

GSIP Boring Logs (Golder Associates, 1990)

**CONSULTING GROUND WATER GEOLOGISTS  
ROUX ASSOCIATES INC**

**GEOLOGIC LOG**

Study No. <u>16101</u> Date <u>5/30/90</u> Project <u>Industri-Plex Site PDI</u> Client <u>Golder Associates</u> Page <u>1</u> of <u>2</u> Logged By <u>H. Hollister</u> Well No. <u>OW-23</u> Loc. <u>Woburn, Mass</u> M.P. Elevation <u>68.54</u> Drilling Started <u>5/16/90</u> Ended _____ Driller <u>D.L. Maher</u> Type Of Rig <u>Hollow Stem Auger</u>	<b>WELL DATA</b>		<b>G W READINGS(1)</b>		
	Hole Diam. (in.)	<u>10"</u>	Date		
	Final Depth (ft.)	<u>27'</u>	DTW		
	Casing Diam. (in.)	<u>4"</u>	MP(2)		
	Casing Length (ft.)	<u>20'</u>	Elev. W.T.		
	Screen Setting (ft.)	<u>17-27'</u>			
	Screen Slot & Type	<u>.010" PVC</u>			
	Well Status				
	<b>SAMPLER</b>		<b>DEVELOPMENT</b>		
	Type	<u>Split spoon</u>			
Hammer	<u>140</u> lb.				
Fall	<u>30</u> in.				

PID	SAMPLE			Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No. Rec.	Depth (ft.)	Blows / 6"			
3.5	0.8	0-2'	1,1,1,1	SP	0	Dark brown medium(+) to coarse SAND, little fine gravel, organic material. Cuttings: Dark brown medium to coarse SAND, some fine gravel; moist.
0.0	0.8	5-7'	1,2,1,1	SP	5	Dark brown fine to coarse SAND, little fine gravel, trace silt organic material.
0.0	1.2	10-12'	1,1,1,1	PT	10	Dark brown fine to medium organic SAND, trace fine gravel some PEAT throughout Sample.
0.0	1.2	15-17'	3,9,12,12	PT SW	15	Top 0.5': Dark brown PEAT. Bottom: Grey fine(+) to medium SAND, little organic material, trace coarse gravel.
0.0	1.8	20-22'	8,10,10,11	SM <sup>d</sup> SW	20	Top 1.65': Light brown fine SAND, some silt, trace coarse sand, iron stained laminated. Bottom 0.1': Light brown medium to coarse(+) SAND, Little fine gravel.
0.0	1.1	25-27'	30,45,33,20	SW GW <sup>f</sup>	25	Top 0.5': Brown medium to coarse SAND. Bottom: Brown medium to coarse SAND and fine(+) to coarse gravel.
0.0	1.0	30-32'	27,24,22,20	SP	30	Brown Medium to coarse(+) SAND, some fine gravel, trace coarse gravel; iron stained.

**REMARKS:** (1) in feet relative to a common datum  
 (2) from top of PVC casing

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**GEOLOGIC LOG**

Study No. <u>16101</u> Date <u>5/30/90</u>		<b>WELL DATA</b>		<b>G W READINGS(1)</b>	
Project <u>Industri-Plex PDI</u>		Hole Diam. (in.) <u>10"</u>		Date   DTW MP(2)   Elev. W.T.	
Client <u>Golder Associates</u>		Final Depth (ft.) <u>27'</u>			
Page <u>2</u> of <u>2</u>		Casing Diam. (in.) <u>4</u>			
Logged By <u>H. Hollister</u>		Casing Length (ft.) <u>20'</u>			
Well No. <u>OW-23</u>		Screen Setting (ft.) <u>17-27'</u>			
Loc. <u>Woburn, Mass</u>		Screen Slot & Type <u>.010" PVC</u>			
M.P. Elevation <u>68.54</u>		<b>SAMPLER</b>		<b>DEVELOPMENT</b>	
Drilling Started <u>5/16/90</u> Ended <u>5/17/90</u>		Type <u>Split spoon</u>			
Driller <u>D.L. Maher</u>		Hammer <u>140</u> lb.			
Type Of Rig <u>Hollow Stem Auger</u>		Fall <u>30</u> in.			

