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CHARACTERIZATION INVESTIGATION STUDY
GEOTECHNICAL EVALUATION OF WASTE PIT MATERIAL
PROPERTIES AND BORING LOGS

~~GEOTECHNICAL EVALUATION OF MATERIAL PROPERTIES OF WASTE PIT MATERIALS~~ AT THE FEED MATERIALS PRODUCTION CENTER FERNALD, OHIO MARCH, 1988

03/01/88

ROY F WESTON, INC/WMCO
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STUDY

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Characterization Investigation Study

Geotechnical Evaluation of Waste Pit Material Properties
and
Boring Logs

Roy F. Weston, Inc.

March 1988

Prepared for the

FEED MATERIALS PRODUCTION CENTER

WESTINGHOUSE MATERIALS COMPANY OF OHIO

P.O. BOX 398704
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UNDER CONTRACT DE-AC05-86OR21600

U.S. DEPARTMENT of ENERGY

OAK RIDGE OPERATIONS OFFICE

GEOTECHNICAL EVALUATION OF MATERIAL PROPERTIES OF WASTE PIT MATERIALS AT THE FEED MATERIALS PRODUCTION CENTER FERNALD, OHIO

PREPARED FOR WESTINGHOUSE MATERIALS COMPANY
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1.0 INTRODUCTION

During the period from March, 1987 to April, 1987 samples were collected for a geotechnical evaluation of their material properties from the following areas:

- o Pits 1 through 6
- o Burn Pit
- o Two Lime Sludge Ponds
- o Sanitary Landfill

The sample numbers, the sample locations, the depth intervals of the samples, the consistency and the amount (weight) of each sample are shown on Table 1. These samples were composite samples taken over the depth interval listed on Table 1.

From the samples collected, samples were selected for laboratory testing which would be representative of the area they come from. Each geotechnical composite sample was visually classified and several samples were selected for Phase I laboratory testing. These tests included the following:

o Grain Size with Hydrometer	(ASTM D-422)
o Specific Gravity	(ASTM D-854)
o Atterberg Limits	(ASTM D-423, D-424)
o Moisture Content	(ASTM D-2216)

These tests are used to classify the material properties of each sample. The grain size test is used to determine the distribution of the particle sizes to see how much of the sample is sand, silt, or clay; the specific gravity results are used as part of the calculations for the hydrometer portion of the grain size test and can also be used in conjunction with minerology; the Atterberg limits are used to determine if the soil exhibits plastic behavior and if it does, if it is a silt or clay of low or high plasticity, and the moisture content is used as a general indicator, to compare against such tests as the optimum moisture content to determine if the soil will need wetting or drying during placement (if the material is to be moved). A summary of the results of these tests are summarized on Table 2, and the plots of the grain sizes along with the backup calculation data are shown in Appendix A.

Once the Phase I testing was complete, a Phase II testing program was initiated to further characterize the material properties of the wastes in each disposal area. This Phase II testing program consisted of re-runs of some tests to prove repeatability as well as Harvard Miniature compaction tests and 1-D Consolidation Tests. The

TABLE 1 SAMPLE/ IDENTIFICATION

Sample No.	Depth Interval	Sample Locations	Sample Amount (lbs)	Consistency
FMP-PS-01-048	0-12'	Pit 1	5	Clayey
FMP-PS-03-052	0-20'	Pit 3	10	Sludge
FMP-PS-04-039		Pit 4	12	Clayey
FMP-PS-04-062	0-20'	Pit 4	5	Clayey
FMP-PS-04-002	0-20'	Pit 4	10	Clayey
FMP-PS-04-037		Pit 4	10	Clayey
FMP-PS-49-019	0-12'	Landfill	5	Clayey
FMP-PS-49-047		Landfill	5	Clayey
FMP-PS-49-003	0-18'	Landfill	5	Clayey
FMP-PS-49-056		Landfill	5	Clayey
FMP-PS-49-033		Landfill	5	Clayey
FMP-PS-49-072		Landfill	5	Clayey
FMP-PS-48-013	2-11.2'	Lime Sludge	10	Sludge
FMP-PS-48-028		Lime Sludge	12	Sludge
FMP-PS-48-042	0-12'	Lime Sludge	10	Sludge
FMP-PS-07-004		Burn Pit	5	Sludge
FMP-PS-07-002	0-10'	Burn Pit	5	Sludge
FMP-PS-07-052	0-16'	Burn Pit	6	Sludge
FMP-PS-07-050		Burn Pit	4	Sludge
FMP-PS-07-034	0-16'	Burn Pit	6	Sludge
FMP-PS-47-056		Lime Sludge		Sludge
FMP-PS-47-012	0-5.5'	Lime Sludge	1	Sludge
FMP-PS-06-022	0-15'	Pit 6	10	Sludge
FMP-PS-02-039		Pit 2	4	Clayey
FMP-PS-03-090	0-20'	Pit 3	5	Sludge
FMP-PS-06-010	0-10'	Pit 6	8	Sludge
FMP-PS-05-025	10-29'	Pit 5	20	Clayey

TABLE 2

GEOTECHNICAL LABORATORY MATERIAL PROPERTY TESTING RESULTS

SAMPLE NO.	DEPTH INTERVAL	SAMPLE LOCATION	USCS CLASSIF.	SPECIFIC GRAVITY	LIQUID LIMIT	PLASTICITY INDEX	NATURAL MOISTURE CONTENT(%)	PERCENT -200 SIEVE (SILT&CLAY)	PERCENT -2 MICRON (CLAY)	MAXIMUM DRY DENSITY(pcf)	OPTIMUM MOISTURE CONTENT(%)	COLOR	CONSISTANCY	SAMPLE AMOUNT(lbs.)
1-48	0.0-12.'	PIT 1	GC	2.62	34	11	17.2	43	14	109.4	17.3	BROWN	CLAYEY	5
2-39		PIT 2	MH	2.59	53	21	31.9	61	22	86.3	17.5		CLAYEY	4
3-52	0.0-20.'	PIT 3	MH	2.54	52	20	55.9	67	10			BROWN	SLUDGE	10
REDUE							57.0	66	13					
3-90	0.0-20.'	PIT 3	ML		38	5	43.3	68	11	88.3	26.4	GRAY	SLUDGE	5
REDUE				2.65			41.6	66	15					
4-02	0.0-20.'	PIT 4	ML	2.75	NP	NP	27.0	94	6			GRAY	CLAYEY	10
4-37		PIT 4											CLAYEY	10
4-39		PIT 4											CLAYEY	12
4-62	0.0-20.'	PIT 4	ML	3.33	NP	NP	28.6	55	6	120.6	18.2	GRAY	CLAYEY	5
REDUE				3.63										
5-25	10.-29.'	PIT 5	MH	2.43	81	29	189.5	70	2	62.5	50.4	BROWN	CLAYEY	20
6-10	0.0-10.'	PIT 6	ML	2.87	NP	NP	60.4	79	7			GRAY	SLUDGE	8
6-22	0.0-15.'	PIT 6	ML		NP	NP	50.5	68	8	101.2	23.0	GRAY	SLUDGE	10
7-02	0.0-10.'	BURN PIT	SM	2.46	NP	NP	30.1	36	4			GRAY/BROWN	SLUDGE	5
7-04		BURN PIT											SLUDGE	5
7-34	0.0-16.'	BURN PIT	ML		36	2	30.2	57	15			BROWN/BLACK	SLUDGE	6
REDUE					33	3								
7-50		BURN PIT											SLUDGE	4
7-52	0.0-16.'	BURN PIT	SM	2.35	NP	NP	29.2	40	6	81.2	9.5	BLACK	SLUDGE	6
47-06		LIME SLUDGE											SLUDGE	-
47-12	0.0-5.5'	LIME SLUDGE	ML	2.33	NP	NP	134.0	98	7			GRAY/WHITE	SLUDGE	1
48-13	2.-11.2'	LIME SLUDGE	ML		NP	NP	89.6	99	6			WHITE	SLUDGE	10
48-28		LIME SLUDGE								72.8	40.3		SLUDGE	12
48-42	0.0-12.'	LIME SLUDGE	ML	2.49	NP	NP	88.8	94	4			WHITE	SLUDGE	10
49-03	0.0-18.'	LANDFILL	CL	2.57	33	14	13.4	60	22	109.7	18.0	BROWN/GRAY	CLAYEY	5
49-19	0.0-12.'	LANDFILL	CL		40	20	15.1	52	19	100.1	17.7	BROWN/GRAY	CLAYEY	5
49-33		LANDFILL											CLAYEY	5
49-47		LANDFILL								115.8	13.5		CLAYEY	5
49-56		LANDFILL											CLAYEY	5
49-72		LANDFILL		2.58									CLAYEY	5
AVERAGES				2.68	44	14	54.4	67	10	95.3	22.9			

*NOTES/DEFINITIONS OF TERMS

NP = NON PLASTIC-- THE SOIL EXHIBITS NO CHARACTERISTICS OF PLASTICITY

-200 SIEVE = THE PERCENT OF THE TOTAL SAMPLE BY WEIGHT PASSING A 200 MESH(.074mm) SIEVE THIS SIZE DESIGNATION IS THE BREAK BETWEEN SAND AND (SILT & CLAY)

-2MICRON = THE PECENT OF THE TOTAL SAMPLE BY WEIGHT PASSING A SIEVE WITH A HOLE SIZE OF .0002 mm THIS SIZE IS COMMONLY REFERED TO AS THE BREAK BETWEEN SILT AND CLAY

Harvard Miniature compaction test is a small Standard proctor test to determine the moisture density relationship of a soil. The test requires less sample than the Standard proctor (which is why this test was chosen) and uses a kneeding compaction as opposed to a tamping compaction. Correlations have been developed between the two tests, and for this testing program the correlation was checked, as shown on Figure 1 using a soil similar to that from the disposal areas. The correlation shown on Figure 1 indicated that using 3 lifts/25 rods was the closest to the Standard proctor and was used for all the tests performed. The moisture-density relationship was determined to ascertain the moisture content at which the soil is most easily compacted, should the material need to be removed from their present location and compacted into a new disposal area.

The 1-D consolidation test (ASTM D-2435) is used to determine the rate and the amount of consolidation (settlement) that will take place due to loading. Factors which must be considered when calculating the rate of settlement include the layer thickness, the density of the material and if the material will have single or double drainage (single drainage takes 4 times longer). It does not matter if the waste materials are relocated to a new disposal site or stabilized in place, the rate and the amount of settlement due to placement of a cover system will be an important consideration in the remedial action design.

2.0 TEST RESULTS

The following sections describe the results of the material testing for each disposal area sampled and what the results mean if the pits are reclaimed or relocated to a new disposal pit. Tables 2 and 3 summarize the results of all tests while Appendix A shows the results of the Phase I testing. Appendix B shows the results of the Harvard Miniature compaction tests and Appendix C shows the results of the Consolidation tests.

2.1 PIT 1 RESULTS

One sample was tested from Pit 1. This sample was a composite from 0 to 12 ft and classified as a gravelly clay with a natural moisture content approximately equal to the optimum moisture content (16%), indicating that the material is fairly well drained. The sample was also tested for it's consolidation properties and the sample had a remolded coefficient of consolidation (C_v) of $1.8 \times 10^{-3} cm^2/sec$ and a

HARVARD MINIATURE COMPACTION CORRELATION

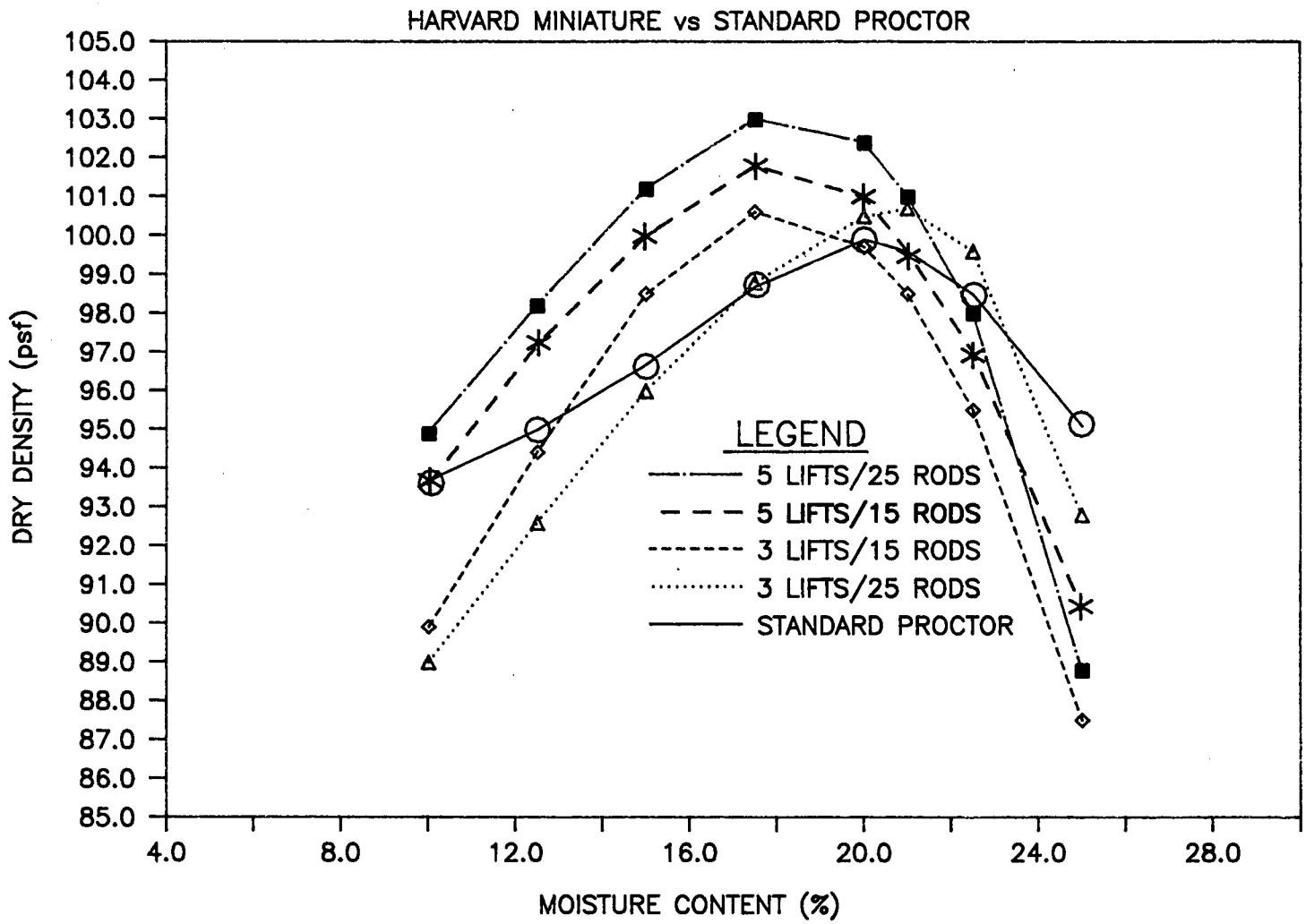


FIGURE 1

2754-01-01

BK/3-2-88

TABLE 3 LABORATORY CONSOLIDATION RESULTS

SAMPLE NO.	DEPTH INTERVAL	SAMPLE LOCATION	DRY DENSITY (PCF)	MOISTURE CONTENT(%)	Cv CM.2/SEC	Cc	INITIAL VOID RATIO	PERCENT COMPACTION
1-48	0.0-12.'	PIT 1	103.6	20.0	1.8E-03	0.138	0.578	94.7
2-39		PIT 2	81.8	20.3	5.8E-03	0.244	0.975	94.8
3-52	0.0-20.'	PIT 3						
3-90	0.0-20.'	PIT 3	83.0	30.1	1.6E-02	0.135	0.907	94.0
4-02	0.0-20.'	PIT 4						
4-37		PIT 4						
4-39		PIT 4						
4-62	0.0-20.'	PIT 4	114.3	22.4	1.8E-02	0.159	0.983	94.8
5-25	10.-29.'	PIT 5	59.8	54.7	1.7E-02	0.425	1.538	95.7
6-10	0.0-10.'	PIT 6						
6-22	0.0-15.'	PIT 6	96.6	25.4	5.7E-03	0.242	0.857	95.4
7-02	0.0-10.'	BURN PIT						
7-04		BURN PIT						
7-34	0.0-16.'	BURN PIT						
7-50		BURN PIT						
7-52	0.0-16.'	BURN PIT						
47-06		LIME SLUDGE						
47-12	0.0-5.5'	LIME SLUDGE						
48-13	2.-11.2'	LIME SLUDGE						
48-28		LIME SLUDGE						
48-42	0.0-12.'	LIME SLUDGE						
49-03	0.0-18.'	LANDFILL						
49-19	0.0-12.'	LANDFILL	96.5	17.8	2.9E-03	0.198	0.663	96.4
49-33		LANDFILL						
49-47		LANDFILL						
49-56		LANDFILL						
49-72		LANDFILL						
		AVERAGES	90.8	27.2	4.13E-02	0.220	0.929	95.1

Cv = COEFFICIENT OF CONSOLIDATION
Cc = COMPRESSION INDEX

compression index (C_c) of 0.138. This means if that if a 5 ft cover system were placed over a 20 ft layer of the waste, it would settle 3.7 inches and would take 169 days under single drainage conditions. This is a fast rate of settlement and should not create long-term settlement problems.

2.2 PIT 2 RESULTS

One composite sample was tested from Pit 2. The sample was a silt with a high plasticity. The insitu moisture content (31.9%) was considerably higher than the optimum moisture content (17.8%), indicating that considerable drying will be required to compact the waste into a new disposal area. The maximum dry density of 86.1 pcf is lower than most soils, but is what should be expected of a silt.

The remolded coefficient of consolidation is $5.8 \times 10^{-3} cm^2/sec$ and a compression index of 0.244. Using a 20 ft layer of waste with single drainage and assuming a 5 ft cover system is placed over the waste, the material would settle approximately 6.3 inches in 52 days. This is a very fast rate of consolidation and would not create long-term settlement problems.

2.3 PIT 3 RESULTS

Two composite samples from 0 to 20 ft were tested from Pit 3. Both samples were silts varying from low to high plasticity. The insitu moisture content varied from 41.6% to 57.0% with an average of 49.5 percent.

The remolded coefficient of consolidation is $1.6 \times 10^{-2} cm^2/sec$ and a compression index of 0.135. Using a 20 ft layer of waste with single drainage and assuming a 5 ft cover system is placed over the waste, the material would settle approximately 3.5 inches in 19 days, which is an extremely fast rate of consolidation and will not create long-term settlement problems.

2.4 PIT 4 RESULTS

Two composite samples from 0 to 20 ft were tested from Pit 4. Both samples were non-plastic silts. The insitu moisture content varied from 27% to 28.6% while the optimum moisture content is 17% indicating that considerable dewatering would be required if the waste were relocated to a new disposal area. The maximum dry density for the waste material is 120.6 pcf which is high because of the high specific

gravity of 3.33 which is an indication that high amounts of uranium or some other mineral may be present.

The remolded coefficient of consolidation is $1.8 \times 10^{-2} cm^2/sec$ and a compression index of 0.159. Using a 20 ft layer of waste with single drainage and assuming a 5 ft cover system is placed over the waste, the material would settle approximately 3.4 inches in 17 days which is an extremely fast rate of consolidation and will not create long-term settlement problems.

2.5 PIT 5 RESULTS

One composite sample from 10 to 29 ft was tested from Pit 5. The sample was a silt with high plasticity and an insitu moisture content of 189.5%, which is approximately 3 times the optimum moisture content of 62.3%. The maximum dry density is 57.3 pcf and the specific gravity is 2.43. This low specific gravity is normal for silt.

The remolded coefficient of consolidation is $1.7 \times 10^{-2} cm^2/sec$ and the compression index is 0.425. Using a 30 ft layer of waste with single drainage and assuming a 5 ft cover system is placed over the waste, the material would settle approximately 12 inches over a period of 40 days. Although the total settlement would occur rapidly, there would need to be concern over differential settlement across the pit because of the magnitude of settlement that will occur.

2.6 PIT 6 RESULTS

Two composite samples, one from 0 to 10 ft and one from 0 to 15 ft were tested and were determined to be non-plastic silts with an insitu moisture content ranging from 50.5% to 60.4% and an optimum moisture content of 24.0%. The maximum dry density is 101.5 pcf and the specific gravity is 2.87.

The remolded coefficient of consolidation is $5.7 \times 10^{-3} cm^2/sec$ and the compression index is 0.242. Using a 20 ft layer of waste with single drainage and assuming a 5 ft cover system is placed over the waste, the material would settle approximately 5.5 inches over a period of 53 days. Again because of the rate of consolidation, long-term total settlement will not be a problem, however differential settlement will need to be considered due to inconsistencies across the pit in density and layer thicknesses.

2.7 BURN PIT RESULTS

Three composite samples were tested for their material properties. Two of the samples were composites from 0 to 16 ft and one sample was a composite from 0 to 10 ft. The samples ranged from a non-plastic sandy silt to a silt of low plasticity, with a fairly consistent insitu moisture content ranging from 29.2% to 30.2% and a specific gravity ranging from 2.35 to 2.46.

The optimum moisture content for the sandy silt was a low 8% with a maximum dry density of 77 pcf, indicating that considerable drying will need to take place to be able to recompact the waste material. No consolidation properties were determined for these samples.

2.8 LIME SLUDGE PONDS RESULTS

Three composite samples were tested for their material properties. One sample was from 0 to 5.5 ft, one sample was from 2 to 11.2 ft and the third sample was from 0 to 12 ft. All samples were non-plastic silts with insitu water contents ranging from 38.8% to 134.0% and a specific gravity ranging from 2.33 to 2.49.

No testing of the compaction characterization or the consolidation properties were done due to time restraints within the testing program.

2.9 LANDFILL RESULTS

Two composite samples were tested from the landfill for their material properties. One sample was from 0 to 12 ft and the other was from 0 to 18 ft. Both samples were a clay of low plasticity with an insitu moisture content ranging from 13.5% to 17.5%, which means that the insitu condition is very close to optimum and would compact well. The specific gravity ranged from 2.57 to 2.58 and the maximum dry density ranged from 100.2 to 115.7 pcf.

The coefficient of consolidation for one sample was $2.9 \times 10^{-2} cm^2/sec$ and the compression index was 0.198. Based on these data, a 20 ft layer of waste with single drainage with 5 ft cover system placed over it would consolidate 5 inches in 105 days. This amount of settlement and the rate at which it would occur will not create a long-term settlement problem.

3.0 CONCLUSIONS

Because most of the materials in each of the pits is a silt, the consolidation characteristic of the materials are not a problem. The coefficient of consolidation for each material is in the 10^{-2} to $10^{-3}cm^2/sec$ range, which is very fast when compared to most clayey soils and mine wastes, such as uranium mill tailings.

The only pit that will be a problem from a handling and total settlement standpoint is pit 5. Because of the high moisture content (189%) some method of dewatering will need to be devised before the waste can be handled with conventional equipment.

4.0 RECOMMENDATIONS

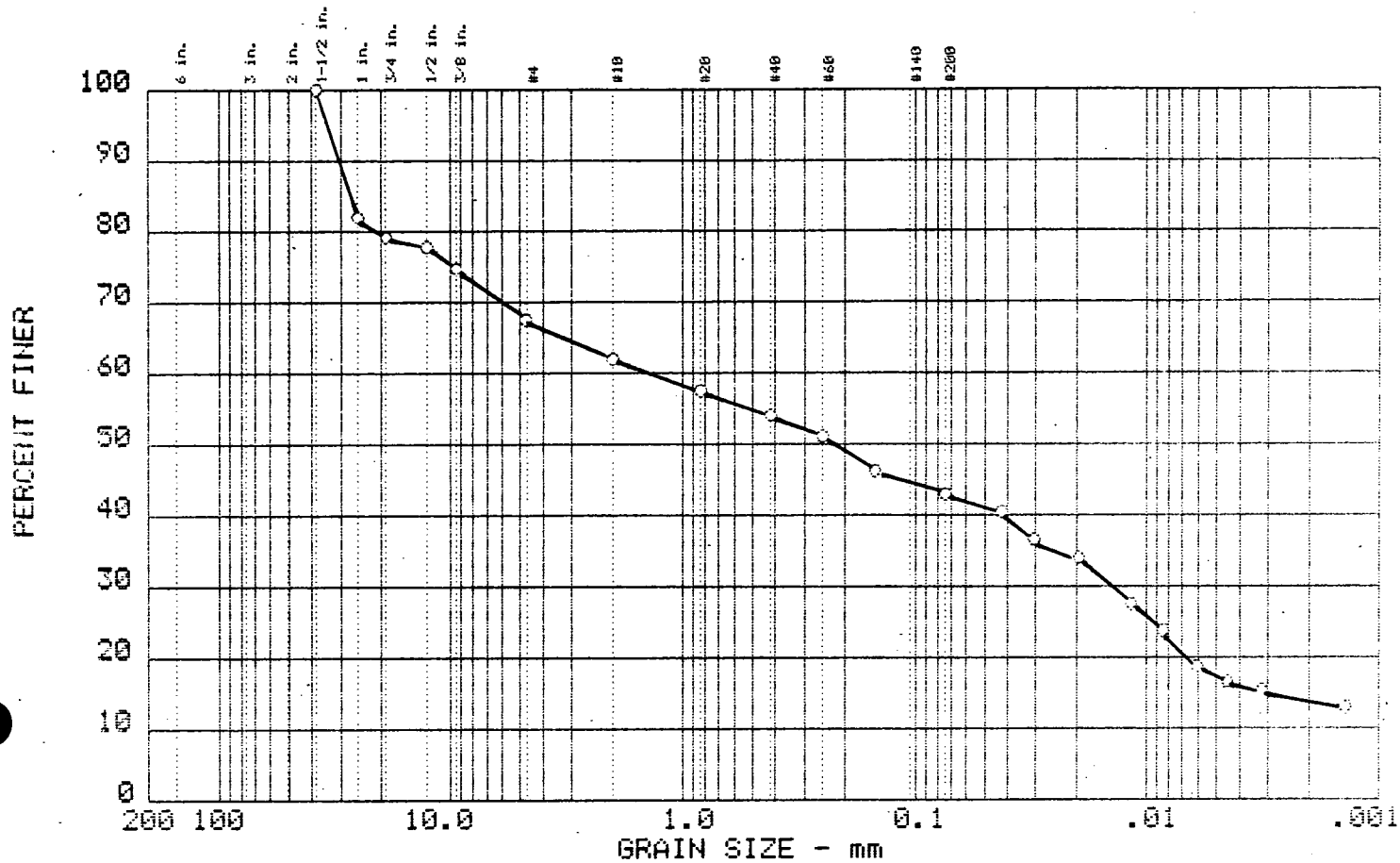
Since the testing program on each of the pits has been very limited, it is not possible to make accurate predictions of the rates and amounts of settlement that will take place across the pits, if they were stabilized in place. Therefore, before reclamation of any of the waste disposal areas, in place, or to a new disposal area, additional testing of the consolidation properties will be required to prepare a final Remedial Action design.

Grain Size

APPENDIX A

RESULTS OF GRAIN SIZE ANALYSIS

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	1		32.9	24.5	25.9	17.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	34	11	27.86	1.38	0.22	0.014	0.0029			

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN CLAYEY GRAVEL WITH SAND	GC	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 01-048, 0.0'-12.0'

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 17.2%

GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

Fig. No. 16

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 7

Date: 06/12/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 01-048, 0.0'-12.0'
Sample Description: BROWN CLAYEY GRAVEL WITH SAND
USCS Class: GC
Liquid limit: 34
AASHTO Class:
Plasticity index: 11

Notes

Remarks: NATURAL MOISTURE: 17.2%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	413.74
Tare =	52.56
Dry sample weight =	361.18

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
1.5 inches	0.00	100.0
1 inches	65.07	82.0
0.75 inches	75.00	79.2
0.5 inches	80.60	77.7
0.375 inches	91.52	74.7
# 4	117.39	67.5
# 10	137.72	61.9
# 20	3.53	57.5
# 40	6.28	54.1
# 60	8.74	51.1
# 100	12.61	46.3
# 200	15.29	42.9

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 61.9
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 29.61
Dry weight & tare = 29.41
Tare = 21.39
Hygroscopic moisture= 2.5 %
Calculated biased weight= 78.8
Automatic temperature correction

Composite correction at 20 deg C =-3

Meniscus correction only= 0
Specific gravity of solids= 2.62
Specific gravity correction factor= 1.007
Hydrometer type: 152H

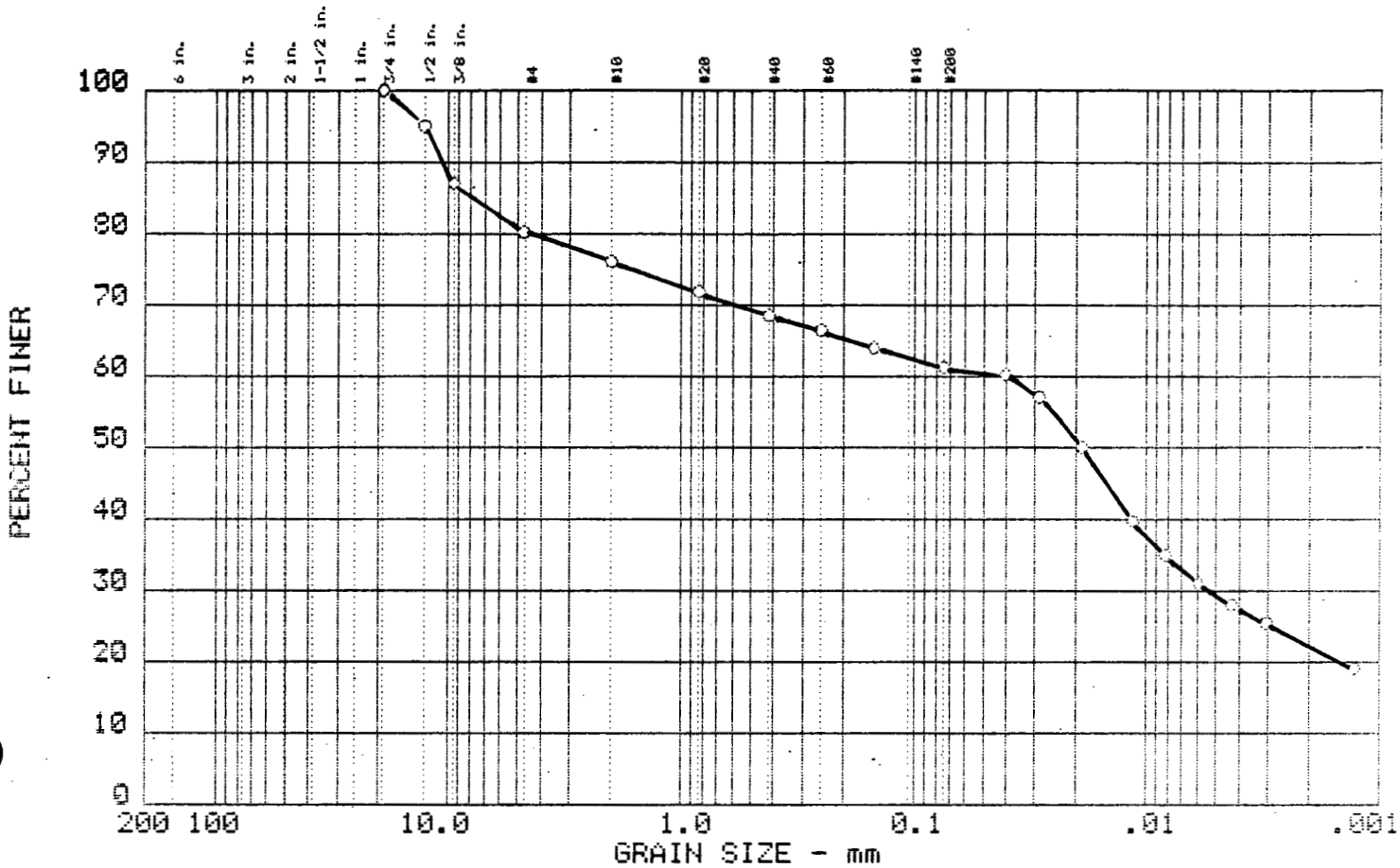
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	26.0	33.0	31.6	0.0128	33.0	10.9	0.0424	40.4
2.0	26.0	30.0	28.6	0.0128	30.0	11.4	0.0306	36.6
5.0	26.0	28.0	26.6	0.0128	28.0	11.7	0.0196	34.0
15.0	26.0	23.0	21.6	0.0128	23.0	12.5	0.0117	27.6
30.0	26.0	20.0	18.6	0.0128	20.0	13.0	0.0085	23.8
60.0	26.0	16.0	14.6	0.0128	16.0	13.7	0.0061	18.7
120.0	24.0	15.0	13.0	0.0131	15.0	13.8	0.0045	16.5
240.0	24.0	14.0	12.0	0.0131	14.0	14.0	0.0032	15.3
1362.0	21.0	13.0	10.2	0.0136	13.0	14.2	0.0014	13.0

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 32.5 % SAND = 24.5
% SILT = 25.9 % CLAY = 17.0

D85= 27.86 D60= 1.380 D50= 0.221
D30= 0.0140 D15= 0.00282

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	19		20.0	19.0	32.0	29.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	53	21	8.0	.04	.019	.0055				

MATERIAL DESCRIPTION	USCS	AASHTO
○		

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 02-039, 0.0'-10.0'

Date: 9/15/87

Remarks:
NATURAL MOISTURE: 31.9%

GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

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Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 19

Date: 9/15/87
Project No.: 43235
Project: WESTON-FERNALD SITE

Sample Data

Location of Sample: 02-039, 0.0'-10.0'
Sample Description:
USCS Class: Liquid limit: 53
AASHTO Class: Plasticity index: 21

Notes

Remarks: NATURAL MOISTURE: 31.9%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	391.20
Tare =	89.60
Dry sample weight =	301.60

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
0.75 inches	0.00	100.0
0.5 inches	14.92	95.1
0.375 inches	39.07	87.0
# 4	59.66	80.2
# 10	72.33	76.0
# 20	2.73	71.9
# 40	4.85	68.6
# 60	6.30	66.4
# 100	7.92	64.0
# 200	9.73	61.2

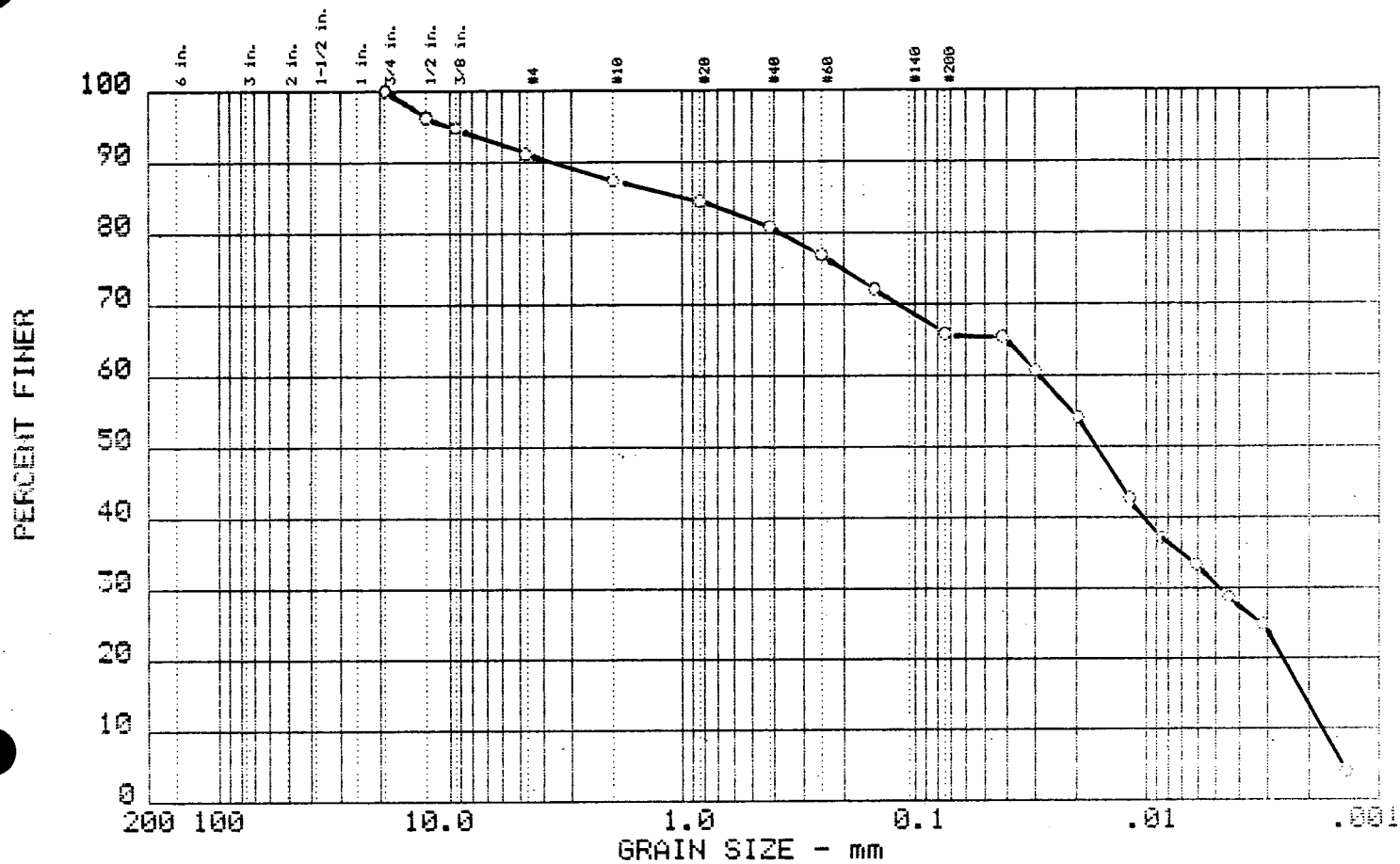
Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 76.0
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 32.41
Dry weight & tare = 32.11
Tare = 21.13
Hygroscopic moisture= 2.7 %
Calculated biased weight= 64.0
Automatic temperature correction
Composite correction at 20 deg C =-3

Meniscus correction only= 0
Specific gravity of solids= 2.59
Specific gravity correction factor= 1.014
Hydrometer type: 152H

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	27.0	39.0	38.1	0.0128	39.0	9.9	0.0403	60.3
2.0	27.0	37.0	36.1	0.0128	37.0	10.2	0.0290	57.1
5.0	27.0	32.5	31.6	0.0128	32.5	11.0	0.0190	50.0
15.0	27.0	26.0	25.1	0.0128	26.0	12.0	0.0115	39.7
30.0	27.0	23.0	22.1	0.0128	23.0	12.5	0.0083	35.0
60.0	27.0	20.5	19.6	0.0128	20.5	12.9	0.0059	31.0
120.0	26.0	19.0	17.6	0.0130	19.0	13.2	0.0043	28.0
240.0	27.0	17.0	16.1	0.0128	17.0	13.5	0.0030	25.5
1429.0	27.0	13.0	12.1	0.0128	13.0	14.2	0.0013	19.1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	20		9.0	23.0	26.0	30.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	52	20	0.9	.029	.017	.005	.0021	.0018		

MATERIAL DESCRIPTION	USCS	AASHTO
○		

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 03-052, 0.0'-20.0'

Date: 9/15/87

Remarks:
NATURAL MOISTURE: 57.0%

GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

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Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 20

Date: 9/15/87
Project No.: 43235
Project: WESTON-FERNALD SITE

Sample Data

Location of Sample: 03-052, 0.0'-20.0'
Sample Description:
USCS Class:
AASHTO Class:
Liquid limit: 52
Plasticity index: 20

Notes

Remarks: NATURAL MOISTURE: 57.0%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	337.50
Tare =	86.50
Dry sample weight =	251.00

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
0.75 inches	0.00	100.0
0.5 inches	9.39	96.3
0.375 inches	13.00	94.8
# 4	22.25	91.1
# 10	31.60	87.4
# 20	1.74	84.4
# 40	3.72	80.9
# 60	5.97	77.0
# 100	8.76	72.1
# 200	12.33	65.9

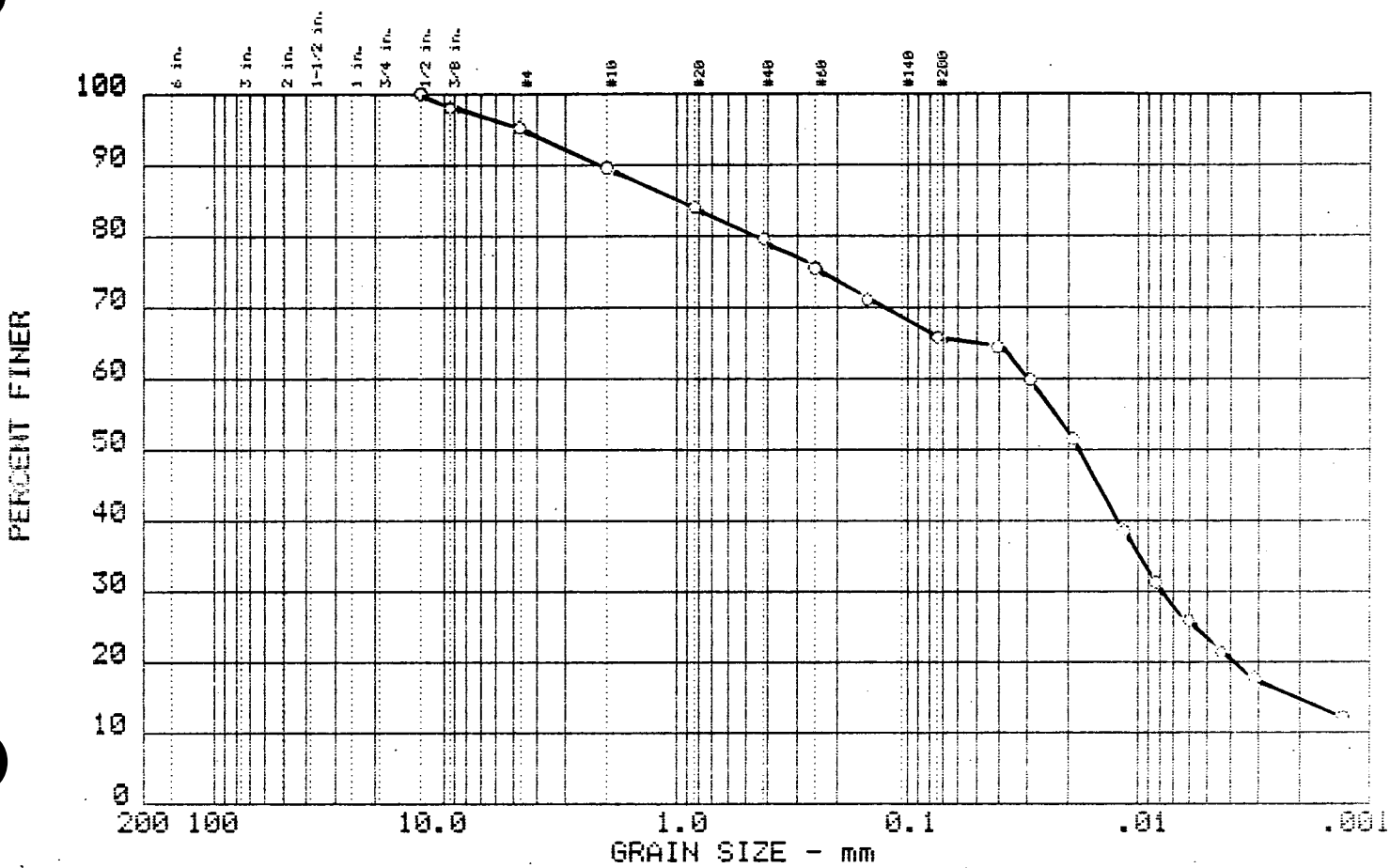
Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 87.4
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 33.94
Dry weight & tare = 33.29
Tare = 21.57
Hygroscopic moisture= 5.5 %
Calculated biased weight= 54.2
Automatic temperature correction
Composite correction at 20 deg C =-3.5

Meniscus correction only= 0
Specific gravity of solids= 2.54
Specific gravity correction factor= 1.027
Hydrometer type: 152H

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	27.0	36.0	34.6	0.0130	36.0	10.4	0.0420	65.5
2.0	27.0	33.5	32.1	0.0130	33.5	10.8	0.0303	60.8
5.0	27.0	30.0	28.6	0.0130	30.0	11.4	0.0196	54.1
15.0	27.0	24.0	22.6	0.0130	24.0	12.4	0.0118	42.8
30.0	27.0	21.0	19.6	0.0130	21.0	12.9	0.0085	37.1
60.0	27.0	19.0	17.6	0.0130	19.0	13.2	0.0061	33.3
120.0	26.0	17.0	15.1	0.0132	17.0	13.5	0.0044	28.7
240.0	26.0	15.0	13.1	0.0132	15.0	13.8	0.0032	24.9
1426.0	26.0	4.0	2.1	0.0132	4.0	15.6	0.0014	4.1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	2		5.0	29.0	44.0	22.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	38	5	1.0	.03	.019	.008	.002			

MATERIAL DESCRIPTION	USCS	AASHTO
○		

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 03-090, 0.0'-20.0'

Date: 9/15/87

Remarks:
NATURAL MOISTURE: 41.6%

GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

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Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 2

Date: 9/15/87
Project No.: 43235
Project: WESTON-FERNALD SITE

Sample Data

Location of Sample: 03-090, 0.0'-20.0'
Sample Description:
USCS Class:
AASHTO Class:
Liquid limit: 38
Plasticity index: 5

