60	15.0 20.0		14.5	SP-SC	Medium dense, red gray, poorly graded SAND with clay, mps: 2 mm, no odor, wet.			5	70	15	10				
		0.6				16.5	CL	Stiff, red gray, lean CLAY, mps: 2 mm, no odor, moist.					10	90				
20		0.3						-Bottom of Exploration at 20.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/07/04				20.0	9.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 20.0
Rock Cored (lin. ft.) -
Samples 4

Boring No. GP-4301

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4301
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20						20.0												

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4302

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 7, 2004
Finish: April 7, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 10,140
E 8,018

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 52	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 3 cm, no odor, moist.				5	15	80				
		0.2				1.5	CL	Stiff, yellow brown, lean CLAY, mps: 2.5 cm, no odor, moist.					10	90				
		0.4																
5		0.3	G-2 60	5.0 10.0														
		0.4				7.5	SM	Medium dense, yellow brown, silty SAND mps: 0.5 mm, no odor, moist. Wet at 8 ft.					85	15				
		0.3																
10		0.6	G-3 52	10.0 15.0														
		0.5				12.0	SP	Medium dense, red gray, poorly graded SAND, mps: 1 mm, no odor, wet.				90	45	5				
15		0.4	G-4	15.0 20.0		14.5	SP-SC	Medium dense, red gray, poorly graded SAND with clay, mps: 2 mm, no odor, wet. Similar to above.										
						17.0	CL	Stiff, red gray, lean CLAY, mps: 2 mm, no odor, moist.										
20								-Bottom of Exploration at 20.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/07/04				20.0	8.0

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.) 20.0
Rock Cored (lin. ft.) -
Samples 4

Boring No. GP-4302

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4302
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20						20.0												

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. GP-4304

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 29, 2004
Finish: March 29, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 10,047
E 7,943

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 48	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, oprganic SOIL, mps: , no odor, moist.		5	10	10	20	55				
		ND				1.0	CL	Medium stiff, brown, lean CLAY, mps: 1 mm, no odor, moist.					5	95				
		ND						Becoming yellow brown at 4 ft.										
5			G-2 58	5.0 10.0														
		ND				7.0	SM	Medium dense, yellow brown, silty SAND, mps 1 mm, no odor, moist. Wet at 8 ft.					85	15				
		ND				9.0	SM	Medium dense, red gray, silty SAND, mps: 1 mm, no odor, wet.				5	80	15				
10		0.2	G-3 60	10.0 15.0														
		2.9				13.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
		ND																
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/29/04				15.0	8.0

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3

Boring No. GP-4304

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4305

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 29, 2004
Finish: March 29, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 10,047
E 7,972

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		ND	G-1 42	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 3 mm, no odor, moist.			10	10	15	65				
		ND				1.0	CL	Medium stiff, olive brown, lean CLAY, mps: 7 m, no odor, moist.					10	90				
						4.0	CL	Medium stiff, light brown, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
5		0.2	G-2 60	5.0 10.0														
		0.2				6.5	SM	Medium dense, light brown, silty SAND, mps: 3 mm, no odor, moist.					85	15				
		0.1				7.5	SM	Medium dense, gray brown, silty SAND, mps: 2 mm, no odor, wet.				10	75	15				
10		0.1	G-3	10.0 15.0														
		0.2																
		0.4				14.0	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/29/04				15.0	7.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3

Boring No. GP-4305

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Toughness: L-Low, M-Medium, H-High Plasticity: N-Nonplastic, L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4306

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: March 29, 2004
Finish: March 29, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation
Datum Estimated
Location
N 10,047
E 8,000

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: 66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: Direct Push
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		ND	G-1 54	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 2 cm, no odor, moist.			5	10	20	65				
		ND				1.5	CL	Medium stiff, olive brown, lean CLAY, mps: 1 mm, no odor, moist.										
		ND				4.0	CL	Stiff, light brown, lean CLAY with some red gray mottling, mps: 0.5 mm, no odor, moist.					5	95				
5			G-2 60	5.0 10.0														
		ND				7.5	SM	Medium dense, yellow brown, silty SAND, mps: 1 mm, no odor, moist. Wet at 8.5 ft.					85	15				
		ND				9.0	SM	Medium dense, gray brown, silty SAND, mps: 1 mm, no odor, wet.				5	80	15				
10			G-3	10.0 15.0														
		ND				14.5	CL	Stiff, red gray, lean CLAY, mps: 0.5 mm, no odor, moist.					5	95				
15						15.0		-Bottom of Exploration at 15.0 feet.-										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
03/29/04				15.0	8.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples 3

Boring No. GP-4306

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4307

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 16, 2004
Finish: April 16, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.8
Datum Estimated
Location
N 9,923
E 7,679