P ID	SAMPLE			Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No. Rec.	Depth (ft.)	Blows/6"			
5.2	0.5	35-36'	32,20	SP	35	Grey fine to coarse SAND and fine gravel, little coarse gravel. Auger refusal @ 37.6'
	2.2	38.5-41.5'	73% recovery	Bedrock	40	Green-grey granodiorite some quartzsome calcite veins, Oblique and vertical fractures

**REMARKS:** (1) in feet relative to a common datum  
 (2) from top of PVC casing



**CONSULTING GROUND WATER GEOLOGISTS  
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**GEOLOGIC LOG**

Study No. <u>16101Y</u> Date <u>4/30/90</u> Project <u>Industri-Plex PDI</u> Client <u>Golder Associates</u> Page <u>1</u> of <u>    </u> Logged By <u>L. McTiernan</u> Well No. <u>OW-24b</u> Loc. <u>Woburn, M.A.</u> M.P. Elevation <u>57.26'</u> Drilling Started <u>4/25/90</u> Ended <u>4/27/90</u> Driller <u>D.L. Maher</u> Type Of Rig <u>Hollow Stem Auger</u>	<b>WELL DATA</b> Hole Diam. (in.) <u>10"</u> Final Depth (ft.) <u>59.65</u> Casing Diam. (in.) <u>4"</u> Casing Length (ft.) <u>49.50-59.65</u> Screen Setting (ft.) <u>10 Slot PVC</u> Screen Slot & Type <u>    </u> Well Status <u>    </u>		<b>G W READINGS(1)</b> Date   DTW MP(2)   Elev. W.T.		
	<b>SAMPLER</b> Type <u>Split spoon</u> Hammer <u>140</u> lb. Fell <u>30</u> in.		<b>DEVELOPMENT</b>		

PID	SAMPLE				Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No.	Rec.	Depth (ft.)	Blows / 6"			
9.1	1	0.8'	0-2'	1,2,6,12	SP		Light dark brown, fine to coarse SAND, little fine to coarse Gravel, trace organic materials. (fill).
7.8	2	1.4'	5-7'	10,20,18,18	SP	5	Light brown fine(+) to coarse SAND, trace fine gravel. Moist at bottom.
6.2	3	2.0'	10-12'	6,12,13,14	SP	10	Gray fine to coarse SAND, some fine Gravel, coarsening downwards. Wet.
—	4	1.35'	15-17'	10,12,12,15	SP SW SP	15	0.-0.2' Brown fine to coarse SAND, trace fine Gravel. 0.2-1.2' Gray-brown fine SAND, laminated orange & black 1.2-1.35' Gray-brown to orange fine Gravel.
12.2	5	1.3'	20-22'	4,6,7,9	SW	20	Light brown fine to medium SAND; several orange laminae.
3.1	6	1.5'	25-27'	5,10,12,21	SW	25	Light brown fine(+) to medium SAND.
3.6	7	1.7'	30-32'	8,11,12,15	SW	30	Light brown fine to medium, trace silt; micaceous sand.

**REMARKS:** (1) in feet relative to a common datum  
(2) from top of PVC casing

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ROUX ASSOCIATES INC**

**GEOLOGIC LOG**

<b>STUDY DATA</b> Study No. <u>16101Y</u> Date <u>4/30/90</u> Project <u>Industri plex PDI</u> Client <u>Golder Associates</u> Page <u>2</u> of <u>3</u> Logged By <u>L. McTiernan</u> Well No. <u>OW-24b</u> Loc. <u>Woburn, M.A.</u> M.P. Elevation <u>57.26</u> Drilling Started <u>4/25/90</u> Ended <u>4/27/90</u> Driller <u>D.L. Maher Company</u> Type Of Rig <u>Hollow Stem Auger</u>		<b>WELL DATA</b> Hole Diam. (in.) <u>10"</u> Final Depth (ft.) <u>59.65</u> Casing Diam. (in.) <u>4"</u> Casing Length (ft.) <u>49.50</u> Screen Setting (ft.) <u>49.50-59.65</u> Screen Slot & Type <u>10 Slot PVC</u> Well Status _____		<b>G W READINGS(1)</b> Date   DTW MP(2)   Elev. W.T.		
		<b>SAMPLER</b> Type <u>Split spoon</u> Hammer <u>140</u> lb. Fall <u>30</u> in.		<b>DEVELOPMENT</b>		

PID	SAMPLE				Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No.	Rec.	Depth (ft.)	Blows / 6"			
3.1	1.4	35-37'	3,5,7,10	SW	35	Light brown fine SAND, very tight seam of silt and clay at 35.9'.	
3.2	1.7	40-42'	5,6,8,14	SW	40	Top 1.3': Brown fine to medium SAND, coarsening downward. Bottom 0.4': Brown to grey medium to coarse SAND and fine to coarse gravel; coarsening downward.	
2.3	0.7	45-47'	7,19,13,10	GP	45	Grey-brown fine to coarse angular GRAVEL, some fine to coarse sand, trace silt.	
2.4	1.6	50-52'	8,10,12,12	SM <sup>d</sup> MH	50	Top 0.7': Brown fine SAND, some silt. Bottom: Grey SILT, little fine sand; tight.	
2.2	1.3	55-57'	7,9,10,8	SM <sup>d</sup>	55	Grey fine SAND and silt, trace black clay; tight.	
2.0	2.0	60-62'	7,6,10,11	SM <sup>d</sup>	60	Grey fine SAND, little silt. fining downward; moderately tight.	