Notes

Remarks: NATURAL MOISTURE: 41.6%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	397.30
Tare =	85.90
Dry sample weight =	311.40

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
0.5 inches	0.00	100.0
0.375 inches	6.12	98.0
# 4	14.90	95.2
# 10	32.43	89.6
# 20	3.07	84.1
# 40	5.61	79.5
# 60	7.91	75.4
# 100	10.32	71.1
# 200	13.28	65.8

Hydrometer Analysis Data

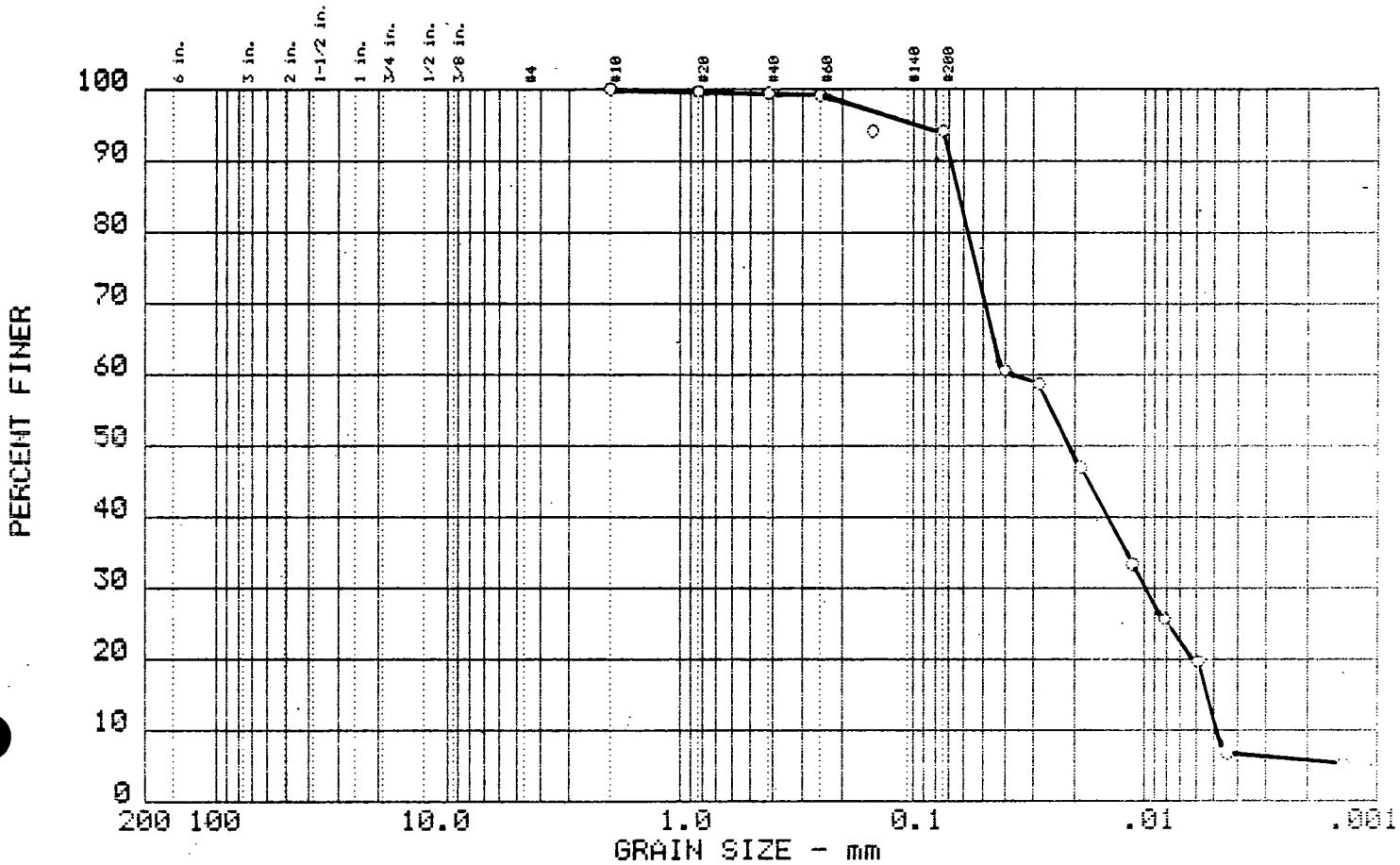
Separation sieve is number 10
Percent -# 10 based on complete sample= 89.6
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 30.54
Dry weight & tare = 30.32
Tare = 21.50
Hygroscopic moisture= 2.5 %
Calculated biased weight= 54.5
Automatic temperature correction
Composite correction at 20 deg C =-3

Meniscus correction only= 0

Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	27.0	36.0	35.1	0.0126	36.0	10.4	0.0406	64.4
2.0	27.0	33.5	32.6	0.0126	33.5	10.8	0.0292	59.8
5.0	27.0	29.0	28.1	0.0126	29.0	11.5	0.0191	51.5
15.0	27.0	22.0	21.1	0.0126	22.0	12.7	0.0116	38.7
30.0	27.0	18.0	17.1	0.0126	18.0	13.3	0.0084	31.3
60.0	27.0	15.0	14.1	0.0126	15.0	13.8	0.0060	25.8
120.0	26.0	13.0	11.6	0.0127	13.0	14.2	0.0044	21.4
240.0	26.0	11.0	9.6	0.0127	11.0	14.5	0.0031	17.7
1425.0	26.0	8.0	6.6	0.0127	8.0	15.0	0.0013	12.2

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	4			5.9	82.2	11.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○		NP	.062	.039	0.021	0.010	0.0052	.005		

MATERIAL DESCRIPTION	USCS	AASHTO
○ GRAY SILT	ML	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 04-002, 0.0'-20.0'

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 27.0%

GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

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Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 4

Date: 06/12/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 04-002, 0.0'-20.0'
Sample Description: GRAY SILT
USCS Class: ML
AASHTO Class:
Liquid limit: NP
Plasticity index: NP

Notes

Remarks: NATURAL MOISTURE: 27.0%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	50.00
Tare =	0.00
Dry sample weight =	50.00

Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 20	0.17	99.7
# 40	0.25	99.5
# 60	0.42	99.2
# 100	2.90	94.2
# 200	2.97	94.1

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 100.0
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 39.72
Dry weight & tare = 39.64
Tare = 21.49
Hygroscopic moisture= 0.4 %
Calculated biased weight= 49.8
Automatic temperature correction
Composite correction at 20 deg C =-4.5

Meniscus correction only= 0
Specific gravity of solids= 2.8
Specific gravity correction factor= 0.969
Hydrometer type: 152H

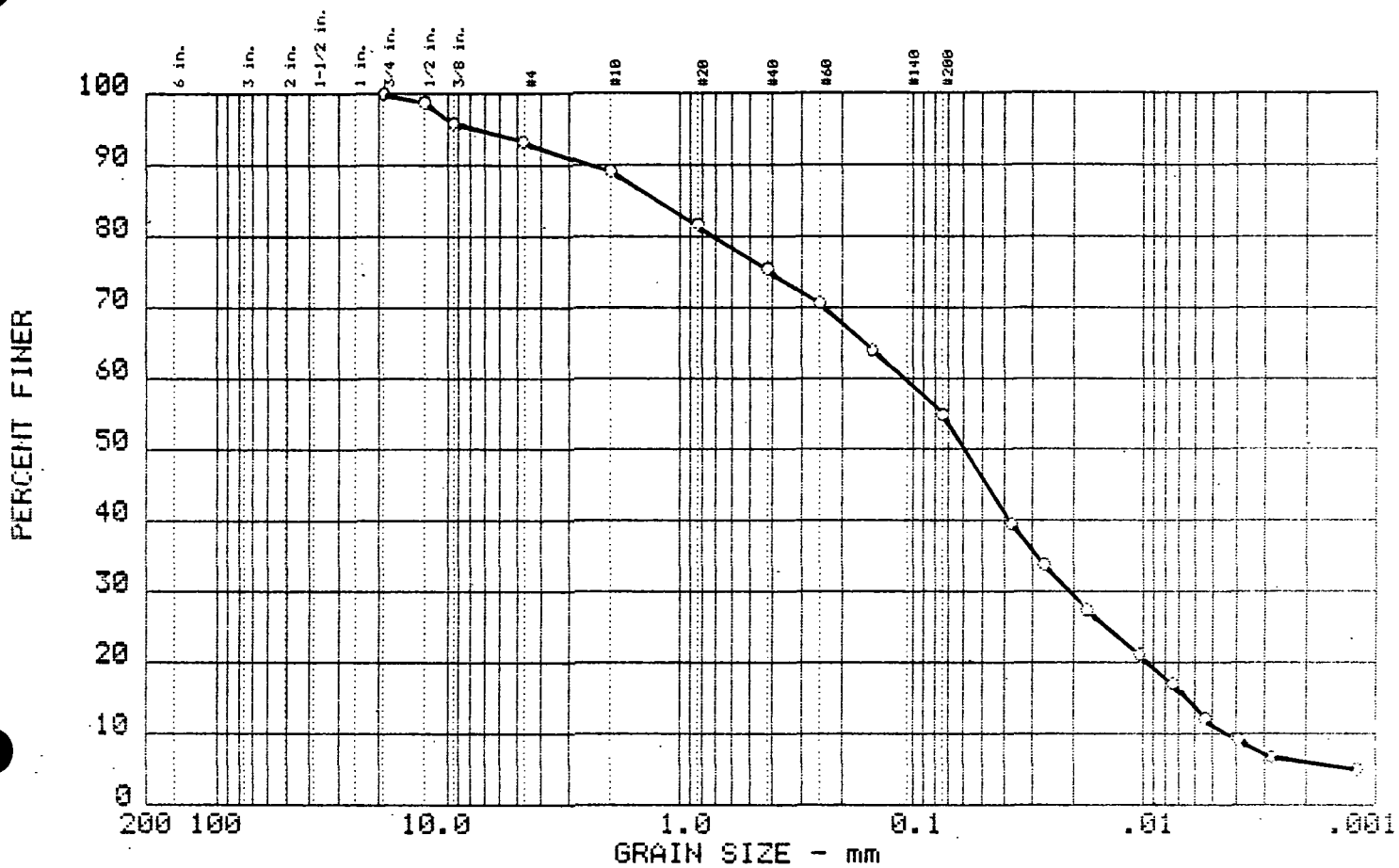
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	26.0	34.0	31.1	0.0122	34.0	10.7	0.0399	60.6
2.0	26.0	33.0	30.1	0.0122	33.0	10.9	0.0284	58.7
5.0	26.0	27.0	24.1	0.0122	27.0	11.9	0.0188	47.0
15.0	26.0	20.0	17.1	0.0122	20.0	13.0	0.0113	33.4
30.0	26.0	16.0	13.1	0.0122	16.0	13.7	0.0082	25.6
60.0	26.0	13.0	10.1	0.0122	13.0	14.2	0.0059	19.7
120.0	24.0	7.0	3.5	0.0125	7.0	15.1	0.0044	6.7
1354.0	21.0	7.0	2.7	0.0129	7.0	15.1	0.0014	5.2

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 5.9
% SILT = 82.2 % CLAY = 11.8

D85= 0.06 D60= 0.034 D50= 0.021
D30= 0.0100 D15= 0.00532 D10= 0.00480
Cc = 0.6209 Cu = 7.0307

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	S		6.7	38.3	43.6	11.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○		NP	1.19	0.10	0.06	0.021	0.0065	.0043		

MATERIAL DESCRIPTION	USCS	AASHTO
○ GRAY SANDY SILT	ML	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 04-062, 0.0'-20.0'

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 28.6%

GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

Fig. No. 31

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 5

Date: 06/15/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 04-062, 0.0'-20.0'
Sample Description: GRAY SANDY SILT
USCS Class: ML
AASHTO Class:
Liquid limit: NP
Plasticity index: NP

Notes

Remarks: NATURAL MOISTURE: 28.6%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	396.78
Tare =	86.25
Dry sample weight =	310.53

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
0.75 inches	0.00	100.0
0.5 inches	3.88	98.8
0.375 inches	12.85	95.9
# 4	20.96	93.3
# 10	33.51	89.2
# 20	4.16	81.8
# 40	7.66	75.5
# 60	10.42	70.6
# 100	14.11	64.0
# 200	19.22	54.9

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 89.2
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 39.87
Dry weight & tare = 39.42
Tare = 21.37
Hygroscopic moisture= 2.5 %
Calculated biased weight= 54.7
Automatic temperature correction
Composite correction at 20 deg C =-4.5

Meniscus correction only= 0
Specific gravity of solids= 3.33
Specific gravity correction factor= 0.890
Hydrometer type: 152H

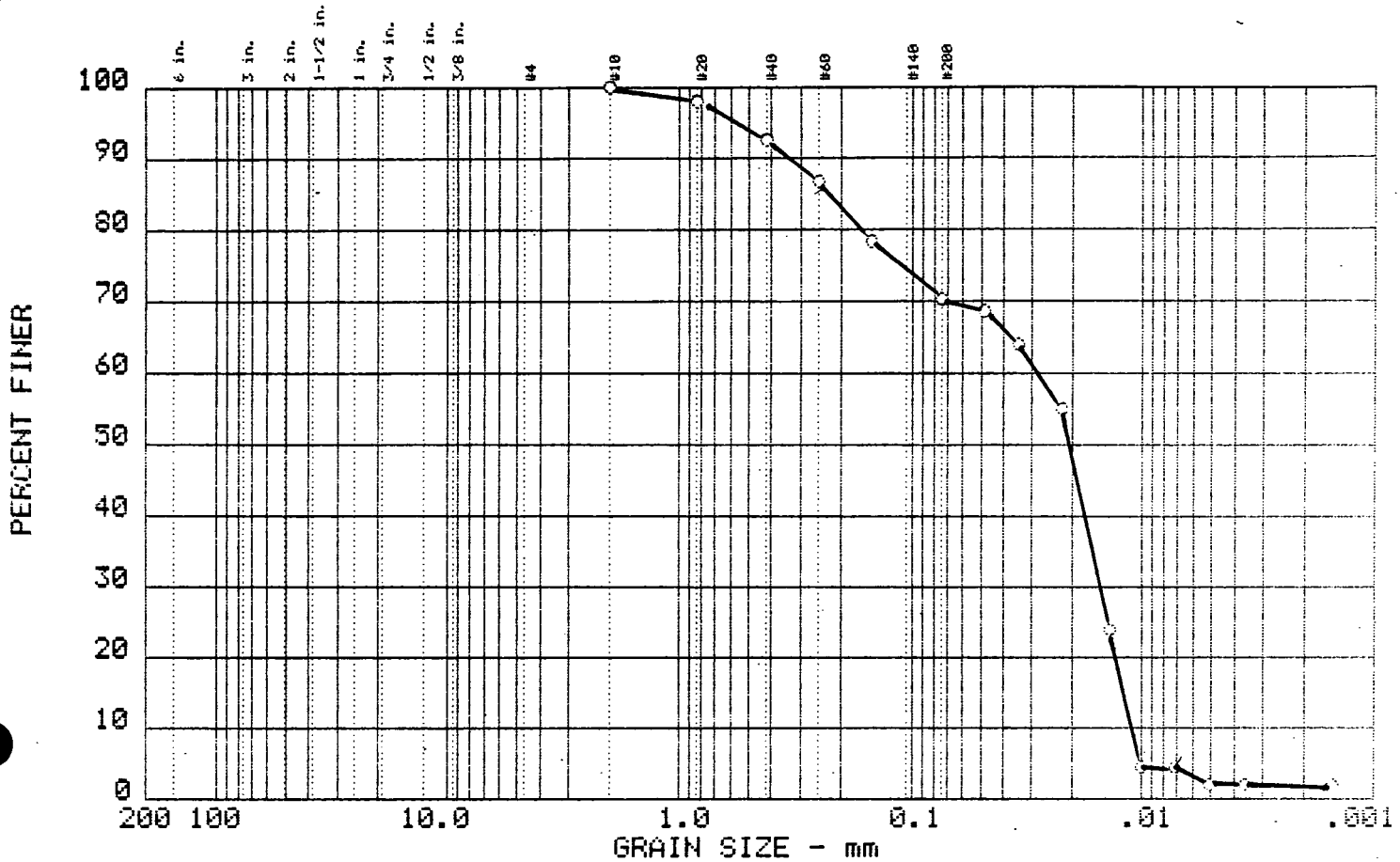
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	25.0	27.5	24.3	0.0108	27.5	11.8	0.0372	39.5
2.0	25.0	24.0	20.8	0.0108	24.0	12.4	0.0269	33.8
5.0	25.0	20.0	16.8	0.0108	20.0	13.0	0.0175	27.3
15.0	24.0	16.5	13.0	0.0110	16.5	13.6	0.0104	21.1
30.0	24.0	14.0	10.5	0.0110	14.0	14.0	0.0075	17.0
60.0	24.0	11.0	7.5	0.0110	11.0	14.5	0.0054	12.1
120.0	23.0	9.5	5.7	0.0111	9.5	14.7	0.0039	9.2
240.0	23.0	8.0	4.2	0.0111	8.0	15.0	0.0028	6.8
1400.0	23.0	7.0	3.2	0.0111	7.0	15.1	0.0012	5.1

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 6.7 % SAND = 38.3
% SILT = 43.6 % CLAY = 11.3

D85= 1.19 D60= 0.104 D50= 0.058
D30= 0.0209 D15= 0.00653 D10= 0.00427
Cc = 0.9886 Cu = 24.2661

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	5		0.0	30.0	68.0	2.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	81	29	0.22	.028	0.02	0.015	0.0122	.0114		

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN ELASTIC SILT WITH SAND	MH	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 05-025, 120.0"-352.0"

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 189.5%

GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

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Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 9

Date: 06/15/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 05-025, 120.0'-352.0'
Sample Description: BROWN ELASTIC SILT WITH SAND
USCS Class: MH
Liquid limit: 81
AASHTO Class:
Plasticity index: 29

Notes

Remarks: NATURAL MOISTURE: 189.5%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	50.00
Tare =	0.00
Dry sample weight =	50.00

Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 20	0.99	98.0
# 40	3.72	92.6
# 60	6.72	86.6
# 100	10.85	78.3
# 200	14.89	70.2

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 100.0
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 25.10
Dry weight & tare = 23.92
Tare = 21.13
Hygroscopic moisture= 42.3 %
Calculated biased weight= 35.1
Automatic temperature correction
Composite correction at 20 deg C =-3

Meniscus correction only= 0
Specific gravity of solids= 2.43
Specific gravity correction factor= 1.058
Hydrometer type: 152H

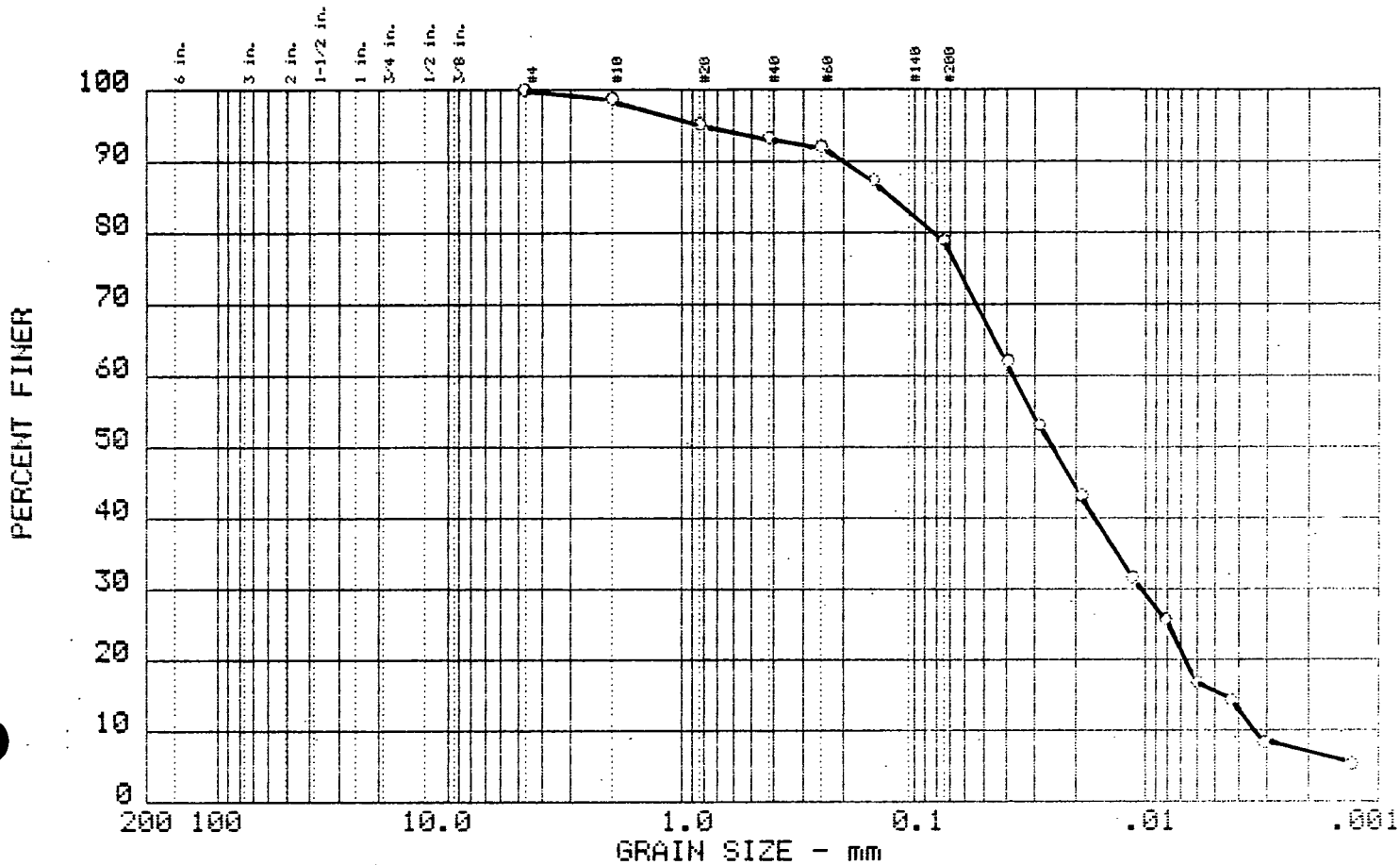
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	25.0	24.5	22.8	0.0138	24.5	12.3	0.0484	68.6
2.0	25.0	23.0	21.3	0.0138	23.0	12.5	0.0346	64.1
5.0	25.0	20.0	18.3	0.0138	20.0	13.0	0.0223	55.0
15.0	24.0	10.0	8.0	0.0140	10.0	14.7	0.0138	23.9
30.0	24.0	3.5	1.5	0.0140	3.5	15.7	0.0101	4.4
60.0	24.0	3.5	1.5	0.0140	3.5	15.7	0.0072	4.4
120.0	23.0	3.0	0.7	0.0141	3.0	15.8	0.0051	2.0
240.0	23.0	3.0	0.7	0.0141	3.0	15.8	0.0036	2.0
1397.0	23.0	3.0	0.7	0.0141	3.0	15.8	0.0015	2.0

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 29.8
% FINES = 70.2

D85= 0.22 D60= 0.026 D50= 0.020
D30= 0.0149 D15= 0.01227 D10= 0.01138
Cc = 0.7464 Cu = 2.3121

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	7		0.0	21.1	63.8	15.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○		NP	0.11	.037	0.03	0.010	0.0047	.0034		

MATERIAL DESCRIPTION	USCS	AASHTO
○ GRAY SILT WITH SAND	ML	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 06-010, 0.0'-120.0'

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 60.4%

GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

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Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 10

Date: 06/15/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 06-010, 0.0'-120.0'
Sample Description: GRAY SILT WITH SAND
USCS Class: ML
AASHTO Class:
Liquid limit: NP
Plasticity index: NP

Notes

Remarks: NATURAL MOISTURE: 60.4%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	309.11
Tare =	93.70
Dry sample weight =	215.41

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	2.55	98.8
# 20	1.81	95.2
# 40	2.77	93.3
# 60	3.40	92.1
# 100	5.79	87.4
# 200	10.07	78.9

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 98.8
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 39.32
Dry weight & tare = 38.46
Tare = 21.56
Hygroscopic moisture= 5.1 %
Calculated biased weight= 48.1
Automatic temperature correction
Composite correction at 20 deg C =-4.5

Meniscus correction only= 0
Specific gravity of solids= 2.87
Specific gravity correction factor= 0.956

Hydrometer type: 152H

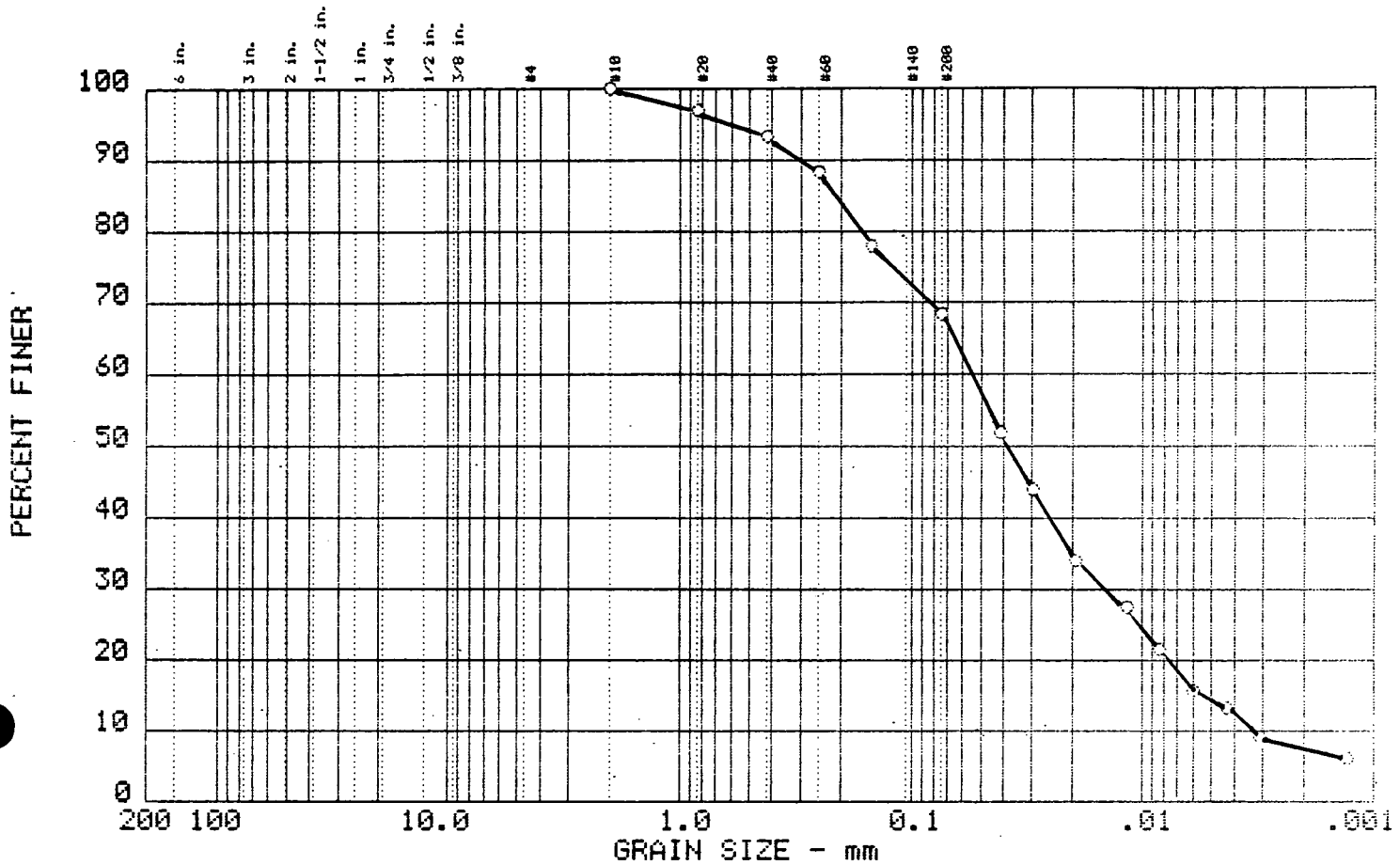
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	25.0	34.5	31.3	0.0121	34.5	10.6	0.0394	62.1
2.0	25.0	30.0	26.8	0.0121	30.0	11.4	0.0288	53.1
5.0	25.0	25.0	21.8	0.0121	25.0	12.2	0.0189	43.2
15.0	24.0	19.5	16.0	0.0122	19.5	13.1	0.0114	31.7
30.0	24.0	16.5	13.0	0.0122	16.5	13.6	0.0082	25.7
60.0	24.0	12.0	8.5	0.0122	12.0	14.3	0.0060	16.8
120.0	23.0	11.0	7.2	0.0124	11.0	14.5	0.0043	14.2
240.0	23.0	8.0	4.2	0.0124	8.0	15.0	0.0031	8.3
1395.0	23.0	6.5	2.7	0.0124	6.5	15.2	0.0013	5.3

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 21.1
% SILT = 63.8 % CLAY = 15.1

D85= 0.11 D60= 0.037 D50= 0.025
D30= 0.0102 D15= 0.00472 D10= 0.00338
Cc = 0.8395 Cu = 10.8643

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	8		0.0	31.6	54.2	14.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○		NP	0.21	.054	0.04	0.014	0.0055	.0033		

MATERIAL DESCRIPTION	USCS	AASHTO
○ GRAY SANDY SILT	ML	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 06-022, 0.0"-180.0"

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 50.5%

GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

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Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 11

Date: 06/15/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 06-022, 0.0'-180.0'
Sample Description: GRAY SANDY SILT
USCS Class: ML
Liquid limit: NP
AASHTO Class:
Plasticity index: NP

Notes

Remarks: NATURAL MOISTURE: 50.5%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	302.64
Tare =	85.75
Dry sample weight =	216.89

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 20	1.49	97.0
# 40	3.33	93.3
# 60	5.85	88.3
# 100	11.02	78.0
# 200	15.80	68.4

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 100.0
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 31.29
Dry weight & tare = 30.98
Tare = 21.49
Hygroscopic moisture= 3.3 %
Calculated biased weight= 48.4
Automatic temperature correction
Composite correction at 20 deg C =-4

Meniscus correction only= 0
Specific gravity of solids= 2.87
Specific gravity correction factor= 0.956
Hydrometer type: 152H

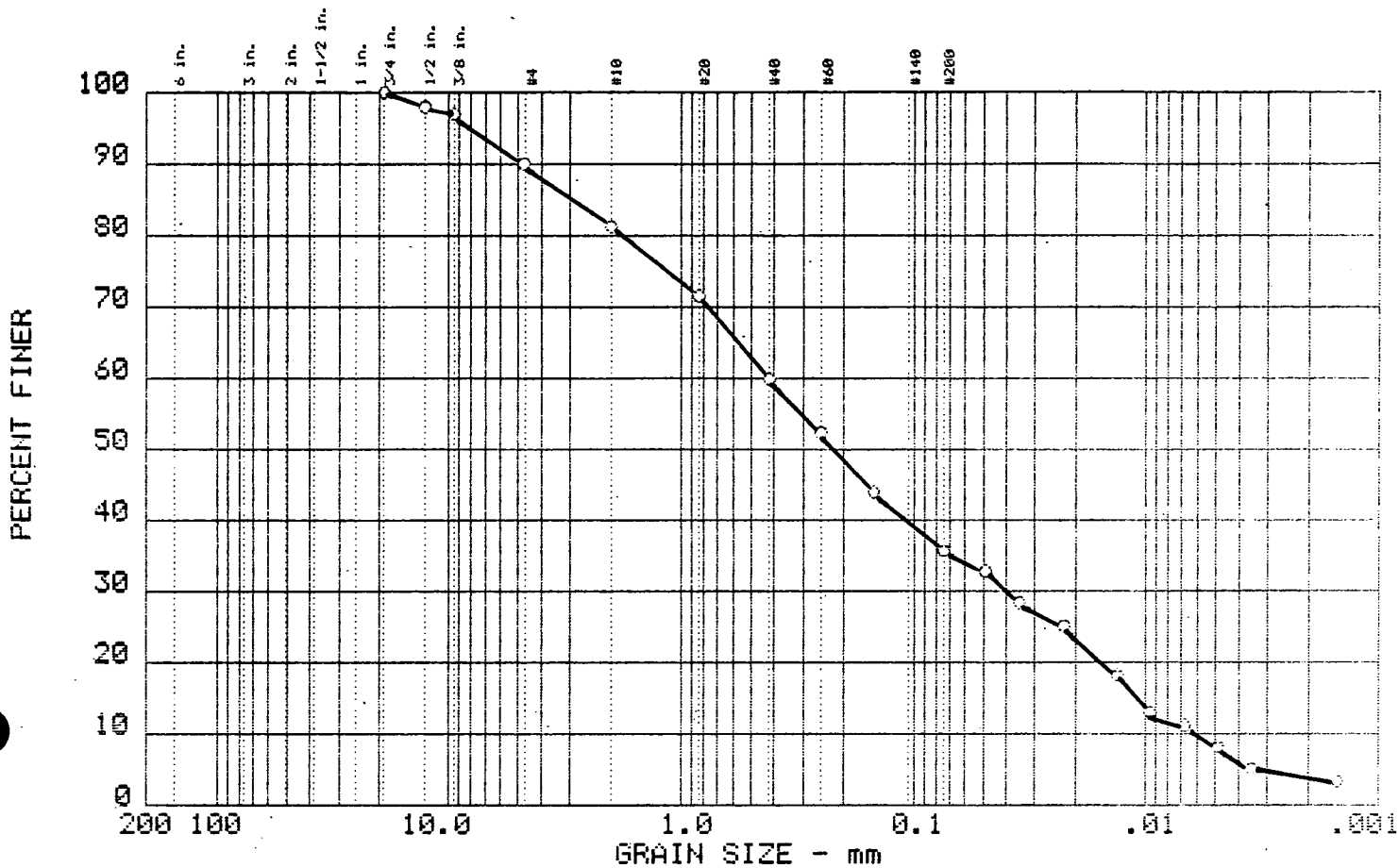
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	25.0	29.0	26.3	0.0121	29.0	11.5	0.0411	51.9
2.0	25.0	25.0	22.3	0.0121	25.0	12.2	0.0298	44.0
5.0	25.0	20.0	17.3	0.0121	20.0	13.0	0.0195	34.1
15.0	24.0	17.0	14.0	0.0122	17.0	13.5	0.0116	27.5
30.0	24.0	14.0	11.0	0.0122	14.0	14.0	0.0084	21.6
60.0	24.0	11.0	8.0	0.0122	11.0	14.5	0.0060	15.7
120.0	23.0	10.0	6.7	0.0124	10.0	14.7	0.0043	13.2
240.0	23.0	8.0	4.7	0.0124	8.0	15.0	0.0031	9.2
1392.0	23.0	6.5	3.2	0.0124	6.5	15.2	0.0013	6.2

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 31.6
% SILT = 54.2 % CLAY = 14.2

D85= 0.21 D60= 0.054 D50= 0.038
D30= 0.0142 D15= 0.00559 D10= 0.00329
Cc = 1.1350 Cu = 16.4059

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	9		10.0	54.4	27.3	8.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○		NP	2.95	0.42	0.21	0.040	0.0111	.0059		

MATERIAL DESCRIPTION	USCS	AASHTO
○ GRAY, BROWN, AND WHITE SILTY SAND	SM	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 07-002, 0.0'-10.0'

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 30.1%

GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

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Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 12

Date: 06/15/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 07-002, 0.0'-10.0'
Sample Description: GRAY, BROWN, AND WHITE SILTY SAND
USCS Class: SM
Liquid limit: NP
AASHTO Class:
Plasticity index: NP

Notes

Remarks: NATURAL MOISTURE: 30.1%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	255.74
Tare =	52.65
Dry sample weight =	203.09

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
0.75 inches	0.00	100.0
0.5 inches	4.28	97.9
0.375 inches	6.10	97.0
# 4	20.36	90.0
# 10	38.15	81.2
# 20	5.99	71.5
# 40	13.13	59.9
# 60	17.79	52.3
# 100	22.91	44.0
# 200	28.11	35.6

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 81.2
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 32.25
Dry weight & tare = 32.07
Tare = 21.39
Hygroscopic moisture= 1.7 %
Calculated biased weight= 60.5
Automatic temperature correction
Composite correction at 20 deg C =-4.5

Meniscus correction only= 0
Specific gravity of solids= 2.47
Specific gravity correction factor= 1.046
Hydrometer type: 152H

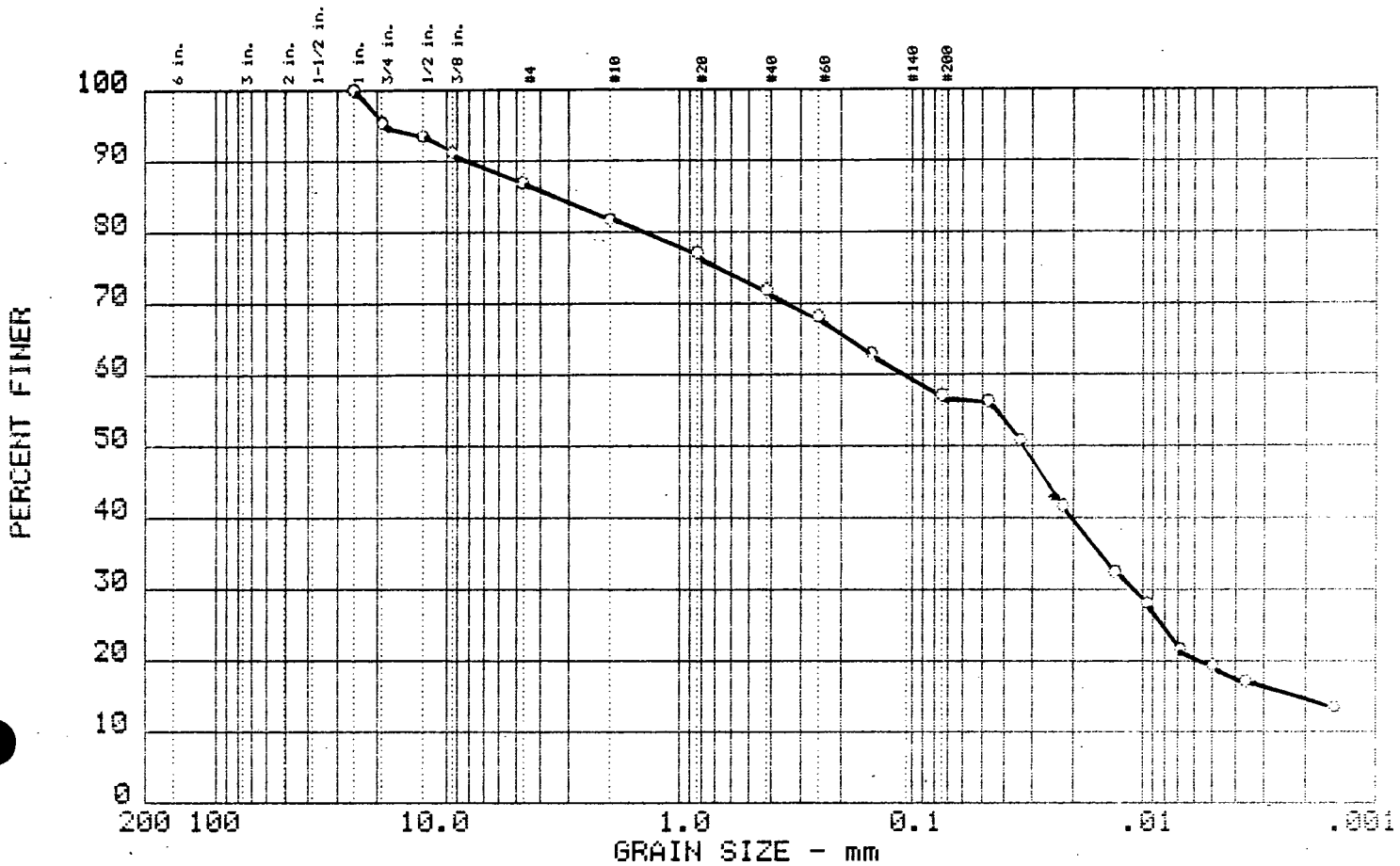
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	24.0	22.5	19.0	0.0138	22.5	12.6	0.0489	32.7
2.0	24.0	20.0	16.5	0.0138	20.0	13.0	0.0352	28.4
5.0	24.0	18.0	14.5	0.0138	18.0	13.3	0.0225	25.0
15.0	24.0	14.0	10.5	0.0138	14.0	14.0	0.0133	18.1
30.0	24.0	11.0	7.5	0.0138	11.0	14.5	0.0096	12.9
60.0	24.0	10.0	6.5	0.0138	10.0	14.7	0.0068	11.1
120.0	23.0	8.5	4.7	0.0139	8.5	14.9	0.0049	8.1
240.0	22.0	7.0	2.9	0.0141	7.0	15.1	0.0035	5.0
1377.0	22.0	6.0	1.9	0.0141	6.0	15.3	0.0015	3.3

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 10.0 % SAND = 54.4
% SILT = 27.3 % CLAY = 8.2

D85= 2.95 D60= 0.422 D50= 0.214
D30= 0.0394 D15= 0.01109 D10= 0.00589
Cc = 0.6237 Cu = 71.6143

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	10	0.0	13.1	29.8	37.7	19.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	36	2	3.35	0.11	0.03	0.011	0.0024			

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN AND BLACK SANDY SILT	ML	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 07-034, 0.0'-16.0'

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 30.2%

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GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 13

Date: 06/15/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 07-034, 0.0'-16.0'
Sample Description: BROWN AND BLACK SANDY SILT
USCS Class: ML
AASHTO Class:
Liquid limit: 36
Plasticity index: 2

Notes

Remarks: NATURAL MOISTURE: 30.2%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	368.09
Tare =	52.69
Dry sample weight =	315.40

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
1 inches	0.00	100.0
0.75 inches	14.24	95.5
0.5 inches	20.58	93.5
0.375 inches	27.67	91.2
# 4	41.21	86.9
# 10	57.36	81.8
# 20	2.90	77.1
# 40	6.03	71.9
# 60	8.34	68.2
# 100	11.48	63.0
# 200	15.08	57.1

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 81.8
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 34.75
Dry weight & tare = 34.42
Tare = 21.11
Hygroscopic moisture= 2.5 %
Calculated biased weight= 59.6
Automatic temperature correction
Composite correction at 20 deg C =-4

Meniscus correction only= 0
Specific gravity of solids= 2.35
Specific gravity correction factor= 1.084
Hydrometer type: 152H

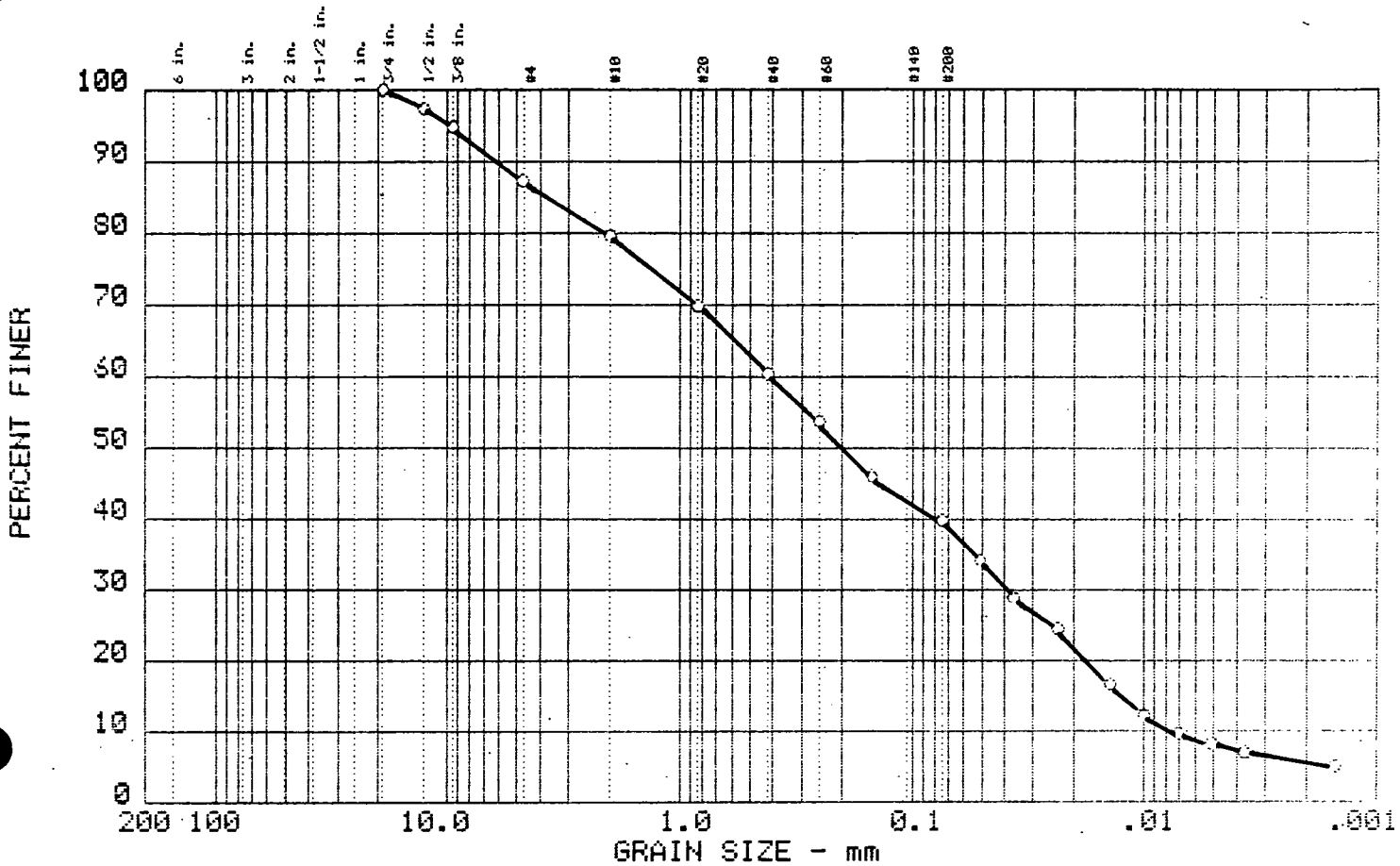
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	24.0	34.0	31.0	0.0144	34.0	10.7	0.0471	56.3
2.0	24.0	31.0	28.0	0.0144	31.0	11.2	0.0341	50.8
5.0	24.0	26.0	23.0	0.0144	26.0	12.0	0.0223	41.7
15.0	24.0	21.0	18.0	0.0144	21.0	12.9	0.0133	32.6
30.0	24.0	18.5	15.5	0.0144	18.5	13.3	0.0096	28.1
60.0	24.0	15.0	12.0	0.0144	15.0	13.8	0.0069	21.7
120.0	23.0	14.0	10.7	0.0146	14.0	14.0	0.0050	19.4
240.0	22.0	13.0	9.4	0.0147	13.0	14.2	0.0036	17.1
1380.0	22.0	11.0	7.4	0.0147	11.0	14.5	0.0015	13.5

