

To: Robert Hust, DEEP, Bureau of Water Protection and Land Use

I have reviewed the proposed stream flow classifications for the Town of East Lyme related to its public water supply. I see that the Four Mile River, Stream Segment 108,002,239 located in the Lower Thames & Southeastern Central River Basin, immediately north of Route 1 has not been categorized as being a potential public water supply. In the "Water Supply Availability Study, Plants Dam, East Lyme, Connecticut," dated January 2000 prepared by Lenard Engineering, Inc. for the East Lyme Water and Sewer Commission, this area was identified as a potential public water supply. A copy of the study is attached for the record. I would like the final classification for this stream segment to reflect this.

Please do not hesitate to contact me with any questions.

Thank you.

Bradford C. Kargl
Municipal Utility Engineer
East Lyme Water & Sewer Commission
P.O. Box 519
108 Pennsylvania Avenue
Niantic, CT 06357

(860) 739-6931, Ext 139

To: Robert Hust, DEEP, Bureau of Water Protection and Land Use

As a follow-up to my review comments submitted by email on October 31, 2013, I wanted to comment on the fact that the classification criteria regarding Concerns for Margin of Safety are stated as being "No" for all stream segments in our Level A aquifer protection areas. In fact, Margin of Safety is a main concern and a driving factor for the development and expansion of supplies in East Lyme.

In addition, Darrow Pond with Stream Segments 108,001,800 / 108,001, 801 and 108,001,803, has been considered a future water supply with considerable investment already made. The Town of East Lyme has obtained a significant track of land adjacent to Darrow Pond, which has an open space component, three existing bedrock wells that have been water quality and yield tested and operated on an emergency basis, and has a location for a future water storage tank site and treatment. The proposed stream classifications do not take into account that this is an area with a future water supply with investment.

Finally, in my email of 10/31 it was indicated that the stream segment 108,002,239 (Four Mile River) immediately north of Route 1 was not designated as a potential public water supply. A closer look indicates that the segments 108,002,430 and 108,002,268 in the immediate area would also be affected by the potential water supply designation and should be noted as such.

Please do not hesitate to contact me with any questions.

Thank you.

Bradford C. Kargl
Municipal Utility Engineer
East Lyme Water and Sewer Commission
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Niantic, CT 06357
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**WATER SUPPLY AVAILABILITY STUDY
PLANTS DAM PROPERTY
EAST LYME, CONNECTICUT**

Prepared for:

East Lyme Water & Sewer Commission

JANUARY, 2000

Prepared by:

LENARD ENGINEERING, INC.

CIVIL, ENVIRONMENTAL and HYDROGEOLOGICAL CONSULTANTS
1066 STORRS ROAD, P.O. BOX 580
STORRS, CT 06268-0580

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2. Property Map
3. Drainage Basin Map
4. Surficial Map – Stratified Drift
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- B. Water Quality Results

I INTRODUCTION

The Town of East Lyme Water & Sewer Commission (East Lyme) retained Lenard Engineering, Inc. (LEI) to conduct a new source of supply feasibility study for the Plants Dam Property. This parcel was obtained for East Lyme for the purpose of open space preservation and future water supply needs.

At that time, a new surface water reservoir was envisioned. Due to current Connecticut DEP and US EPA policies, which make the permitting of new surface water supplies next to impossible, the focus of our investigation focuses on future groundwater source of supply development.

II EXECUTIVE SUMMARY

1. LEI conducted a preliminary water supply evaluation of the Plants Dam property, which included a subsurface exploration program, review of available mapping, streamflow calculations, and contact with DEP officials.
2. The most favorable location for a future production well is in the southeastern portion of the property, with a future full-size well having a potential yield of 250-350 gpm (up to 500,000 gallons per day). Because of limited land holdings on the eastern shore of Plants Dam pond, easements and/or land acquisition would be required from the State of Connecticut for the necessary 200-foot sanitary radius. Additional test borings to the east, on State of Connecticut property, may even indicate more favorable well locations.
3. Because the Four Mile River has a relatively large watershed above Plants Dam, potential streamflow reduction due to a 500,000 gpd groundwater withdrawal appears to be minimal.
4. Impact on Plants Dam Pond water levels, fisheries in the Four Mile River watershed, and wetlands adjacent to the pond, appear to be the key environmental factors to be evaluated as part of future permits.
5. Basic water quality parameters from Test Boring/Observation Well No. 1 indicated good water quality, low in iron, manganese, and hardness. pH adjustment and fluoridation, appears to be the only treatment required for a future production well.

6. Because of favorable results of this preliminary study, we recommend the town proceed as follows:

a. Begin preliminary discussions with the State of Connecticut Army National Guard to determine if property easements or acquisitions are possible. Estimated Cost: -0-

b. Arrange a meeting with CT DEP-Inland Water Resources staff to review key environmental permitting issues.

Estimated Cost: -0-

c. If the results of both meetings are favorable, install additional observation wells in the vicinity of test borings/Observation Well No. 1, and on State of Connecticut property, to determine the optimum location for a production well.

Estimated Cost: \$20,000

d. Construct a production well, install piezometers, stream gauges, and far field observations wells in the aquifer. Conduct a diversion permit pumping test, complete groundwater modeling, and acquire easements and/or property, and submit diversion permit application.

Estimated Cost: \$200,000

e. If diversion permits are approved, construct pump station, and connecting water mains to the existing mains on Boston Post Road.