**REMARKS:** (1) in feet relative to a common datum  
(2) from top of PVC casing

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**GEOLOGIC LOG**

Study No. <u>16101</u> Date <u>4/30/90</u> Project <u>Industri-Plex PDI</u> Client <u>Golder Associates</u> Page <u>3</u> of <u>3</u> Logged By <u>L. McTiernan</u> Well No. <u>OW-24b</u> Loc. <u>Woburn, M.A.</u> M.P. Elevation <u>57.26</u> Drilling Started <u>4/25/90</u> Ended <u>4/27/90</u> Driller <u>D.L. Maher</u> Type of Rig <u>Hollow Stem Auger</u>	<p style="text-align: center;"><b>WELL DATA</b></p> Hole Diam. (in.) <u>10"</u> Final Depth (ft.) <u>59.65</u> Casing Diam. (in.) <u>4"</u> Casing Length (ft.) <u>49.50</u> Screen Setting (ft.) <u>49.50-59.65</u> Screen Slot & Type <u>10 Slot PVC</u> Well Status _____	<p style="text-align: center;"><b>G W READINGS(1)</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:33%;">Date</th> <th style="width:33%;">DTW MP(2)</th> <th style="width:33%;">Elev. W.T.</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Date	DTW MP(2)	Elev. W.T.			
Date	DTW MP(2)	Elev. W.T.						
<p style="text-align: center;"><b>SAMPLER</b></p> Type <u>Split spoon</u> Hammer <u>140</u> lb. Fell <u>30</u> in.		<p style="text-align: center;"><b>DEVELOPMENT</b></p>						

SAMPLE				Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
No.	Rec.	Depth (ft.)	Blows / 6"			
0.0	0.6	64-65.5	14,40,35	SW	65	Grey fine SAND, auger refusal @ 65.5'. (Bedrock).
-	3.5	69.5-73'	100%recovery		70	Green-grey coarse grain grano-diorite low quartz. Moderately fractured both vertical and oblique fractures, some sand in rock.

**REMARKS:** (1) in feet relative to a common datum  
 (2) from top of PVC casing



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**GEOLOGIC LOG**

Study No. <u>16101</u> Date <u>5/19/90</u> Project <u>Industri-Plex Site</u> Client <u>Golder Associate</u> Page <u>1</u> of <u>2</u> Logged By <u>B. Thomas</u> Well No. <u>OW-25b</u> Loc. <u>Woburn, Mass</u> M.P. Elevation <u>65.34</u> Drilling Started <u>5/17/90</u> Ended <u>5/20/90</u> Driller <u>D.L. Maher</u> Type Of Rig <u>Dual Reverse Rotary</u>	<b>WELL DATA</b> Hole Diam. (in.) <u>8"</u> Final Depth (ft.) <u>40.3</u> Casing Diam. (in.) <u>4"</u> Casing Length (ft.) <u>29.8'</u> Screen Setting (ft.) <u>29.8-40.3</u> Screen Slot & Type <u>.010" PVC</u> Well Status _____	<b>G W READINGS(1)</b> Date   DTW MP(2)   Elev. W.T.             
<b>SAMPLER</b> Type <u>Split spoon</u> Hammer <u>140</u> lb. Fall <u>10</u> in.		<b>DEVELOPMENT</b>

*PID	SAMPLE			Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No.	Rec.	Depth (ft.)			
0.0		0.8	0-2'	3,18,60/3"	SP	0 - Brown fine to coarse SAND some fine to coarse gravel(fill). Cuttings 0-10': Brown coarse sand and cobbles(fill).
		NR	10-12'	7,11,11,12		5 - 10 - No recovery.
0.0		0.7	13-15'	4,6,4,8	SW	15 - Light brown fine to medium(+) SAND; iron stained lamination.
0.0		1.1	23-25'	3,10,2,5	SW	25 - Grey-brown fine to coarse SAND, some fine gravel, trace silt; coarsening downward, wet. 30 -

**REMARKS:** (1) in feet relative to a common datum  
(2) from top of PVC casing

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**GEOLOGIC LOG**

Study No. 16101 Date 5/19/90  
 Project Industri-Plex Site  
 Client Golder Associates  
 Page 2 of 2  
 Logged By B. Thomas  
 Well No. OW-25b  
 Loc. Woburn, Mass  
 M.P. Elevation 65.34  
 Drilling Started 5/17/90 Ended 5/20/90  
 Driller D.L. Maher  
 Type of Rig Dual Reverse Rotary Rig

**WELL DATA**  
 Hole Diam. (in.) 8"  
 Final Depth (ft.) 40.3  
 Casing Diam. (in.) 4"  
 Casing Length (ft.) 29.8  
 Screen Setting (ft.) 29.8-40.3  
 Screen Slot & Type 010" PVC  
 Well Status \_\_\_\_\_

G W READINGS(1)		
Date	DTW MP(2)	Elev. W.T.