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 13.1 % SAND = 29.8
% SILT = 37.7 % CLAY = 19.4

D85= 3.35 D60= 0.112 D50= 0.033
D30= 0.0107 D15= 0.00240

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	11	0.0	12.7	47.5	31.7	8.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○		NP	3.72	0.40	0.20	0.039	0.0124	.0077		

MATERIAL DESCRIPTION	USCS	AASHTO
○ BLACK SILTY SAND	SM	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 07-052, 0.0'-16.0'

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 29.2%

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GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 14

Date: 06/15/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 07-052, 0.0'-16.0'
Sample Description: BLACK SILTY SAND
USCS Class: SM
AASHTO Class:
Liquid limit: NP
Plasticity index: NP

Notes

Remarks: NATURAL MOISTURE: 29.2%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	351.95
Tare =	52.84
Dry sample weight =	299.11

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
0.75 inches	0.00	100.0
0.5 inches	7.90	97.4
0.375 inches	15.65	94.8
# 4	37.99	87.3
# 10	61.13	79.6
# 20	6.16	69.8
# 40	11.97	60.5
# 60	16.28	53.7
# 100	21.09	46.0
# 200	25.01	39.8

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 79.6
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 32.21
Dry weight & tare = 32.01
Tare = 21.57
Hygroscopic moisture= 1.9 %
Calculated biased weight= 61.7
Automatic temperature correction
Composite correction at 20 deg C =-4.5

Meniscus correction only= 0
Specific gravity of solids= 2.35
Specific gravity correction factor= 1.084
Hydrometer type: 152H

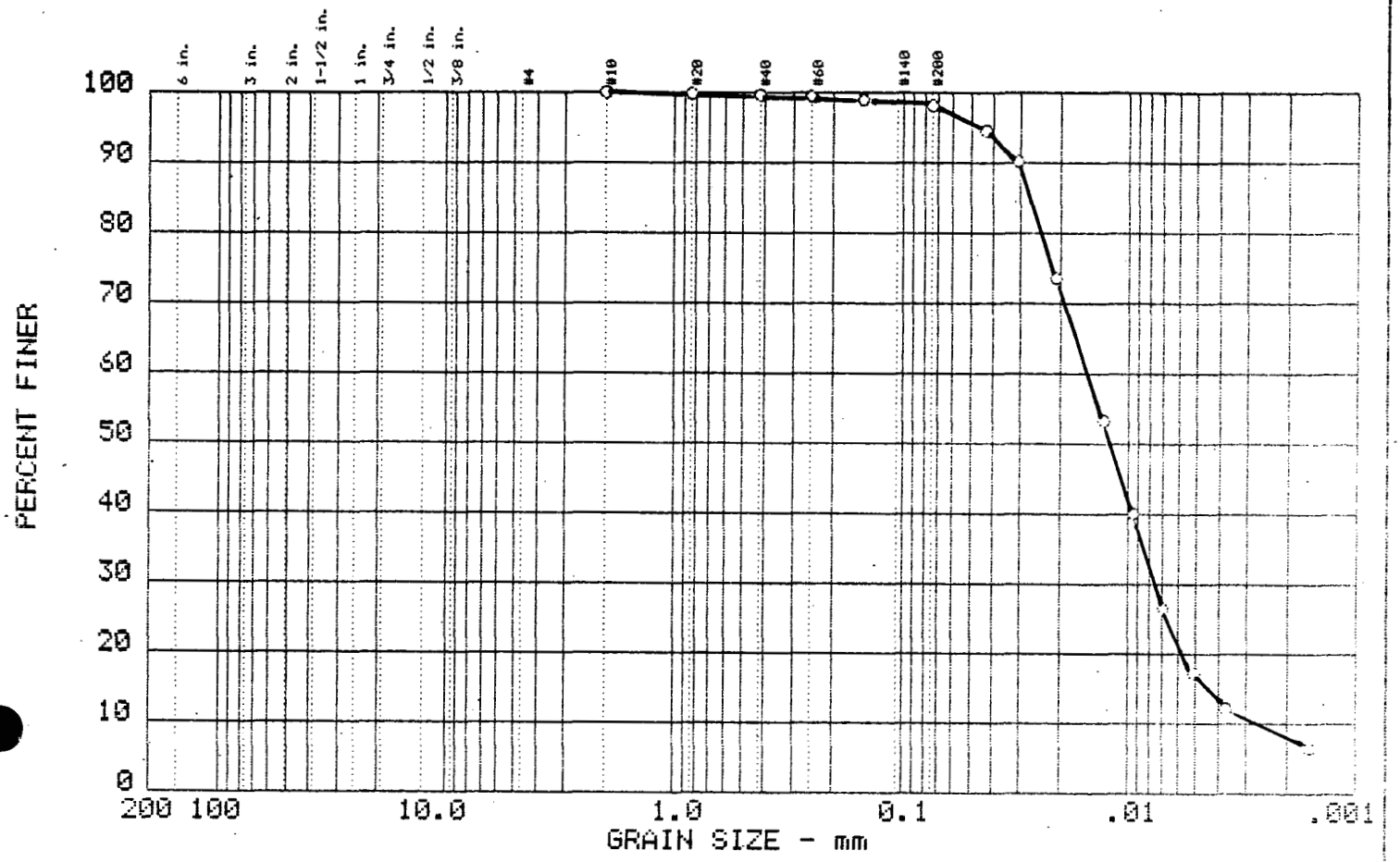
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	24.0	23.0	19.5	0.0144	23.0	12.5	0.0509	34.2
2.0	24.0	20.0	16.5	0.0144	20.0	13.0	0.0367	28.9
5.0	24.0	17.5	14.0	0.0144	17.5	13.4	0.0236	24.5
15.0	24.0	13.0	9.5	0.0144	13.0	14.2	0.0140	16.6
30.0	24.0	10.5	7.0	0.0144	10.5	14.6	0.0100	12.2
60.0	24.0	9.0	5.5	0.0144	9.0	14.8	0.0071	9.6
120.0	23.0	8.5	4.7	0.0146	8.5	14.9	0.0051	8.2
240.0	22.0	8.0	3.9	0.0147	8.0	15.0	0.0037	6.9
1372.0	22.0	7.0	2.9	0.0147	7.0	15.1	0.0015	5.1

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 12.7 % SAND = 47.5
% SILT = 31.7 % CLAY = 8.1

D85= 3.72 D60= 0.403 D50= 0.197
D30= 0.0394 D15= 0.01245 D10= 0.00767
Cc = 0.5012 Cu = 52.4807

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	17		0.0	1.9	81.4	16.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○		NP	.027	.015	.012	.0076	.0046	.0029		

MATERIAL DESCRIPTION	USCS	AASHTO
○ GRAY AND WHITE SILT	ML	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 47-012, 0.0'-66.0'

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 134.0%

GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

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Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 15

Date: 06/15/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 47-012, 0.0'-66.0'
Sample Description: GRAY AND WHITE SILT
USCS Class: ML
Liquid limit: NP
AASHTO Class:
Plasticity index: NP

Notes

Remarks: NATURAL MOISTURE: 134.0%

Fig. No.:

Mechanical Analysis Data

Initial
Dry sample and tare= 113.63
Tare = 52.12
Dry sample weight = 61.51
Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 20	0.10	99.8
# 40	0.19	99.6
# 60	0.25	99.5
# 100	0.48	99.0
# 200	0.94	98.1

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 100.0
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 22.41
Dry weight & tare = 22.39
Tare = 21.48
Hygroscopic moisture= 2.2 %
Calculated biased weight= 48.9
Automatic temperature correction
Composite correction at 20 deg C =-4

Meniscus correction only= 0
Specific gravity of solids= 2.33
Specific gravity correction factor= 1.091
Hydrometer type: 152H

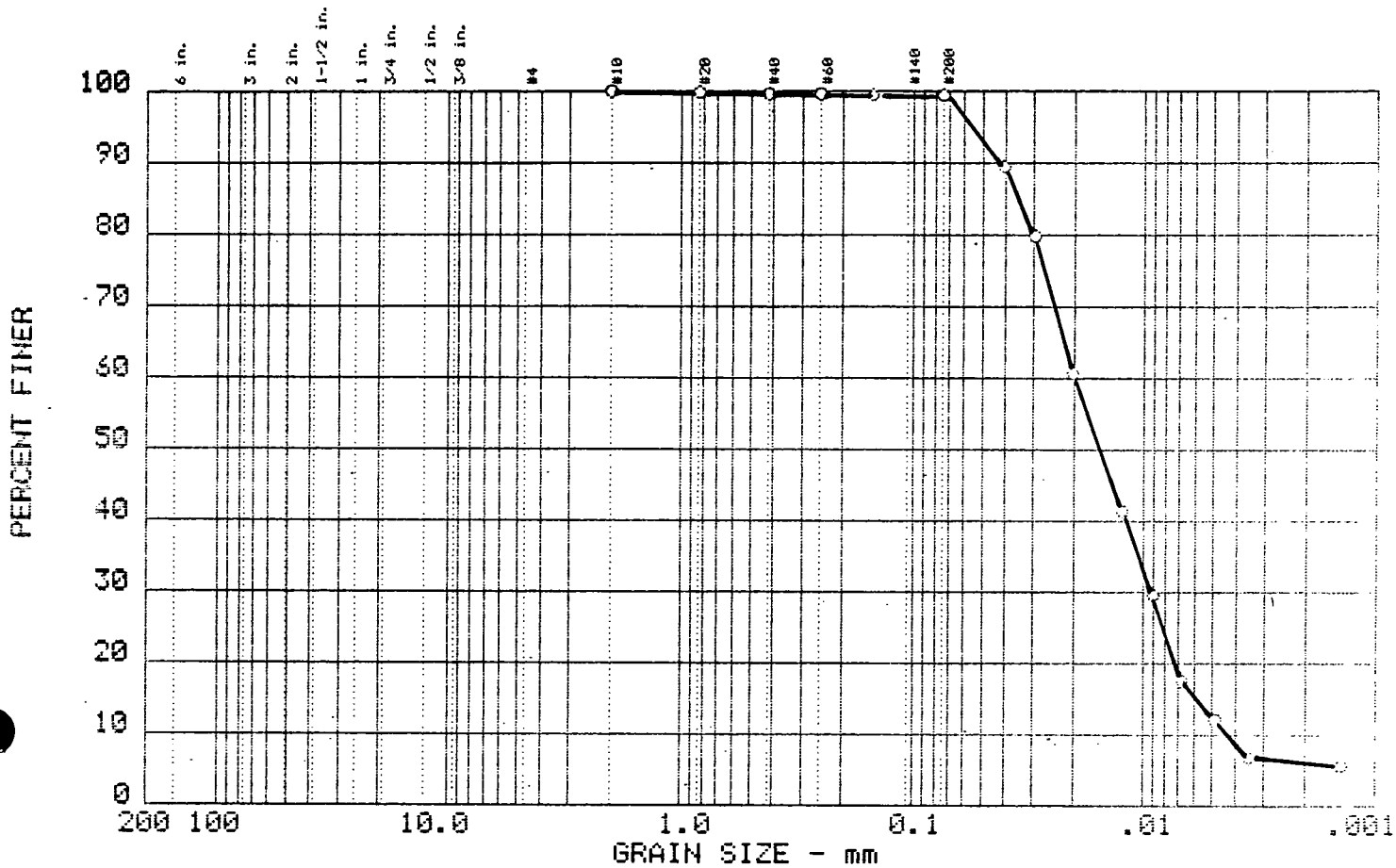
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	24.0	45.5	42.5	0.0145	45.5	8.8	0.0431	94.6
2.0	24.0	43.5	40.5	0.0145	43.5	9.2	0.0310	90.2
5.0	24.0	36.0	33.0	0.0145	36.0	10.4	0.0209	73.5
15.0	24.0	27.0	24.0	0.0145	27.0	11.9	0.0129	53.4
30.0	24.0	21.0	18.0	0.0145	21.0	12.9	0.0095	40.0
60.0	24.0	15.0	12.0	0.0145	15.0	13.8	0.0070	26.6
120.0	23.0	11.0	7.7	0.0147	11.0	14.5	0.0051	17.1
240.0	22.0	9.0	5.4	0.0148	9.0	14.8	0.0037	12.1
1369.0	22.0	6.5	2.9	0.0148	6.5	15.2	0.0016	6.5

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 1.9
% SILT = 81.4 % CLAY = 16.7

D85= 0.03 D60= 0.015 D50= 0.012
D30= 0.0076 D15= 0.00456 D10= 0.00291
Cc = 1.2957 Cu = 5.2180

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	13		0.0	0.6	86.8	12.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○		NP	.036	.02	0.16	0.009	0.0061	.0042		

MATERIAL DESCRIPTION	USCS	AASHTO
○ WHITE SILT	ML	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 48-013, 2.0'-11.2'

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 89.6%

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GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 16

Date: 06/15/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 48-013, 2.0'-11.2'
Sample Description: WHITE SILT
USCS Class: ML
AASHTO Class:
Liquid limit: NP
Plasticity index: NP

Notes

Remarks: NATURAL MOISTURE: 89.6%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	271.44
Tare =	87.73
Dry sample weight =	183.71

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 20	0.04	99.9
# 40	0.19	99.6
# 60	0.21	99.6
# 100	0.23	99.5
# 200	0.31	99.4

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 100.0
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 34.92
Dry weight & tare = 34.50
Tare = 21.40
Hygroscopic moisture= 3.2 %
Calculated biased weight= 48.4
Automatic temperature correction
Composite correction at 20 deg C =-4

Meniscus correction only= 0
Specific gravity of solids= 2.5
Specific gravity correction factor= 1.038
Hydrometer type: 152H

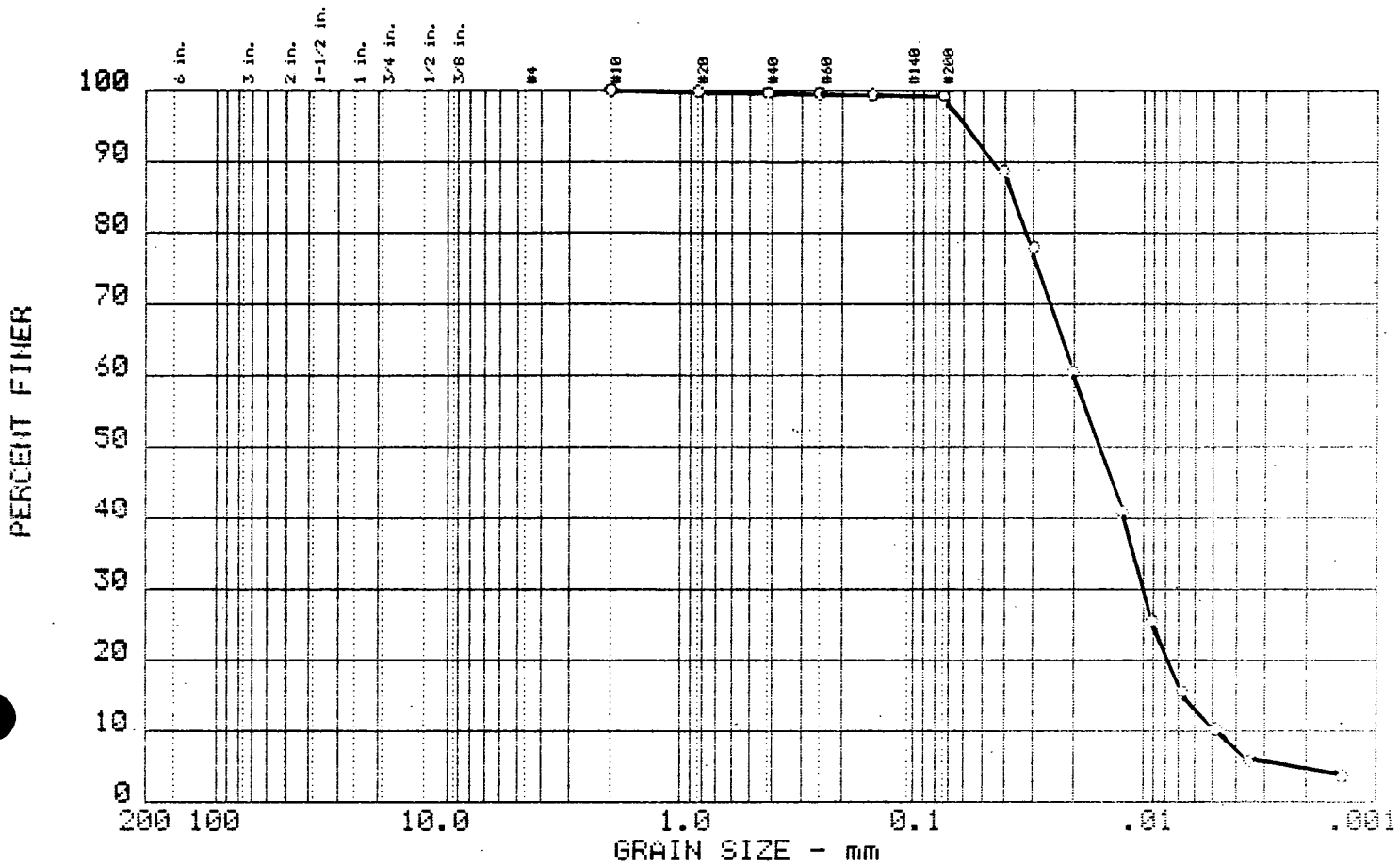
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	25.0	44.5	41.8	0.0135	44.5	9.0	0.0405	89.5
2.0	25.0	40.0	37.3	0.0135	40.0	9.7	0.0298	79.8
5.0	25.0	31.0	28.3	0.0135	31.0	11.2	0.0202	60.6
15.0	25.0	22.0	19.3	0.0135	22.0	12.7	0.0124	41.3
30.0	25.0	16.5	13.8	0.0135	16.5	13.6	0.0091	29.5
60.0	23.0	11.5	8.2	0.0138	11.5	14.4	0.0068	17.5
120.0	23.0	9.0	5.7	0.0138	9.0	14.8	0.0049	12.1
240.0	23.0	6.5	3.2	0.0138	6.5	15.2	0.0035	6.8
1419.0	23.0	6.0	2.7	0.0138	6.0	15.3	0.0014	5.7

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 0.6
% SILT = 86.8 % CLAY = 12.5

D85= 0.03 D60= 0.020 D50= 0.016
D30= 0.0092 D15= 0.00600 D10= 0.00425
Cc = 0.9954 Cu = 4.6989

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	14		0.0	0.7	88.8	10.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○		NP	.037	.02	0.015	0.010	0.0066	.0048		

MATERIAL DESCRIPTION	USCS	AASHTO
○ WHITE SILT	ML	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 48-042, 0.0'-12.0'

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 88.8%

GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

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Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 17

Date: 06/15/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 48-042, 0.0'-12.0'
Sample Description: WHITE SILT
USCS Class: ML
AASHTO Class:
Liquid limit: NP
Plasticity index: NP

Notes

Remarks: NATURAL MOISTURE: 88.8%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	300.05
Tare =	94.14
Dry sample weight =	205.91

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 20	0.06	99.9
# 40	0.13	99.7
# 60	0.19	99.6
# 100	0.28	99.4
# 200	0.36	99.3

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 100.0
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 33.87
Dry weight & tare = 33.28
Tare = 21.12
Hygroscopic moisture= 4.9 %
Calculated biased weight= 47.7
Automatic temperature correction
Composite correction at 20 deg C =-4.5

Meniscus correction only= 0
Specific gravity of solids= 2.5
Specific gravity correction factor= 1.038
Hydrometer type: 152H

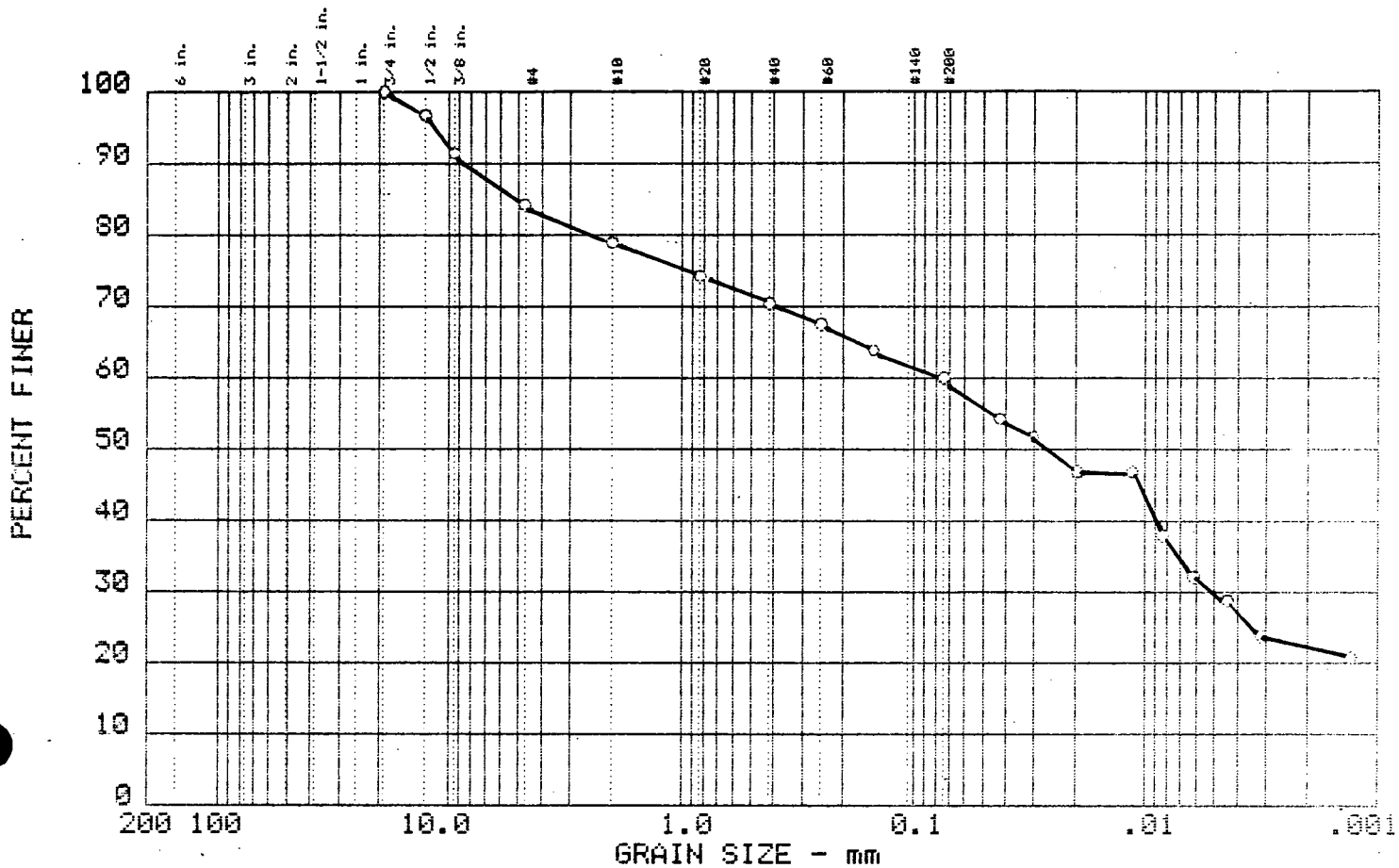
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	25.0	44.0	40.8	0.0135	44.0	9.1	0.0407	88.7
2.0	25.0	39.0	35.8	0.0135	39.0	9.9	0.0300	77.9
5.0	25.0	31.0	27.8	0.0135	31.0	11.2	0.0202	60.4
15.0	25.0	22.0	18.8	0.0135	22.0	12.7	0.0124	40.9
30.0	25.0	15.0	11.8	0.0135	15.0	13.8	0.0092	25.6
60.0	23.0	11.0	7.2	0.0138	11.0	14.5	0.0068	15.6
120.0	23.0	8.5	4.7	0.0138	8.5	14.9	0.0049	10.2
240.0	23.0	6.5	2.7	0.0138	6.5	15.2	0.0035	5.8
1396.0	23.0	5.5	1.7	0.0138	5.5	15.4	0.0014	3.6

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 0.7
% SILT = 88.8 % CLAY = 10.5

D85= 0.04 D60= 0.020 D50= 0.015
D30= 0.0100 D15= 0.00655 D10= 0.00480
Cc = 1.0520 Cu = 4.1495

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	15	0.0	15.7	24.3	30.0	30.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	33	14	5.25	.073	0.03	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN AND GRAY SANDY LEAN CLAY WITH GRAVEL	CL	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 49-003, 0.0'-15.0'

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 13.4%

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GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 18

Date: 06/15/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 49-003, 0.0'-18.0'
Sample Description: BROWN AND GRAY SANDY LEAN CLAY WITH GRAVEL
USCS Class: CL Liquid limit: 33
AASHTO Class: Plasticity index: 14

Notes

Remarks: NATURAL MOISTURE: 13.4%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	433.60
Tare =	93.63
Dry sample weight =	339.97

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
0.75 inches	0.00	100.0
0.5 inches	11.00	96.8
0.375 inches	29.23	91.4
# 4	53.47	84.3
# 10	71.83	78.9
# 20	2.88	74.3
# 40	5.28	70.5
# 60	7.18	67.5
# 100	9.49	63.9
# 200	11.97	60.0

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 78.9
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 35.01
Dry weight & tare = 34.82
Tare = 21.53
Hygroscopic moisture= 1.4 %
Calculated biased weight= 62.5
Automatic temperature correction
Composite correction at 20 deg C =-4

Meniscus correction only= 0
Specific gravity of solids= 2.57
Specific gravity correction factor= 1.019
Hydrometer type: 152H

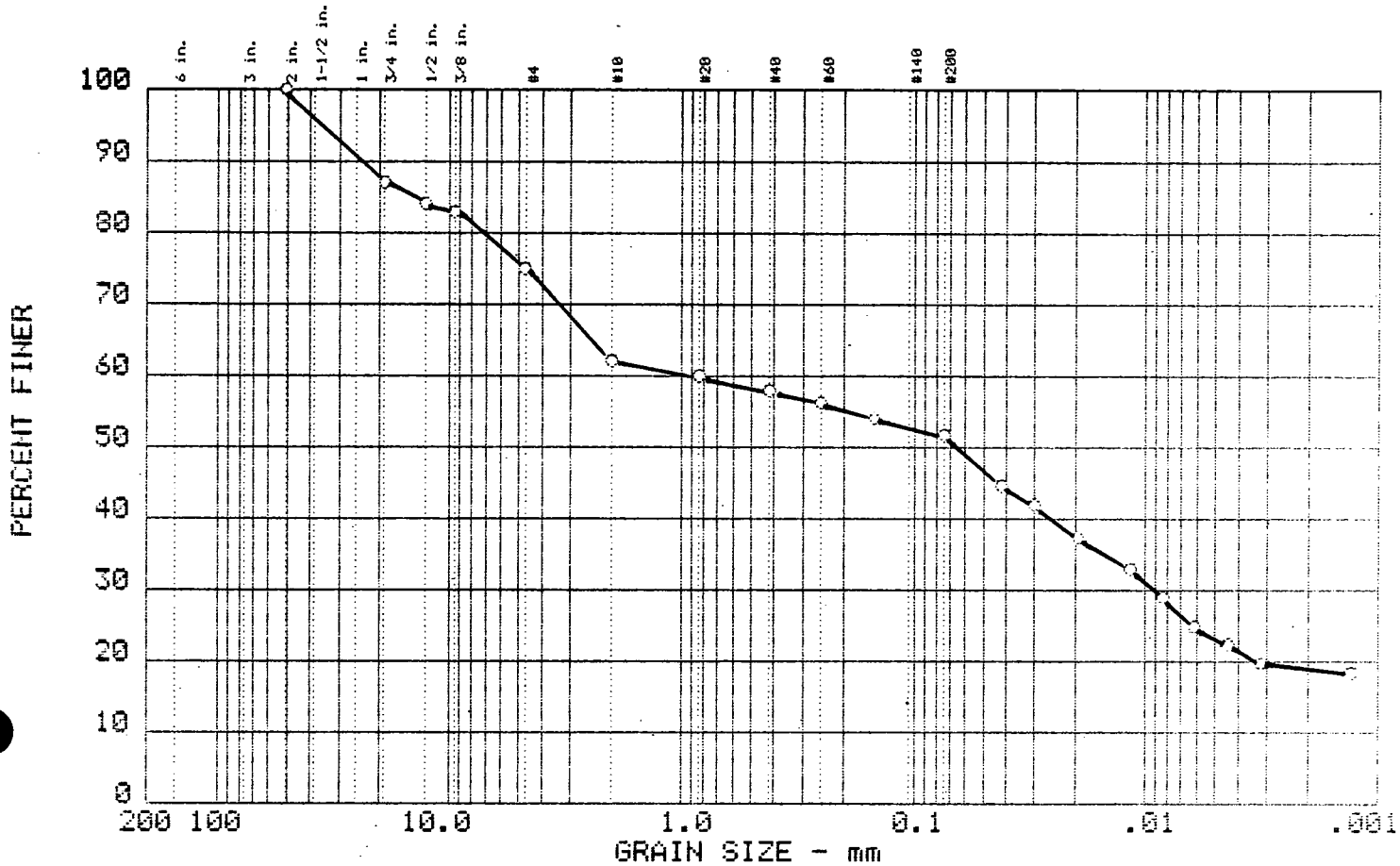
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	25.0	36.0	33.3	0.0132	36.0	10.4	0.0425	54.3
2.0	25.0	34.5	31.8	0.0132	34.5	10.6	0.0304	51.8
5.0	25.0	31.5	28.8	0.0132	31.5	11.1	0.0197	46.9
15.0	25.0	31.5	28.8	0.0132	31.5	11.1	0.0114	46.9
30.0	25.0	26.0	23.3	0.0132	26.0	12.0	0.0084	38.0
60.0	23.0	23.0	19.7	0.0135	23.0	12.5	0.0062	32.1
120.0	23.0	21.0	17.7	0.0135	21.0	12.9	0.0044	28.8
240.0	23.0	18.0	14.7	0.0135	18.0	13.3	0.0032	23.9
1414.0	23.0	16.0	12.7	0.0135	16.0	13.7	0.0013	20.7

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 15.7 % SAND = 24.3
% SILT = 30.0 % CLAY = 30.0

D85= 5.31 D60= 0.073 D50= 0.025
D30= 0.0050

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	16	0.0	24.9	23.3	28.7	23.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	40	20	14.79	0.74	0.06	0.009				

MATERIAL DESCRIPTION	USCS	AASHTO
○ BROWN AND GRAY GRAVELLY LEAN CLAY WITH SAND	CL	

Project No.: 43235
Project: WESTON-FERNALD SITE
○ Location: 49-019, 0.0'-12.0'

Date: 9/10/87

Remarks:
NATURAL MOISTURE: 15.1%

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GRAIN SIZE DISTRIBUTION TEST REPORT
BOWSER-MORNER, INC.

Fig. No. ____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 19

Date: 06/15/87
Project No.: 43235
Project: WESTON - FERNALD SITE

Sample Data

Location of Sample: 49-019, 0.0'-12.0'
Sample Description: BROWN AND GRAY GRAVELLY LEAN CLAY WITH SAND
USCS Class: CL
Liquid limit: 40
AASHTO Class:
Plasticity index: 20

Notes

Remarks: NATURAL MOISTURE: 15.1%

Fig. No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	422.71
Tare =	86.05
Dry sample weight =	336.66

Sample split on number 10 sieve
Split sample data:
Sample and tare = 50 Tare = 0 Sample weight = 50
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
2 inches	0.00	100.0
0.75 inches	43.36	87.1
0.5 inches	53.58	84.1
0.375 inches	57.48	82.9
# 4	83.86	75.1
# 10	127.55	62.1
# 20	1.60	60.1
# 40	3.37	57.9
# 60	4.74	56.2
# 100	6.43	54.1
# 200	8.27	51.8

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 62.1
Weight of hydrometer sample: 50
Hygroscopic moisture correction:
Moist weight & tare = 32.28
Dry weight & tare = 32.00
Tare = 21.48
Hygroscopic moisture= 2.7 %
Calculated biased weight= 78.4
Automatic temperature correction
Composite correction at 20 deg C =-4.5

eniscus correction only= 0
Specific gravity of solids= 2.57
Specific gravity correction factor= 1.019
Hydrometer type: 152H

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
1.0	25.0	37.5	34.3	0.0132	37.5	10.1	0.0420	44.6
2.0	25.0	35.5	32.3	0.0132	35.5	10.5	0.0302	42.0
5.0	25.0	32.0	28.8	0.0132	32.0	11.0	0.0196	37.4
15.0	25.0	28.5	25.3	0.0132	28.5	11.6	0.0116	32.9
30.0	25.0	25.5	22.3	0.0132	25.5	12.1	0.0084	29.0
60.0	23.0	23.0	19.2	0.0135	23.0	12.5	0.0062	24.9
120.0	23.0	21.0	17.2	0.0135	21.0	12.9	0.0044	22.3
240.0	23.0	19.0	15.2	0.0135	19.0	13.2	0.0032	19.7
1411.0	23.0	18.0	14.2	0.0135	18.0	13.3	0.0013	18.4

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 24.9 % SAND = 23.3
% SILT = 28.7 % CLAY = 23.2

D85= 14.79 D60= 0.741 D50= 0.063
D30= 0.0090

Compaction Tests

APPENDIX B

RESULTS OF HARVARD MINIATURE COMPACTION TESTS

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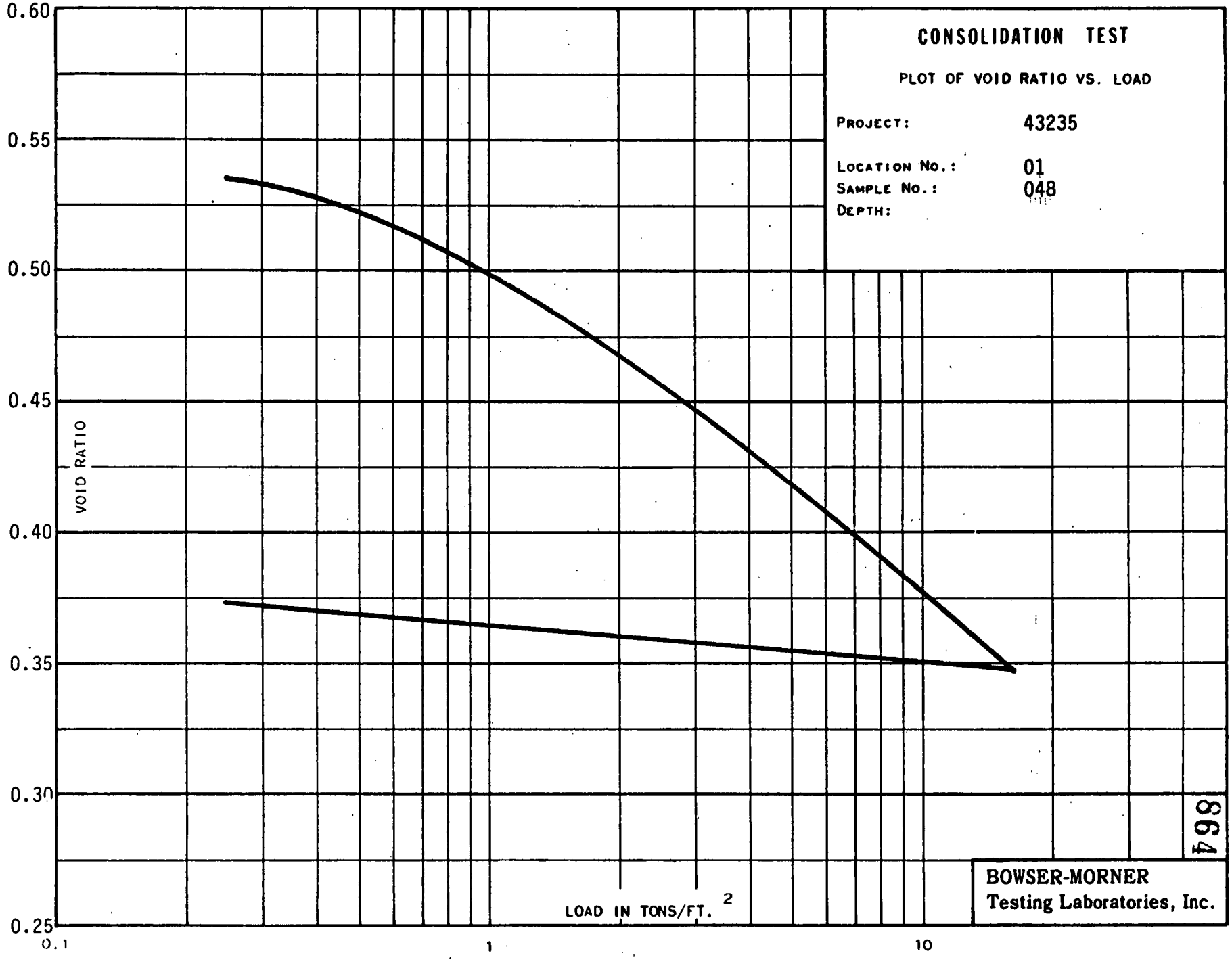
Contains Proprietary Information

Consolidation Tests

APPENDIX C

RESULTS OF CONSOLIDATION TESTS

FORM 2A86



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REPORT OF ONE DIMENSIONAL CONSOLIDATION TEST

PROJECT: 43235
BORING NO: 01
SAMPLE NO: 048
DEPTH: - FT.
SPECIFIC GRAVITY: 2.62
MOISTURE CONTENT
BEFORE: 20.0%
AFTER: 15.7%
DRY WEIGHT OF SOLIDS: .2207 LBS.
INITIAL DIAL READING: .07878 INCHES
INITIAL HEIGHT: .7500 INCHES
INITIAL TOTAL UNIT WEIGHT:
TYPE OF DIAL: N
HEIGHT OF SOLIDS: .4751 INCHES
INITIAL VOID RATIO: .5785

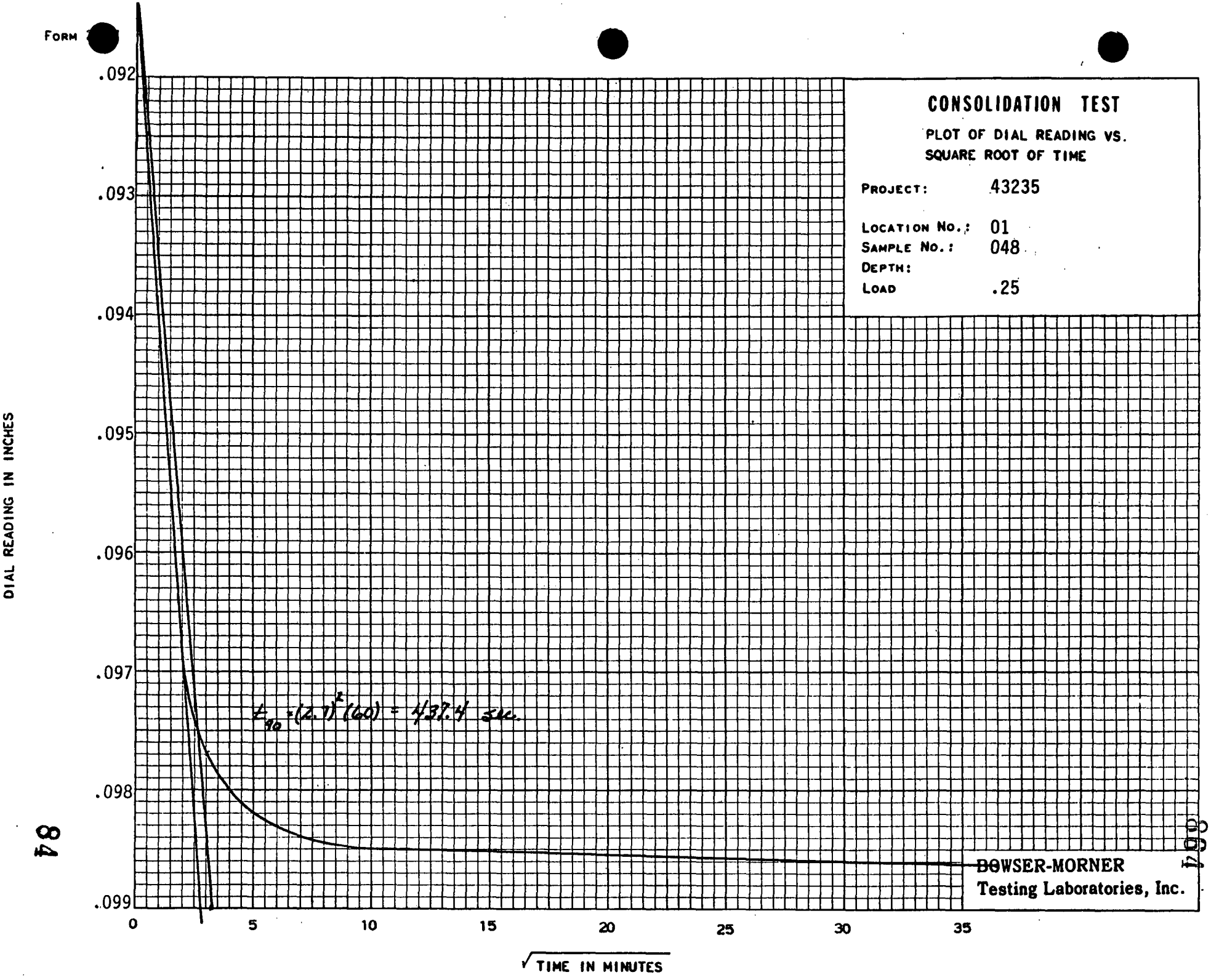
INITIAL DEGREE OF SATURATION: 90.6 %
FINAL DEGREE OF SATURATION: 100.0 %

LOAD TONS/SQ. FT	T90 CONSOL TIME SEC.	FINAL HEIGHT INCHES	VOID RATIO	COEFFICIENT OF CONSOL. SQ. INCHES/SEC. EXP. 10-
.25	437	.73008	.5366	2.56 EXP -4
.50	470	.72279	.5213	2.33 EXP -4
1.00	317	.71065	.4957	3.34 EXP -4
2.00	405	.69578	.4644	2.51 EXP -4
4.00	240	.67943	.4300	4.04 EXP -4
8.00	437	.66059	.3904	2.10 EXP -4
16.00	-----	.64110	.3493	-----
4.00	-----	.64439	.3563	-----
1.00	-----	.64848	.3649	-----
.25	-----	.65226	.3728	-----

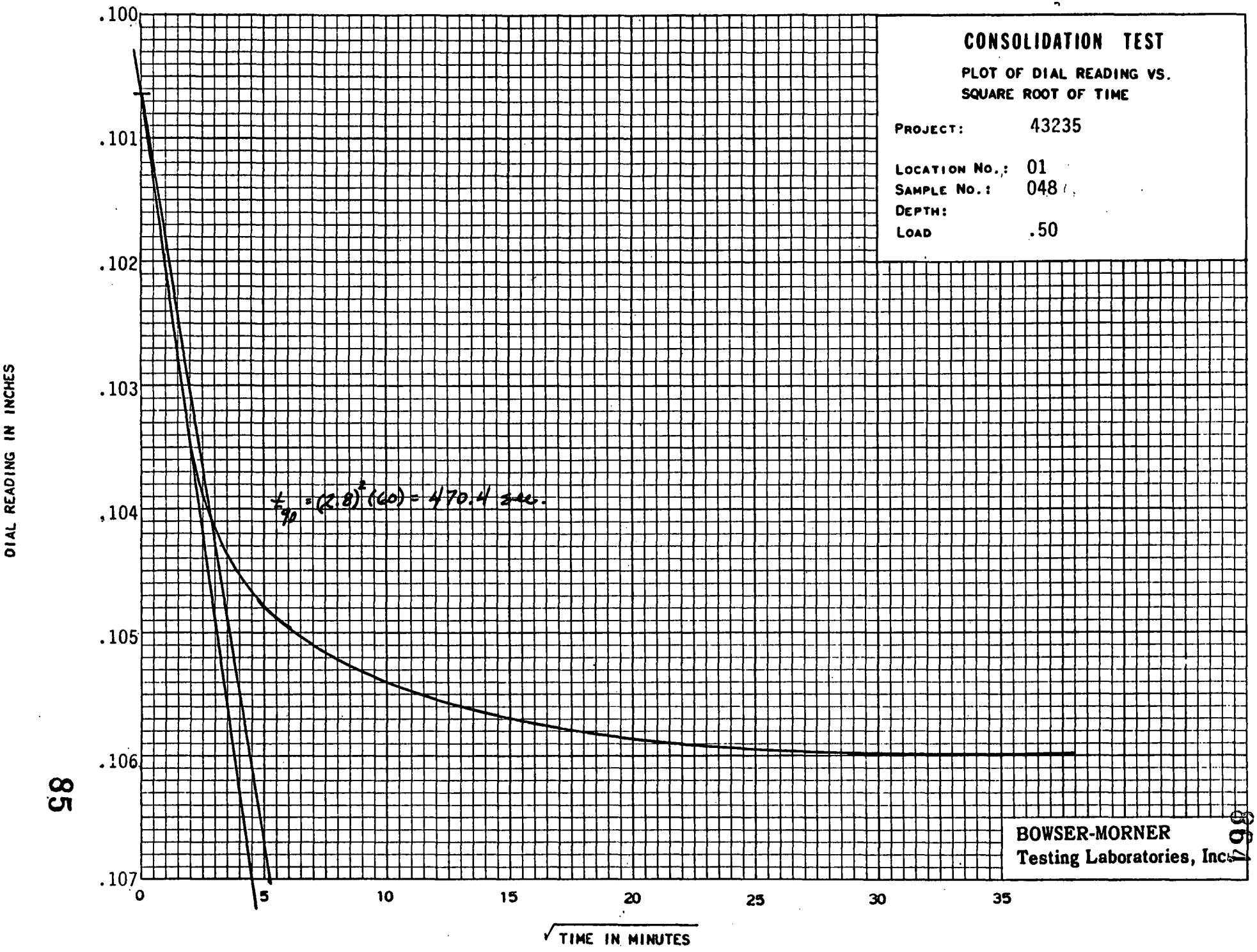
INITIAL DRY UNIT WEIGHT: 103.6 PCF
INITIAL WET UNIT WEIGHT: 124.3 PCF
PERCENT COMPACTION: 94.7%

$\omega = 20.0\%$
$C_c = .578$
$\bar{C}_v = 2.9 \times 10^{-4}$
$C_c = .138$

FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 01
SAMPLE NO.: 048
DEPTH:
LOAD .25
DIAL READING IN INCHES
.092
.093
.094
.095
.096
.097
.098
.099
0
5
10
15
20
25
30
35
√TIME IN MINUTES
$t_{90} = (2.1)^2 (60) = 437.4$ sec.
BOWSER-MORNER
Testing Laboratories, Inc.

FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 01
SAMPLE NO.: 048
DEPTH:
LOAD .50
BOWSER-MORNER
Testing Laboratories, Inc.
DIAL READING IN INCHES
.100
.101
.102
.103
.104
.105
.106
.107
0
5
10
15
20
25
30
35
√TIME IN MINUTES
$t_{90} = (2.8)^2(60) = 470.4$ sec.

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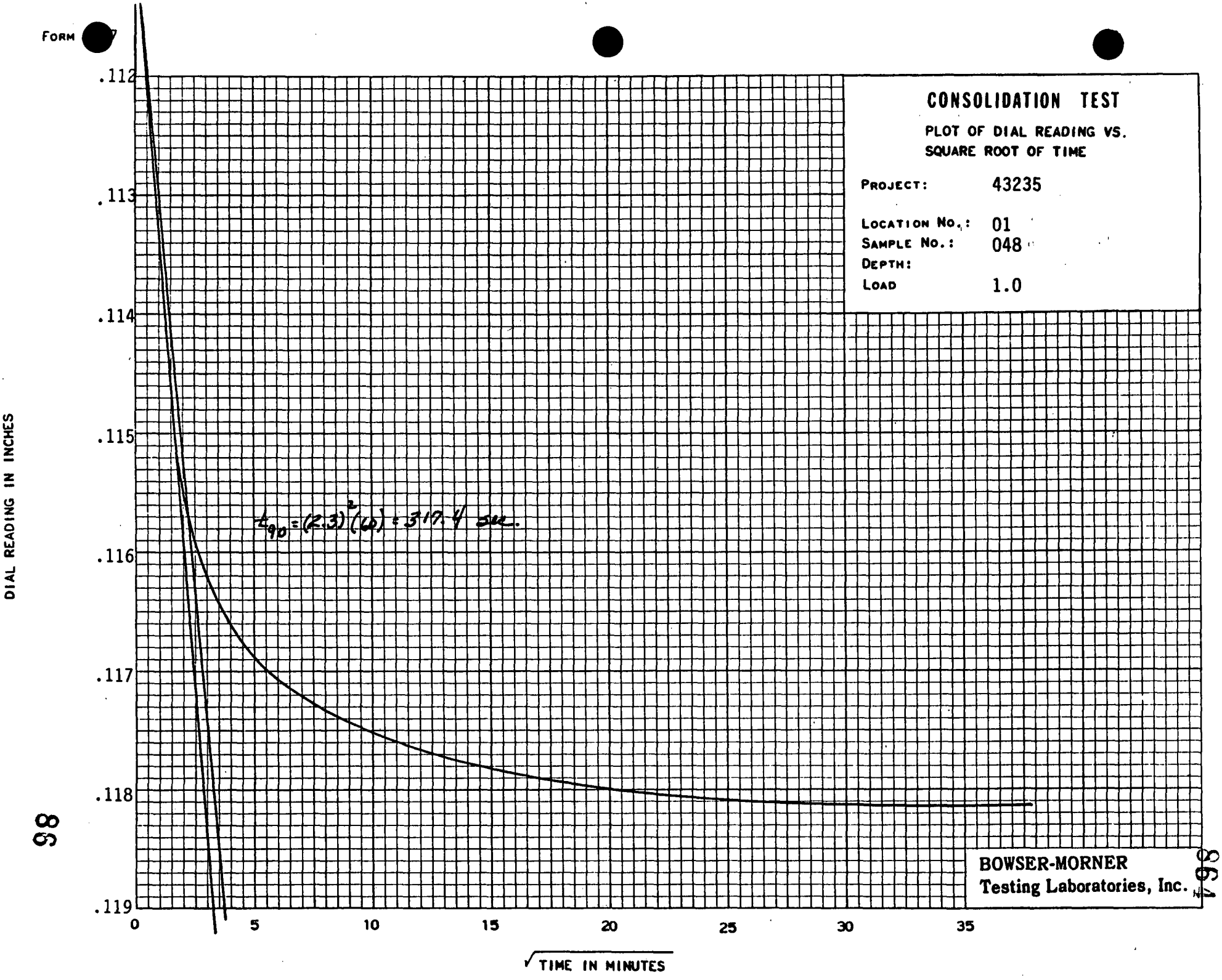
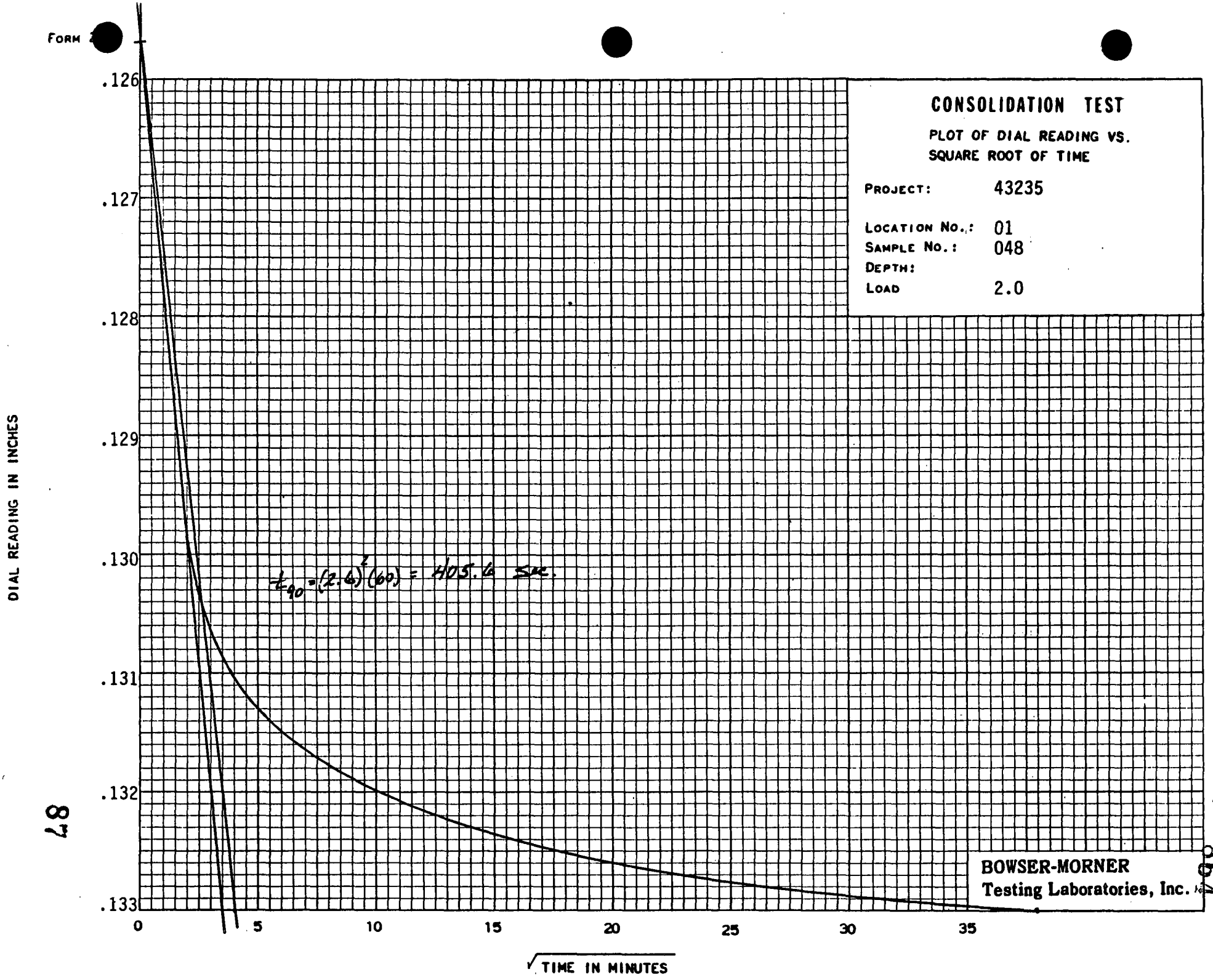
FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 01
SAMPLE NO.: 048
DEPTH:
LOAD 1.0
$t_{90} = (2.3)^2(60) = 317.4$ sec.
DIAL READING IN INCHES
.112
.113
.114
.115
.116
.117
.118
.119
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 01
SAMPLE NO.: 048
DEPTH:
LOAD 2.0
$t_{90} = (2.6)^2(60) = 405.6$ sec.
BOWSER-MORNER
Testing Laboratories, Inc.
DIAL READING IN INCHES
.126
.127
.128
.129
.130
.131
.132
.133
0
5
10
15
20
25
30
35
√TIME IN MINUTES

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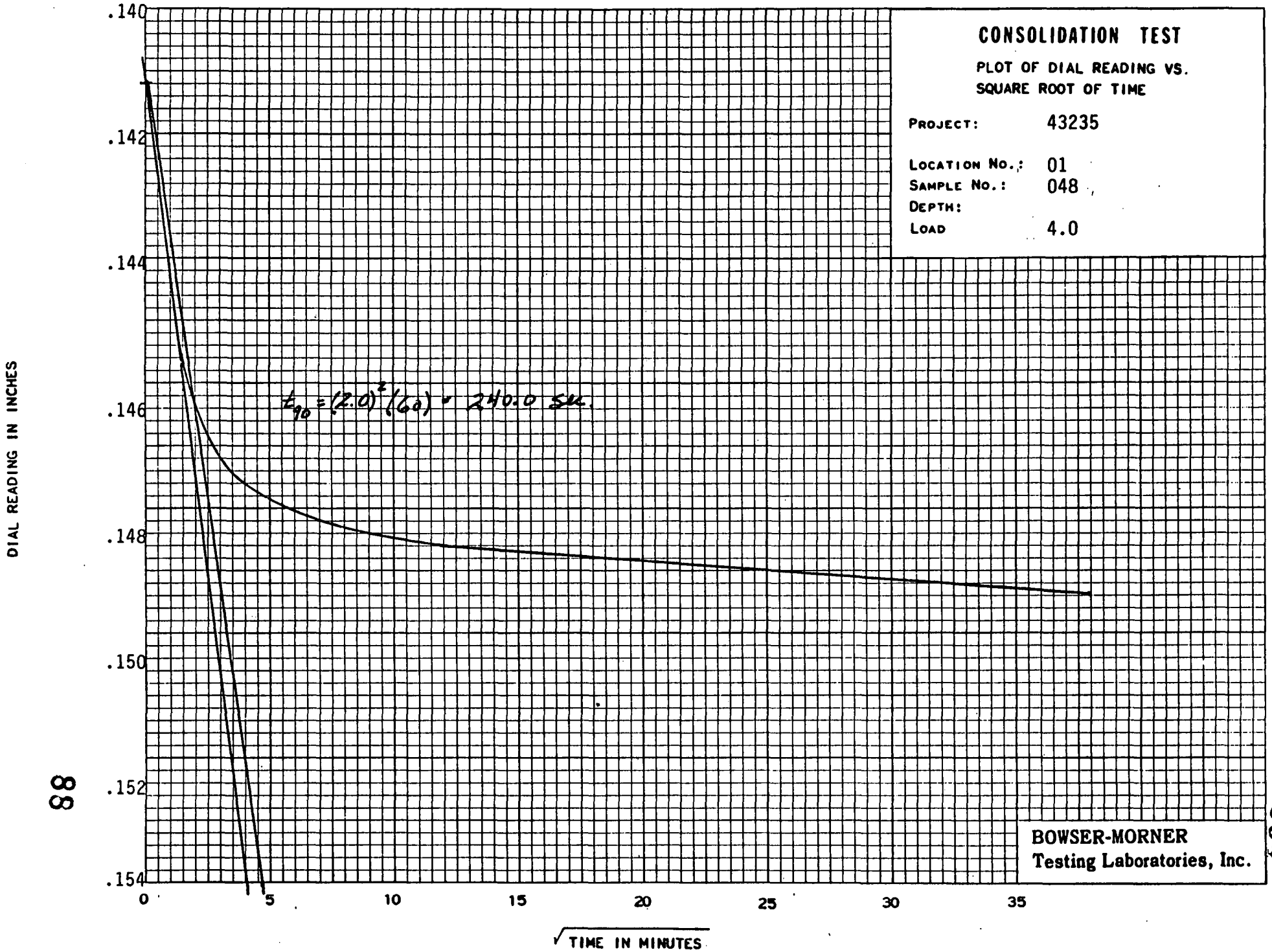
FORM 2[illegible]


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 01
SAMPLE NO.: 048
DEPTH:
LOAD 4.0
$t_{90} = (2.0)^2(60) = 240.0$ sec.
BOWSER-MORNER
Testing Laboratories, Inc.
DIAL READING IN INCHES
.140
.142
.144
.146
.148
.150
.152
.154
0
5
10
15
20
25
30
35
√TIME IN MINUTES

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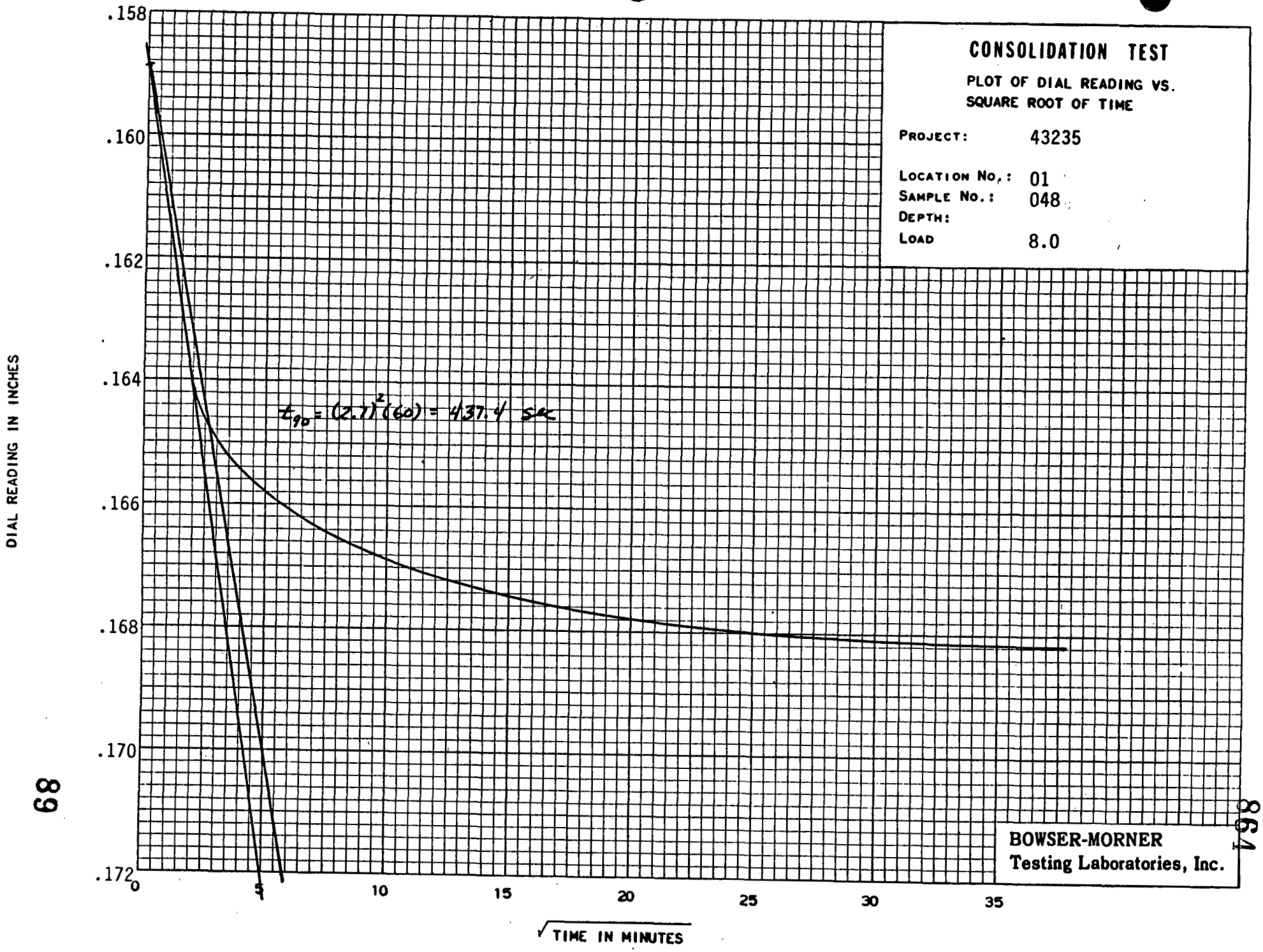
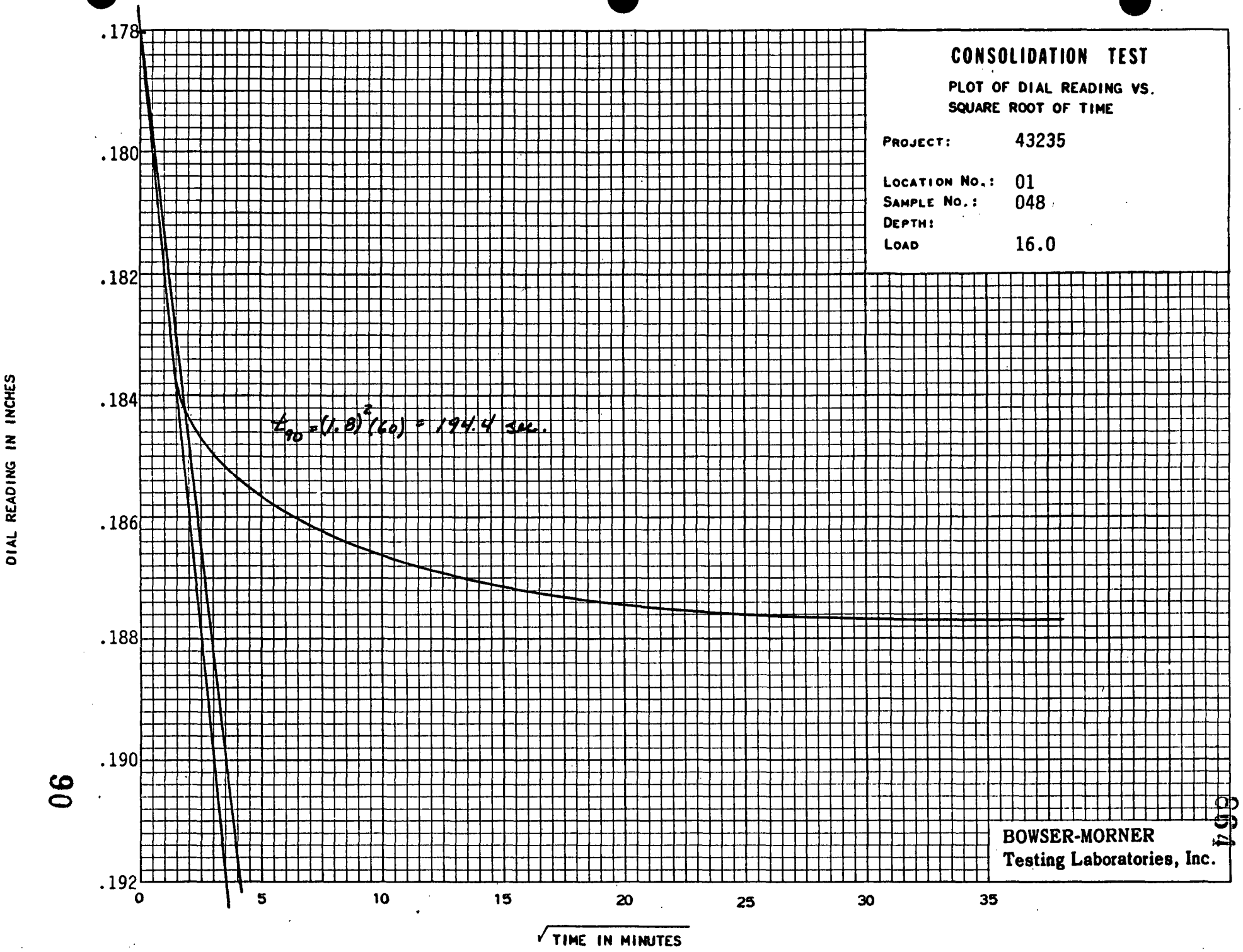
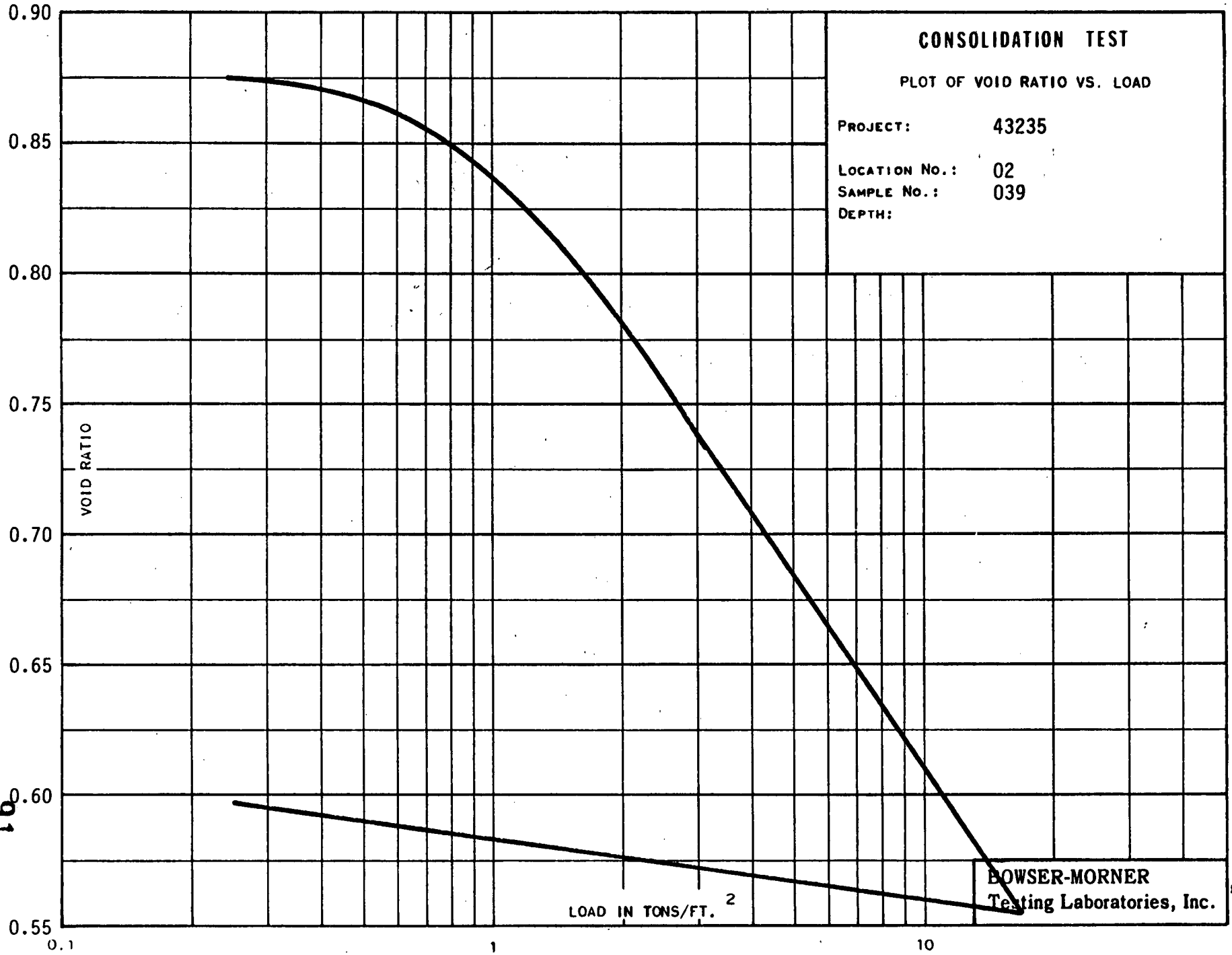
FORM 7


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 01
SAMPLE NO.: 048
DEPTH:
LOAD 8.0
$t_{90} = (2.7)^2(60) = 437.4$ sec
DIAL READING IN INCHES
.158
.160
.162
.164
.166
.168
.170
.172
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM 7


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 01
SAMPLE NO.: 048
DEPTH:
LOAD 16.0
$t_{90} = (1.8)^2 (60) = 194.4$ sec.
DIAL READING IN INCHES
.178
.180
.182
.184
.186
.188
.190
.192
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM 2A86


CONSOLIDATION TEST
PLOT OF VOID RATIO VS. LOAD
PROJECT: 43235
LOCATION NO.: 02
SAMPLE NO.: 039
DEPTH:
VOID RATIO
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.1
1
10
LOAD IN TONS/FT.2
BOWSER-MORNER
Testing Laboratories, Inc.

REPORT OF ONE DIMENSIONAL CONSOLIDATION TEST

PROJECT: 43235
BORING NO: 02
SAMPLE NO: 039
DEPTH: - FT.
SPECIFIC GRAVITY: 2.59
MOISTURE CONTENT
BEFORE: 20.3%
AFTER: 22.2%
DRY WEIGHT OF SOLIDS: .1743 LBS.
INITIAL DIAL READING: .06051 INCHES
INITIAL HEIGHT: .7500 INCHES
INITIAL TOTAL UNIT WEIGHT:
TYPE OF DIAL: N
HEIGHT OF SOLIDS: .3795 INCHES
INITIAL VOID RATIO: .9761

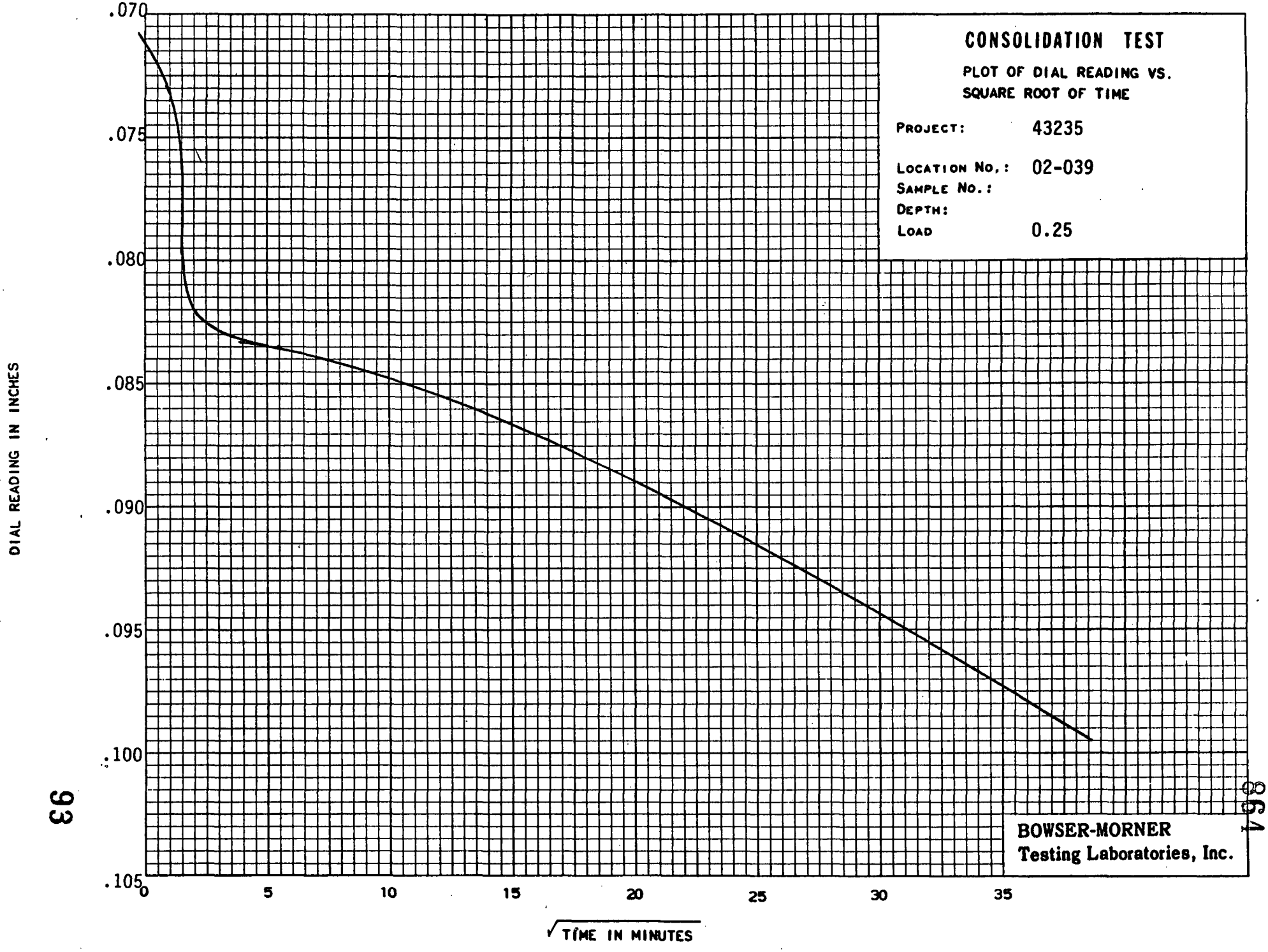
INITIAL DEGREE OF SATURATION: 53.9 %
FINAL DEGREE OF SATURATION: 100.0 %

LOAD TONS/SQ. FT	T90 CONSOL TIME SEC.	FINAL HEIGHT INCHES	VOID RATIO	COEFFICIENT OF CONSOL. SQ. INCHES/SEC. EXP. 10-
.25	-----	.71126	.8740	-----
.50	264	.70830	.8662	3.98 EXP -4
1.00	345	.69811	.8394	2.96 EXP -4
2.00	135	.67336	.7742	7.05 EXP -4
4.00	117	.64693	.7045	7.47 EXP -4
8.00	72	.61859	.6299	1.11 EXP -3
16.00	29	.59032	.5554	2.49 EXP -3
4.00	-----	.59458	.5666	-----
1.00	-----	.60071	.5827	-----
.25	-----	.60643	.5978	-----

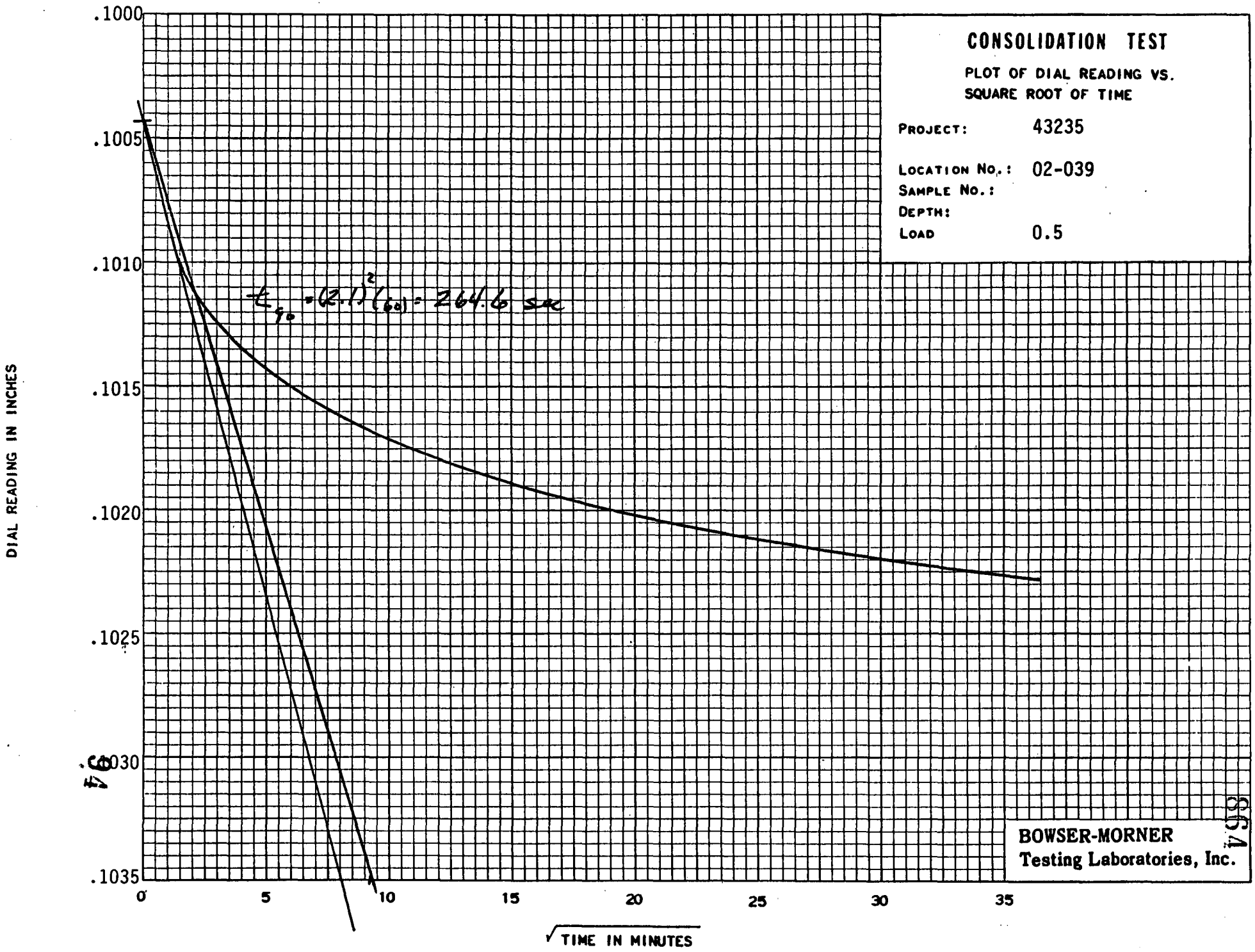
INITIAL DRY UNIT WEIGHT: 81.8 PCF
INITIAL WET UNIT WEIGHT: 98.4 PCF
PERCENT COMPACTION: 94.8%

$w = 20.3$
$C_v = 9 \times 10^{-4}$
$e_0 = .975$
$C_c = .244$

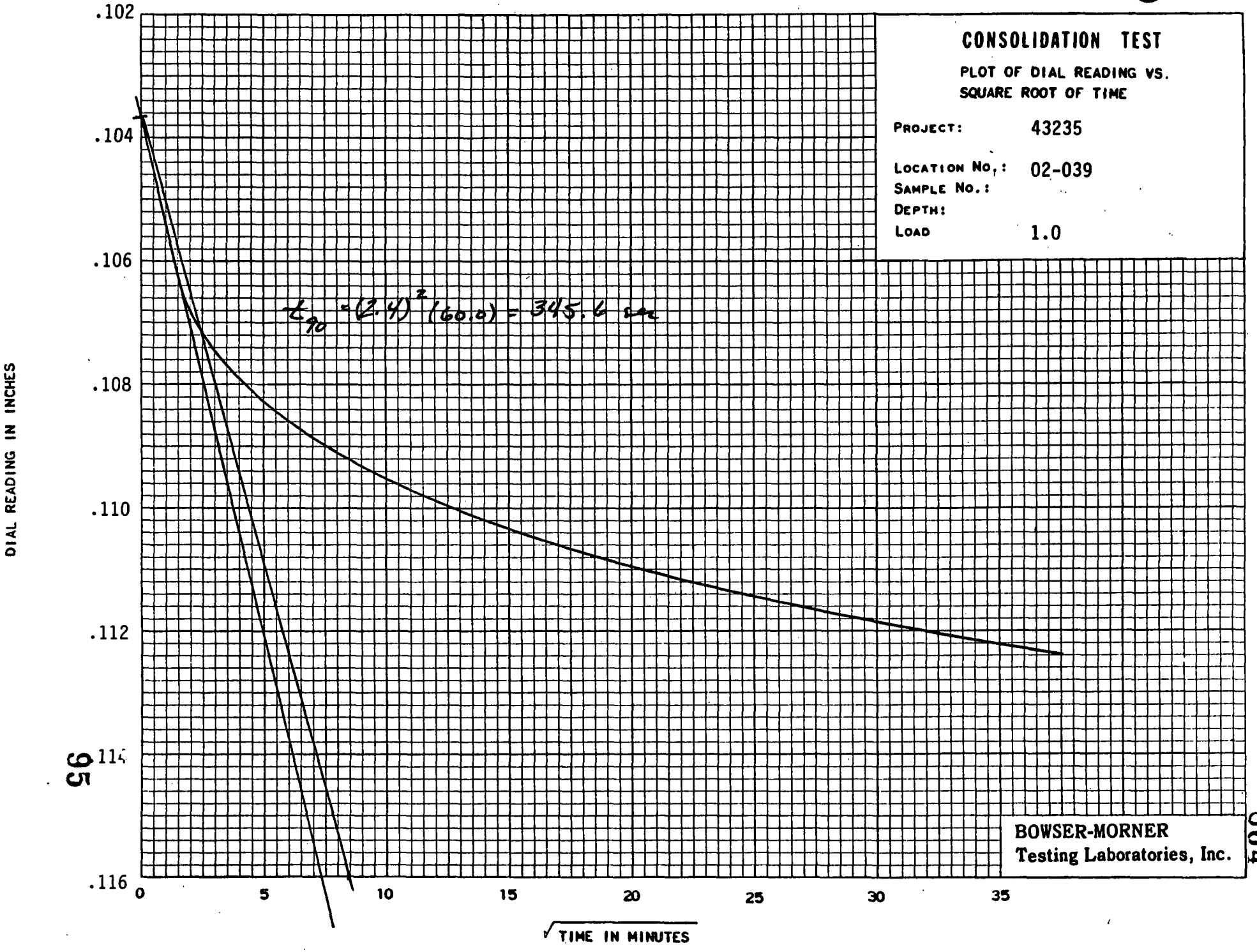
FORM 7


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 02-039
SAMPLE NO.:
DEPTH:
LOAD 0.25
BOWSER-MORNER
Testing Laboratories, Inc.
DIAL READING IN INCHES
.070
.075
.080
.085
.090
.095
.100
.105
0
5
10
15
20
25
30
35
√TIME IN MINUTES

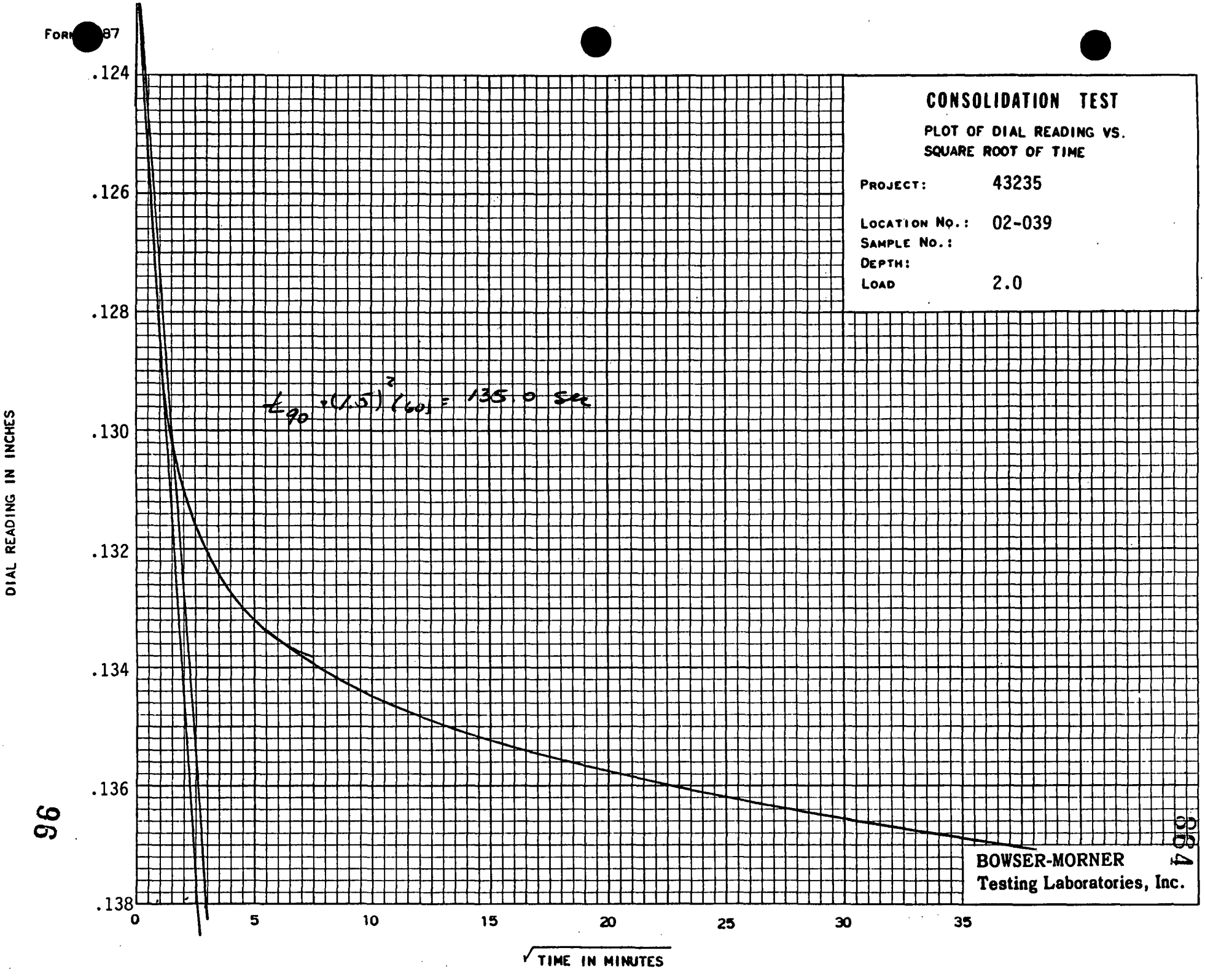
FORM 7


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 02-039
SAMPLE NO.:
DEPTH:
LOAD 0.5
$t_{90} = (2.1)^2(60) = 264.6$ sec
DIAL READING IN INCHES
.1000
.1005
.1010
.1015
.1020
.1025
.1030
.1035
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