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 58	0.0 5.0	NO WELL INSTALLED	755.8	OL-OH	Medium stiff, dark brown, organic SOIL, mps: 2 mm, no odor, moist.				5	10	85				
		0.5				1.0	CL	Medium stiff, yellow brown, lean CLAY with sand, mps: 3 mm, no odor, moist.					15	85				
		0.3																
5		2.4	G-2 36	5.0 8.0														
		3.3				748.8	CL	Stiff, light brown, lean CLAY, mps: 3 cm, no odor, moist.					10	90				
		58.1	G-3 19	8.0 10.0		8.0	SP	Medium dense, tan, poorly graded SAND, mps: 0.5 mm, no odor, moist.					10	90				
10		9.3	G-4 21	10.0 12.0														
		77.6	G-5 60	12.0 17.0														
							SP	Dense, light brown, poorly graded SAND, mps: 0.5 mm, no odor, wet.				5	90	5				
15		65.2					SP	Dense, light brown, poorly graded SAND, mps: 1 mm, no odor, wet.					85	15				
		48.8	G-6 60	17.0 22.0			SP	Dense, light brown, poorly graded SAND, mps: 0.5 mm, no odor, wet. Becoming red gray at 17 ft.					10	90				
		33.0																
20						736.8												

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/16/04				33.5	13.5

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 33.5
Rock Cored (lin. ft.) -
Samples 9

Boring No. GP-4307

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4307
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20						20.0	SP	Dense, red gray, poorly graded SAND, mps: 1 mm, no odor, wet.				5	85	10				
		3.2																
		9.3	G-7 60	22.0 27.0														
25		4.4						1 in. seam of CLAY at 25.5 ft.										
		0.5	G-8	27.0 32.0			SP	Dense, red gray, poorly graded SAND, mps: 1.5 cm, no odor, wet.				50	35	15				
		0.1																
30		0.2																
			G-9 0	32.0 33.5		724.3 32.5	CL	Refusal at 33.5 ft., no sample recovered.										
						723.3 33.5		-Bottom of Exploration at 33.5 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

USCS_TB3 USCSLIB3.GLB USCSTBC3.GDT G:\49017\GINT5\LOGS_COMPLETE\LOGS.GPJ Aug 12, 04

TEST BORING REPORT

Boring No. GP-4308

Project: Delphi Flint Dort Highway, USA
Client: Delphi
Contractor: Stearns Drilling

File No.: 49017
Sheet No.: 1 of 1
Start: April 16, 2004
Finish: April 16, 2004
Driller: R. Christensen
H&A Rep.: J. LeGolvan
Elevation 756.5
Datum Estimated
Location
N 9,944
E 7,677

	Casing	Sampler	Barrel	Drilling Equipment and Procedures	
Type	-	G	-	Rig Make & Model:	66 DT Track
Inside Diameter (in.)	-	1 7/8	-	Bit Type:	-
Hammer Weight (lb.)	-	-	-	Drill Mud:	None
Hammer Fall (in.)	-	-	-	Casing:	Direct Push
				Hoist/Hammer:	- Automatic Hammer

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0			G-1 54	0.0 5.0	NO WELL INSTALLED		OL-OH	Medium stiff, dark brown, organic SOIL, mps: 1.5 cm, no odor, moist.				5	10	85				
		0.3				754.5 2.0	CL	Stiff, yellow brown, lean CLAY with sand, mps: 3.5 cm, no odor, moist.					15	85				
		0.3																
5		0.3	G-2 57	5.0 10.0														
		0.3					CL	Stiff, red brown, lean CLAY, mps: 3 cm, no odor, moist.					10	90				
		0.3				747.5 9.0	ML	Stiff, light brown, clayey SILT with sand and gravel, mps: 2.5 cm, no odor, moist.		5	5	5	5	80				
10		0.5	G-3 58	10.0 15.0		744.5 12.0	SP	Medium dense, tan, poorly graded SAND, mps: 0.5 mm, no odor, moist.					10	90				
		7.7					SP	Dense, light brown, poorly graded SAND, mps: 1 mm, no odor, wet.					85	15				
15		25.6	G-4 60	15.0 20.0														
		1.9						Becoming red gray at 17 ft.										
		2.2				737.0 19.5	SM	Dense, red gray, silty SAND, mps: 0.5 mm, no odor, wet.					80	20				
20																		

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
04/16/04				34.0	13.5

Sample Identification

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (lin. ft.)	34
Rock Cored (lin. ft.)	-
Samples	7

Boring No. GP-4308

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification and percentages based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. GP-4308
File No. 49017
Sheet No. 2 of 1

Depth (ft.)	SPT*	PID	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20			G-5 55	20.0 25.0		736.5 20.0	SP	Dense, red gray, poorly graded SAND, mps: 0.5 mm, no odor, wet.				10	90					
		1.5					SP	Dense, red gray, poorly graded SAND, mps: 1 mm, no odor, wet.			5	85	10					
		0.9					SP	Dense, red gray, poorly graded SAND, mps: 0.5 mm, no odor, wet.				10	90					
							SP	Dense, red gray, poorly graded SAND, mps: 1.5 mm, no odor, wet.				85	15					
25		0.5	G-6 60	25.0 30.0														
		0.5																
		0.6																
30			G-7	30.0 34.0			SP	Dense, red gray, poorly graded SAND, mps: 3 mm, no odor, wet.			5	85	10					
		0.7					SP	Dense, red gray, poorly graded SAND with gravel, mps: 3 cm, no odor, wet.		15	50	25	10					
		0.1				723.0 33.5	CL	Hard, red gray, lean CLAY with sand, mps: 2 cm, no odor, dry.			5	5	10	80				
				-		722.5 34.0		-Bottom of Exploration at 34.0 feet.-										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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