**SAMPLER**  
 Type Split spoon  
 Hammer 140 lb.  
 Fall 30 in.

**DEVELOPMENT**

#	PID	SAMPLE			Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		No. Rec.	Depth (ft.)	Blows / 6"			
0.0		1.0	33-35'	10,10,11,7	SW	35	Brown medium to coarse(+) SAND, little fine gravel; coarsening downward; well sorted.
0.0		0.4	43-45'	2,5,9,12	SP	45	Brown coarse SAND and fine gravel.
		2.8	47.5-50.5	93% recovery		50	Bedrock @ 47.4' Green-grey medium grain Granodiorite some oblique and horizontal fractures. Sand Seam @ 49.'

**REMARKS:** (1) in feet relative to a common datum  
 (2) from top of PVC casing



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**GEOLOGIC LOG**

<b>WELL DATA</b> Hole Diam. (in.) 8" Final Depth (ft.) 94.57 Casing Diam. (in.) 4" Casing Length (ft.) 85.85 Screen Setting (ft.) 84.42-94.57 Screen Slot & Type .010" PVC Well Status _____		<b>G W READINGS(1)</b> Date   DTW MP(2)   Elev. W.T.	
Study No. 16101 Date 5/8/90 Project Industri-Plex Site Client Golder Associates Page 1 of 4 Logged By L. McTiernan Well No. OW-27b Loc. Woburn, Mass M.P. Elevation 70.52 Drilling Started 5/90 Ended _____ Driller D.L. Maher Type of Rig Hollow Stem Auger		<b>SAMPLER</b> Type Split spoon Hammer 140 lb. Fell 30 in.	
		<b>DEVELOPMENT</b>	

PID	SAMPLE			Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No. Rec.	Depth (ft.)	Blows/6"			
0.0	0.9	0-2.0	13,17,50/3"	SP	0	Grey to brown fine to coarse SAND, some fine to coarse gravel(fill)
2.6	1.0	5-7'	8,5,6,32	SP	5	Grey to brown fine to coarse SAND and fine to coarse gravel, some brick and cement fragments. (fill).
3.4	0.6	10-12'	1,2,1,2	SP	10	Grey to brown fine to coarse SAND, some fine to coarse gravel; moist(fill).
0.3	1.45	15-17'	3,6,6,5	SW	15	Light brown fine to medium SAND, trace silt, trace fine gravel, wet.
0.7	1.65	20-22'	4,4,4,4	SW	20	Grey fine SAND, trace silt; red and orange laminae, moderately stiff.
0.9	1.4	25-24'	4,4,6,7	SW	25	Brown fine to medium SAND trace silt, trace fine gravel; fining downward.
1.0	1.3	30-32'	2,3,7,10	SW	30	Brown fine to medium SAND fine sand seam @ 30.6-30.8' Iron stained throughout.

**REMARKS:** (1) in feet relative to a common datum  
(2) from top of PVC casing

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**GEOLOGIC LOG**

Study No. <u>16101</u> Date <u>5/8/90</u>		<b>WELL DATA</b>		<b>G W READINGS(1)</b>	
Project: <u>Industri plex Site PDI</u>		Hole Diam. (in.) <u>8"</u>		Date   DTW MP(2)  Elev. W.T.	
Client: <u>Goldier Associates</u>		Final Depth (ft.) <u>94.57</u>			
Page <u>2</u> of <u>4</u>		Casing Diam. (in.) <u>4"</u>			
Logged By <u>L. McTiernan</u>		Casing Length (ft.) <u>85.85</u>			
Well No. <u>OW-27b</u>		Screen Setting (ft.) <u>84.42-94.57</u>			
Loc. <u>Woburn MA</u>		Screen Slot & Type <u>.010" PVC</u>			
M.P. Elevation <u>70.52</u>		<b>SAMPLER</b>		<b>DEVELOPMENT</b>	
Drilling Started <u>5/3/90</u> Ended _____		Type <u>SPLIT spoon</u>			
Driller <u>D.L. Maher</u>		Hammer <u>140</u> lb.			
Type Of Rig <u>Hollow Stem Auger</u>		Fall <u>30</u> in.			

PID	SAMPLE			Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No.	Rec.	Depth (ft.)			
		N.R.	35-37'	13,20,40/3'	35	No recovery.
0.5	1.25		40-42'	7,2,5,11	40	Light brown fine to medium (+) SAND, trace silt; iron stained, laminae.
	1.35		45-47'	5,5,9,11	45	Gray-brown fine to medium (+) SAND. trace silt; fining downward.
1.3	1.4		50-52'	4,9,10,15	50	Brown fine to medium (+) SAND, moderately tight.
0.0	1.0		55-57'	3,6,4,2	55	Brown fine-medium SAND, little silt, little gray clay; well sorted; tight. Auger refusal @57.0'
0.0	1.5		59-61'	4,2,3,6	60	Note: Dual reverse rotary rig used from 57' to bottom of boring. Brown to gray fine-medium SAND, little silt; well sorted.