Estimated Cost: \$250,000

Total Project Cost \$470,000

Say \$500,000

III SITE CHARACTERISTICS

A. SITE LOCATION

Figure 1 shows the location of the project site, on the north side of Boston Post Road (U.S. Route 1), near the East Lyme/Old Lyme town line. The parcel consists of approximately 127 acres, with its main feature being the Four Mile River and a five foot high concrete dam which impounds an approximate 10-acre pond on the parcel.

Elevations on the parcel range from 300 feet, located along the western portion of the property, to 76 feet, located at the current concrete dam location.

B. PROPERTY LINES

Figure 2 shows the approximate property lines for the Plants Dam parcel, taken from the Town of East Lyme assessor's maps.

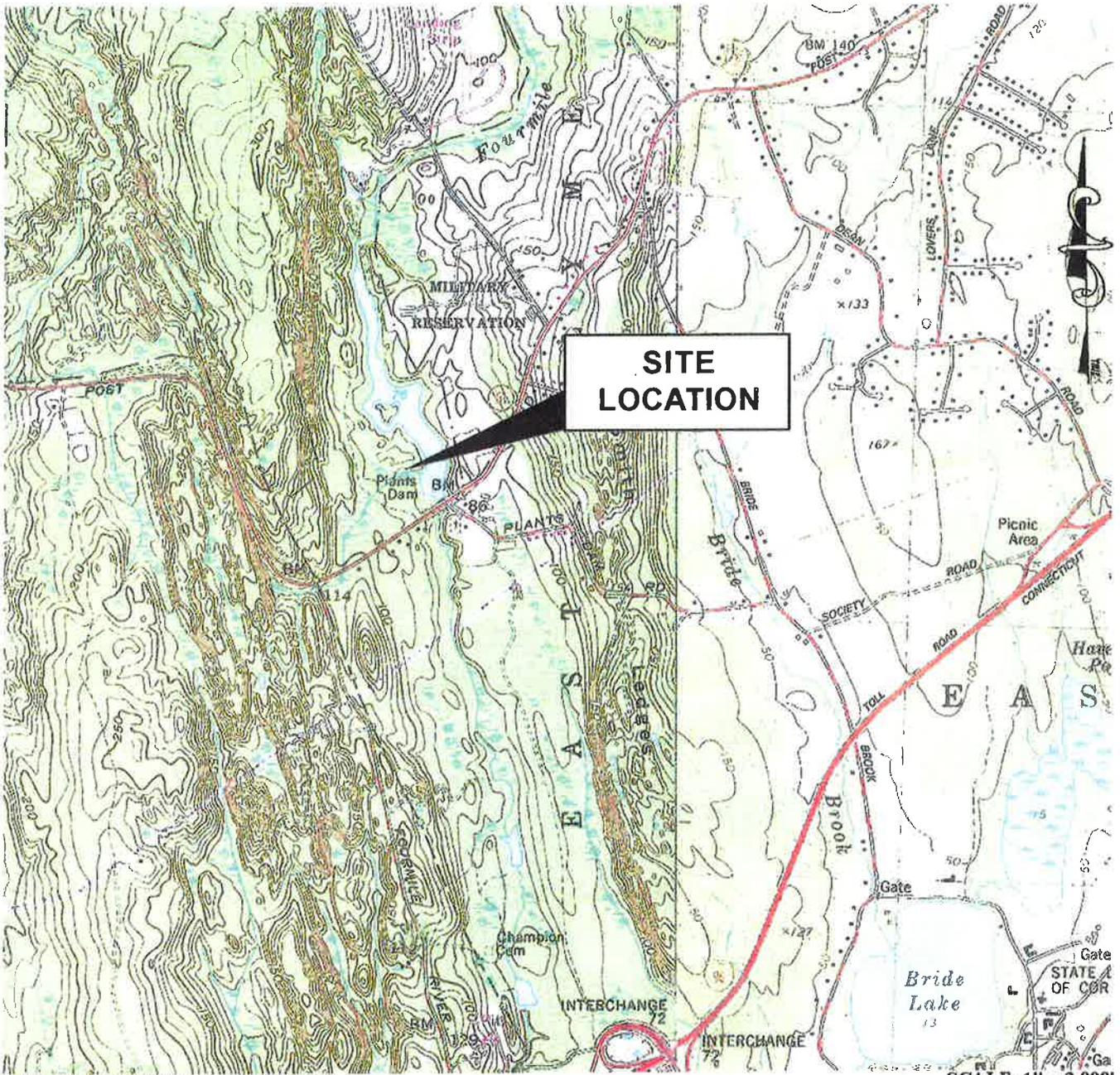
C. DRAINAGE BASINS

Figure 3 shows the drainage basin for the Four Mile River, drawn at a point where the existing concrete dam impounds the Four Mile River on the property. The Four Mile River (DEP Basin #2207) has a watershed area calculated at Plants Dam of approximately 4.94 square miles.

D. GEOLOGY

Figure 4 shows the surficial geology in the vicinity of the Plants Dam parcel. Below the parcel (shown in green) are mapped areas of saturated, stratified drift, which consists of coarse grained sands and gravel, which have the potential to produce higher volumes of water. These deposits are mapped primarily in a north-south axis, and along the eastern edge of the existing Plants Dam pond. Glacial till is mapped surrounding the stratified drift, and includes most of the upland area within the parcel.