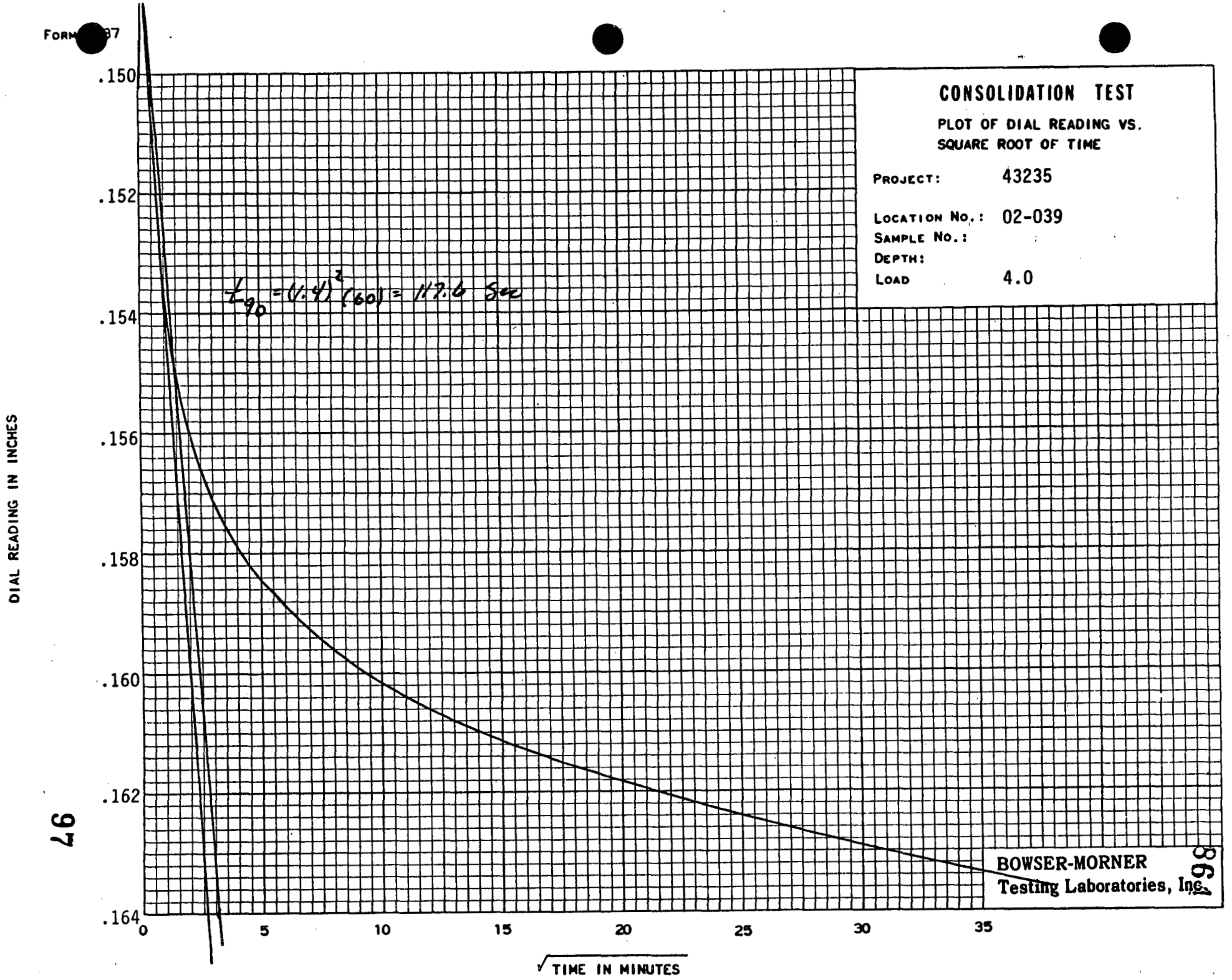
FORM 7


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 02-039
SAMPLE NO.:
DEPTH:
LOAD 1.0
$t_{90} = (2.4)^2 (60.0) = 345.6$ sec
DIAL READING IN INCHES
.102
.104
.106
.108
.110
.112
.114
.116
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

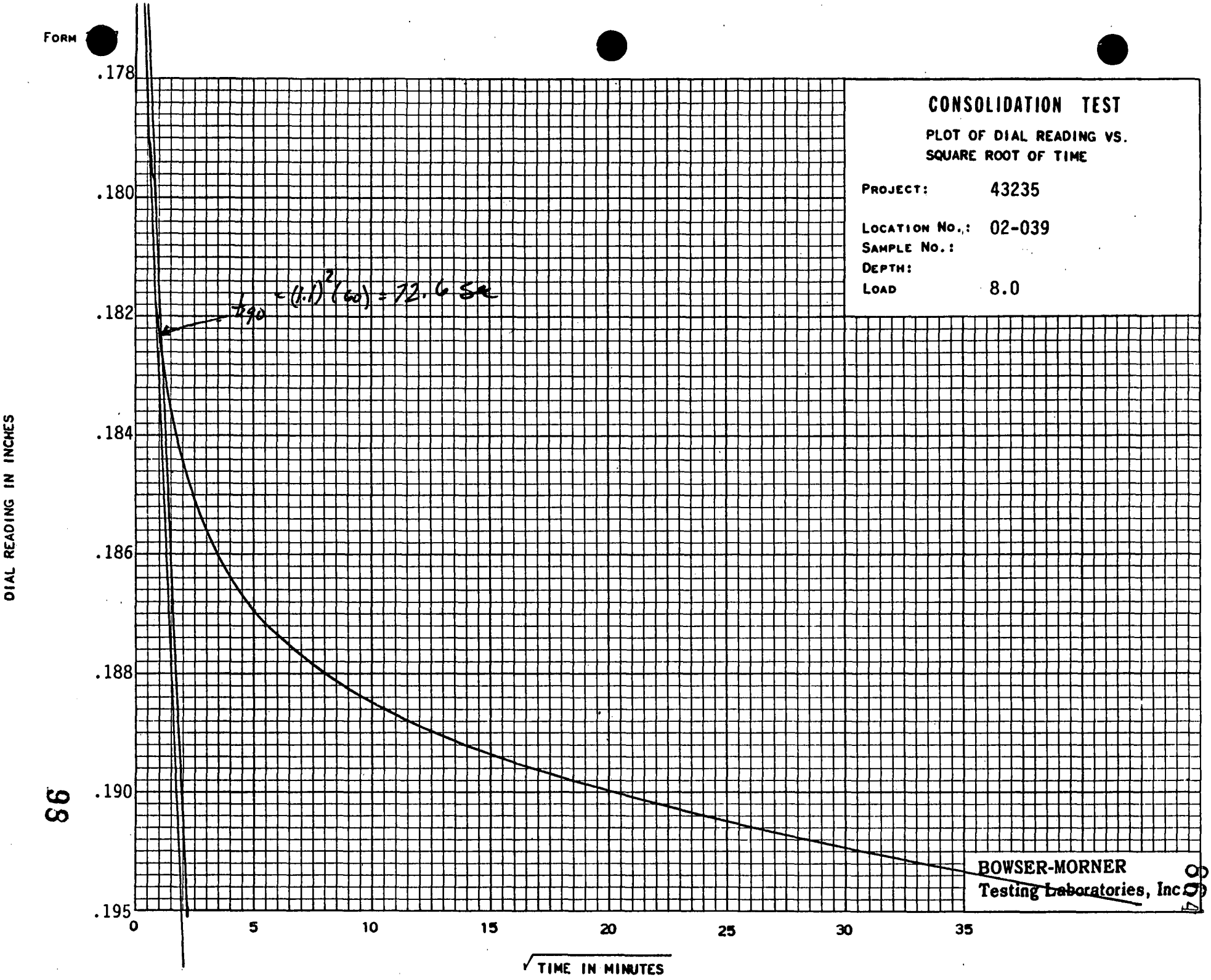
FORM 87


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 02-039
SAMPLE NO.:
DEPTH:
LOAD 2.0
$t_{90} = (1.5)^2 (60) = 135.0$ sec
DIAL READING IN INCHES
.124
.126
.128
.130
.132
.134
.136
.138
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

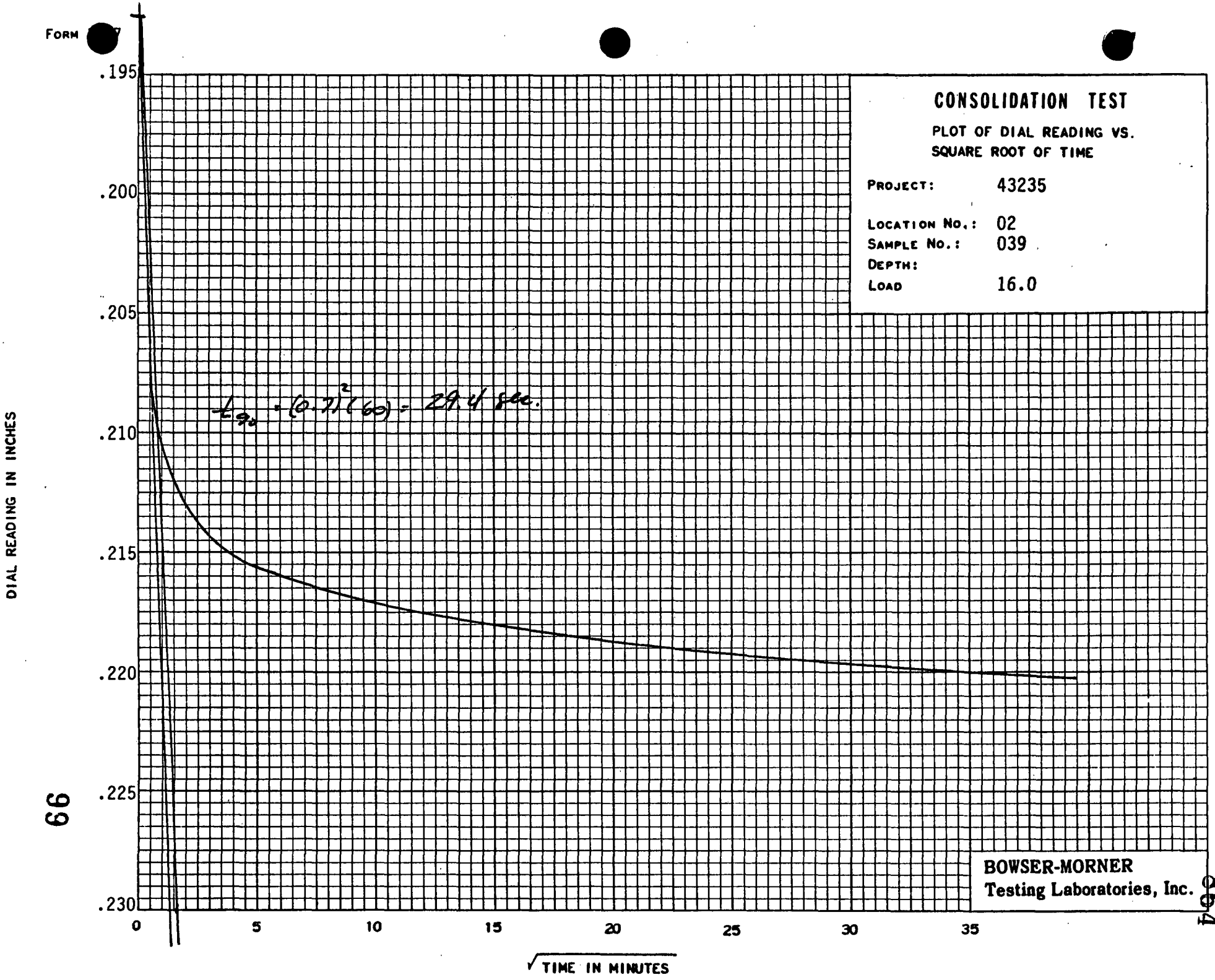
FORM 87


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 02-039
SAMPLE NO.:
DEPTH:
LOAD 4.0
$t_{90} = (1.4)^2 (60) = 117.6$ Sec
DIAL READING IN INCHES
.150
.152
.154
.156
.158
.160
.162
.164
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 02-039
SAMPLE NO.:
DEPTH:
LOAD 8.0
$t_{90} = (1.1)^2(60) = 72.6$ Sec
DIAL READING IN INCHES
.178
.180
.182
.184
.186
.188
.190
.195
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

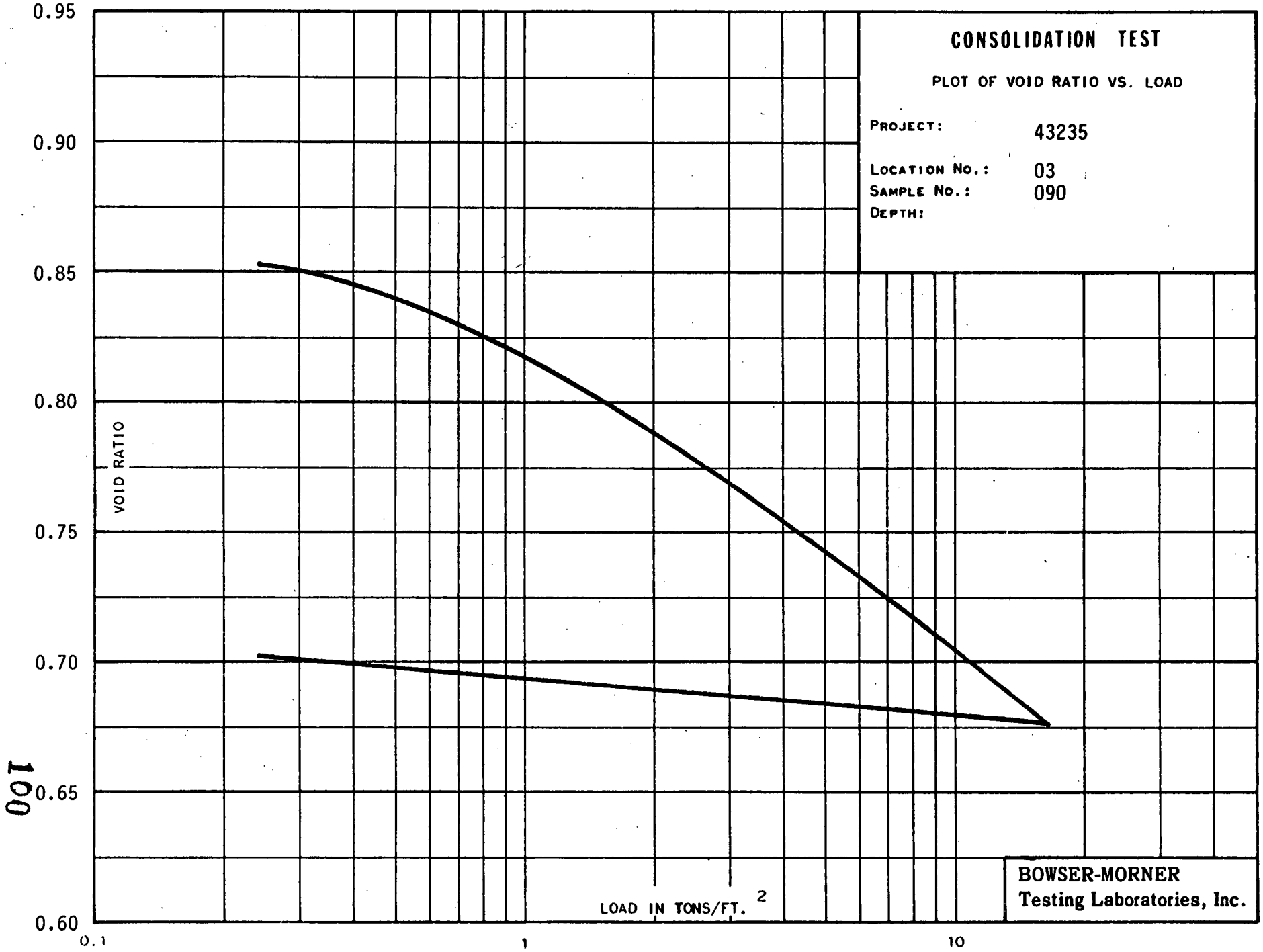
FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 02
SAMPLE NO.: 039
DEPTH:
LOAD 16.0
$t_{90} = (0.71)^2(60) = 29.4$ sec.
BOWSER-MORNER
Testing Laboratories, Inc.
DIAL READING IN INCHES
.195
.200
.205
.210
.215
.220
.225
.230
0
5
10
15
20
25
30
35
√TIME IN MINUTES

99

864

FORM 2A86


CONSOLIDATION TEST
PLOT OF VOID RATIO VS. LOAD
PROJECT: 43235
LOCATION NO.: 03
SAMPLE NO.: 090
DEPTH:
VOID RATIO
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.1
1
10
LOAD IN TONS/FT.2
BOWSER-MORNER
Testing Laboratories, Inc.

REPORT OF ONE DIMENSIONAL CONSOLIDATION TEST

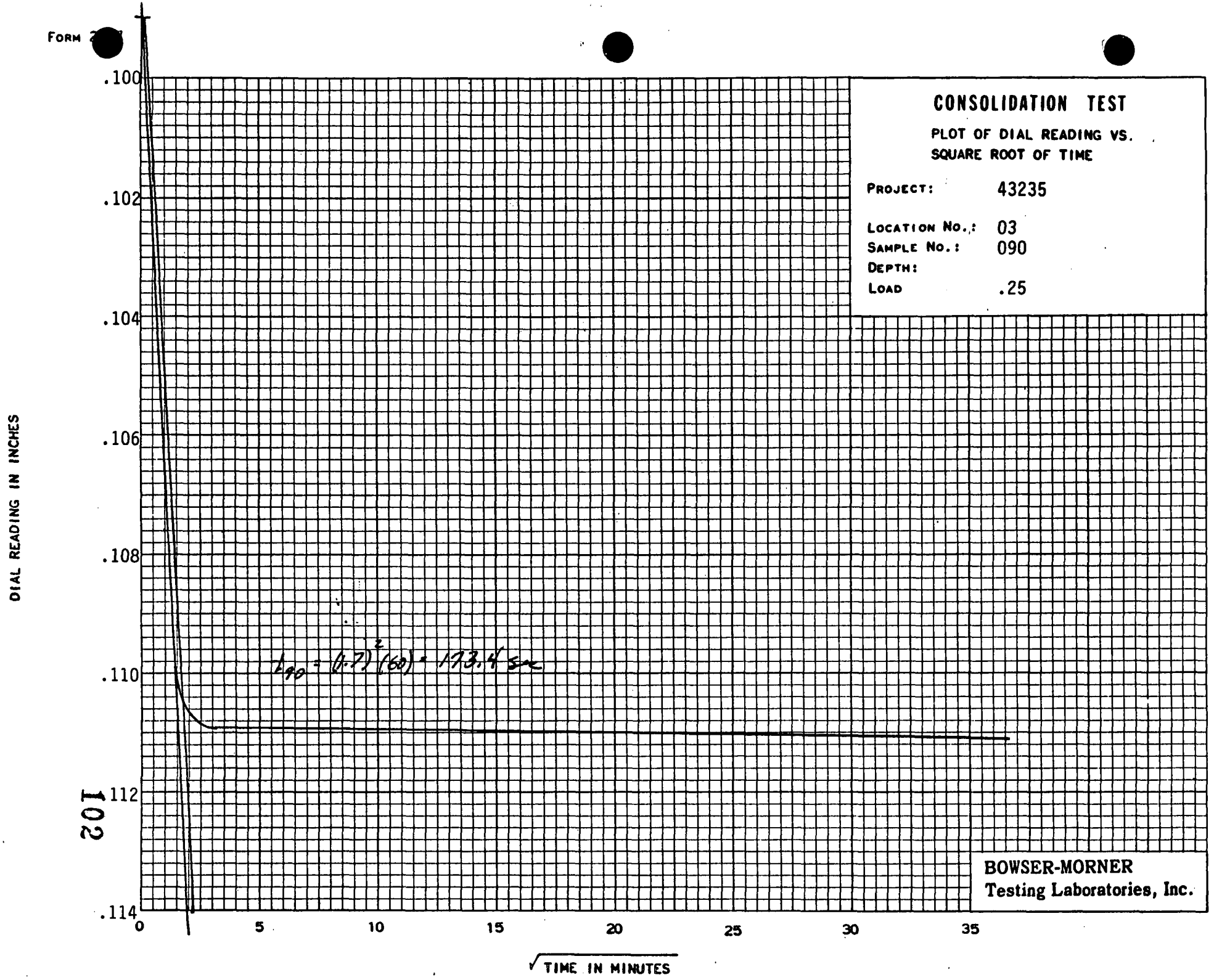
PROJECT:	43235	
BORING NO:	03	
SAMPLE NO:	090	
DEPTH:	-	FT.
SPECIFIC GRAVITY:	2.54	
MOISTURE CONTENT		
BEFORE:	30.2%	
AFTER:	23.0%	
DRY WEIGHT OF SOLIDS:	.1768	LBS.
INITIAL DIAL READING:	.08890	INCHES
INITIAL HEIGHT:	.7500	INCHES
INITIAL TOTAL UNIT WEIGHT:		
TYPE OF DIAL:	N	
HEIGHT OF SOLIDS:	.3926	INCHES
INITIAL VOID RATIO:	.9104	
INITIAL DEGREE OF SATURATION:	84.3 %	
FINAL DEGREE OF SATURATION:	86.3 %	

LOAD TONS/SQ. FT	T90 CONSOL TIME SEC.	FINAL HEIGHT INCHES	VOID RATIO	COEFFICIENT OF CONSOL. SQ. INCHES/SEC. EXP. 10-
.25	173	.72779	.8538	6.41 EXP -4
.50	60	.72232	.8399	1.83 EXP -3
1.00	60	.71303	.8162	1.78 EXP -3
2.00	48	.70192	.7879	2.13 EXP -3
4.00	60	.68954	.7564	1.66 EXP -3
8.00	29	.67510	.7196	3.26 EXP -3
16.00	15	.65843	.6772	6.07 EXP -3
4.00	-----	.66176	.6856	-----
1.00	-----	.66527	.6946	-----
.25	-----	.66851	.7028	-----

INITIAL DRY UNIT WEIGHT: 83.0 PCF
INITIAL WET UNIT WEIGHT: 108.0 PCF
PERCENT COMPACTION: 94.0%

w_c = 30.1
C_v = 2.5×10^{-3}
e_{oc} = .907
C_c = .135

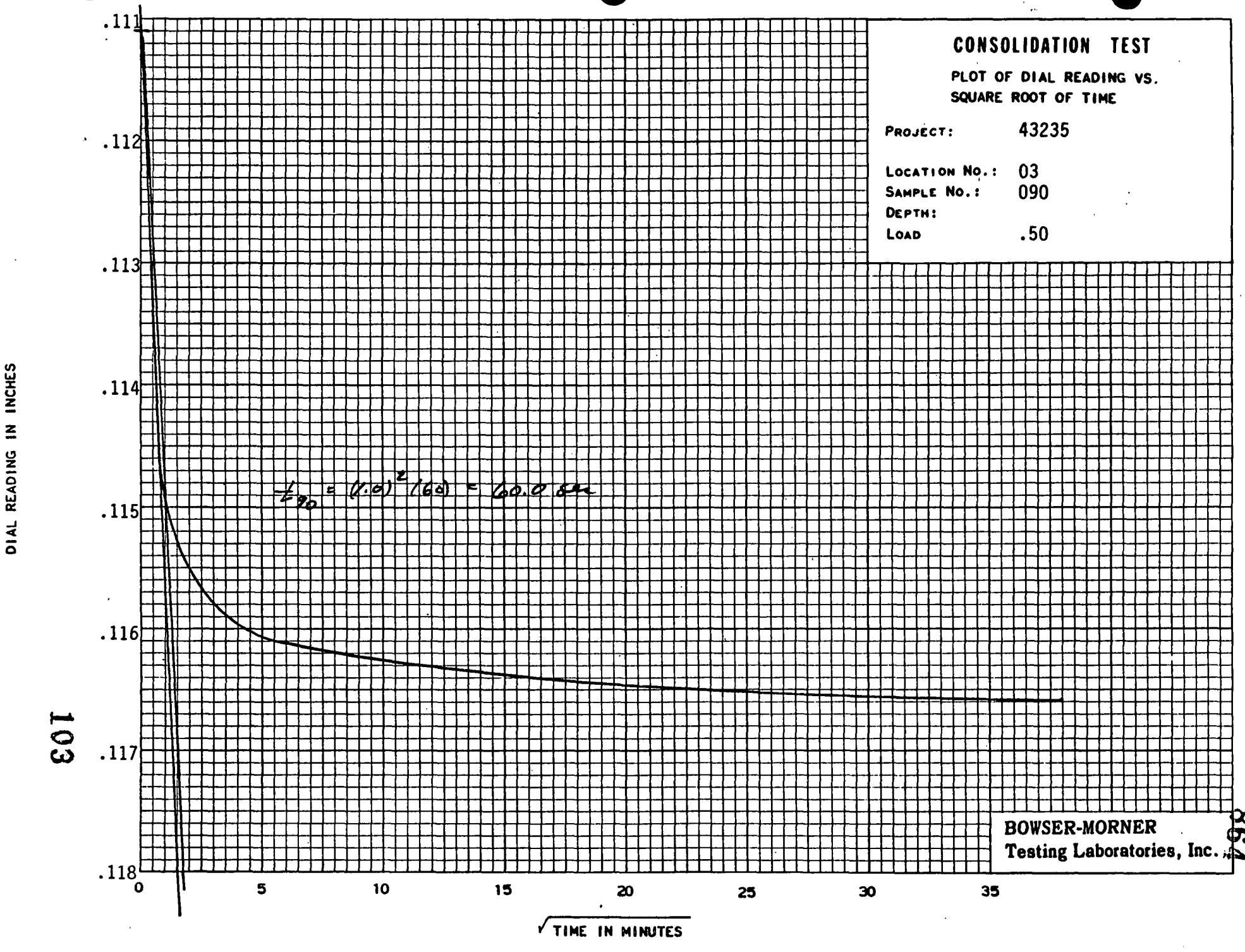
FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 03
SAMPLE NO.: 090
DEPTH:
LOAD .25
BOWSER-MORNER
Testing Laboratories, Inc.
DIAL READING IN INCHES
.100
.102
.104
.106
.108
.110
.112
.114
0
5
10
15
20
25
30
35
√TIME IN MINUTES
$t_{90} = (0.7)^2(60) = 173.4$ sec

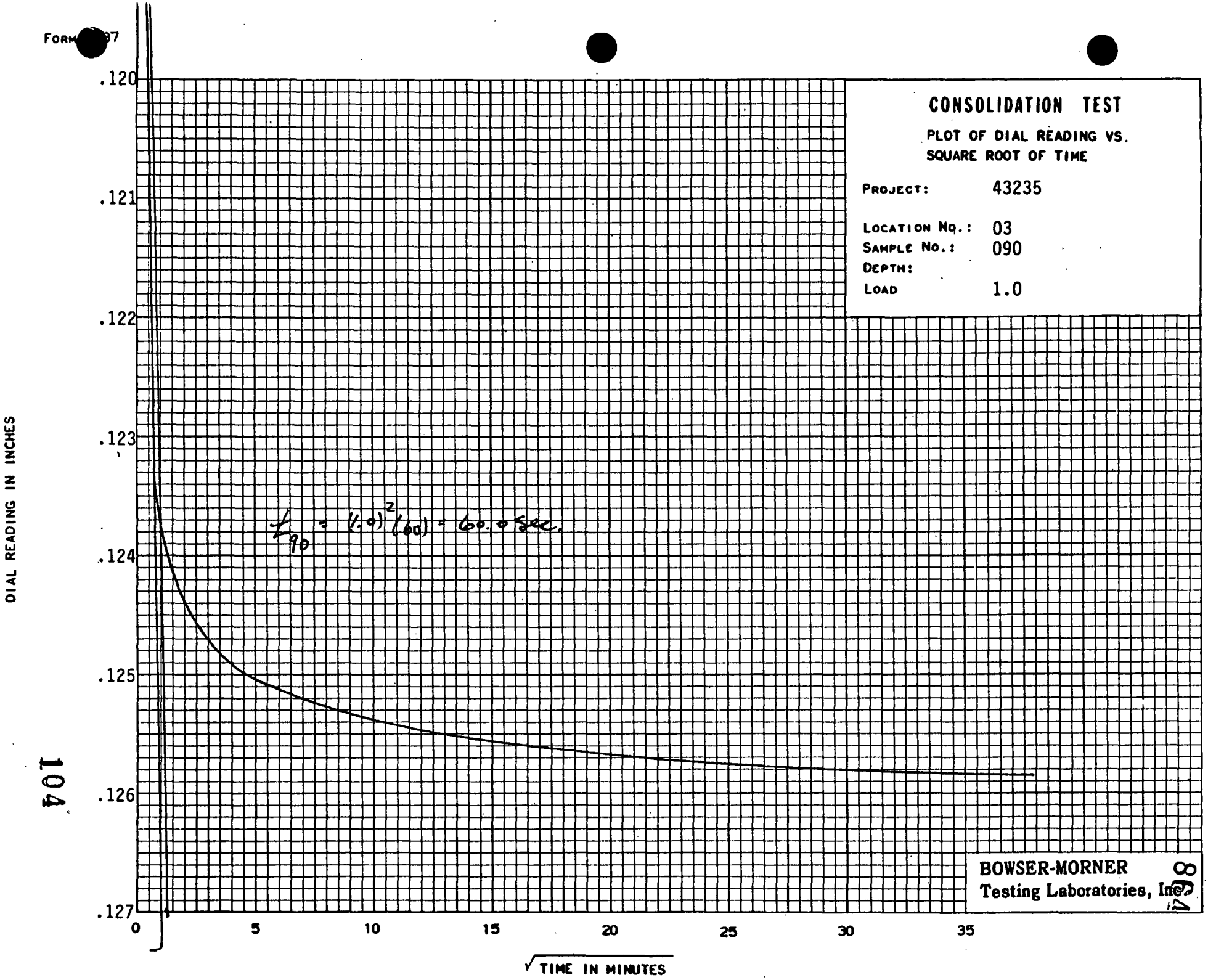
102

864

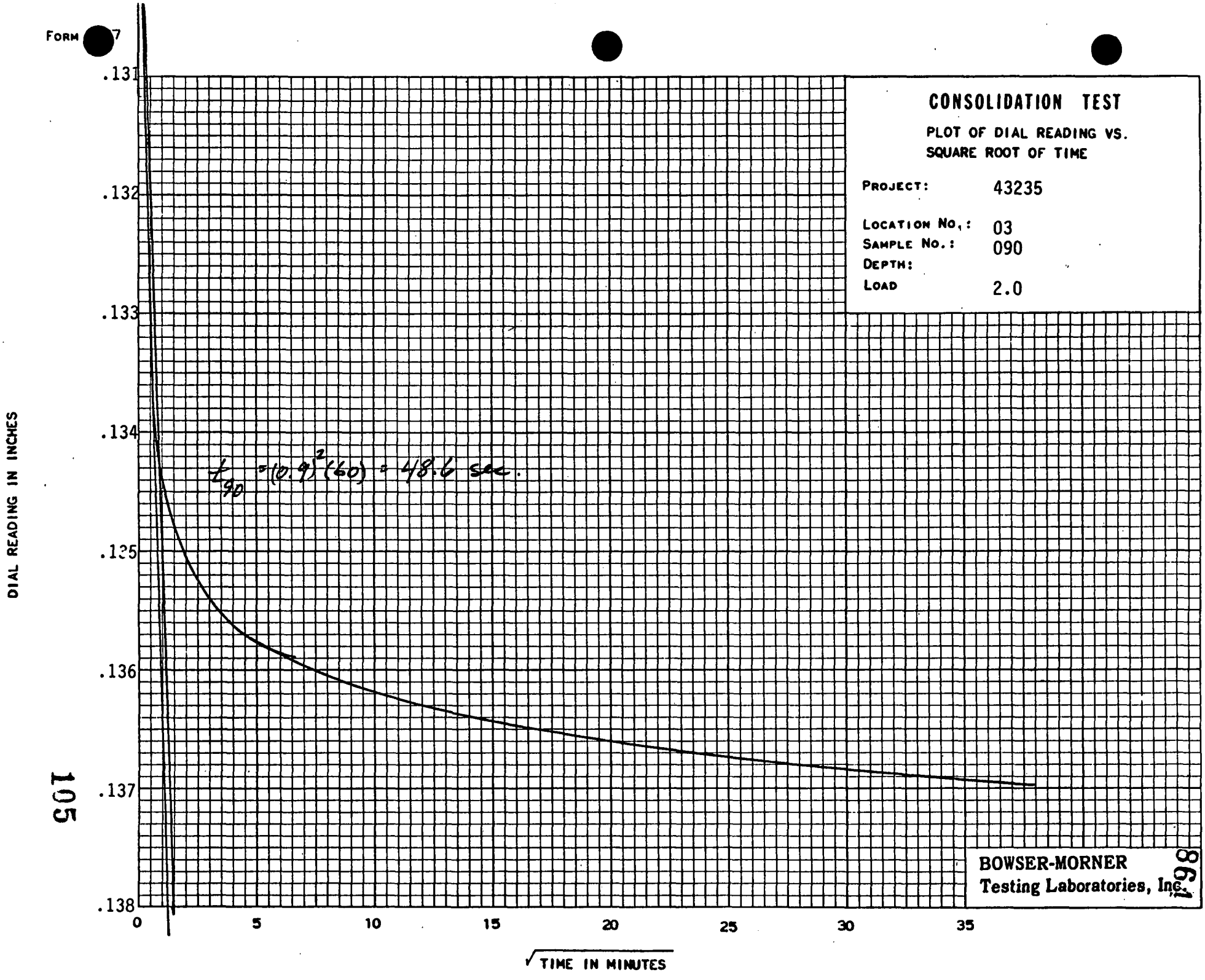
FORM 87


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 03
SAMPLE NO.: 090
DEPTH:
LOAD .50
$t_{90} = (1.0)^2 (60) = 60.0$ sec
DIAL READING IN INCHES
.111
.112
.113
.114
.115
.116
.117
.118
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

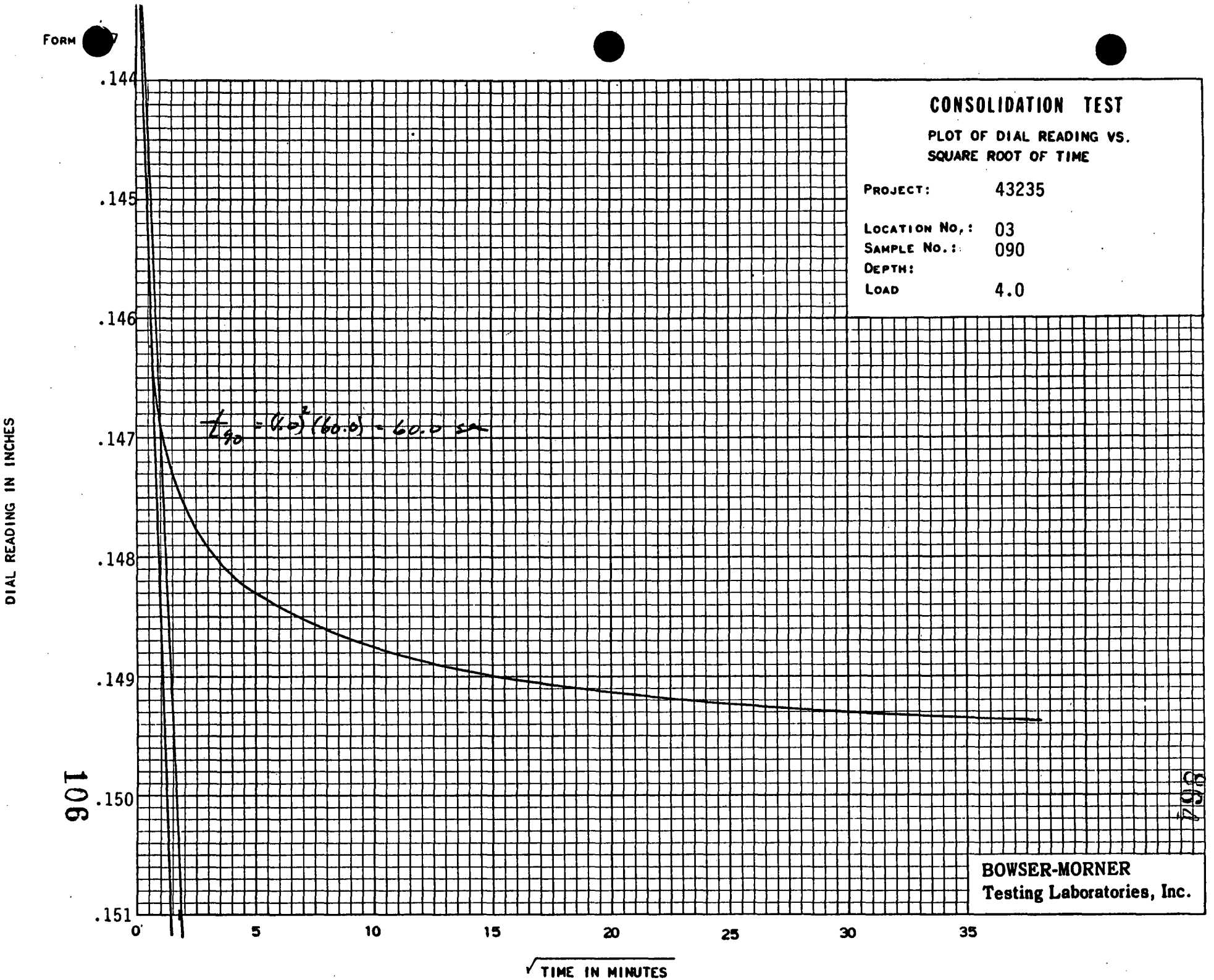
FORM [illegible]87


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 03
SAMPLE NO.: 090
DEPTH:
LOAD 1.0
$t_{90} = (1.0)^2(60) = 60.0$ sec.
DIAL READING IN INCHES
.120
.121
.122
.123
.124
.125
.126
.127
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

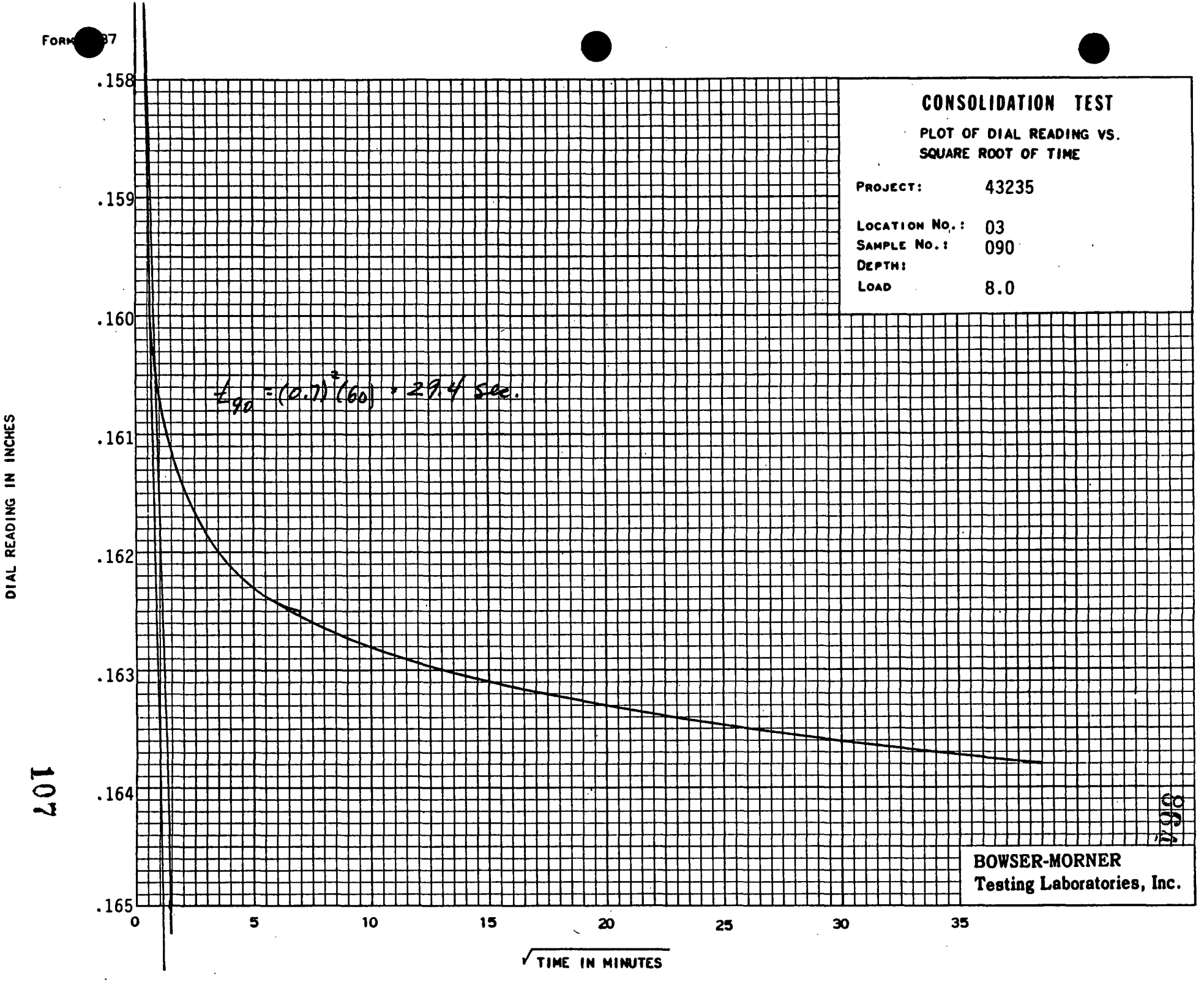
FORM 7


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 03
SAMPLE NO.: 090
DEPTH:
LOAD 2.0
$t_{90} = (0.9)^2(60) = 48.6$ sec.
DIAL READING IN INCHES
.131
.132
.133
.134
.135
.136
.137
.138
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

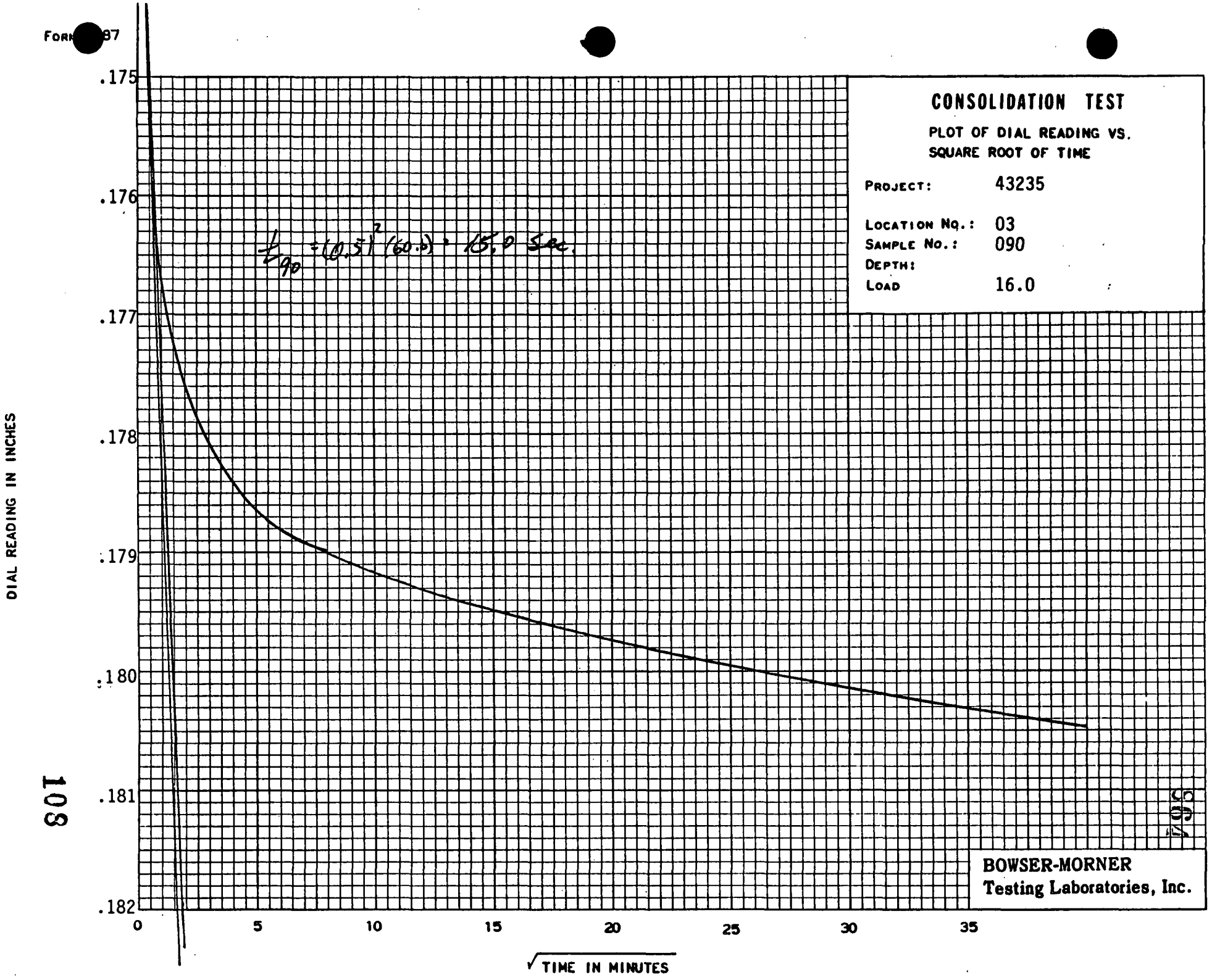
FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 03
SAMPLE NO.: 090
DEPTH:
LOAD 4.0
$t_{90} = (4.0)^2(60.0) = 60.0$ sec
DIAL READING IN INCHES
.144
.145
.146
.147
.148
.149
.150
.151
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM 87


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 03
SAMPLE NO.: 090
DEPTH:
LOAD 8.0
$t_{90} = (0.7)^2(60) = 29.4$ sec.
DIAL READING IN INCHES
.158
.159
.160
.161
.162
.163
.164
.165
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM 37


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 03
SAMPLE NO.: 090
DEPTH:
LOAD 16.0
$t_{90} = (0.5)^2 (60.0) = 15.0$ Sec.
DIAL READING IN INCHES
.175
.176
.177
.178
.179
.180
.181
.182
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