**REMARKS:** (1) in feet relative to a common datum.  
(2) from top of PVC casing

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**GEOLOGIC LOG**

<b>WELL DATA</b> Study No. <u>16101Y</u> Date <u>5/8/90</u> Project <u>Industri-Plex Site</u> Client <u>Goldier Associates</u> Page <u>3</u> of <u>4</u> Logged By <u>L. McTiernan</u> Well No. <u>OW-27B</u> Loc. <u>Woburn, Mass</u> M.P. Elevation <u>70.52</u> Drilling Started <u>5/3/90</u> Ended _____ Driller <u>D.L. Maher</u> Type Of Rig <u>Dual Reverse Rotary Rig</u>		Hole Diam. (in.) <u>8"</u> Final Depth (ft.) <u>94.57</u> Casing Diam. (in.) <u>4"</u> Casing Length (ft.) <u>85.85</u> Screen Setting (ft.) <u>84.42-94.57</u> Screen Slot & Type <u>.010" PVC</u> Well Status _____		<b>G W READINGS (1)</b> Date   DTW MP(2)   Elev. W.T.		
		<b>SAMPLER</b> Type <u>split spoon</u> Hammer <u>140</u> lb. Fell <u>30</u> in.		<b>DEVELOPMENT</b>		

PID	SAMPLE			Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No.	Rec.	Depth (ft.)			
0.0	1.6		69-71'		65 70	Gray SILT, some fine (+) sand trace clay.
0.0	0.5		79-81'	1,1,2,2	80	Gray SILT, some fine (+) sand trace clay.
0.0	1.8		89-91'	1,2,2,3	85 90 95	Gray SILT and fine sand.

**REMARKS:** (1) in feet relative to a common datum  
(2) from top of PVC casing

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<b>WELL DATA</b> Study No. <u>16101Y</u> Date <u>5/8/90</u> Project <u>Industri-Plex Site</u> Client <u>Goldor Associates</u> Page <u>4</u> of <u>4</u> Logged By <u>L. McTiernan</u> Well No. <u>OW-27B</u> Loc. <u>Woburn, Mass</u> M.P. Elevation <u>70.52</u> Drilling Started <u>5/3/90</u> Ended _____ Driller <u>D.L. Maher</u> Type Of Rig <u>Dual Reverse Rotary</u>		Hole Diam. (in.) <u>8"</u> Final Depth (ft.) <u>94.57</u> Casing Diam. (in.) <u>4"</u> Casing Length (ft.) <u>85.85'</u> Screen Setting (ft.) <u>84.42-94.57</u> Screen Slot & Type <u>.010" PVC</u> Well Status _____		<b>G W READINGS (1)</b> Date   DTW MP(2)   Elev. W.T.		
		<b>SAMPLER</b> Type <u>split spoon</u> Hammer <u>140</u> lb. Fall <u>30</u> in.		<b>DEVELOPMENT</b>		

PID	SAMPLE			Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION	
	No.	Rec.	Depth (ft.)				Blows/6"
0.0	1.5		99-100'	1,1,1,2	ML	100 Gray SILT, fine sand.	
						105	
						110	Difficult drilling @ 110' (Bedrock)
	1.3		115-118'	43% recovery		115 Gray-green fine grain Gabbro trace pyrite, plagioclase vein @116'. Oblique and horizontal fractures throughout core, some sandseams; weathered.	

**REMARKS:** (1) in feet relative to a common datum  
(2) from top of PVC casing





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**GEOLOGIC LOG**

<b>WELL DATA</b> Hole Diam. (in.) <u>8"</u> Final Depth (ft.) <u>12'</u> Casing Diam. (in.) _____ Casing Length (ft.) _____ Screen Setting (ft.) _____ Screen Slot & Type _____ Well Status _____		<b>G W READINGS(1)</b> Date   DTW MP(2)   Elev. W.T.	
Study No. <u>16101Y</u> Date <u>6/8/90</u> Project <u>Industri-Plex PDI</u> Client <u>Golder Associates</u> Page <u>1</u> of <u>1</u> Logged By <u>L. McTiernan</u> Well No. <u>RB-6</u> Loc. <u>Woburn, MA</u> M.P. Elevation <u>72.3'</u> Drilling Started <u>4/20/90</u> Ended <u>4/20/90</u> Driller <u>D.L. Maher</u> Type of Rig <u>Hollow Stem Auger</u>		<b>SAMPLER</b> Type <u>Split spoon</u> Hammer <u>140</u> lb. Fall <u>30</u> in.	
		<b>DEVELOPMENT</b>	