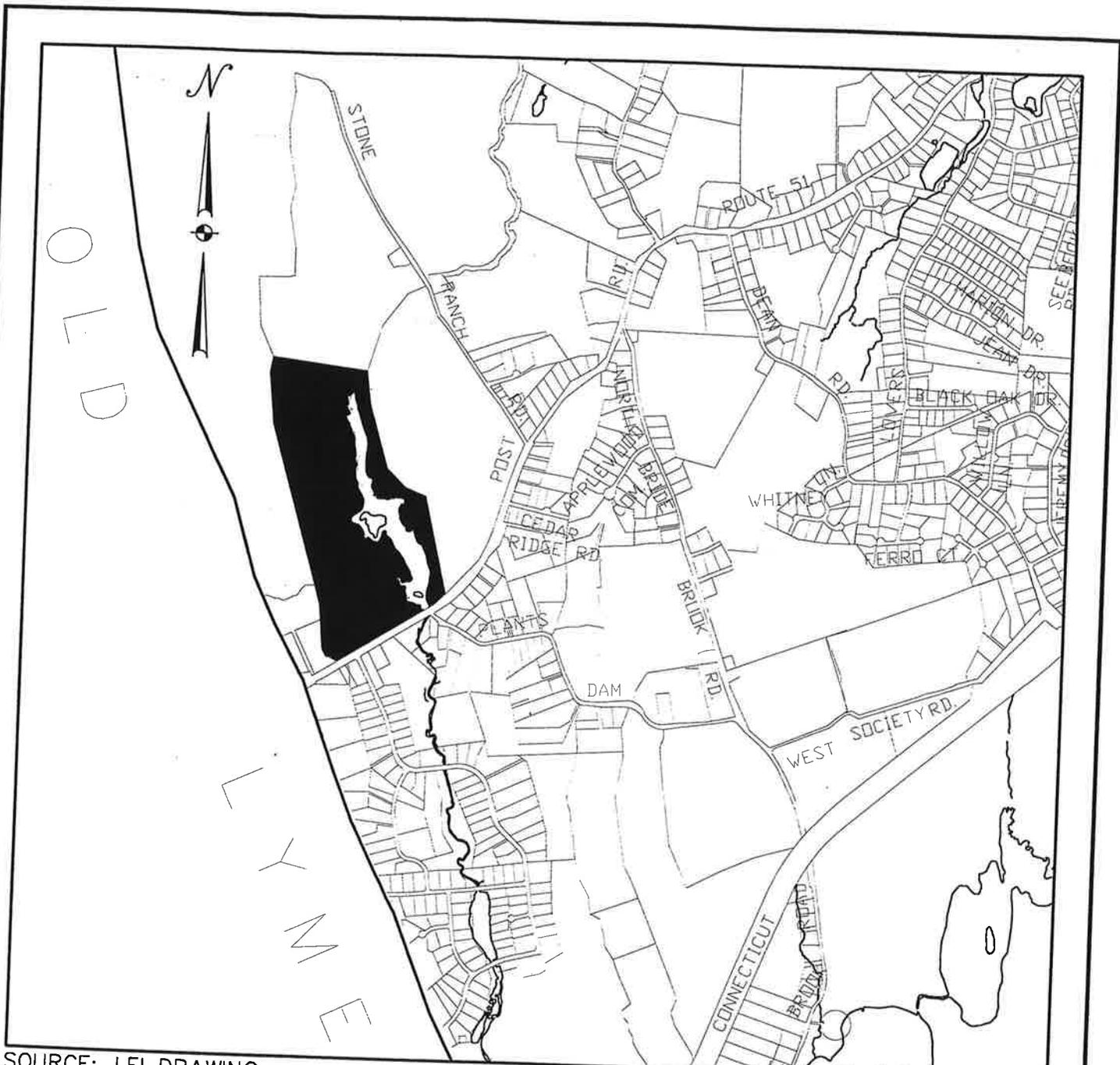
Looking upstream throughout the Four Mile River watershed, the areas of stratified drift comprises approximately 22% of the basin. This is an important factor, as the higher percent stratified drift, the more groundwater and surface water availability generally will exist.



SOURCE: USGS QUADRANGLE MAP
 OLD LYME, CT — PHOTO REVISED 1970

SCALE: 1" = 2,000'