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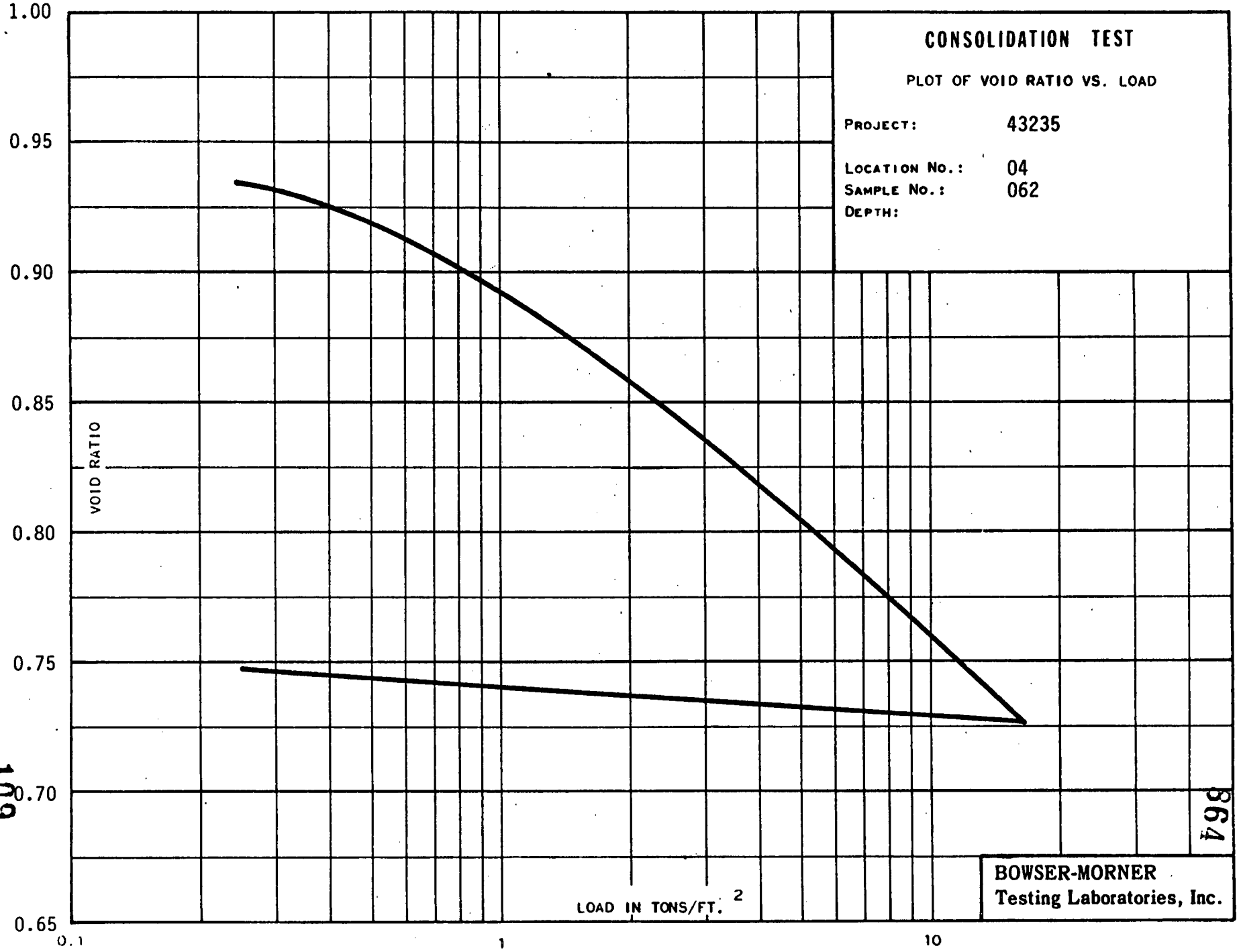
FORM 2A86



364

REPORT OF ONE DIMENSIONAL CONSOLIDATION TEST

PROJECT: 43235
BORING NO: 04
SAMPLE NO: 062
DEPTH: - FT.
SPECIFIC GRAVITY: 3.63
MOISTURE CONTENT
BEFORE: 22.4%
AFTER: 18.1%
DRY WEIGHT OF SOLIDS: .2435 LBS.
INITIAL DIAL READING: .06670 INCHES
INITIAL HEIGHT: .7500 INCHES
INITIAL TOTAL UNIT WEIGHT:
TYPE OF DIAL: N
HEIGHT OF SOLIDS: .3783 INCHES
INITIAL VOID RATIO: .9827

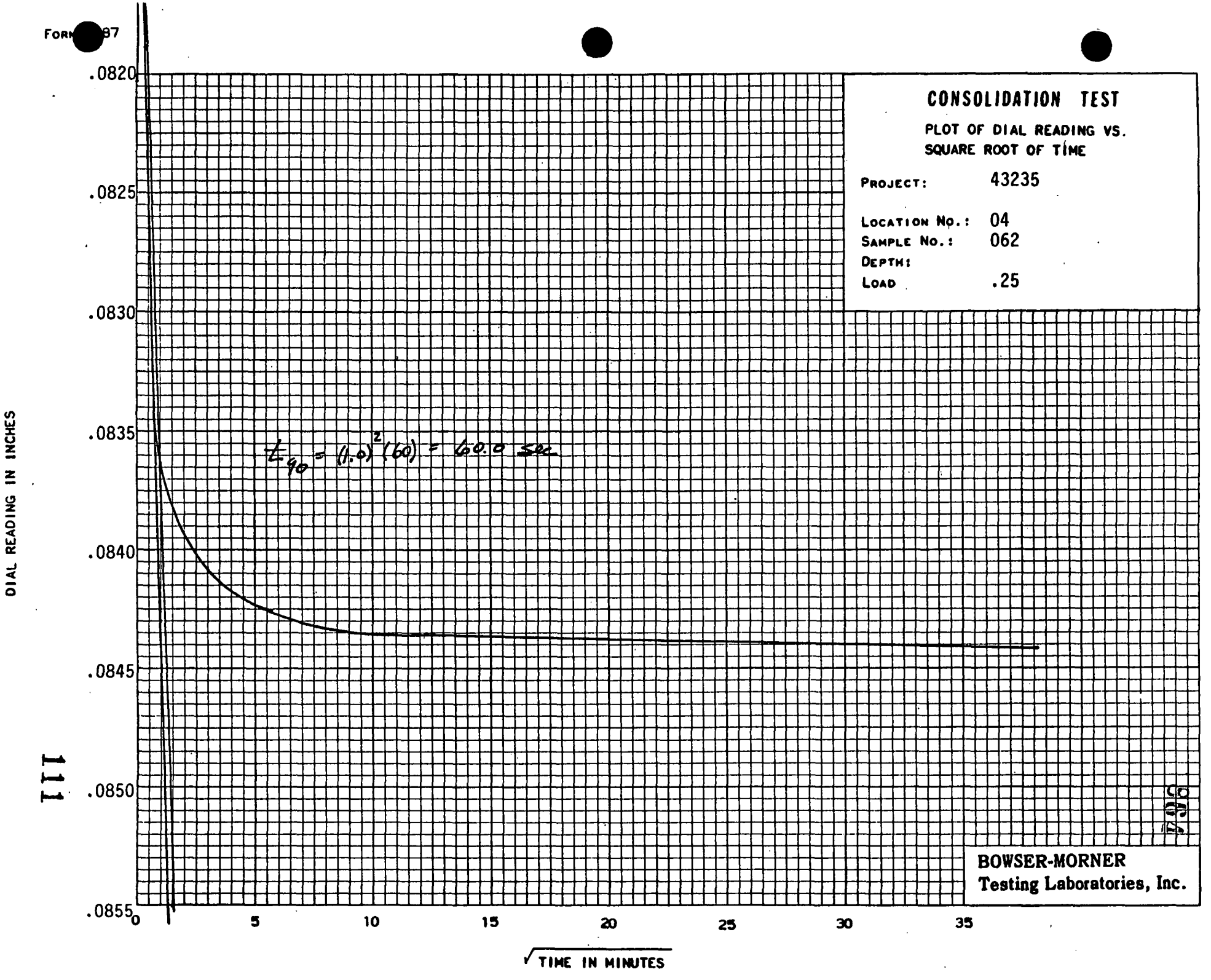
INITIAL DEGREE OF SATURATION: 82.7 %
FINAL DEGREE OF SATURATION: 97.0 %

LOAD TONS/SQ. FT	T90 CONSOL TIME SEC.	FINAL HEIGHT INCHES	VOID RATIO	COEFFICIENT OF CONSOL. SQ. INCHES/SEC. EXP. 10-
.25	60	.73228	.9359	1.88 EXP -3
.50	48	.72529	.9174	2.27 EXP -3
1.00	48	.71539	.8912	2.21 EXP -3
2.00	38	.70336	.8594	2.71 EXP -3
4.00	21	.68910	.8217	4.62 EXP -3
8.00	29	.67260	.7781	3.23 EXP -3
16.00	29	.65307	.7265	3.05 EXP -3
4.00	-----	.65600	.7342	-----
1.00	-----	.65903	.7422	-----
.25	-----	.66159	.7490	-----

INITIAL DRY UNIT WEIGHT: 114.3 PCF
INITIAL WET UNIT WEIGHT: 139.9 PCF
PERCENT COMPACTION: 94.8%

$\omega = 22.4$
$e_o = .983$
$C_u = 2.85 \times 10^{-3}$
$C_c = .159$

FORM 87


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 04
SAMPLE NO.: 062
DEPTH:
LOAD .25
$t_{90} = (1.0)^2(60) = 60.0$ sec
DIAL READING IN INCHES
.0820
.0825
.0830
.0835
.0840
.0845
.0850
.0855
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

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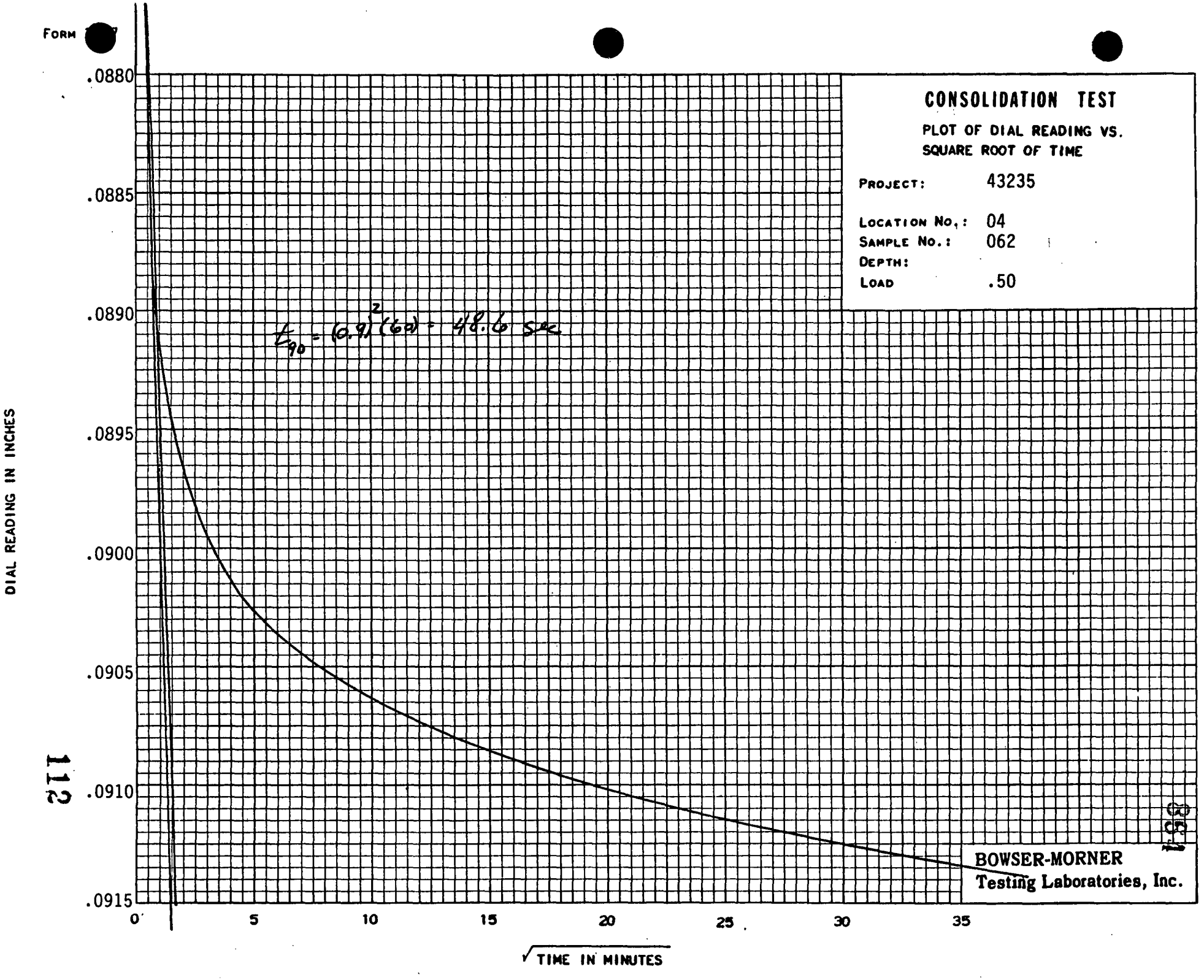
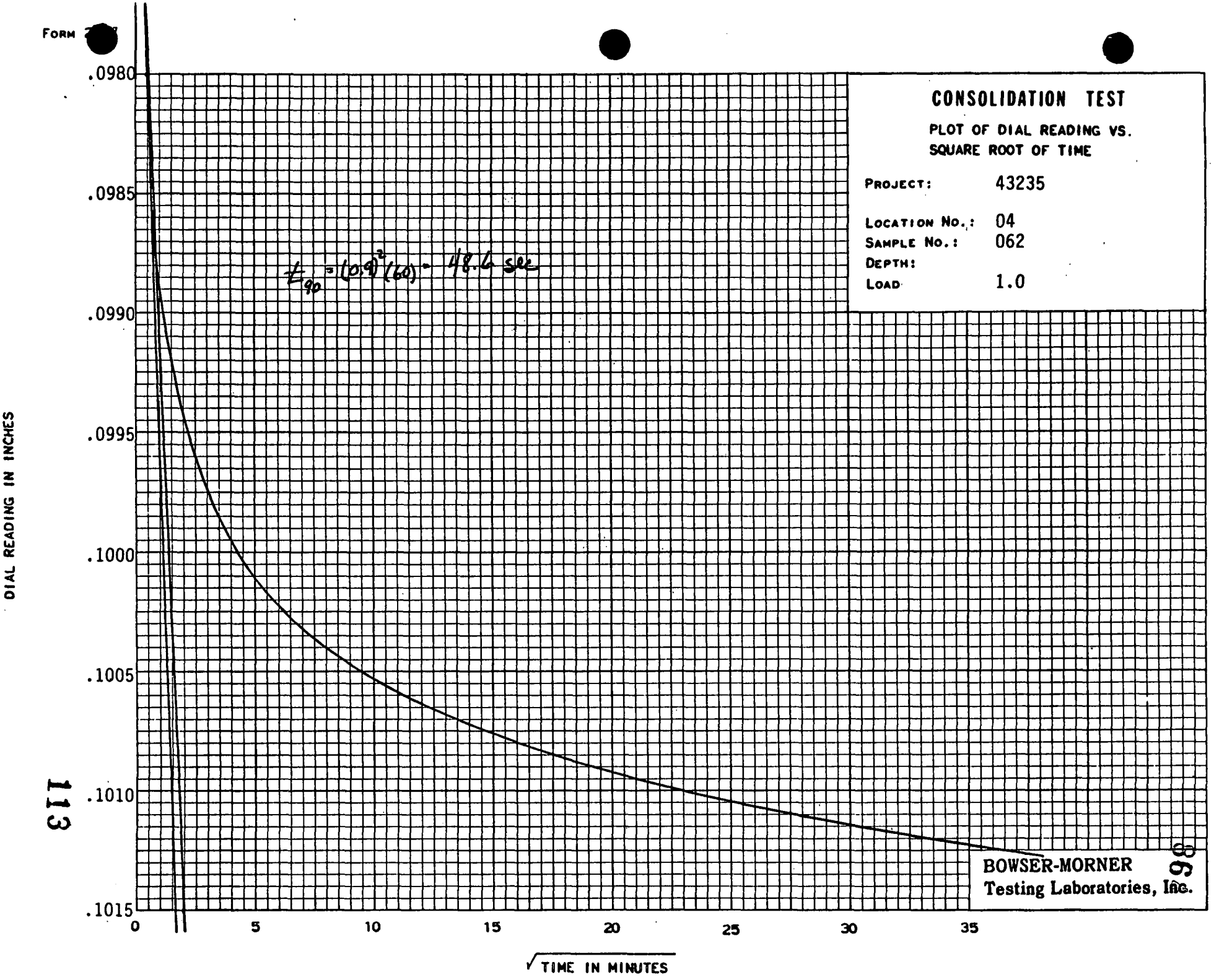
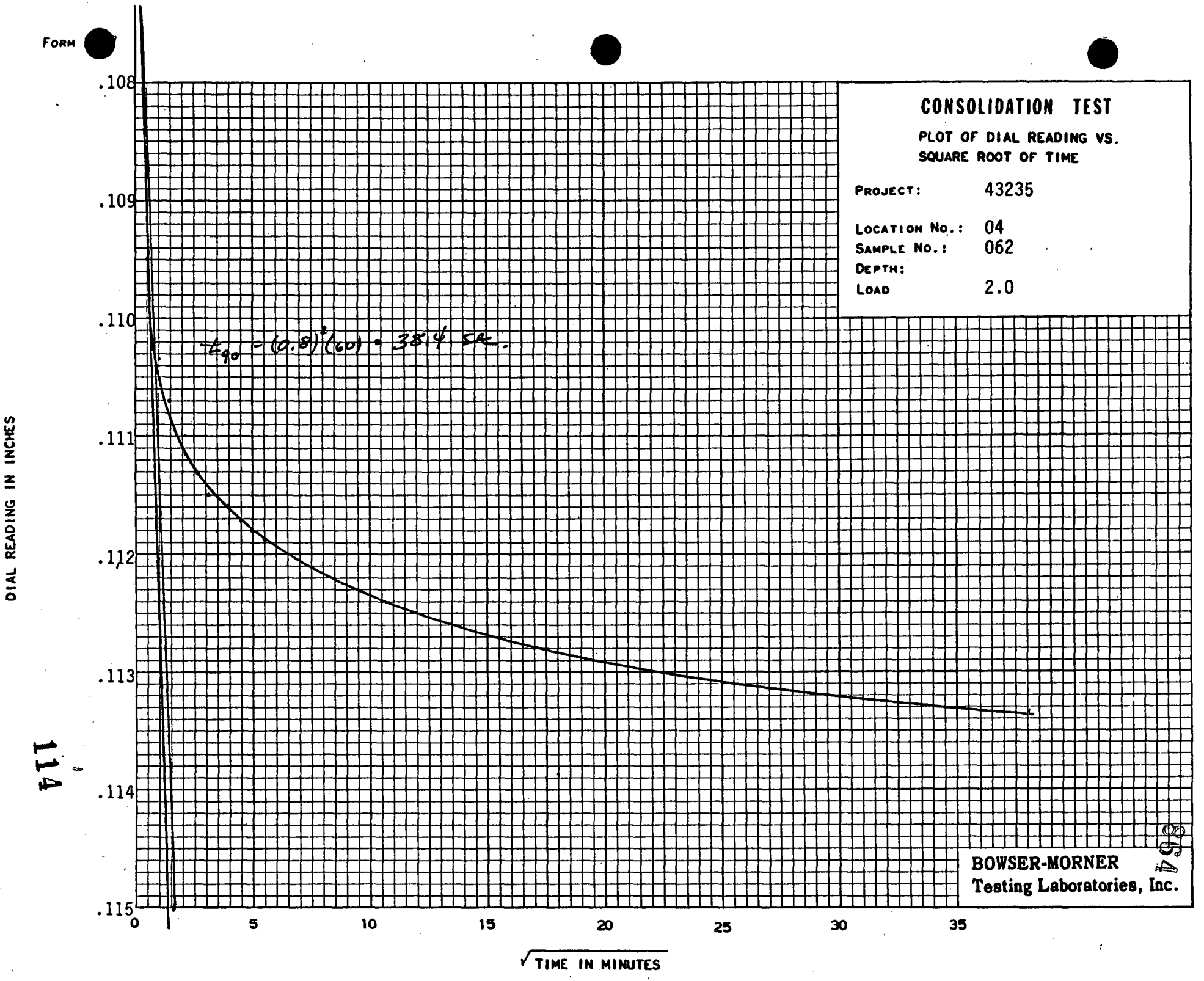
FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 04
SAMPLE NO.: 062
DEPTH:
LOAD .50
$t_{90} = (0.9)^2(60) = 48.6$ sec.
BOWSER-MORNER
Testing Laboratories, Inc.
DIAL READING IN INCHES
.0880
.0885
.0890
.0895
.0900
.0905
.0910
.0915
0
5
10
15
20
25
30
35
√TIME IN MINUTES

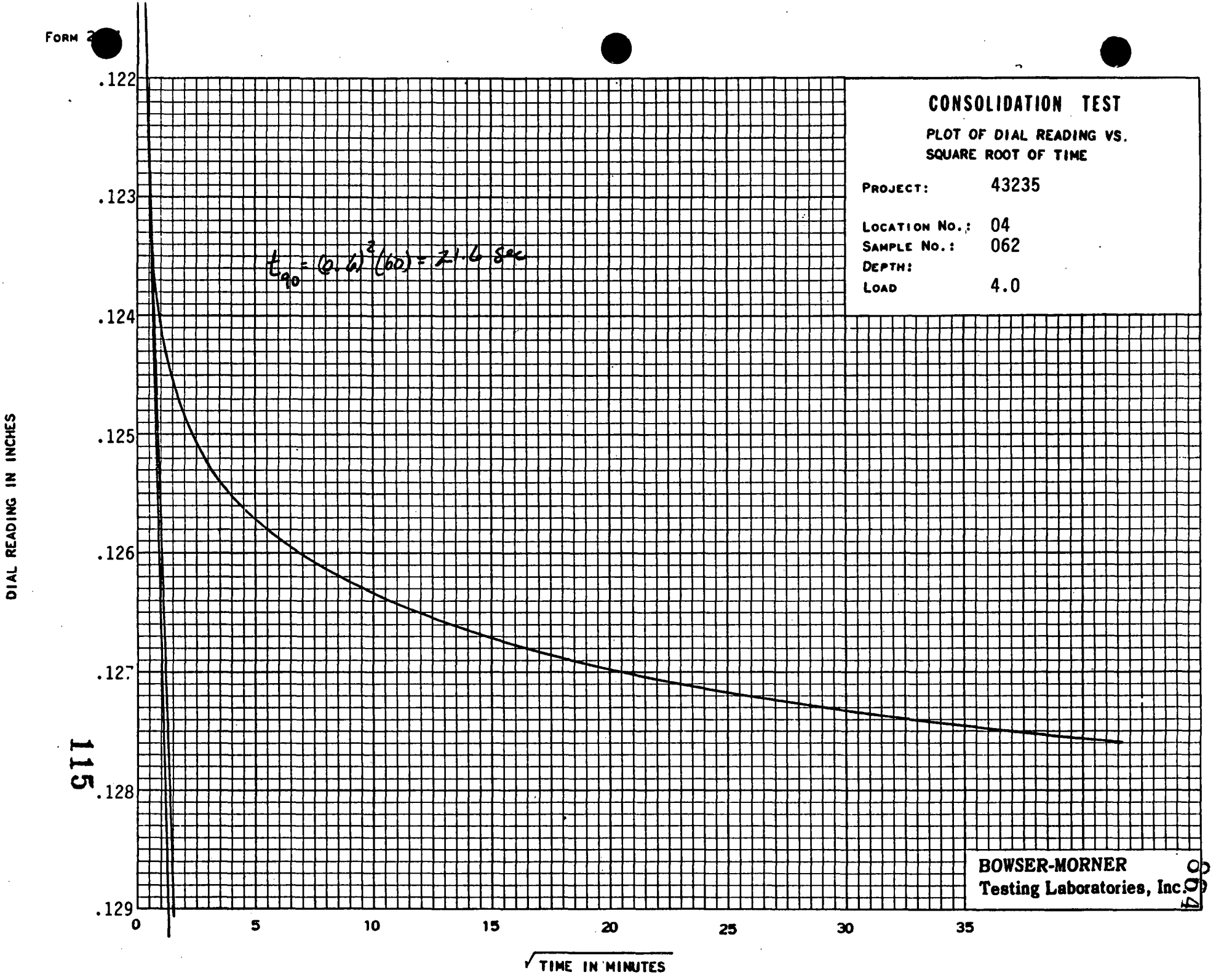
FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 04
SAMPLE NO.: 062
DEPTH:
LOAD 1.0
$t_{90} = (0.9)^2(60) = 48.6$ sec
DIAL READING IN INCHES
.0980
.0985
.0990
.0995
.1000
.1005
.1010
.1015
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

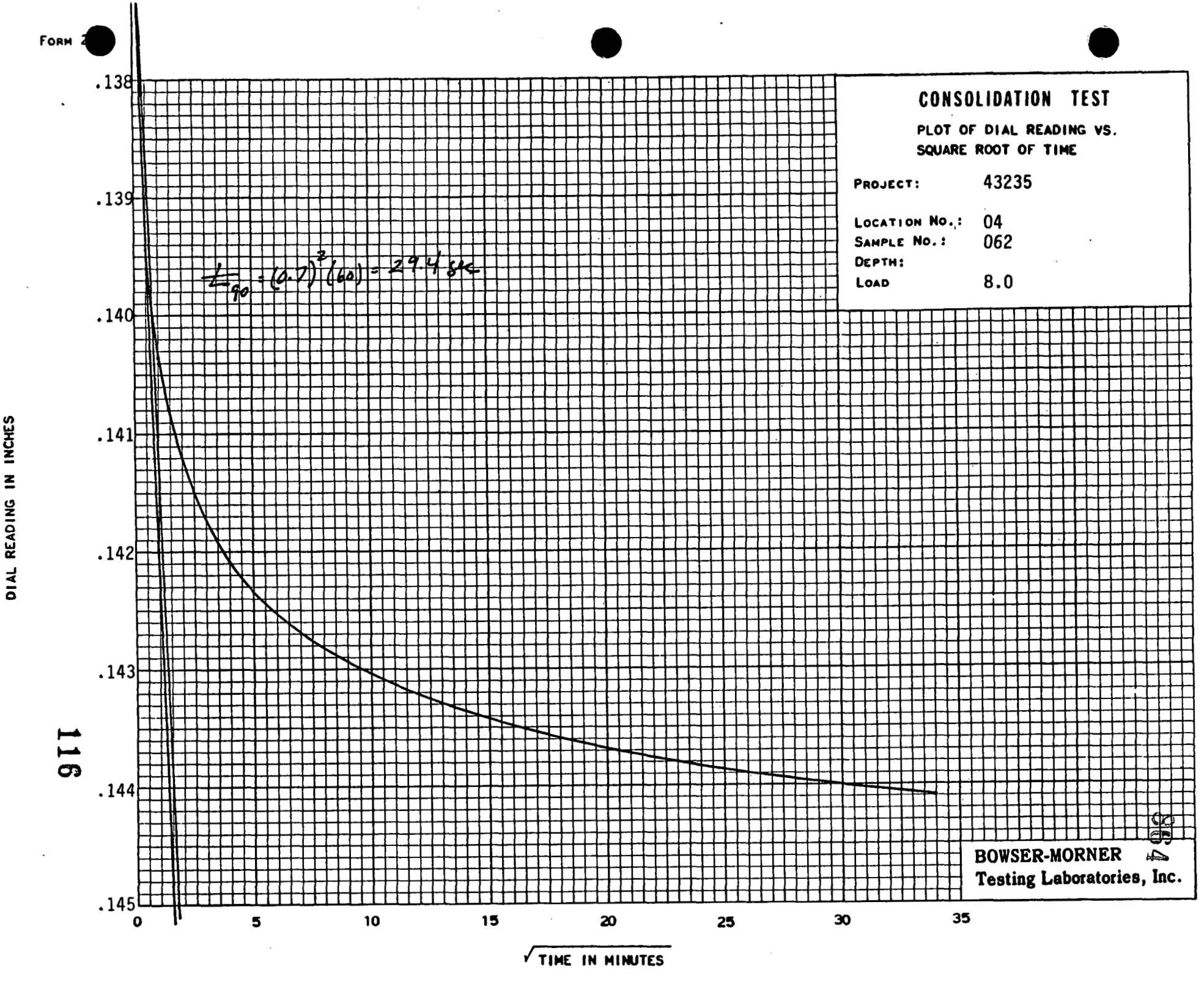
FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 04
SAMPLE NO.: 062
DEPTH:
LOAD 2.0
$t_{90} = (0.9)^2(60) = 38.4$ SEC.
DIAL READING IN INCHES
.108
.109
.110
.111
.112
.113
.114
.115
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

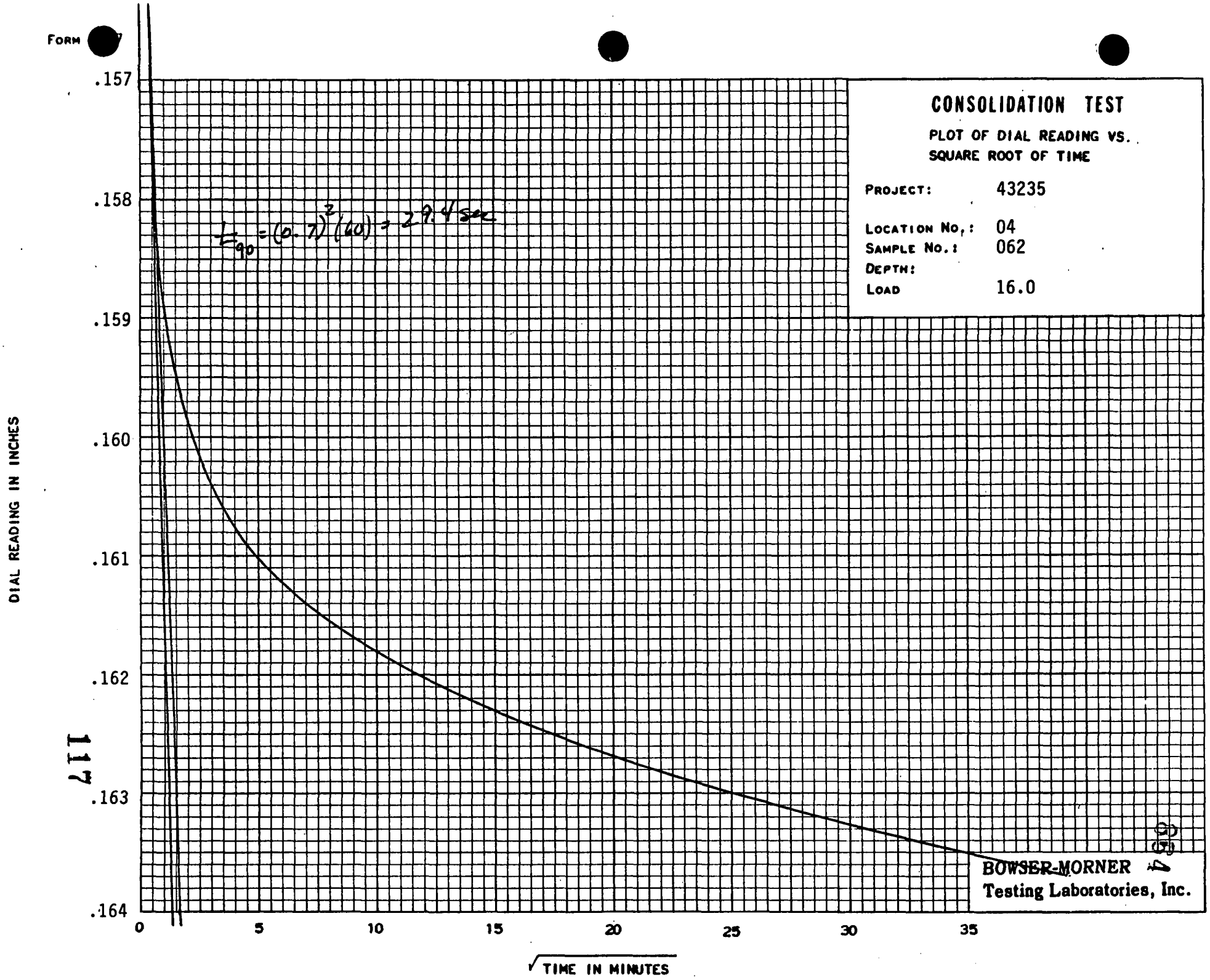
FORM 2


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 04
SAMPLE NO.: 062
DEPTH:
LOAD 4.0
$t_{90} = (0.4)^2(60) = 21.6$ sec
BOWSER-MORNER
Testing Laboratories, Inc.
DIAL READING IN INCHES
.122
.123
.124
.125
.126
.127
.128
.129
0
5
10
15
20
25
30
35
√TIME IN MINUTES

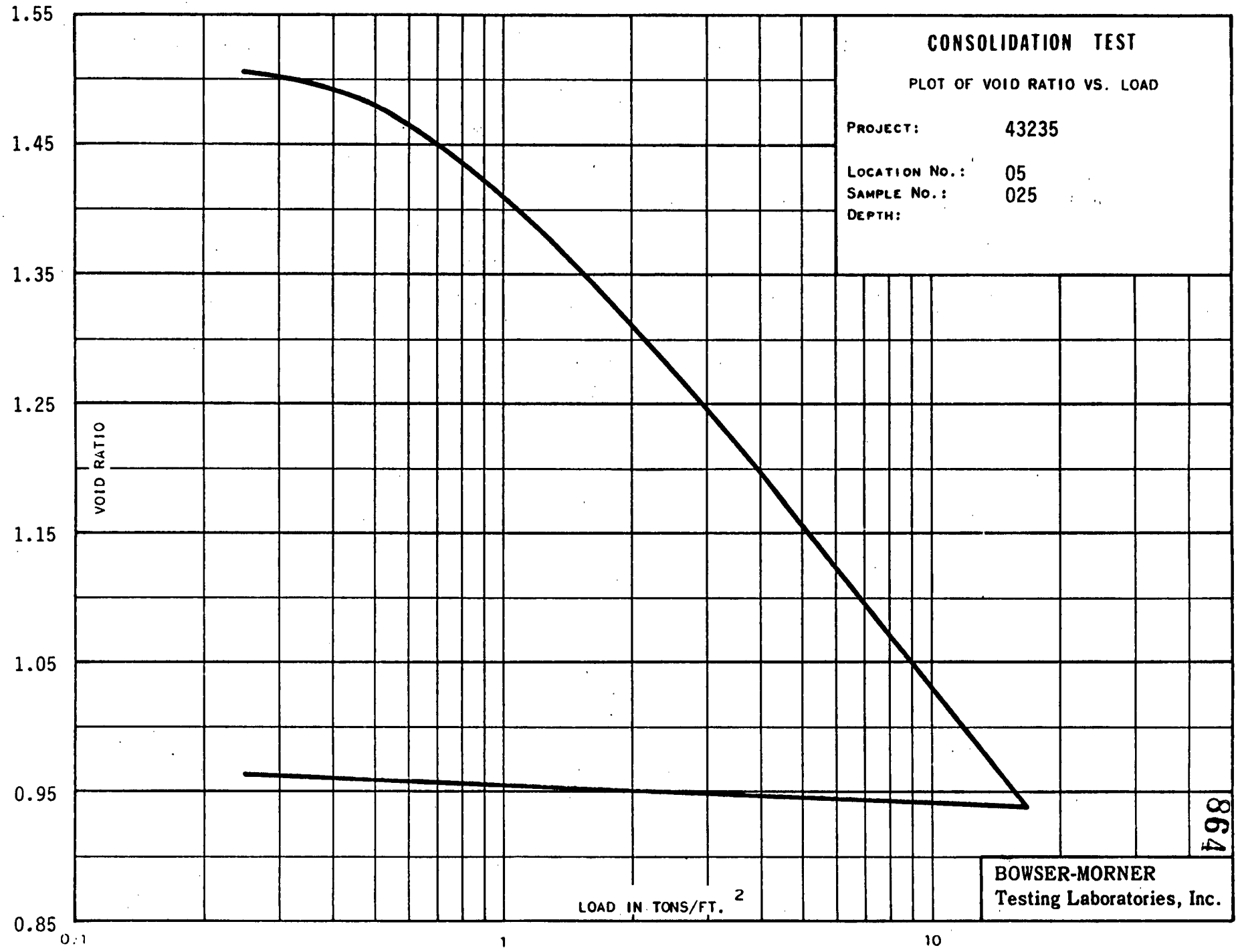
FORM 2


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 04
SAMPLE NO.: 062
DEPTH:
LOAD 8.0
$t_{90} = (0.7)^2(60) = 29.4$ sec
DIAL READING IN INCHES
.138
.139
.140
.141
.142
.143
.144
.145
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 04
SAMPLE NO.: 062
DEPTH:
LOAD 16.0
$t_{90} = (0.7)^2(60) = 29.4$ sec
DIAL READING IN INCHES
.157
.158
.159
.160
.161
.162
.163
.164
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM 2A86



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REPORT OF ONE DIMENSIONAL CONSOLIDATION TEST

PROJECT: 43235
BORING NO: 05
SAMPLE NO: 025
DEPTH: - FT.
SPECIFIC GRAVITY: 2.43
MOISTURE CONTENT
BEFORE: 54.6%
AFTER: 50.8%
DRY WEIGHT OF SOLIDS: .1275 LBS.
INITIAL DIAL READING: .04950 INCHES
INITIAL HEIGHT: .7500 INCHES
INITIAL TOTAL UNIT WEIGHT:
TYPE OF DIAL: N
HEIGHT OF SOLIDS: .2959 INCHES
INITIAL VOID RATIO: 1.5350

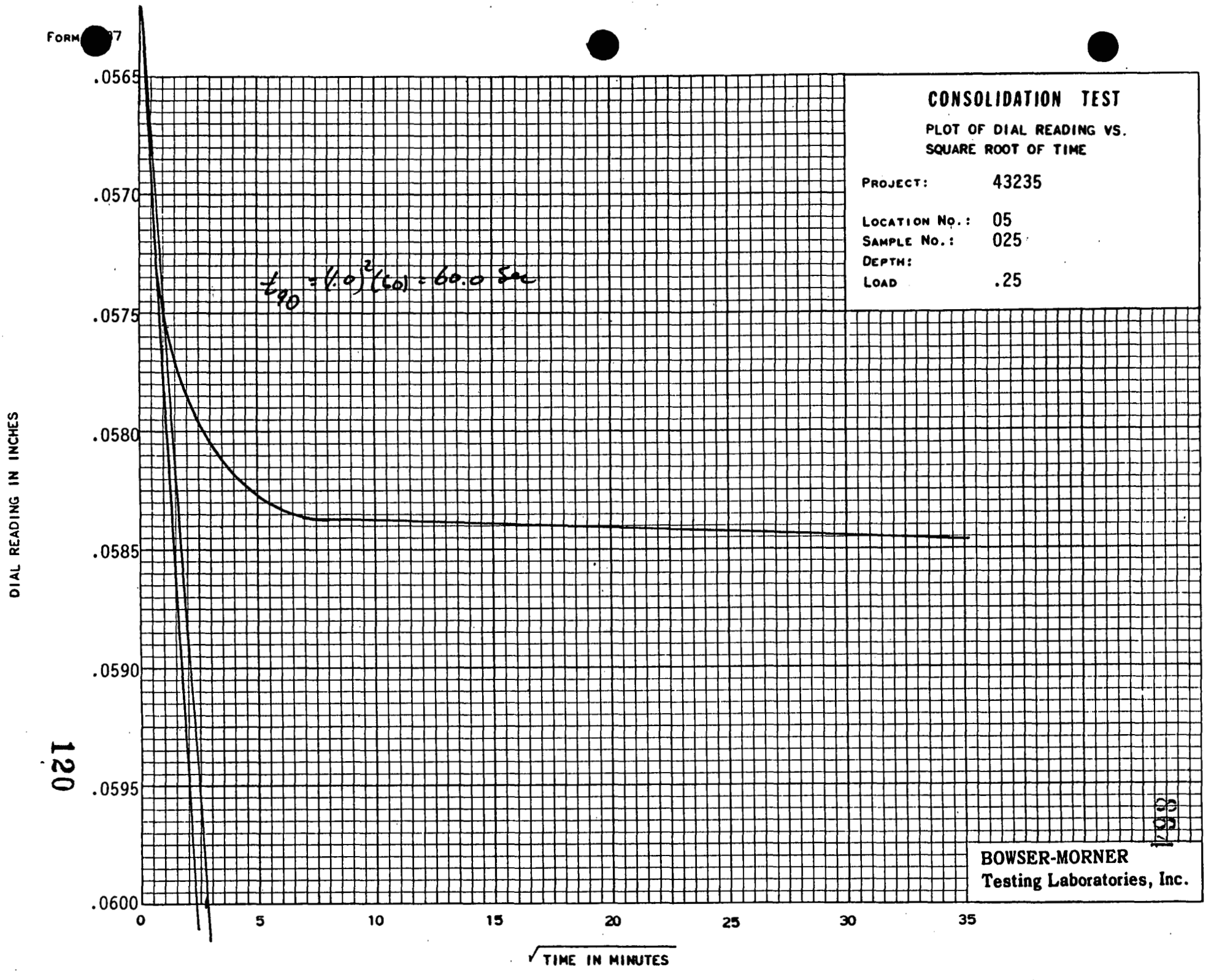
INITIAL DEGREE OF SATURATION: 86.4 %
FINAL DEGREE OF SATURATION: 100.0 %

LOAD TONS/SQ. FT	T90 CONSOL TIME SEC.	FINAL HEIGHT INCHES	VOID RATIO	COEFFICIENT OF CONSOL. SQ. INCHES/SEC. EXP. 10-
.25	60	.74104	1.5047	1.92 EXP -3
.50	38	.73403	1.4810	2.95 EXP -3
1.00	86	.71060	1.4018	1.23 EXP -3
2.00	29	.68107	1.3020	3.31 EXP -3
4.00	38	.64935	1.1948	2.31 EXP -3
8.00	15	.61155	1.0670	5.24 EXP -3
16.00	48	.57391	.9398	1.42 EXP -3
4.00	-----	.57645	.9484	-----
1.00	-----	.57970	.9594	-----
.25	-----	.58210	.9675	-----

INITIAL DRY UNIT WEIGHT: 59.8 PCF
INITIAL WET UNIT WEIGHT: 92.5 PCF
PERCENT COMPACTION: 95.7%

$\omega =$ 54.7
$C_v =$ 2.63x10^{-3}
$e_o =$ 1.59
$C_c =$ .425

FORM [illegible]7


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 05
SAMPLE NO.: 025
DEPTH:
LOAD .25
$t_{90} = (1.0)^2(60) = 60.0$ sec
DIAL READING IN INCHES
.0565
.0570
.0575
.0580
.0585
.0590
.0595
.0600
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