PID	SAMPLE			Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No. Rec.	Depth (ft.)	Blows / 6"			
3.7	1	0.6'	0-2'	14,35,38,21	SP	Brown medium to coarse SAND, and fine to coarse Gravel, trace organic material. Cuttings 0-5': Brown medium sands and Gravel, some large cobbles.  Brown fine to medium SAND, trace fine to coarse Gravel; Wet at bottom 0.2'.  Brown fine to coarse SAND, some fine to coarse Gravel, trace Silt (Gravel is crushed sialic rock). Auger refusal @ 12'.
2.2	2	0.8'	5-7	1,1,1,1	SP	
2.3	3	1.0'	10-12'	12,29,30,51	SP	

**REMARKS:** (1) in feet relative to a common datum  
 (2) from top of PVC casing

**CONSULTING GROUND WATER GEOLOGISTS  
ROUX ASSOCIATES INC**

**GEOLOGIC LOG**

Study No. <u>16101Y</u> Date <u>4/23/90</u> Project: <u>Industri-Plex PDI</u> Client: <u>Golder Associates</u> Page <u>1</u> of <u>1</u> Logged By <u>L. McTiernan</u> Well No. <u>RB-7</u> Loc. <u>Woburn, MA</u> M.P. Elevation <u>68.1'</u> Drilling Started <u>4/20/90</u> Ended <u>4/20/90</u> Driller <u>D.L. Maher</u> Type of Rig <u>Hollow Stem Auger</u>		<b>WELL DATA</b> Hole Diam. (in.) <u>10"</u> Final Depth (ft.) <u>16'</u> Casing Diam. (in.) _____ Casing Length (ft.) _____ Screen Setting (ft.) _____ Screen Slot & Type _____ Well Status _____		<b>G W READINGS(1)</b> Date   DTW MP(2)   Elev. W.T.                   	
		<b>SAMPLER</b> Type <u>Split spoon</u> Hammer <u>140</u> lb. Fell <u>30</u> in.	<b>DEVELOPMENT</b>		

#	SAMPLE			Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	Hnu	No. Rec.	Depth (ft.)			
0.2	1.3"	0-2'	4,4,1,5	SM <sup>d</sup>	0	Orange-brown fine to medium SAND, some silt. Cuttings: Orange-brown sand and silt.
1.1	1.0"	5-7'	30,51,72	GM <sup>d</sup> <sub>U</sub>	5	Grey fine to coarse gravel and fine Sand and silt; wet.
0.0	0.9"	10-12'	12,32,27,35	SP	10	Grey-brown fine to coarse sand and fine to coarse gravel, little silt, very tight.
0.0	0.85"	15-16'	38, 90/4"	GW	15	Grey and pink fine to coarse GRAVEL (bedrock). Auger refusal @ 16'.
					20	

**REMARKS:** (1) in feet relative to a common datum  
(2) from top of PVC casing

**CONSULTING GROUND WATER GEOLOGISTS  
ROUX ASSOCIATES INC**

**GEOLOGIC LOG**

<b>STUDY DATA</b> Study No. <u>16101Y</u> Date <u>4/23/90</u> Project <u>Industri-Plex DDT</u> Client <u>Golder Associates</u> Page <u>1</u> of <u>1</u> Logged By <u>L. McTiernan</u> Well No. <u>RR-9</u> Loc. <u>Woburn, MA</u> M.P. Elevation <u>66.0'</u> Drilling Started <u>4/20/90</u> Ended <u>4/20/90</u> Driller <u>D.L. Maher</u> Type of Rig <u>Hollow Stem Auger</u>		<b>WELL DATA</b> Hole Diam. (in.) <u>10"</u> Final Depth (ft.) <u>26'</u> Casing Diam. (in.) _____ Casing Length (ft.) _____ Screen Setting (ft.) _____ Screen Slot & Type _____ Well Status _____		<b>G W READINGS(1)</b> Date   DTW MP(2)   Elev. W.T.   _____ _____ _____	
<b>SAMPLER</b> Type <u>Split spoon</u> Hammer <u>140</u> lb. Fall <u>30</u> in.		<b>DEVELOPMENT</b> _____ _____ _____			

Hnu	SAMPLE			Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No. Rec.	Depth (ft.)	Blows / 6"			
0	1.6'	0-2'	2,5,9,9	SW	0	Orange to brown fine to medium(+) SAND, laminated at top
0	1.8'	5-7'	6,8,8,7	SW	5	Tan fine-medium to coarse SAND; wet. Cuttings: Orange and tan clean medium sand.
0	1.9'	10-12'	33,34,62,35	SW SP	10	Top 0.7': Grey fine-medium(+) to coarse SAND, little fine gravel. 0.7-1.2': Grey fine SAND, trace silt and clay. Bottom: Grey fine(+) to medium SAND and fine to coarse gravel
0	0.65'	15-16.5'	20,50,70	SP	15	Grey fine to coarse SAND, and fine to coarse gravel, trace silt.
	N.R.	20-22'			20	No recovery, Soft weathered bedrock.
		25-26'			25	Fractured, weathered mafic rock (gabbro).