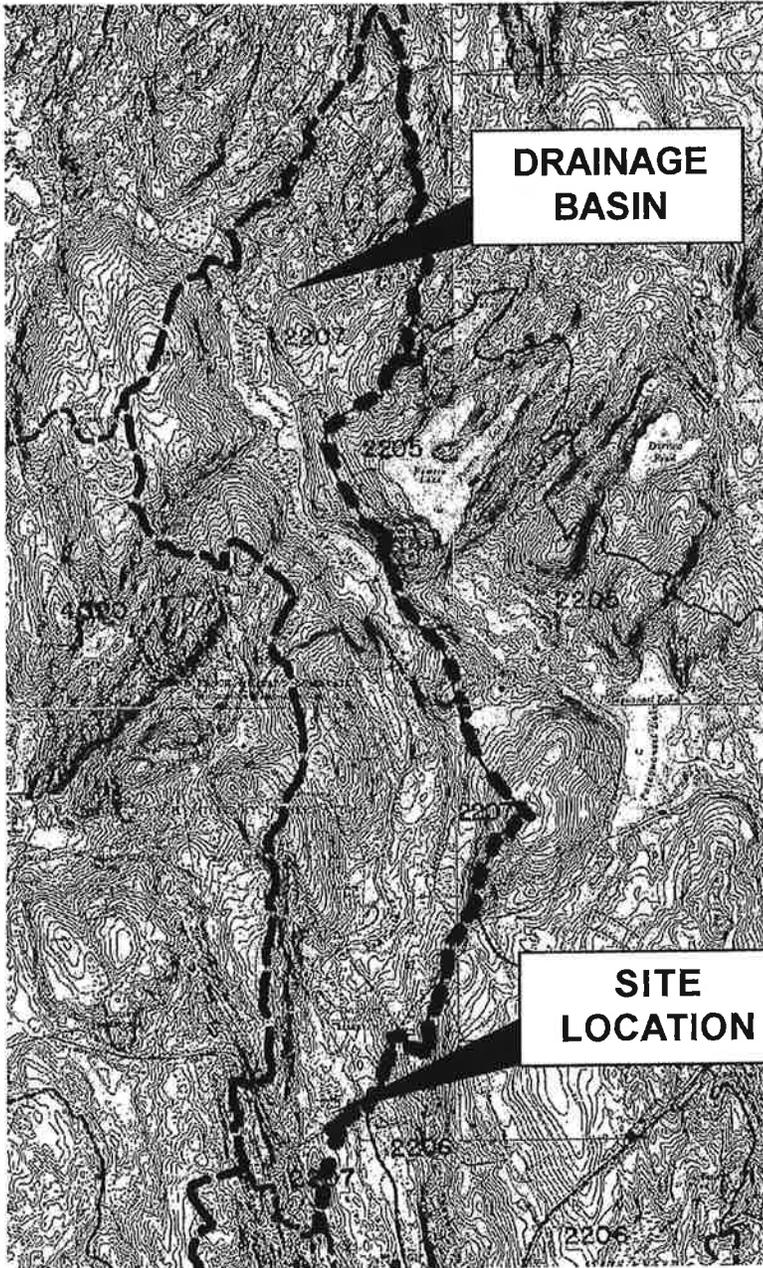
LOCATION MAP
PLANTS DAM PROPERTY
BOSTON POST ROAD
EAST LYME, CONNECTICUT
FIGURE NO. 1



SOURCE: LEI DRAWING
EAST LYME, CT

SCALE: 1"=2000'