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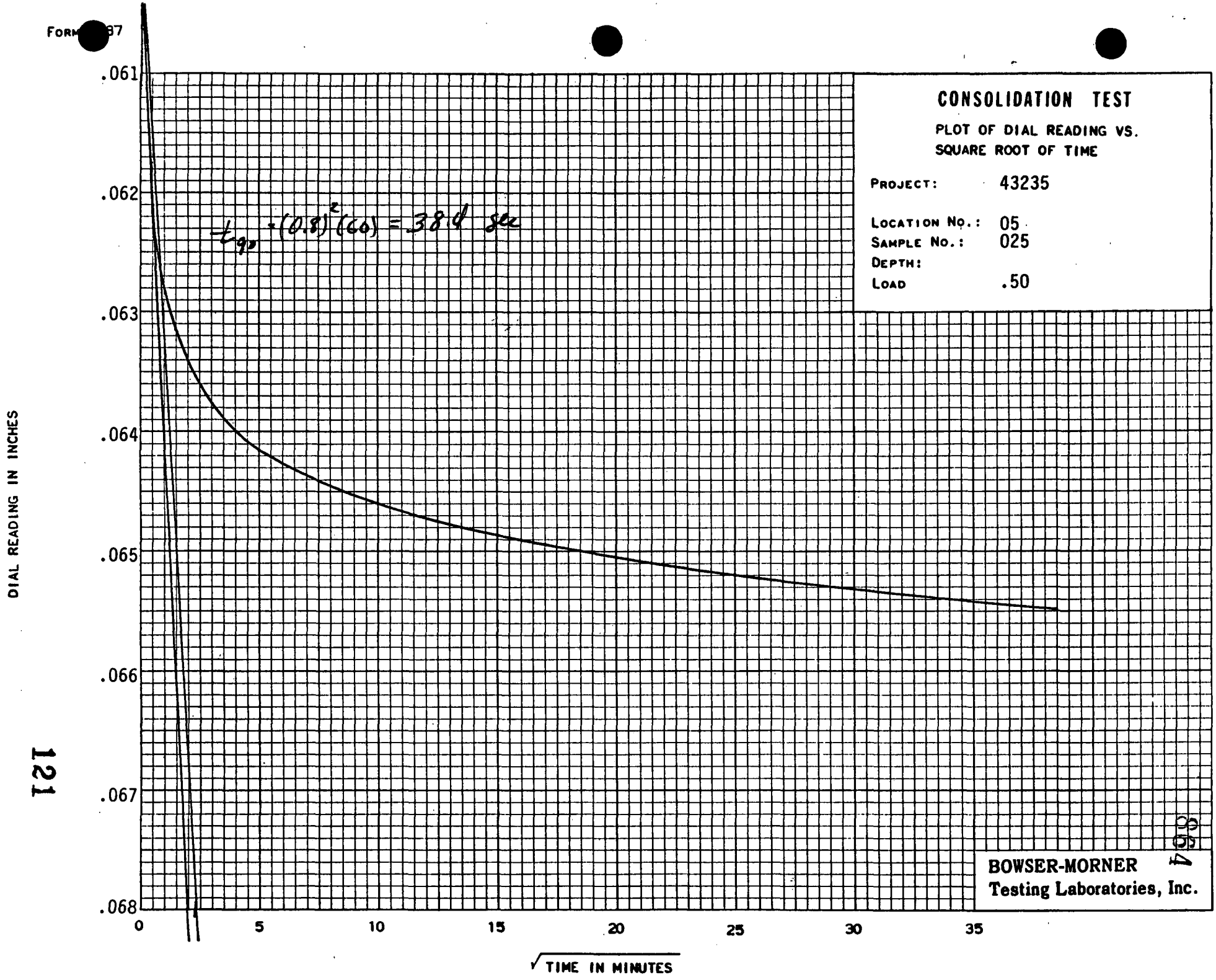
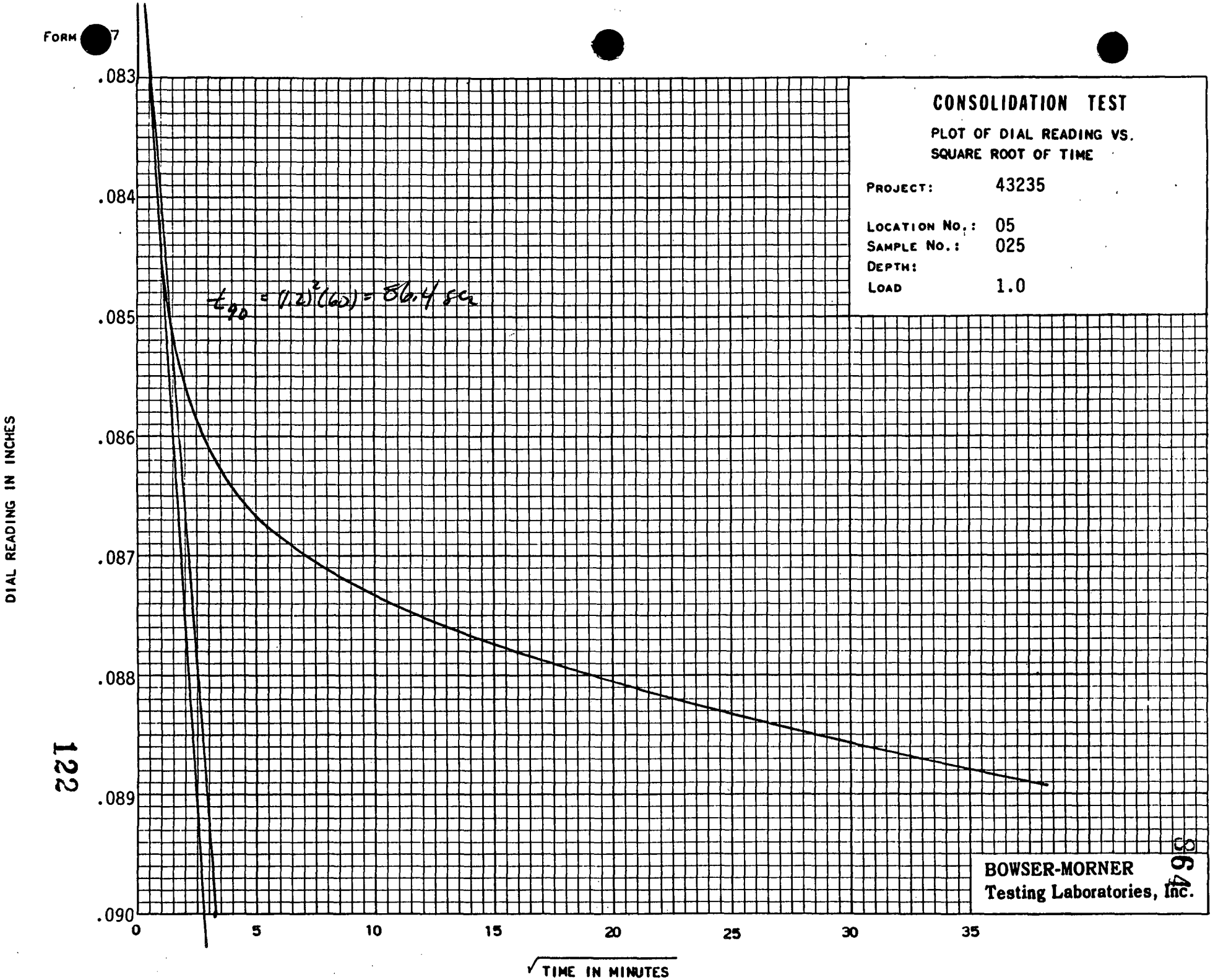
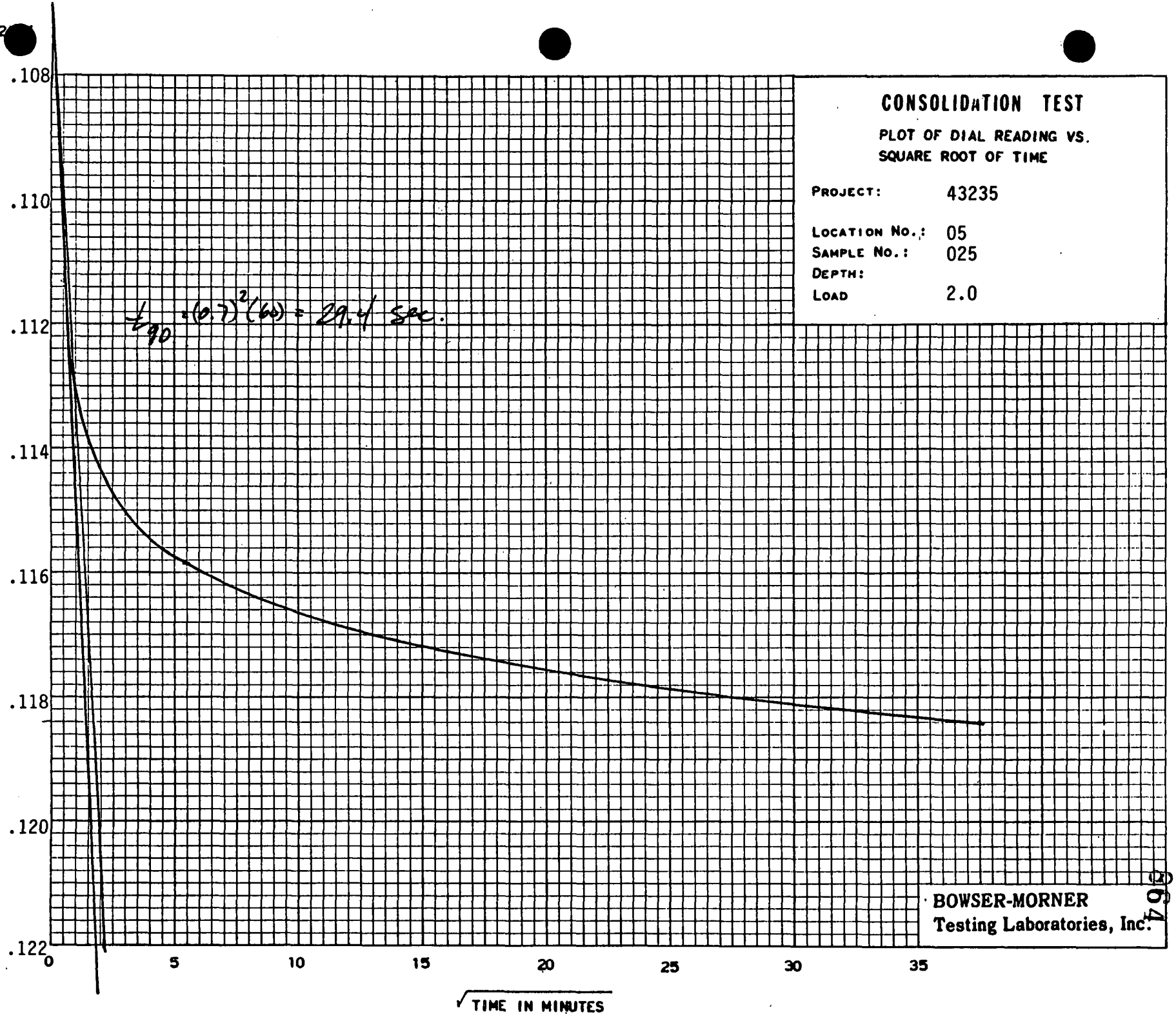
FORM 87


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 05
SAMPLE NO.: 025
DEPTH:
LOAD .50
$t_{90} = (0.8)^2(60) = 38.4$ sec
.061
.062
.063
.064
.065
.066
.067
.068
DIAL READING IN INCHES
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

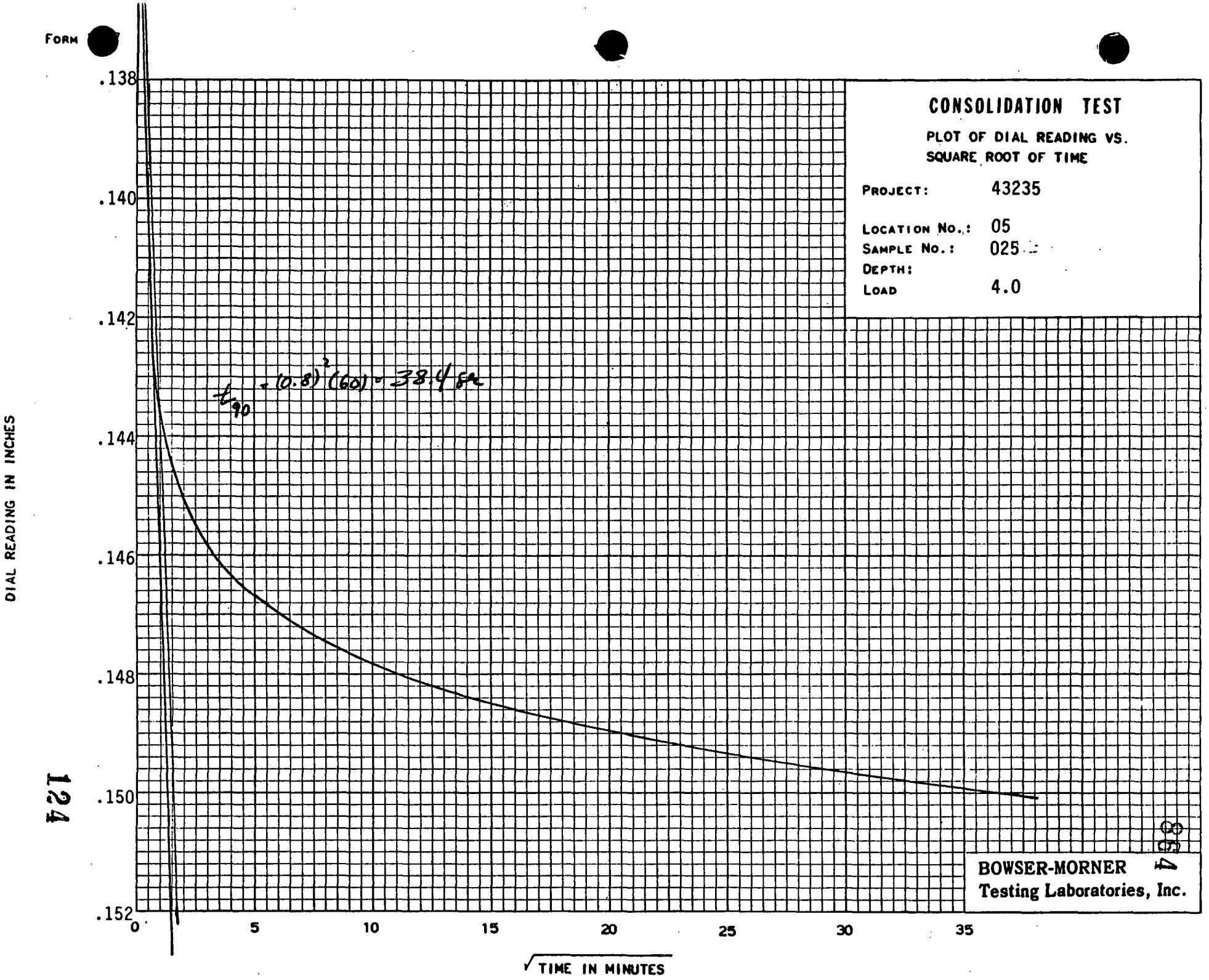
FORM 7


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 05
SAMPLE NO.: 025
DEPTH:
LOAD 1.0
$t_{90} = (1.2)^2(60) = 86.4$ sec
DIAL READING IN INCHES
.083
.084
.085
.086
.087
.088
.089
.090
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

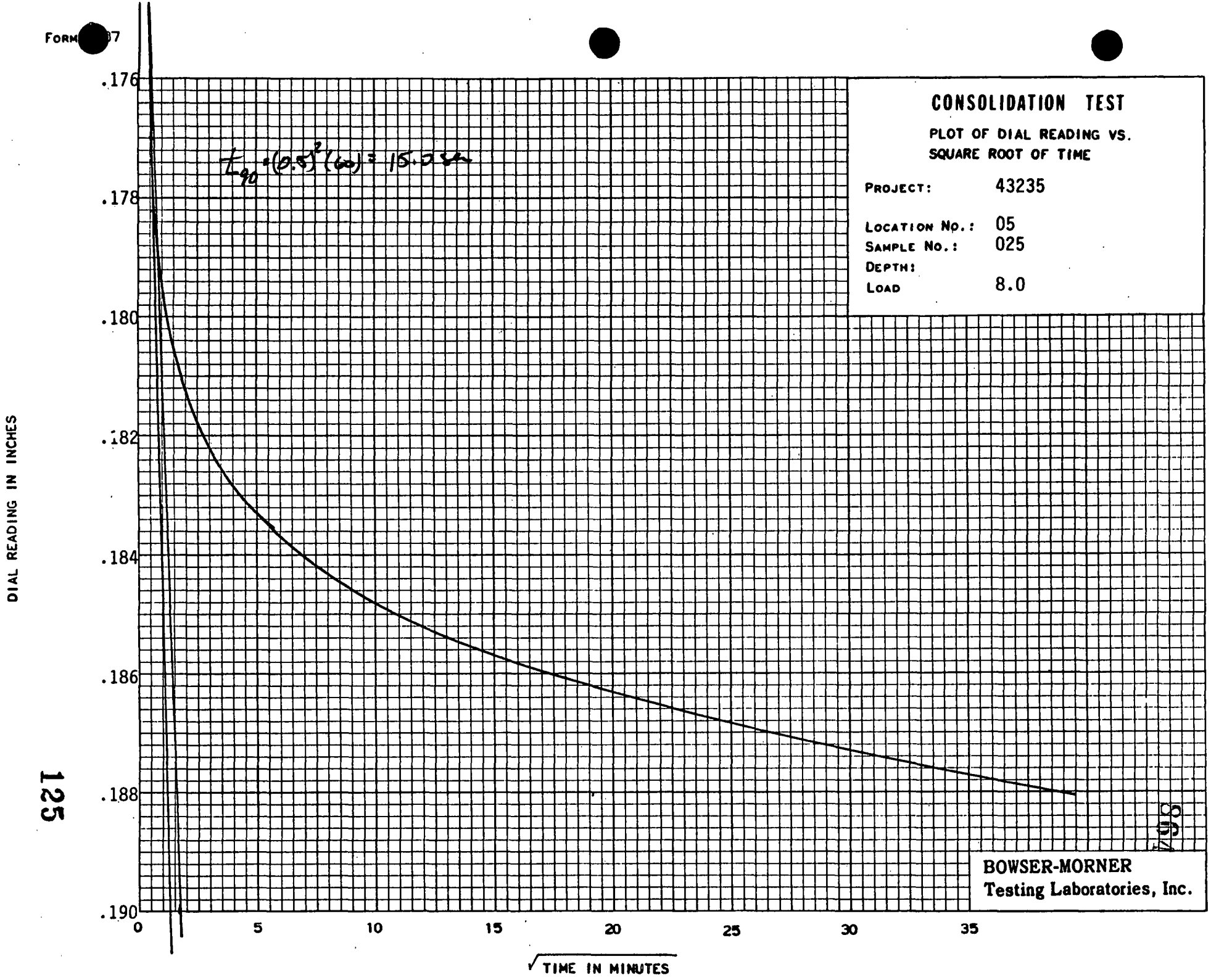
FORM 2


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 05
SAMPLE NO.: 025
DEPTH:
LOAD 2.0
$t_{90} = (0.7)^2(60) = 29.4$ sec.
DIAL READING IN INCHES
.108
.110
.112
.114
.116
.118
.120
.122
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

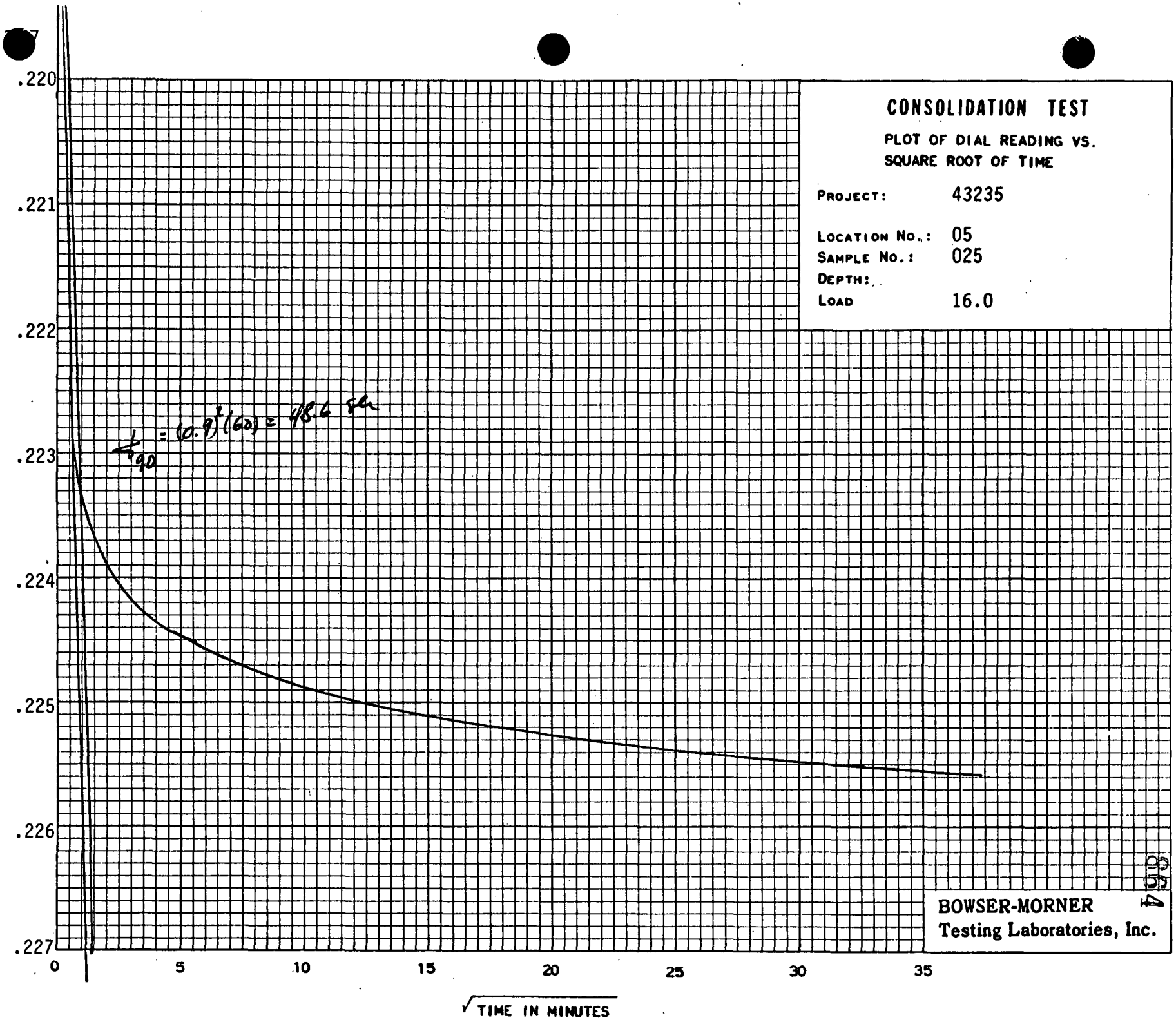
FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 05
SAMPLE NO.: 025
DEPTH:
LOAD 4.0
$t_{90} = (0.8)^2(60) = 38.4$ hr
DIAL READING IN INCHES
.138
.140
.142
.144
.146
.148
.150
.152
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

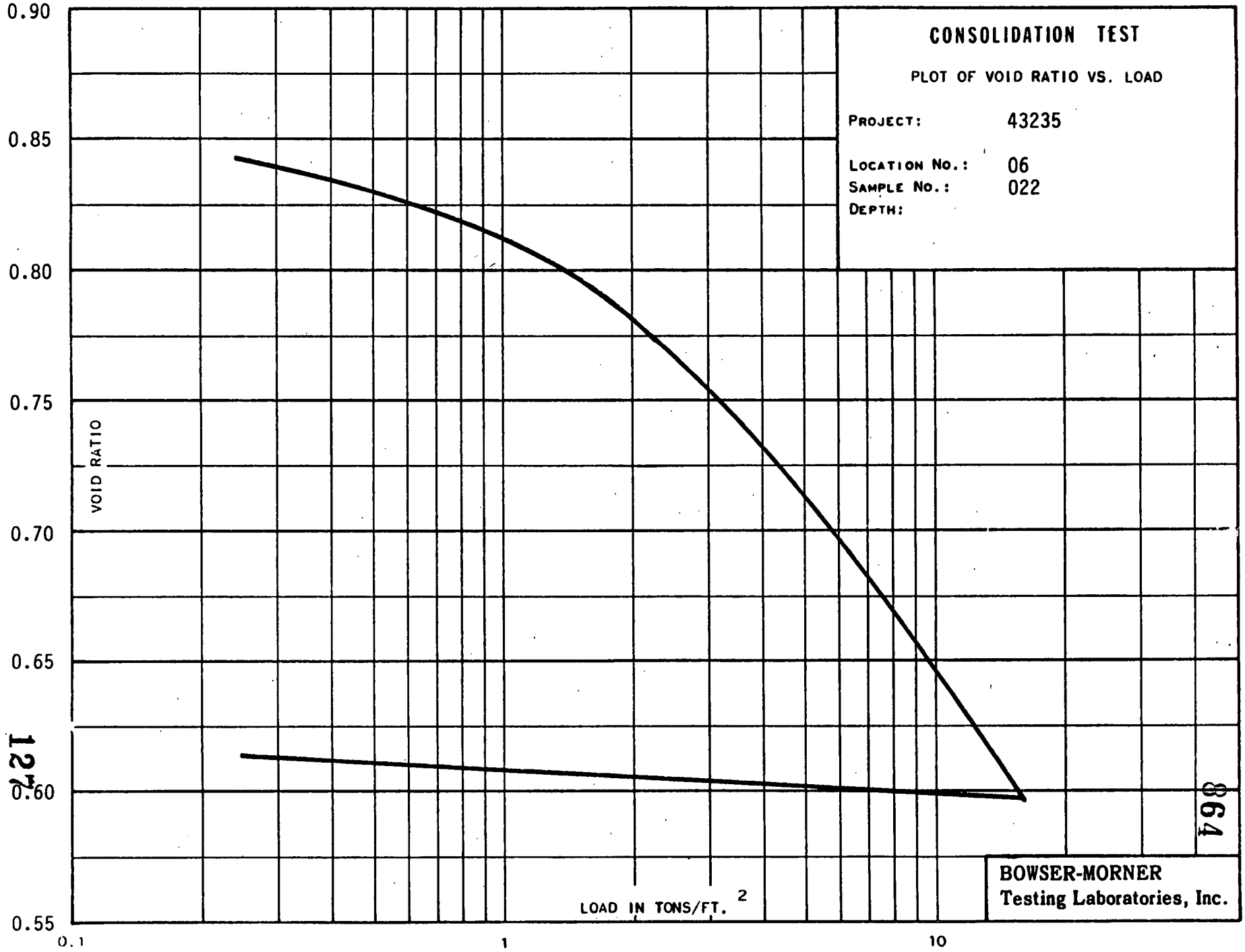
FORM [illegible]7


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 05
SAMPLE NO.: 025
DEPTH:
LOAD 8.0
$t_{90} = (0.5)^2(60) = 15.0$ sec
.176
.178
.180
.182
.184
.186
.188
.190
DIAL READING IN INCHES
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM [illegible]7


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 05
SAMPLE NO.: 025
DEPTH:
LOAD 16.0
$t_{90} = (0.9)^2(60) = 48.6$ sec
DIAL READING IN INCHES
.220
.221
.222
.223
.224
.225
.226
.227
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM 2A86



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REPORT OF ONE DIMENSIONAL CONSOLIDATION TEST

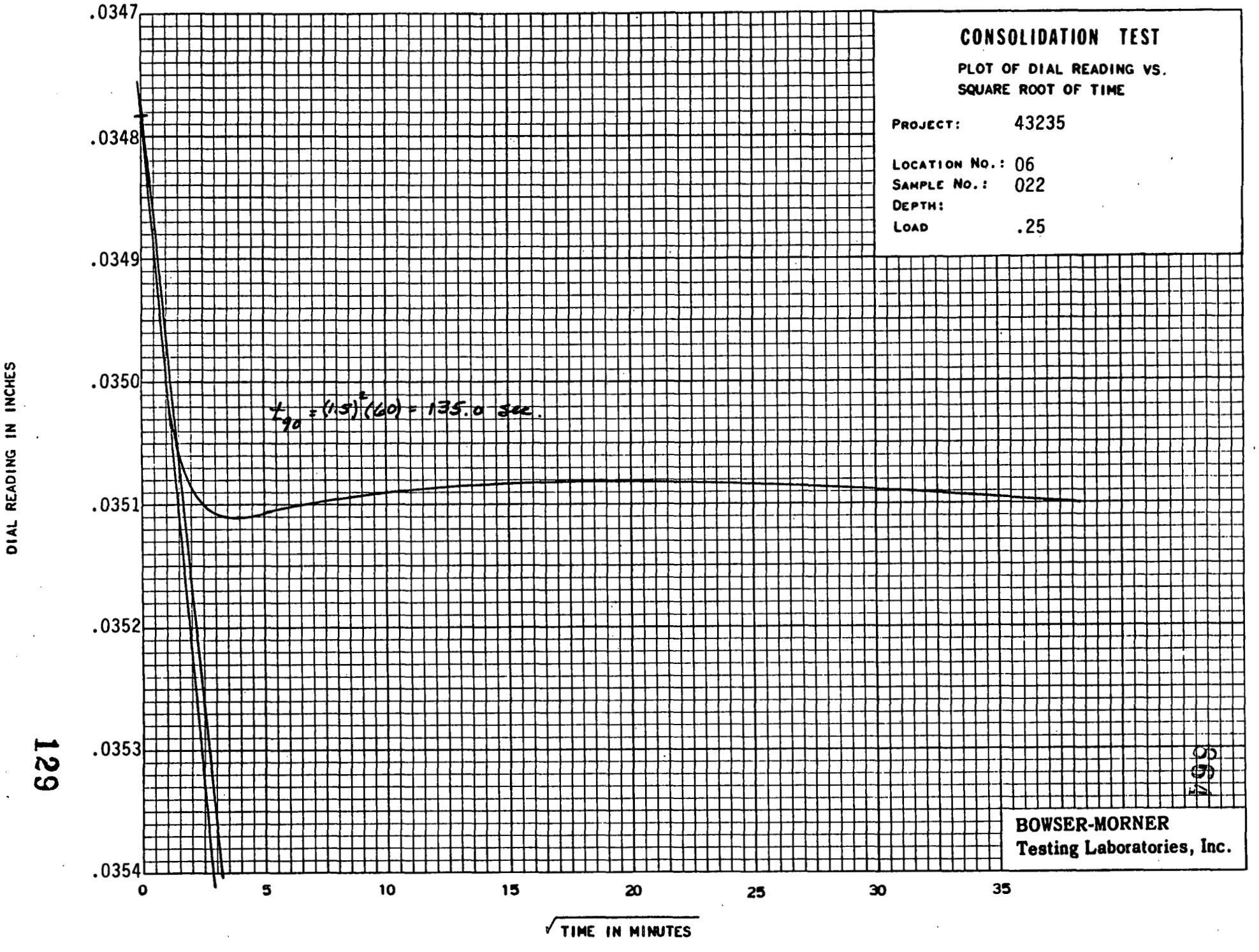
PROJECT:	43235	
BORING NO:	06	
SAMPLE NO:	022	
DEPTH:	-	FT.
SPECIFIC GRAVITY:	2.87	
MOISTURE CONTENT		
BEFORE:	25.3%	
AFTER:	23.3%	
DRY WEIGHT OF SOLIDS:	.2059	LBS.
INITIAL DIAL READING:	.03100	INCHES
INITIAL HEIGHT:	.7500	INCHES
INITIAL TOTAL UNIT WEIGHT:		
TYPE OF DIAL:	N	
HEIGHT OF SOLIDS:	.4046	INCHES
INITIAL VOID RATIO:	.8536	
INITIAL DEGREE OF SATURATION:	85.1 %	
FINAL DEGREE OF SATURATION:	100.0 %	

LOAD TONS/SQ. FT	T90 CONSOL TIME SEC.	FINAL HEIGHT INCHES	VOID RATIO	COEFFICIENT OF CONSOL. SQ. INCHES/SEC. EXP. 10-
.25	135	.74590	.8434	8.65 EXP -4
.50	240	.74103	.8314	4.80 EXP -4
1.00	194	.73338	.8125	5.81 EXP -4
2.00	153	.72151	.7832	7.12 EXP -4
4.00	101	.70130	.7332	1.02 EXP -3
8.00	86	.67518	.6687	1.11 EXP -3
16.00	60	.64640	.5975	1.46 EXP -3
.25	-----	.65382	.6159	-----

INITIAL DRY UNIT WEIGHT: 96.6 PCF
INITIAL WET UNIT WEIGHT: 121.1 PCF
PERCENT COMPACTION: 95.4%

ω = 25.4
e_o = .857
$\bar{C}_v$ = 8.9x10^{-4}
C_c = .242

FORM 87


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 06
SAMPLE NO.: 022
DEPTH:
LOAD .25
$t_{90} = (1.5)^2(60) = 135.0$ sec.
DIAL READING IN INCHES
.0347
.0348
.0349
.0350
.0351
.0352
.0353
.0354
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

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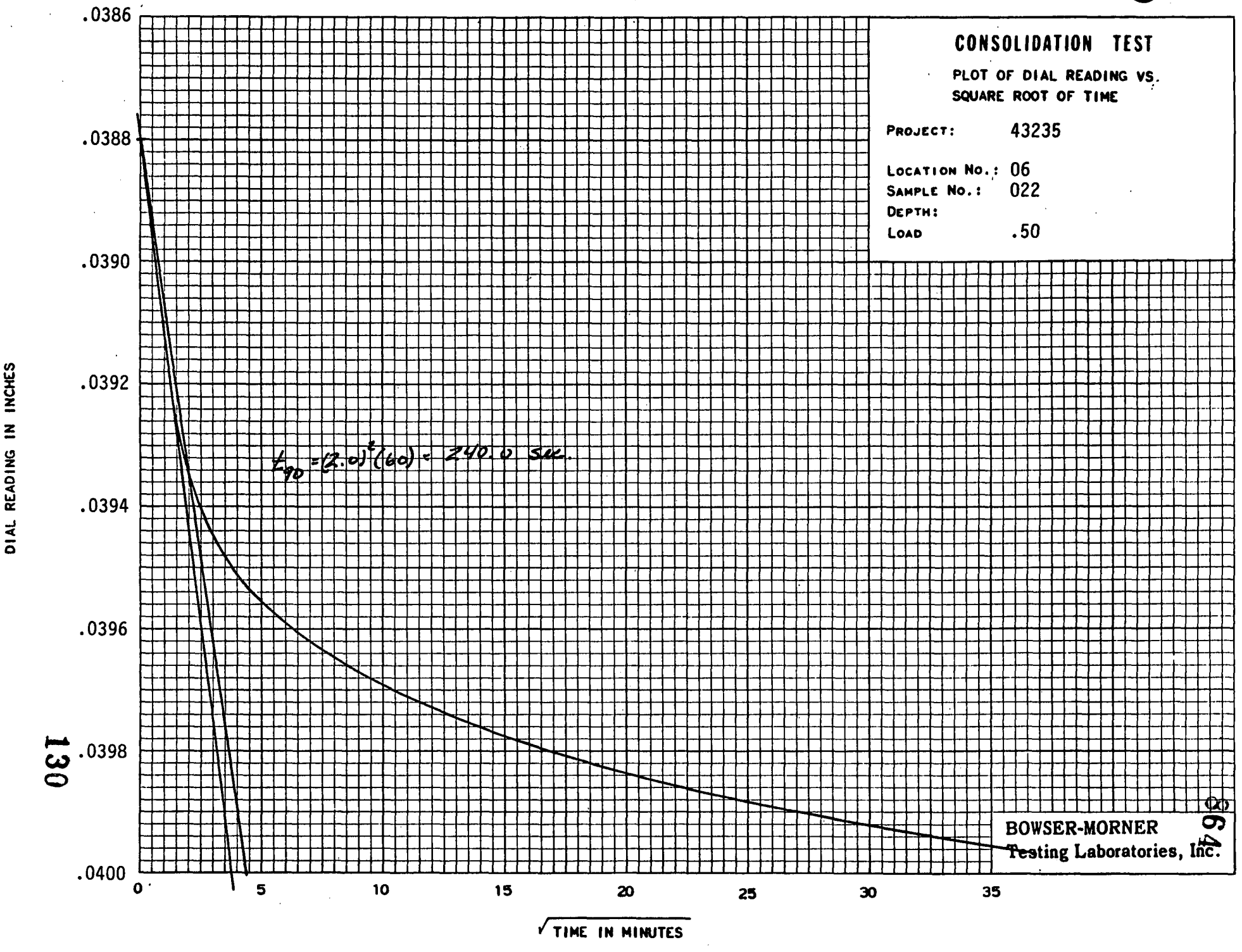
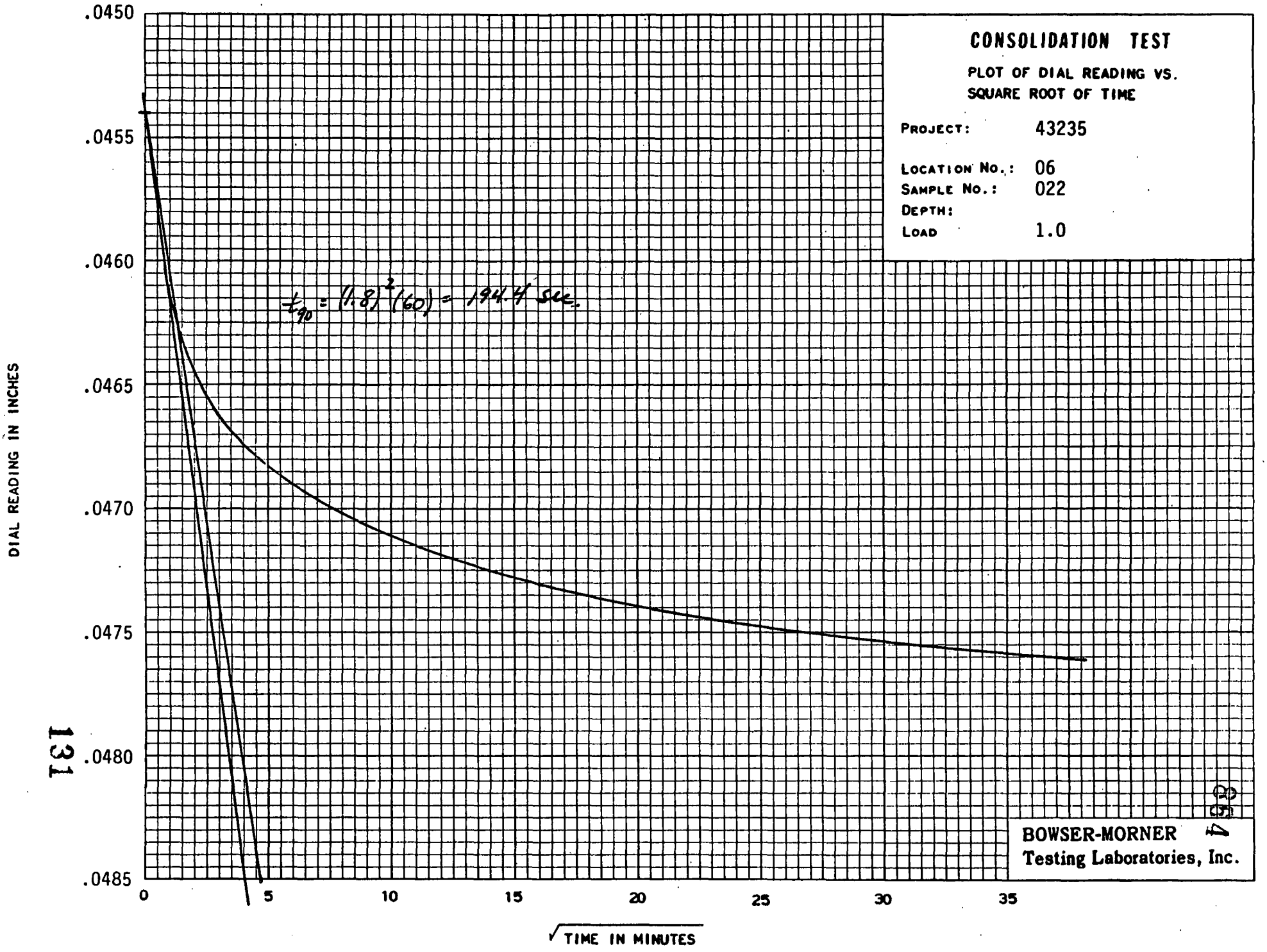
FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 06
SAMPLE NO.: 022
DEPTH:
LOAD .50
$t_{90} = (2.0)^2(60) = 240.0$ sec.
BOWSER-MORNER Testing Laboratories, Inc.
DIAL READING IN INCHES
.0386
.0388
.0390
.0392
.0394
.0396
.0398
.0400
0
5
10
15
20
25
30
35
√TIME IN MINUTES

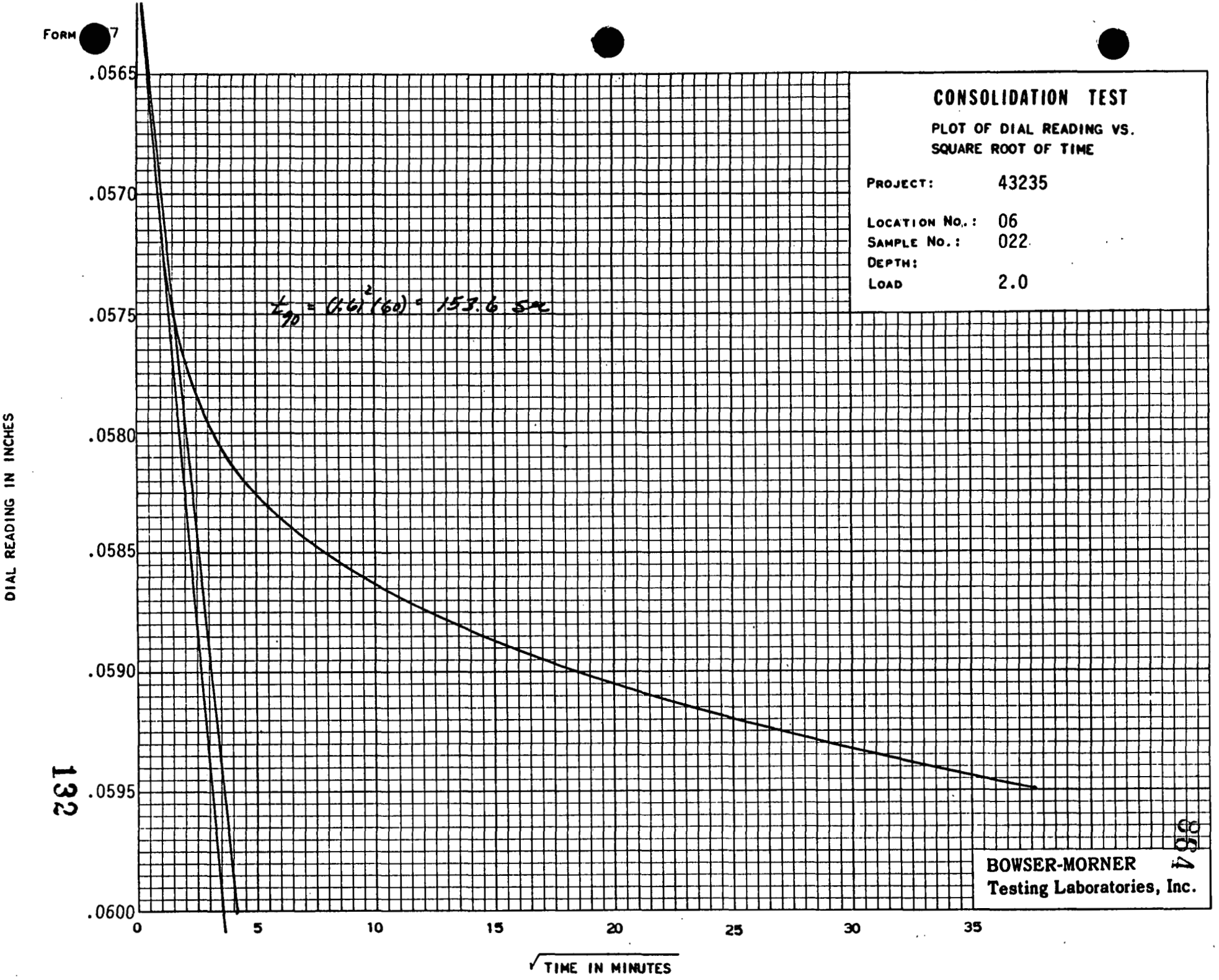
130

64

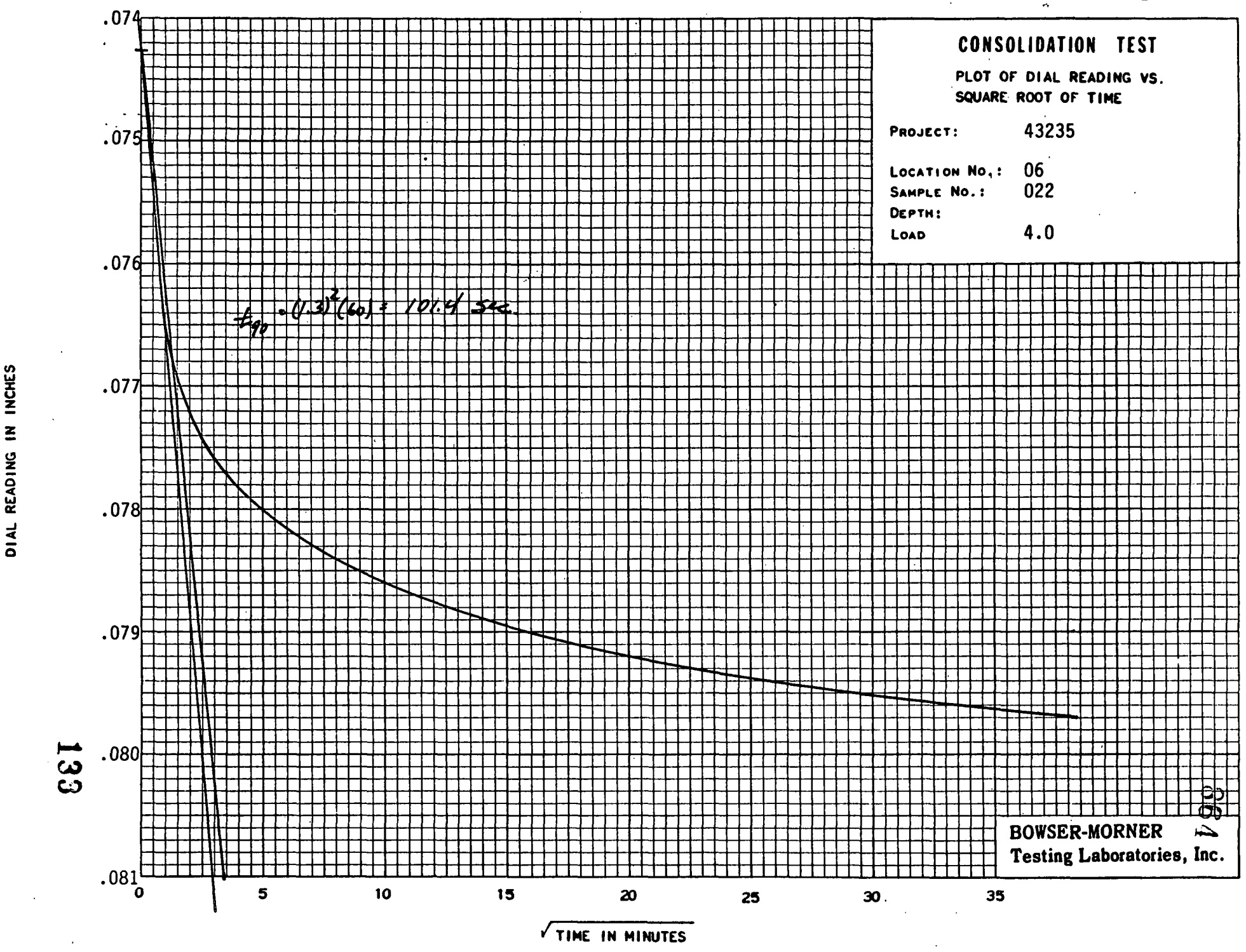
FORM 7


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 06
SAMPLE NO.: 022
DEPTH:
LOAD 1.0
$t_{90} = (1.8)^2(60) = 194.4$ sec.
DIAL READING IN INCHES
.0450
.0455
.0460
.0465
.0470
.0475
.0480
.0485
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