**REMARKS:** (1) in feet relative to a common datum  
(2) from top of PVC casing

**CONSULTING GROUND WATER GEOLOGISTS  
ROUX ASSOCIATES INC**

**GEOLOGIC LOG**

Study No. <u>16101</u> Date _____ Project: <u>Industri-Plex Site</u> Client: <u>Golder Associates</u> Page <u>1</u> of <u>1</u> Logged By <u>H. Hollister</u> Well No. <u>RB-11</u> Loc. <u>Woburn, Mass.</u> M.P. Elevation _____ Drilling Started <u>5/18/90</u> Ended <u>5/18/90</u> Driller <u>D.L. Maher</u> Type Of Rig <u>Hollow Stem Auger</u>	<p style="text-align: center;"><b>WELL DATA</b></p> Hole Diam. (in.) <u>8"</u> Final Depth (ft.) <u>15</u> Casing Diam. (in.) _____ Casing Length (ft.) _____ Screen Setting (ft.) _____ Screen Slot & Type _____ Well Status _____	<p style="text-align: center;"><b>G W READINGS(1)</b></p> Date   DTW MP(2)   Elev. W.T.               
<p style="text-align: center;"><b>SAMPLER</b></p> Type <u>Split Spoon</u> Hammer <u>140</u> lb. Fell <u>30</u> lb.		<p style="text-align: center;"><b>DEVELOPMENT</b></p>

PID	SAMPLE			Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No. Rec.	Depth (ft.)	Blows/6"			
0.3	1.7	0-2	5,8,11,14	SW	0	Brown to red medium SAND; laminated dark brown and Iron Stained Sands.
0	1.4	5-7'	5,10,14,8	SW	5	Light brown fine to medium(+) SAND: moist.
0	0.9	10-11	26,50/1"	SP	10	Grey fine to medium SAND some fine to coarse gravel(till); wet.
	N.R.	15-15.3	50/3"		15	No recovery, auger refusal.

**REMARKS:** (1) in feet relative to a common datum  
 (2) from top of PVC casing

Study No. <u>16101Y</u> Date <u>5/23/90</u> Project <u>Industri-Plex PDI</u> Client <u>Golder Associates</u> Page <u>1</u> of <u>1</u> Logged By <u>T. McTiernan</u> Well No. <u>RB-12</u> Loc. <u>Woburn, MA</u> M.P. Elevation <u>73.82</u> Drilling Started <u>5/21/90</u> Ended <u>5/21/90</u> Driller <u>D.L. Maher</u> Type Of Rig <u>Hollow Stem Auger</u>	<b>WELL DATA</b> Hole Diam. (in.) <u>8"</u> Final Depth (ft.) <u>13"</u> Casing Diam. (in.) _____ Casing Length (ft.) _____ Screen Setting (ft.) _____ Screen Slot & Type _____ Well Status _____	<b>G W READINGS(1)</b> Date   DTW MP(2)   Elev. W.T.               
M.P. Elevation <u>73.82</u> Drilling Started <u>5/21/90</u> Ended <u>5/21/90</u> Driller <u>D.L. Maher</u> Type Of Rig <u>Hollow Stem Auger</u>		<b>SAMPLER</b> Type <u>Split spoon</u> Hammer <u>140</u> lb. Fell <u>30</u> in.

PTD	SAMPLE				Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No.	Rec.	Depth (ft.)	Blows / 6"			
0.0	1	1.6"	0-2'	4,6,7,10	SW		Light brown medium SAND, trace fine Gravel.
0.0	2	1.5"	5-7'	7,10,15,27	SM <sup>d</sup>	5	Tan fine to medium SAND, little silt (silt in lense at 1.2-1.3'); fining downwards.
0.0	3	0.9"	10-12'	6,15,46/5"	SP	10	Brown to grey, fine to coarse SAND, and fine to coarse Gravel, trace(-) silt. Wet. Auger refusal @ 13'
						15	

**REMARKS:** (1) in feet relative to a common datum  
 (2) from top of PVC casing

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**GEOLOGIC LOG**

Study No. <u>16101Y</u> Date <u>5/23/90</u> Project: <u>Industri-Plex PDT</u> Client: <u>Golder Associates</u> Page <u>1</u> of <u>1</u> Logged By: <u>L. McTiernan</u> Well No. <u>RB-13</u> Loc. <u>Woburn, MA</u> M.P. Elevation <u>73.02</u> Drilling Started <u>5/21/90</u> Ended <u>5/21/90</u> Driller <u>D.L. Maher</u> Type Of Rig <u>Hollow Stem Auger</u>	<b>WELL DATA</b> Hole Diam. (in.) <u>8"</u> Final Depth (ft.) <u>14"</u> Casing Diam. (in.) _____ Casing Length (ft.) _____ Screen Setting (ft.) _____ Screen Slot & Type _____ Well Status _____	<b>G W READINGS(1)</b> Date   DTW MP(2)   Elev. W.T.   _____   _____   _____
<b>SAMPLER</b> Type <u>Split spoon</u> Hammer <u>140</u> lb. Fall <u>30</u> in.		<b>DEVELOPMENT</b> _____ _____ _____