PLANTS DAM PARCEL
PLANTS DAM PROPERTY
 BOSTON POST ROAD
 EAST LYME, CONNECTICUT
 FIGURE NO. 2

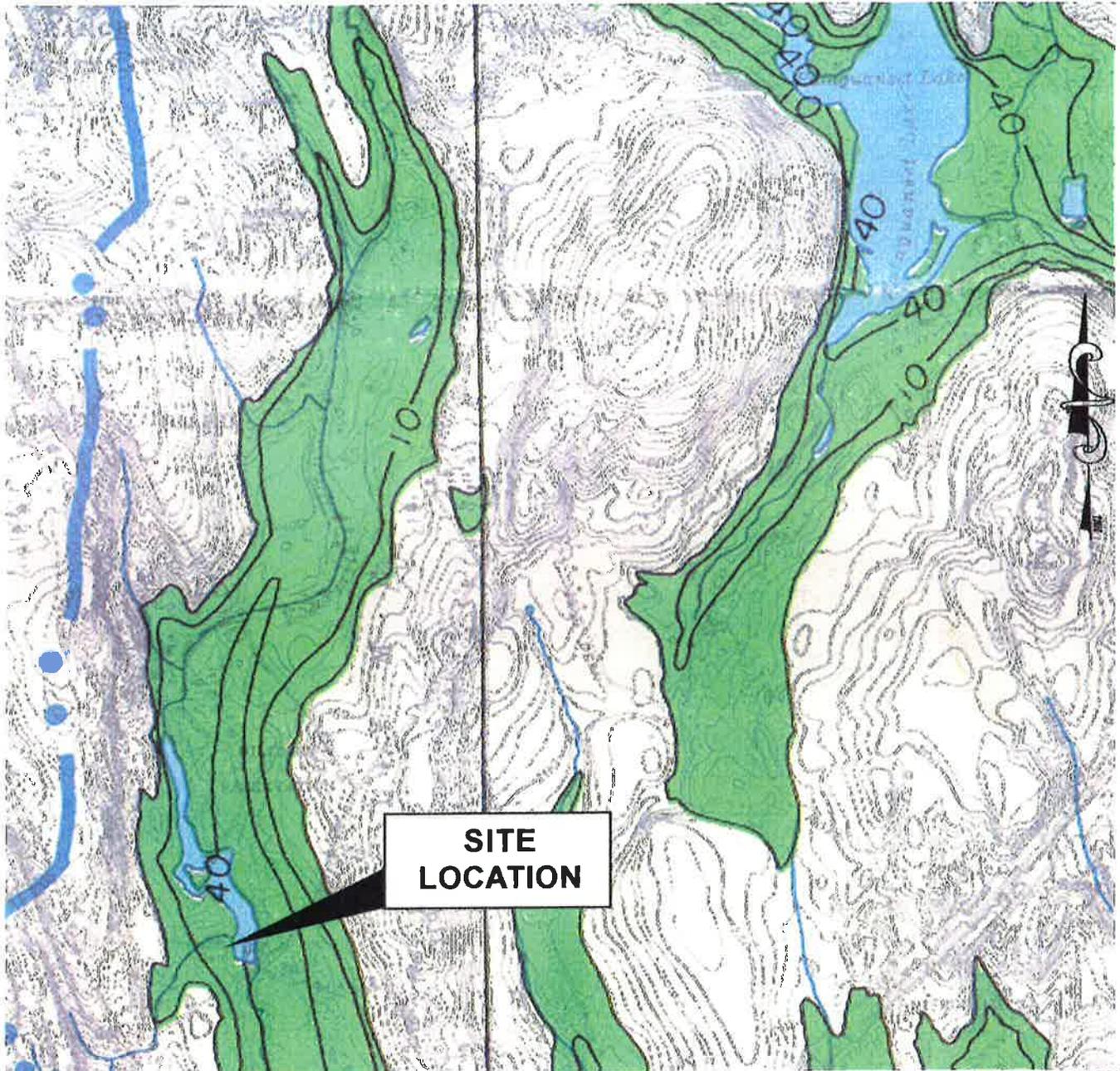


DRAINAGE BASIN AREA: 4.94 sq. mi.
STRATIFIED DRIFT AREA: 1.103 sq. mi.
% STRATIFIED DRIFT: 22.32%

SOURCE: DEP BULLETIN NO. 4
PUBLIC WATER SUPPLY SOURCES &
DRAINAGE BASINS - JUNE 1982

SCALE: 1" = 5,000'

DRAINAGE BASIN
PLANTS DAM PROPERTY
BOSTON POST ROAD
EAST LYME, CONNECTICUT
FIGURE NO. 3



SOURCE: USGS GEOHYDROLOGIC MAP
LOWER THAMES & SOUTHEASTERN COASTAL RIVER BASINS

SCALE: 1" = 2,000'

SURFICIAL MAP-STRATIFIED DRIFT

PLANTS DAM PROPERTY

BOSTON POST ROAD

EAST LYME, CONNECTICUT

FIGURE NO. 4

IV SUBSURFACE EXPLORATION PROGRAM

LEI supervised surface exploration along both the eastern and western side of Plants Dam Pond to determine favorable location(s) for potential water supply wells. Figure 5 shows the location of test boring and observation wells installed on the site, with copies of drilling logs provided in Appendix A. These are described in detail below.

Test Borings/Observation Wells No. 1 & 2 – These wells were drilled on the eastern side of Plants Dam Pond approximately 100 feet east of the pond, and 150 feet north of Boston Post Road. This well (OW-1) showed the most potential on the site, indicating sand and gravel deposits to a depth of 49 feet. A second 2" diameter well (OW2) was installed adjacent to this well, with a short duration pump test conducted. The results of this test indicate that a full-size production well with a 250-350 gpm yield could be installed at this location.

Test Borings 3 & 4 – These borings, also located on the eastern side of Plants Dam Pond, indicated finer grain deposits and much denser material than test boring #1. These locations would not make significant quantities of water, and no wells were set.

Test Borings/Observation Well No. 5 – This well was installed on the western side of Plants Dam Pond, approximately 1000 feet north of Boston Post Road. This well was drilled to a depth of 35 feet, and had intermittent layers of sand and gravel, divided by thin layers of silt deposits, also noted. The 25 feet of saturated thickness at this location makes it a candidate for a future large diameter, shallow production well, with a potential capacity of 50-100 gpm.

Test Boring No. 6 – This boring was conducted approximately 200 feet south of Observation Well No. 4, also on the western shore of the pond. This boring indicated 25 feet of sands and gravel prior to refusal. Although the material is favorable for well construction, the 15 feet of saturated thickness limits well yield.

Test Borings 7 & 8 – These were conducted on the west side of the pond, approximately 200 feet north of Boston Post Road. These borings hit refusal at a depth of approximately 10 feet, indicating poor water supply potential.



SOURCE: USGS QUADRANGLE MAP
OLD LYME, CT — PHOTO REVISED 1970

SCALE: 1" = 500'

SUBSURFACE EXPLORATION PLAN

PLANTS DAM PROPERTY

BOSTON POST ROAD

EAST LYME, CONNECTICUT

FIGURE NO. 5

V PERMITTING CONCERNS

Similar to permitting efforts for existing wells 3A and 5, and proposed well no. 6, any new well(s) at the Plants Dam property would be subject to DEP Diversion Permitting. The following items were investigated on a preliminary basis to determine the relative difficulty in permitting this site.

A. WETLANDS IMPACTS

As previously shown on Figure 5, the Four Mile River, Plants Dam, and some small on-site streams are all banded by inlands-wetlands, which need to be evaluated as part of the permit process. The location of future production wells, and the rate of withdrawal from these wells, will determine if wetland impacts are significant on the site. On a preliminary basis, wetland impacts due to pumping future production wells appear to be low to moderate, especially if future wells are located east of the pond.

B. STREAMFLOW REDUCTION

As previously shown on Figure 3, the Four Mile River has a watershed area of 4.94 miles, calculated at Plants Dam. Based on USGS methodology, a watershed of this size would typically have an average flow condition of 8.9 cfs, and a 7 year-10 day historic low flow value of 0.60 cfs. Using the most conservative DEP approach, which assumes that 100% of the water for the wells comes from adjacent streams, pumping a well(s) at approximately 350 gpm (500,000 gallons per day) would result in the following reductions in streamflow.

<u>Anticipated Well Production</u>		<u>Predicted Streamflow</u>		<u>Pumping as Percent of Streamflow</u>	
<u>GPM</u>	<u>CFS</u>	<u>AVG (cfs)</u>	<u>7Q10 (cfs)</u>	<u>AVG Streamflow</u>	<u>7Q10 Streamflow</u>
350	0.78	8.9	0.60	8.7%	130%

C. FISHERIES IMPACTS

LEI contacted Peter Arristed, Fisheries Biologist for the Connecticut DEP. According to Mr. Arristed, a similar study to those conducted on Bride Brook and Pattagansett River would be required for this potential diversion.

D. WATER QUALITY

Water quality samples were taken from Observation Well No. 1, and analyzed for basic water chemistry parameters. The laboratory results are provided in Appendix B and indicate good quality water, low in minerals (iron, manganese, and hardness). Based on the parameters sampled, only basic chemical treatment (pH adjustment, fluoridation) would be required to pump this water into distribution. A broader range of compounds should be sampled for in the future, prior to installing a full size production well, to verify that good water quality continues to exist.

APPENDIX A

BORING LOGS

Soil Sampling Log

DATE STARTED **1/4/00**
 DATE FINISHED **1/4/00**
 WEIGHT OF HAMMER **140 Lbs.**
 HAMMER FALL **30"**
 ROUND WATER OBSERVATION
 DATE **1/4/00** -
 TIME **0 Hours** -
 DEPTH **9'-0"** -
 SAMPLER Dia. (Type/O.D./I.D.) **SS 2" / 1-3/8"**
 TYPE OF RIG **D-50-Track**

Connecticut Test Borings, LLC

P.O. Box 69 - Seymour, CT 06483

GEOTECHNICAL & ENVIRONMENTAL DRILLING

(203) 888-3857 (203) 888-5777
 FAX: (203) 888-0655



SHEET **1 OF 1**
 PROJECT No. **C00100**
 LOCATION **Boston Post Road
 East Lyme, CT**
 OFFSET
 GROUND ELEVATION
 HOLE No. **OW-5**
 CASING **HSA 2-1/4"**
 SAMPLER **SS 1-3/8"**
 CORE BARREL

ESPECIALLY COMPILED FOR
Lenard Engineering, Inc.
1066 Storrs Road PO Box 580
Storrs, CT 06268

DEPTH (FEET)	SAMP TYPE	BLOWS PER 6 INCHES ON SAMPLER				DENSITY OR CONSIST MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE			BORE / WELL (NOT TO SCALE)
		0-6	6-12	12-18	18-24				NO.	PEN.	REC.	
							6"	BR. SILT, ROOTS, LEAVES				
							4'	BR. F-C SAND, SOME F-C GRAVEL, TR. SILT				
-5	SS	5	6	7	7	MEDIUM DRY		TAN F-VF SAND, L. SILT	1	24	18	
-10	SS	3	3	3	4	V. LOOSE WET		SAME	2	24	18	
-15	SS	3	5	6	6	MEDIUM WET	13'	TAN VF-SAND & SILT	3	24	18	
-20	SS	4	12	13	9	MEDIUM WET	21'6"	BR. F-C SAND, SOME F-C GRAVEL, TR. SILT	4	24	18	
-25	SS	5	7	6	11	MEDIUM WET	26'	BR. VF-F SAND, L. SILT	5	24	20	
-30	SS	89	45	39	20	V. DENSE WET	28'	BR. F-C SAND, SOME F-C GRAVEL, L. SILT OCC. COBBLES	6	24	20	
-35	SS	100/3				V. DENSE WET	33'	GREY SILT, SOME VF-C SAND, L. F-C GRAVEL (TILL)				
							34'6"	AUGERED FROM 34'6" TO 35'3"	7	3	3	
							35'3"	REFUSAL				
-40								SET 2" PVC WELL PIPE 35' BELOW GRADE				
-45								SCREEN -35' TO -20'				
								RISER -20' TO +2				
								BENTONITE -18' TO -16				
								BACKFILL -16' TO -3'				
								SAND MIX -3' TO -0				

Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

DRILLER: **S. Butrej**
 SUPERVISOR: **R. Hanson**
 GEOTECHNICAL ENGINEER:
 DRILLING INSPECTOR:

SAMPLE TYPE
 C = CORED
 W = WASHED
 SS = SPLIT SPOON
 UP = UNDISTURBED PISTON
 TP = TEST PIT
 UT = UNDISTURBED THINWALL

COHESIONLESS SOILS
 0-4 VERY LOOSE
 4-10 LOOSE
 10-30 MEDIUM
 30-50 DENSE
 50+ VERY DENSE
 COHESIVE SOILS
 0-2 VERY SOFT
 2-4 SOFT
 4-8 MEDIUM
 8-15 STIFF
 15-30 VERY STIFF
 30+ HARD

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

FILE: **C00100**

Soil Sampling Log

Connecticut Test Borings, LLC

P.O. Box 69 - Seymour, CT 06483

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FAX: (203) 888-0655



ESPECIALLY COMPILED FOR
Lenard Engineering, Inc.
1066 Storrs Road PO Box 580
Storrs, CT 06268

SHEET	1 OF 1
PROJECT No.	C00100
LOCATION	Boston Post Road East Lyme, CT
OFFSET	
GROUND ELEVATION	
HOLE No.	OW-6
CASING	HSA 4-1/4"
SAMPLER	SS 1-3/8"
CORE BARREL	

DATE STARTED	1/4/00
DATE FINISHED	1/4/00
WEIGHT OF HAMMER	140 Lbs.
HAMMER FALL	30"
GROUND WATER OBSERVATION	
DATE	1/4/00
TIME	0 Hours
DEPTH	9'-0"
SAMPLER Dia. (Type/O.D./I.D.)	SS 2" / 1-3/8"
TYPE OF RIG	D-50-Track