S PID	SAMPLE				Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No. Rec.	Depth (ft.)	Blows / 6"				
0.0	1	1.6	0-2'	2,7,5,6	SP		Light to dark brown, fine to medium (+) SAND, trace silt, trace organic material.
0.4	2	1.3	5-7'	4,6,9,10	SP	5	Light brown to grey fine to medium SAND, trace(-) fine Gravel. Moist.
3.5 Back ground PID= 3.0	3	2.0	10-12'	10,22,22, 50/5'	SP	10	Light brown medium to coarse SAND, and fine(+) to coarse Gravel.
						15	Auger refusal @ 14'.

**REMARKS:** (1) in feet relative to a common datum  
 (2) from top of PVC casing

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**GEOLOGIC LOG**

<b>WELL DATA</b> Hole Diam. (in.) <u>8"</u> Final Depth (ft.) <u>12'</u> Casing Diam. (in.) _____ Casing Length (ft.) _____ Screen Setting (ft.) _____ Screen Slot & Type _____ Well Status _____		<b>G W READINGS(1)</b> Date   DTW MP(2)   Elev. W.T.	
Study No. <u>16101X</u> Date <u>5/23/90</u> Project <u>Industri-Plex PDI</u> Client <u>Goldier Associates</u> Page <u>1</u> of <u>1</u> Logged By <u>L. McTiernan</u> Well No. <u>RB-15</u> Loc. <u>Woburn, MA</u> M.P. Elevation <u>70.94</u> Drilling Started <u>5/21/90</u> Ended <u>5/21/90</u> Driller <u>D.L. Maher</u> Type Of Rig <u>Hollow Stem Auger</u>		<b>SAMPLER</b> Type <u>SPLIT spoon</u> Hammer <u>140</u> lb. Fell <u>30</u> in.	
		<b>DEVELOPMENT</b>	

PTD	SAMPLE				Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No.	Rec.	Depth (ft.)	Blows / 6"			
4.5	1	1.5'	0-2'	3,5,6,7	SMU SW		0-1.0' Dark brown fine organic SAND trace silt and clay. Moist. 1.0-1.5' Tan medium SAND, well-sorted.
4.0	2	1.9'	5-7'	7,13,17,25	SW	5	Brown to gray fine to medium SAND, trace(organic horizon at 0.6', separates browner, slightly coarser sands from grayer, slightly finer sands below).
3.6	3	1.4'	10-12'	1,4,8,50	SW SP	10	Brown to gray medium SAND, little fine to coarse Gravel (well-rounded and restricted to gray sand zone).

**REMARKS:** (1) in feet relative to a common datum  
(2) from top of PVC casing

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**GEOLOGIC LOG**

<b>WELL DATA</b> Study No. <u>16101Y</u> Date <u>5/23/90</u> Project <u>Industri-Plex PDI</u> Client <u>Golder Associates</u> Page <u>1</u> of <u>1</u> Logged By <u>L. McTiernan</u> Well No. <u>RB-17</u> Loc. <u>Woburn, Mass</u> M.P. Elevation <u>73.64</u> Drilling Started <u>5/22/90</u> Ended <u>5/22/90</u> Driller <u>D.L. maher Company</u> Type Of Rig <u>Hollow Stem Auger</u>		Hole Diam. (in.) <u>8"</u> Final Depth (ft.) <u>10.5'</u> Casing Diam. (in.) _____ Casing Length (ft.) _____ Screen Setting (ft.) _____ Screen Slot & Type _____ Well Status _____		<b>G W READINGS(1)</b> Date   DTW MP(2)   Elev. W.T.               	
<b>SAMPLER</b> Type <u>split spoon</u> Hammer <u>140</u> lb. Fall <u>30</u> in.		<b>DEVELOPMENT</b>			

# PID	SAMPLE				Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	No.	Rec.	Depth (ft.)	Blows / 6"			
0.0	1	1.6'	0-2'	1,6,8,10	SMD 1		Light to dark brown (with red blotches) fine to medium SAND, little Silt, trace fine to coarse Gravel, trace organic materials.
0.0	2	1.7'	5-7'	3,4,5,8	SW	5	Brown to Black fine to medium SAND (finer, black sands in layers at 0.6- 0.7' and 1.55-1.7'); Wet.
0.0	3	1.1'	10-10.5'	6.50/0"	SW	10	Black fine (+) to medium, micaceous SAND; fining downwards. Auger refusal at 10.5'.
						15	

**REMARKS:** (1) in feet relative to a common datum  
(2) from top of PVC casing