C A L S O I W S I N G	D E P T H	S A M P L E D E P T H (FEET)	S A M P L E T Y P E	B L O W S P E R 6 I N C H E S O N S A M P L E R				D E N S I T Y O R C O N S I S T M O I S T U R E	P R O F I L E C H A N G E D E P T H E L E V.	F I E L D I D E N T I F I C A T I O N O F S O I L S R E M A R K S	S A M P L E			B O R E / W E L L (NOT TO SCALE)
				0-6	6-12	12-18	18-24				N O.	P E N	R E C.	
	-5	5'-7'	SS	5	11	14	10	MEDIUM DRY	8'	TAN F-M SAND, TR. SILT	1	24	12	
	-10	10'-12'	SS	4	4	5	5	LOOSE WET	14'	BR. F-C SAND, L. F-M GRAVEL, TR. SILT	2	24	18	
	-15	15'-17'	SS	7	16	14	11	DENSE WET	24'	SAME	3	24	22	
	-20	20'-22'	SS	16	14	32	18	V. DENSE WET	24' 24'6"	AUGERED FROM 24' TO 24'6" REFUSAL	4	24	16	
	-25													
	-30													
	-35													
	-40													
	-45													
	-50													

Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

PREPARED BY: **S. Butrej**
 PERFORMED BY: **R. Hanson**
 ENGINEER:
 LOGGING INSPECTOR:

SAMPLE TYPE C = CORED W = WASHED SS = SPLIT SPOON UP = UNDISTURBED PISTON TP = TEST PIT UT = UNDISTURBED THINWALL	COHESIONLESS SOILS 0-4 VERY LOOSE 4-10 LOOSE 10-30 MEDIUM 30-50 DENSE 50+ VERY DENSE	COHESIVE SOILS 0-2 VERY SOFT 2-4 SOFT 4-8 MEDIUM 8-15 STIFF 15-30 VERY STIFF 30+ HARD
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NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

FILE: **C00100**

Soil Sampling Log

Connecticut Test Borings, LLC

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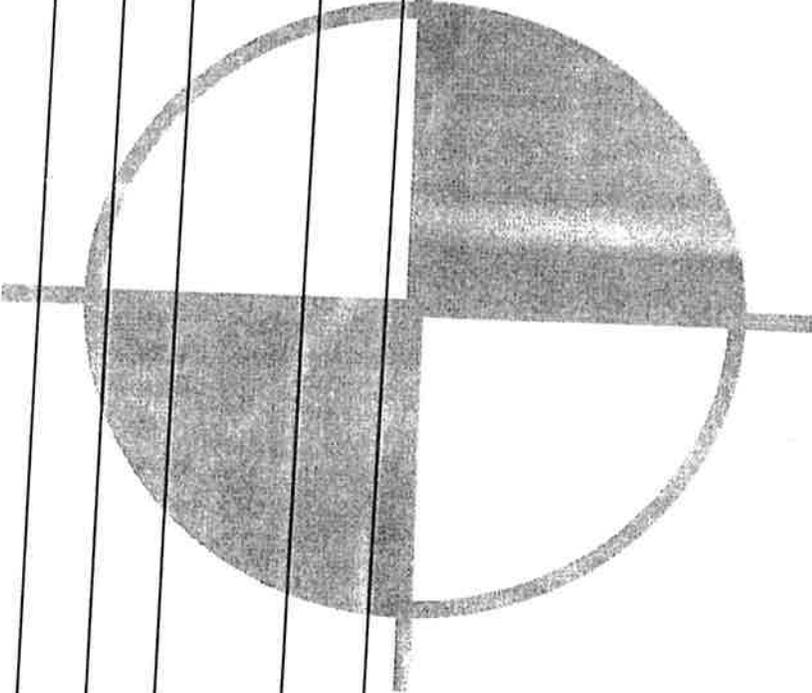
Lenard Engineering, Inc.
1066 Storrs Road PO Box 580
Storrs, CT 06268



SHEET	1 OF 1
PROJECT No.	C00100
LOCATION	Boston Post Road East Lyme, CT
OFFSET	
GROUND ELEVATION	
HOLE No.	OW-7
CASING	HSA
SAMPLER	SS 4-1/4"
CORE BARREL	SS 1-3/8"

DATE STARTED *	1/4/00
DATE FINISHED	1/4/00
WEIGHT OF HAMMER	140 Lbs.
HAMMER FALL	30"
GROUND WATER OBSERVATION	
DATE	1/4/00
TIME	0 Hours
DEPTH	6'-0"
SAMPLER Dia. (Type/O.D./I.D.)	SS 2" / 1-3/8"
TYPE OF RIG	D-50-Track

C A L S I N G	D E P T H	S A M P L E D E P T H (FEET)	S A M P L E T Y P E	B L O W S P E R 6 I N C H E S O N S A M P L E R				D E N S I T Y O R C O N S I S T M O I S T U R E	P R O F I L E C H A N G E D E P T H E L E V.	F I E L D I D E N T I F I C A T I O N O F S O I L R E M A R K S	S A M P L E			B O R E / W E L L (NOT TO SCALE)	
				0-6	6-12	12-18	18-24				N O.	P E N	R E C.		
		5'-7'	SS	31	49	45	20	V.DENSE WET	8" 4'	BLK. SILT, L. VF-SAND, ROOTS. LEAVES LT. BR. SILTY SAND					
		10'-10'11"	SS	39	100/5			V.DENSE WET	4' 10'5" 12'	BR. VF-C SAND, SOME SILT, SOME F-C GRAVEL OCC. COBBLES AUGERED FROM 10'5"-12' REFUSAL	1	24	18		
											2	11	11		



Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

S. Butrej
R. Hanson

ENGINEER:
INSPECTOR:
NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

SAMPLE TYPE
C = CORED
W = WASHED
SS = SPLIT SPOON
UP = UNDISTURBED PISTON
TP = TEST PIT
UT = UNDISTURBED THINWALL

COHESIONLESS SOILS
0-4 VERY LOOSE
4-10 LOOSE
10-30 MEDIUM
30-50 DENSE
50+ VERY DENSE

COHESIVE SOILS
0-2 VERY SOFT
2-4 SOFT
4-8 MEDIUM
8-15 STIFF
15-30 VERY STIFF
30+ HARD

FILE: **C00100**

Soil Sampling Log

Connecticut Test Borings, LLC

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(203) 888-3857 (203) 888-5777
FAX: (203) 888-0655



SHEET **1 OF 1**

PROJECT No. **C00100**

LOCATION **Boston Post Road
East Lyme, CT**

OFFSET

GROUND ELEVATION

HOLE No. **OW-8**

CASING **HSA 4-1/4"**

SAMPLER **SS 1-3/8"**

CORE BARREL

ESPECIALLY COMPILED FOR
Lenard Engineering, Inc.
1066 Storrs Road PO Box 580
Storrs, CT 06268

DATE STARTED **1/4/00**
DATE FINISHED **1/4/00**
WEIGHT OF HAMMER **140 Lbs.**
HAMMER FALL **30"**
GROUND WATER OBSERVATION
DATE **1/4/00** -
TIME **0 Hours** -
DEPTH **4'-0"** -
SAMPLER Dia. (Type/O.D./I.D.) **SS 2" / 1-3/8"**
TYPE OF RIG **D-50-Track**

C B L S O I L W I T H S	D E P T H	SAMPLE DEPTH (FEET)	SAMP TYPE	BLOWS PER 6 INCHES ON SAMPLER				DENSITY OR CONSIST MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE			BORE / WELL (NOT TO SCALE)
				0-6	6-12	12-18	18-24				NO.	PEN	REC.	
									10"	BLK. SILT, L. VF-SAND, ROOTS, LEAVES				
										BR. SILT, L. VF-SAND				
	-5	5'-7"	SS	13	59	35	66	V.DENSE WET	4'	BR. VF-C SAND, SOME SILT, L. F-C GRAVEL	1	24	16	
	-10	10'-10'11"	SS	48	100/5			V.DENSE WET	10'6"	AUGERED FROM 10'6"-11'	2	11	6	
									11'	REFUSAL				
	-15													
	-20													
	-25													
	-30													
	-35													
	-40													
	-45													
	-50													

Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

DRILLER: **S. Butrej**
HELPER: **R. Hanson**
S. ENGINEER:
S. INSPECTOR:

SAMPLE TYPE
C = CORED
W = WASHED
SS = SPLIT SPOON
UP = UNDISTURBED PISTON
TP = TEST PIT
UT = UNDISTURBED THINWALL

COHESIONLESS SOILS
0-4 VERY LOOSE
4-10 LOOSE
10-30 MEDIUM
30-50 DENSE
50+ VERY DENSE

COHESIVE SOILS
0-2 VERY SOFT
2-4 SOFT
4-8 MEDIUM
8-15 STIFF
15-30 VERY STIFF
30+ HARD

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

FILE: **C00100**

APPENDIX B

WATER QUALITY RESULTS

envirolab incorporated

249 boston post road
 p.o. box 577
 east lyme, ct 06333
 (860) 739-4080
 (860) 739-4662 (fax)

Log Number: C-13317
 Date Received: 11/2/99
 Date Reported: 11/18/99

Sample Identification:
 Name: Baborow Property/S.E. Corner
 Street:
 Town: East Lyme State: CT
 Zip: Phone:

Billing Address:
 Name: ELWD
 Street:
 Town: State:
 Zip: Phone:

Tests Requested: GWQ
 Type of Water Supply:

Collected By: ELWD
 Time: Date: 11/2/99

Parameter	Results	Suggested Health Code Limits*
Total coliforms	Not Requested	0 Colony/100ml
<u>E. coli</u>	Not Requested	0 Colony/100ml
Color	6	15 Co-Pt Units
Odor	0	2 Threshold Units
Hardness	32	<75 mg/L=Soft Water
Sulfate	7	---
pH	6.3	6.4-10.0
Turbidity	0.1	5.0 NTU
Chloride	28	250 mg/L
Nitrate-Nitrogen	0.95	10.0 mg/L
Nitrite-Nitrogen	0.000	1.000 mg/L
Ammonia-Nitrogen	0.00	---
Iron	0.0	---
Manganese	0.00	---
Sodium	18	28 mg/L

- 1) This water has been determined potable for the parameters tested.
- 2) This water has been determined not potable.
- 3) Certain levels do not meet the suggested code limits. We suggest contacting your local health director to determine the potability of your water supply.

Comments:

Authorization:

William S. Georgian
 William S. Georgian,
 Director

Health code limits are based on current published limits in the CT Public Health Code, Federal and World Health Organization guidelines.