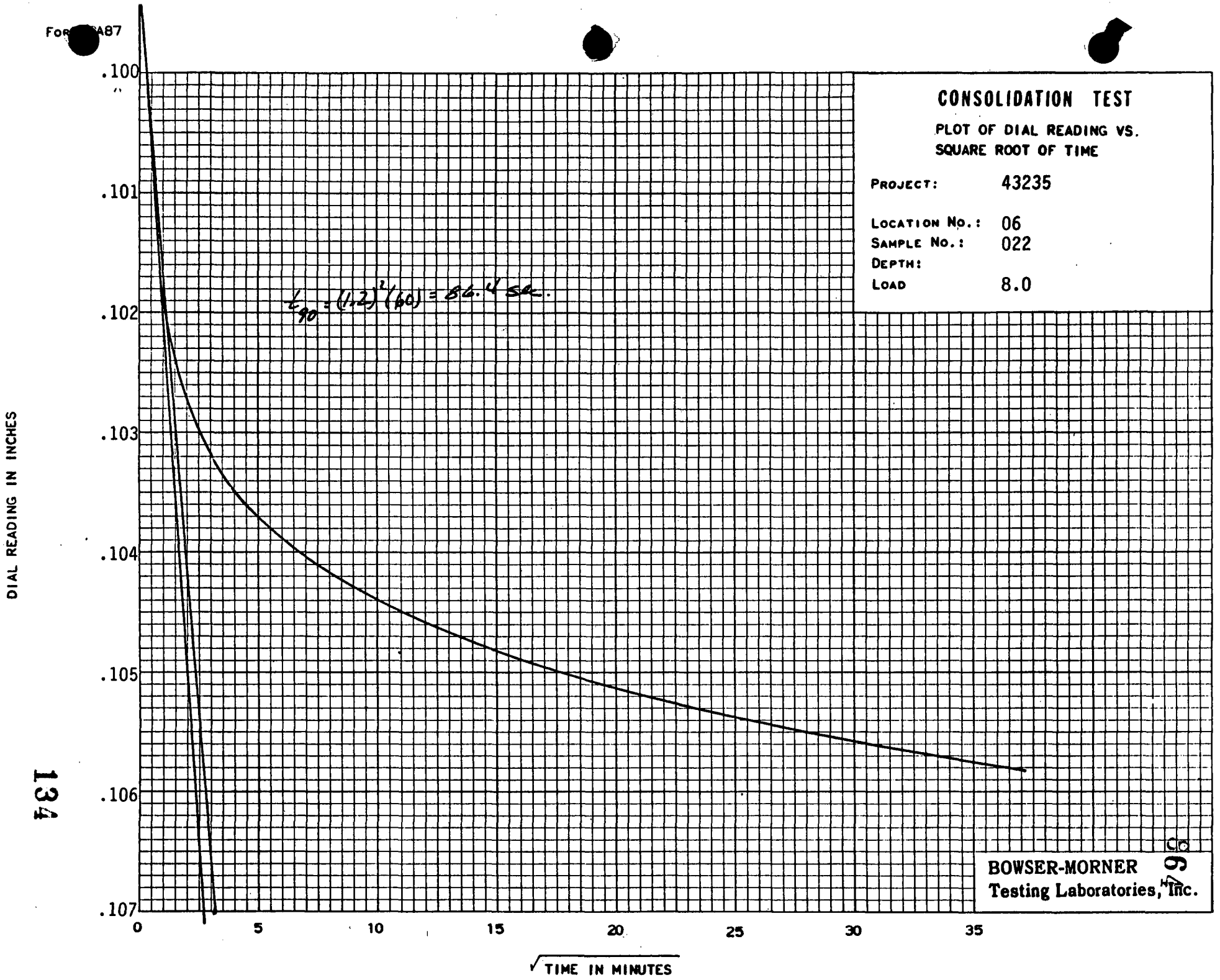
FORM 7


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 06
SAMPLE NO.: 022
DEPTH:
LOAD 2.0
$t_{90} = (1.6)^2(60) = 153.6$ sec
DIAL READING IN INCHES
.0565
.0570
.0575
.0580
.0585
.0590
.0595
.0600
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

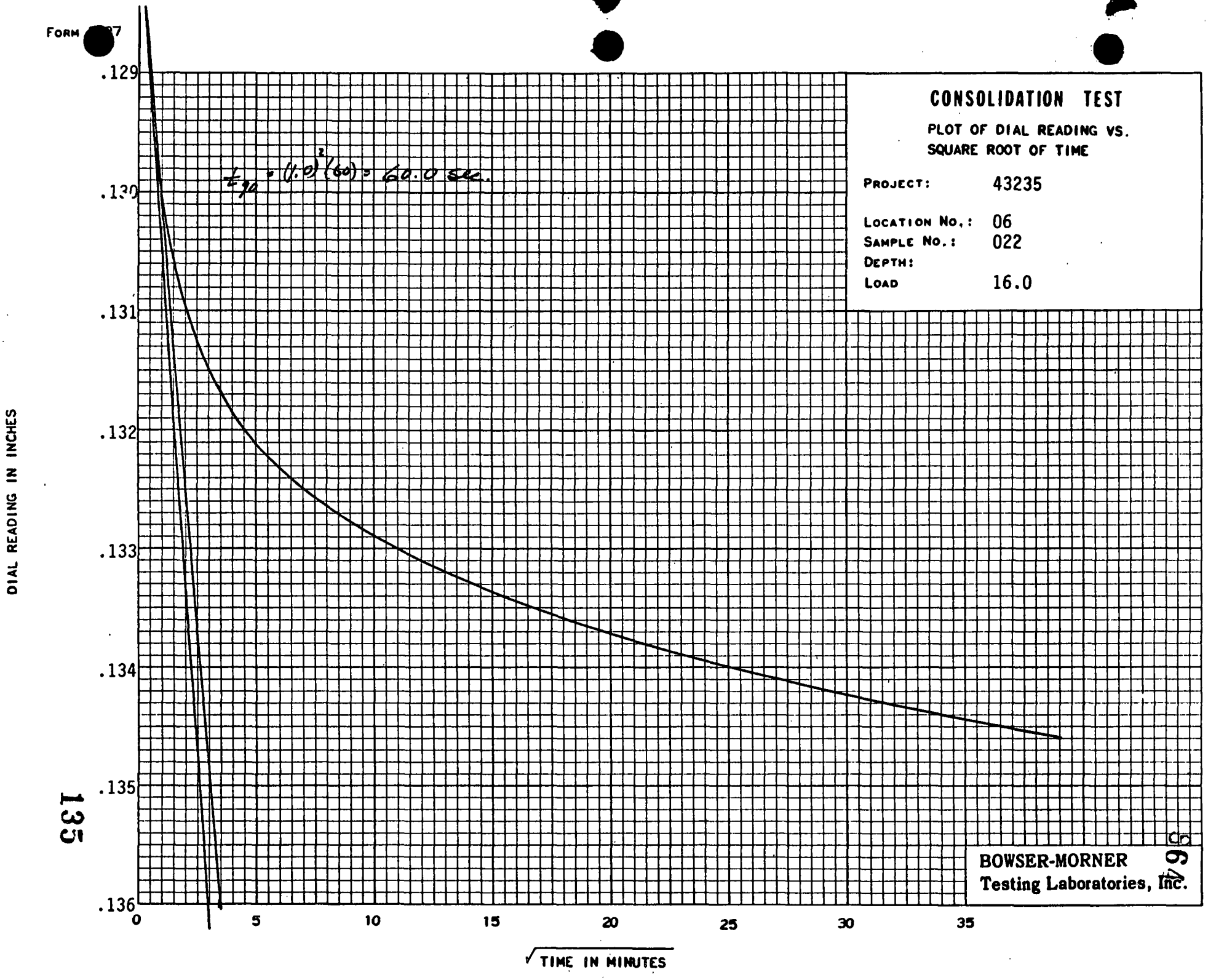
FORM 7


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 06
SAMPLE NO.: 022
DEPTH:
LOAD 4.0
$t_{90} = (0.3)^2(60) = 101.4$ sec.
DIAL READING IN INCHES
.074
.075
.076
.077
.078
.079
.080
.081
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

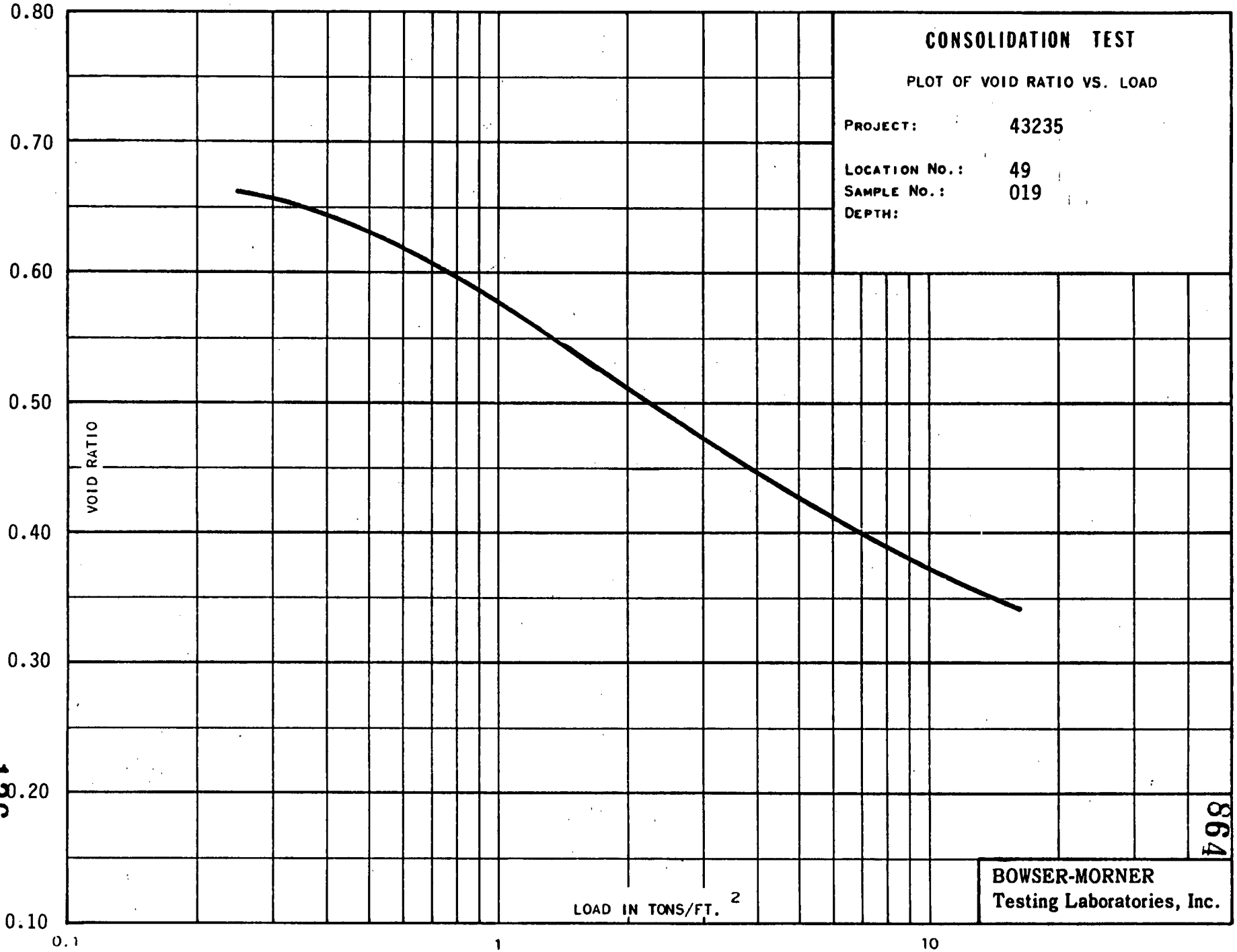
Form [illegible]A87


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 06
SAMPLE NO.: 022
DEPTH:
LOAD 8.0
$t_{90} = (1.2)^2(60) = 86.4$ sec.
DIAL READING IN INCHES
.100
.101
.102
.103
.104
.105
.106
.107
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM [illegible]7


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 06
SAMPLE NO.: 022
DEPTH:
LOAD 16.0
$t_{90} = (1.0)^2(60) = 60.0$ sec.
.129
.130
.131
.132
.133
.134
.135
.136
DIAL READING IN INCHES
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM 2A86



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REPORT OF ONE DIMENSIONAL CONSOLIDATION TEST

PROJECT: 43235
BORING NO: 49
SAMPLE NO: 019
DEPTH: - FT.
SPECIFIC GRAVITY: 2.57
MOISTURE CONTENT
BEFORE: 17.8%
AFTER: 16.2%
DRY WEIGHT OF SOLIDS: .2056 LBS.
INITIAL DIAL READING: .11539 INCHES
INITIAL HEIGHT: .7500 INCHES
INITIAL TOTAL UNIT WEIGHT:
TYPE OF DIAL: N
HEIGHT OF SOLIDS: .4511 INCHES
INITIAL VOID RATIO: .6627

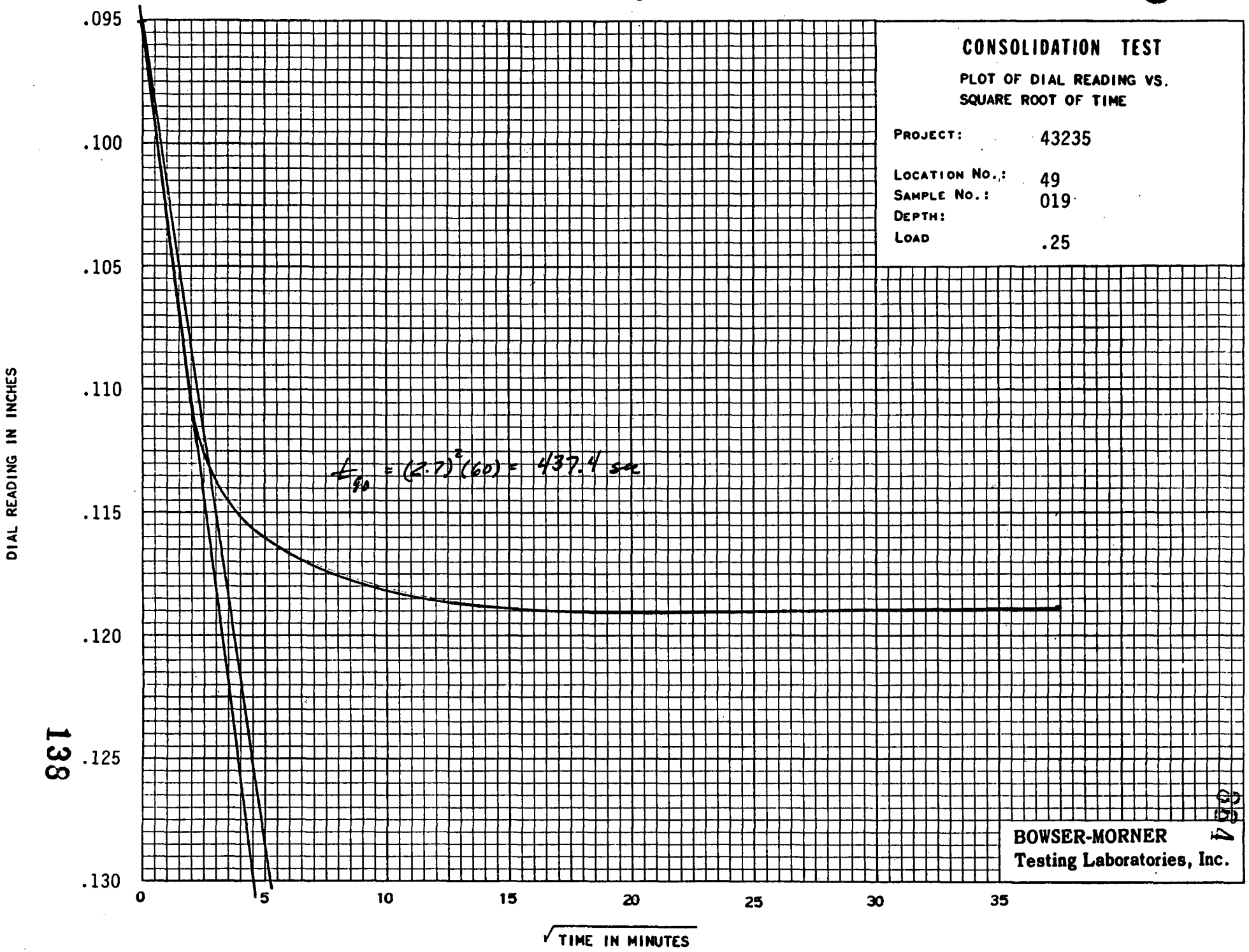
INITIAL DEGREE OF SATURATION: 69.0 %
FINAL DEGREE OF SATURATION: 100.0 %

LOAD TONS/SQ. FT	T90 CONSOL TIME SEC.	FINAL HEIGHT INCHES	VOID RATIO	COEFFICIENT OF CONSOL. SQ. INCHES/SEC. EXP. 10-
.25	437	.75000	.6627	2.70 EXP -4
.50	153	.73515	.6297	7.39 EXP -4
1.00	135	.70987	.5737	7.84 EXP -4
2.00	135	.68307	.5143	7.26 EXP -4
4.00	375	.65589	.4540	2.41 EXP -4
8.00	375	.62918	.3948	2.22 EXP -4
16.00	540	.60702	.3457	1.43 EXP -4

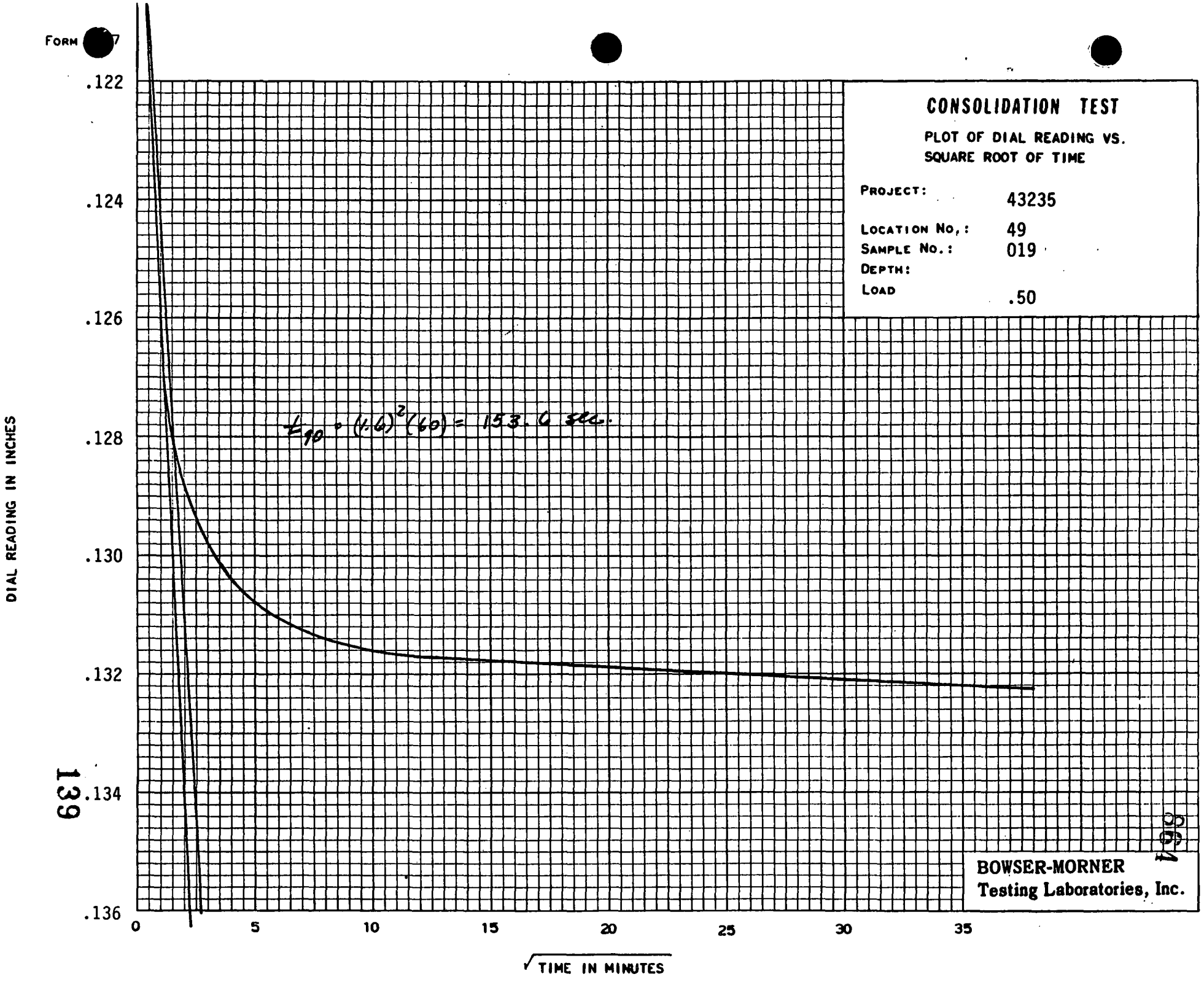
INITIAL DRY DENSITY: 96.5 PCF
INITIAL WET DENSITY: 113.7 PCF
PERCENT COMPACTION: 96.4%

$w =$ 17.8
$e_c =$ .663
$\bar{c}_v =$ 4.46×10^{-4}
$C_c =$ .198

FORM 2


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 49
SAMPLE NO.: 019
DEPTH:
LOAD .25
$t_{90} = (2.7)^2(60) = 437.4$ sec
DIAL READING IN INCHES
.095
.100
.105
.110
.115
.120
.125
.130
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM 7


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 49
SAMPLE NO.: 019
DEPTH:
LOAD .50
$t_{90} = (1.6)^2(60) = 153.6$ sec.
DIAL READING IN INCHES
.122
.124
.126
.128
.130
.132
.134
.136
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

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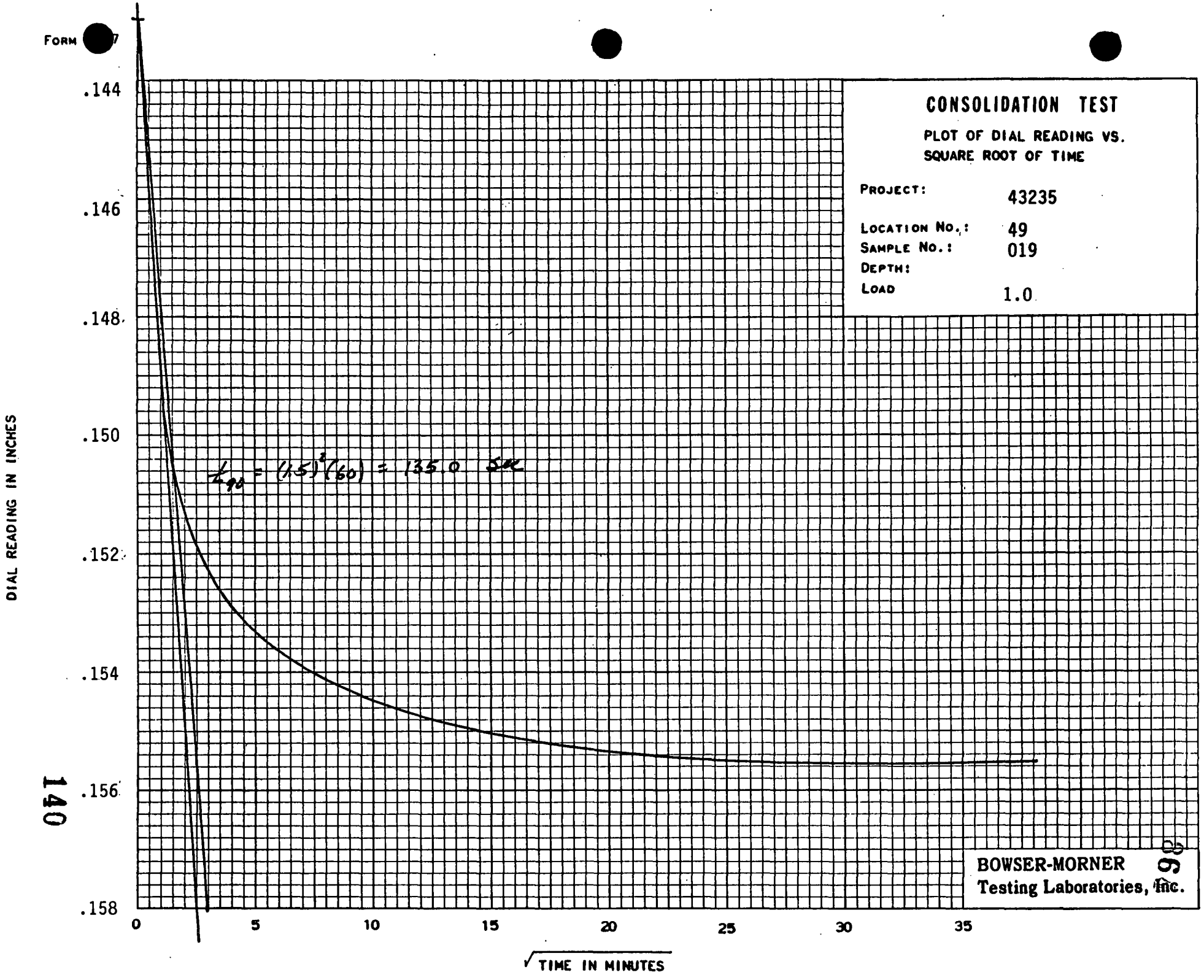
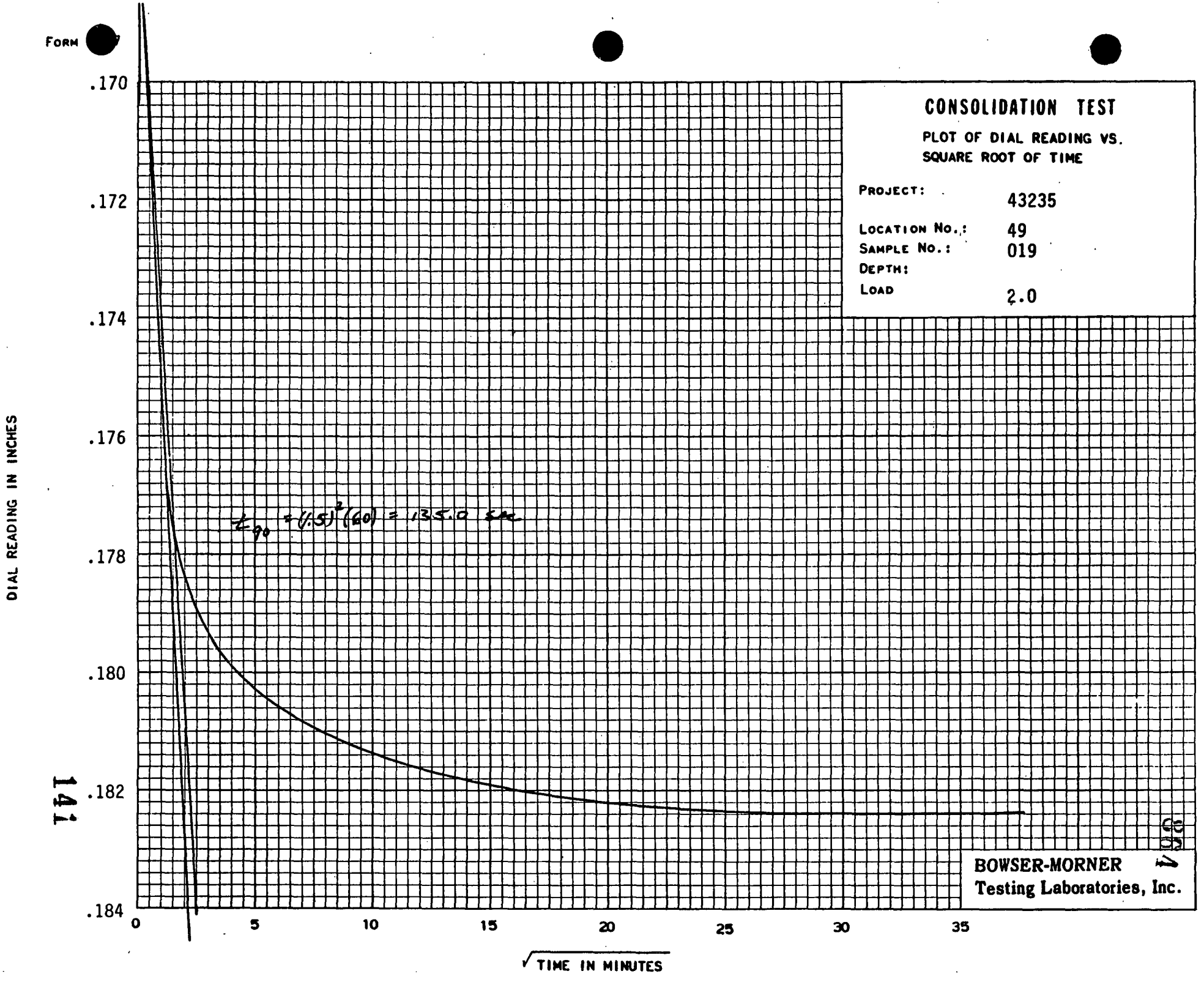
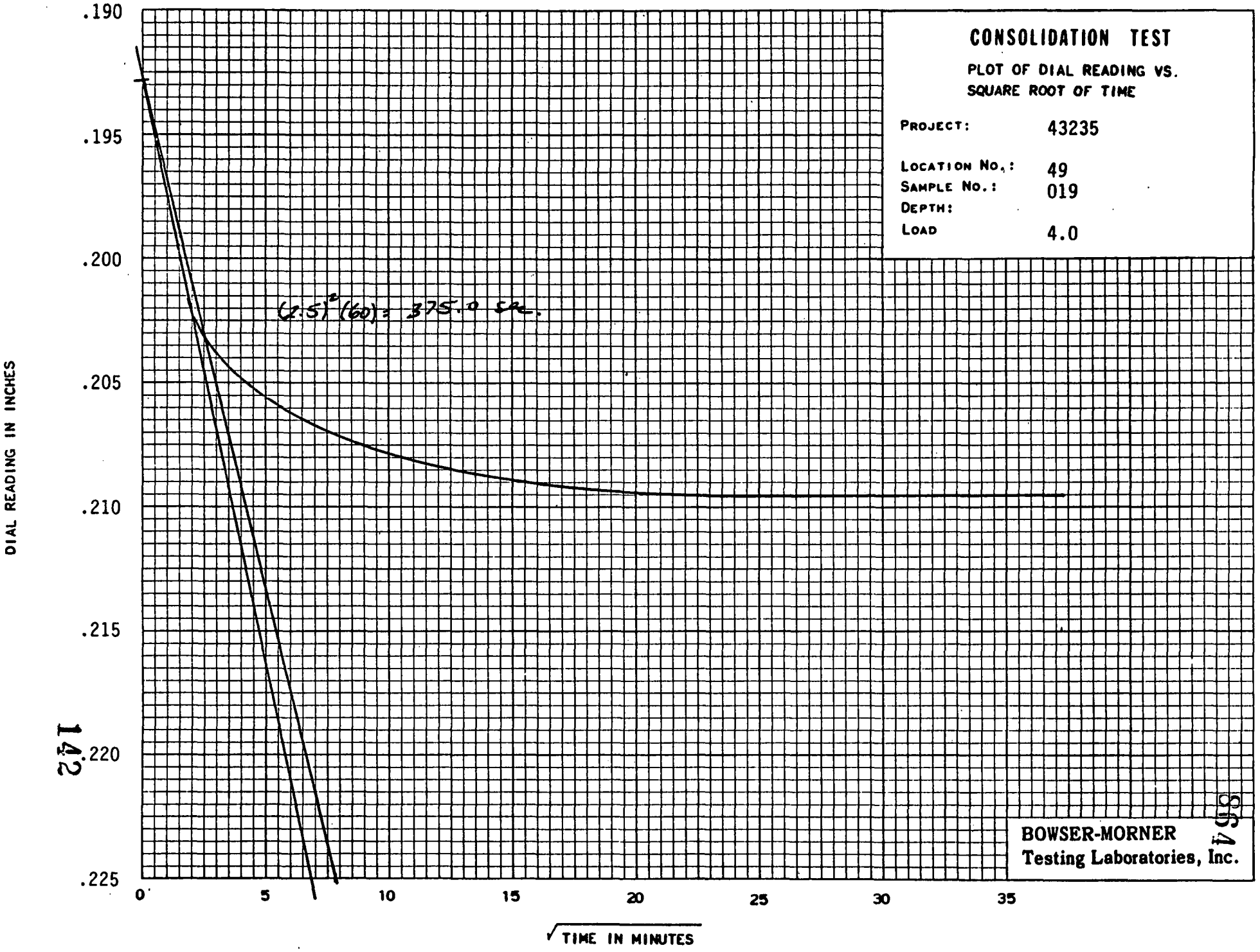
FORM 7


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 49
SAMPLE NO.: 019
DEPTH:
LOAD 1.0
$t_{90} = (1.5)^2(60) = 135.0$ sec
DIAL READING IN INCHES
.144
.146
.148
.150
.152
.154
.156
.158
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

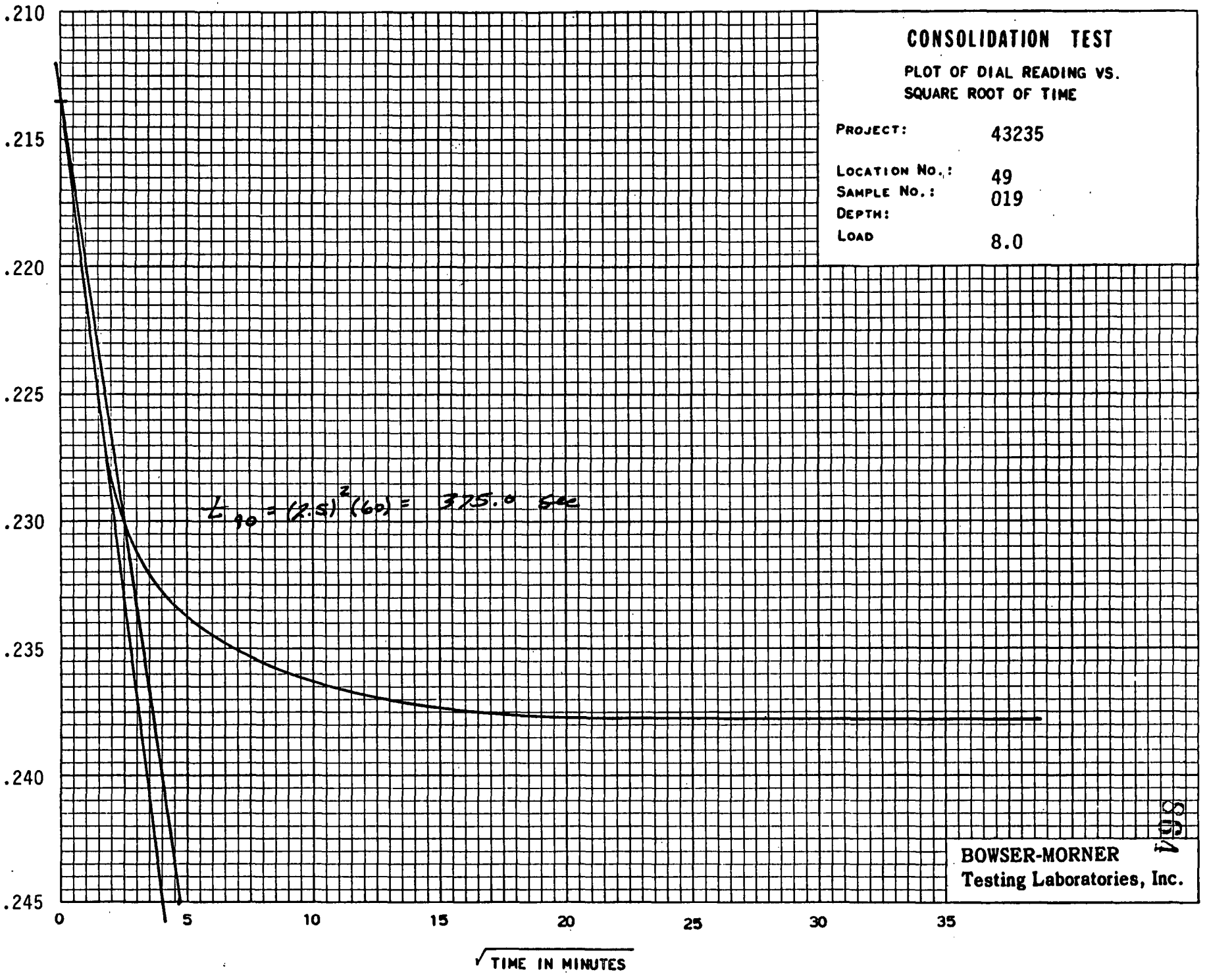
FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS. SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 49
SAMPLE NO.: 019
DEPTH:
LOAD 2.0
$t_{90} = (1.5)^2(60) = 135.0$ sec
DIAL READING IN INCHES
.170
.172
.174
.176
.178
.180
.182
.184
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

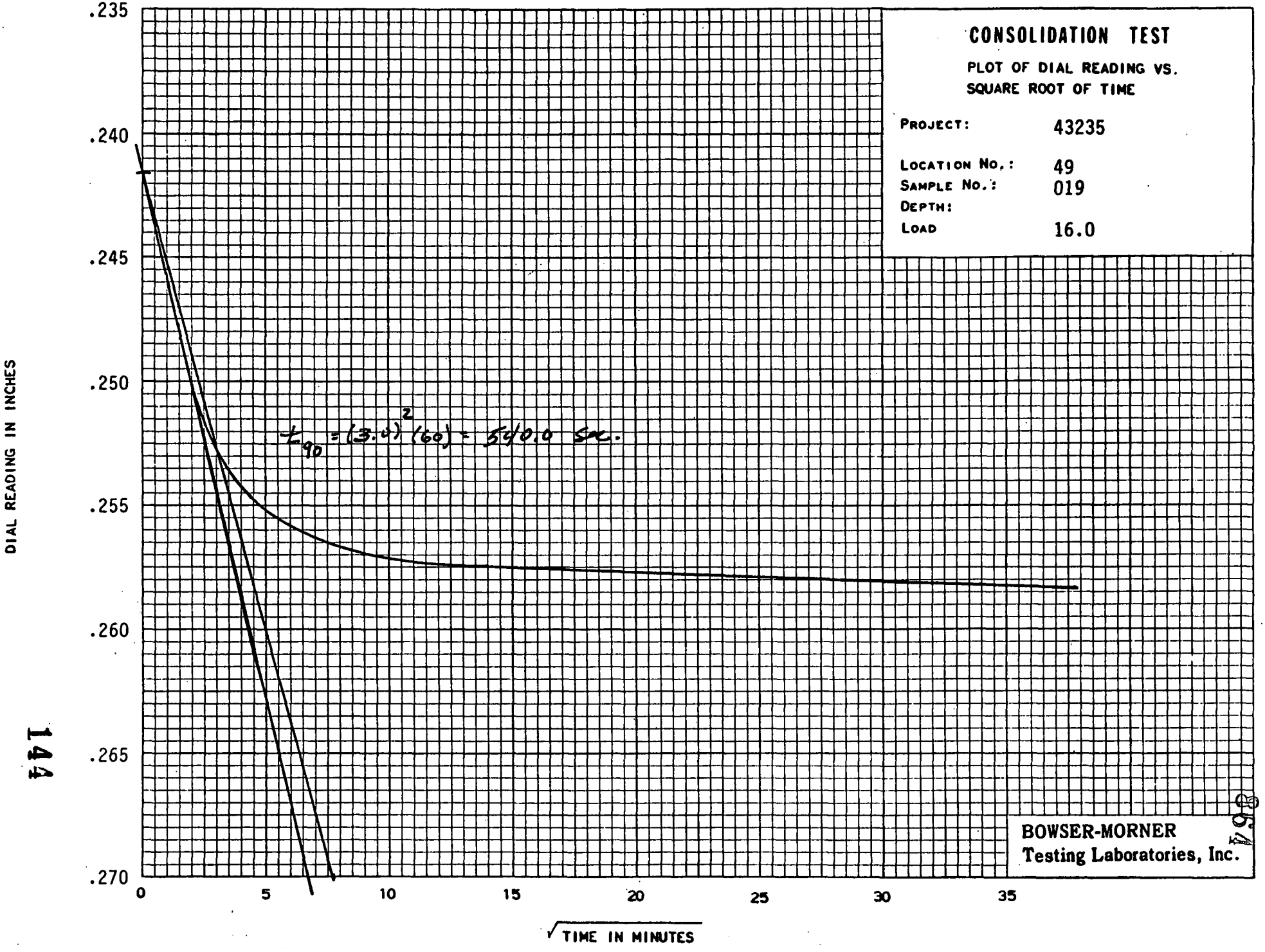
FORM [illegible]7


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 49
SAMPLE NO.: 019
DEPTH:
LOAD 4.0
(2.5)²(60) = 375.0 sec.
DIAL READING IN INCHES
.190
.195
.200
.205
.210
.215
.220
.225
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM


CONSOLIDATION TEST
PLOT OF DIAL READING VS.
SQUARE ROOT OF TIME
PROJECT: 43235
LOCATION NO.: 49
SAMPLE NO.: 019
DEPTH:
LOAD 8.0
$t_{90} = (2.5)^2(60) = 375.0$ sec
DIAL READING IN INCHES
.210
.215
.220
.225
.230
.235
.240
.245
0
5
10
15
20
25
30
35
√TIME IN MINUTES
BOWSER-MORNER
Testing Laboratories, Inc.

FORM 7



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Boring Logs

FMPC Pit 1 Boring Logs

WESTON

Borehole 03, Pit 01 864

BOREHOLE LOG (SOIL)

Page 1 of 1

Pit 1

LOCATION MAP:

SITE ID: EMP- LOCATION ID: Borehole 3

SITE COORDINATES (ft.):

N S 1525 E 1705

GROUND ELEVATION (ft. MSL): N/K

DRILLING METHOD: Hollow Stem Auger

DRILLING CONTR.: Bowser - Morner

DATE STARTED: 87/04/15

DATE COMPLETED: 87/04/15

FIELD REP.: Eddie R. Mignardet

Checked by T. Dougherty 4/22/87

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION Very wet, grass covered, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	
0.00'		22"	22"	S	01	4-13-24-25	49	CL	Dk. gray-brown (10 YR 5/3) clay, grading downward into dk. brown-black (10 YR 2/2) clayey material (sludge?); some roots (organics?) in upper clay; trace lt. red (2.5 YR 6/8) clay (?) clasts and lime-green-yellow (5 YR 3/8) friable material (UF?); slightly moist; med. stiff.	SLDG
2.00'		24"	16"	S	02	13-23-23-19	42	OT	Gray-brown (10 YR 5/2) clayey (?) material (sludge?); organics (?); trace 0.13 to 0.25" rock/glass fragments; dry; med. stiff.	SLDG
4.00'		15"	10"	S	03	6-7-7-10	17	OT	Same as interval 2-4'	
6.00'		17"	13.5"	S	04	11-6-7-12	19	OT	Gray-brown (10 YR 5/3) greasy, clayey (?) material (sludge?); some 0.5 to 1.5" rock clasts; trace black (10 YR 2/2) clayey (?) material; slightly moist; soft.	SLDG
8.00'		NR	NR	S	05	8-4-4-5	9	OT	No Recovery	NORC
10.00'		16.5"	16.5"	S	06	6-5-7-5	12	OT	Yellow (10 YR 8/8) clayey (?) material (sludge?) grading downward into dk. gray (2.5 YR 4/0) greasy, clayey (?) material; yellow material contains spongy texture; moist; soft	SLDG
12.00'										

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COMMENTS: NR = No Recovery

Notebook 46 pp. 59-62

SAMPLE TYPE

A - Auger cuttings

S - 2" O.D. 1.38" I.D. drive sample

U - 3" O.D. 2.42" I.D. tube sample

T - 3" O.D. thin-walled Shelby tube

WESTON

Borehole 01, Pit 01 864

BORE HOLE LOG (SOIL)

Pit 1

LOCATION MAP:

SITE ID: FMP LOCATION ID: Borehole 1

SITE COORDINATES (ft.):

N S 1360 E 1750

GROUND ELEVATION (ft. MSL): NIK

DRILLING METHOD: Hollow Stem Auger

DRILLING CONTR.: Brouser - Morner

DATE STARTED: 87/04/13

DATE COMPLETED: 87/04/13

FIELD REP.: Eddie R. Mignardot

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION very wet, grass covered, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	
0.00		21"	21"	S	01	4-17-24-20	44	CL	Yellowish-brown (10 YR 4/6) clay, grading downward into dk. brown (10 YR 2/2) clayey siltst. (flyash?) trace light reddish brown 5 YR 6/3) 0.13 to 0.25" rock clasts; roots (organics) near top of sample; moist; med. stiff	FLYA
2.00'		18"	18"	S	02	7-11-10-8	18	ML	Dk brown-black (10 YR 2/2) clayey siltst. (flyash?) slightly moist; med. stiff; trace pink-gray (5 YR 6/3) clay (?) clasts	FLYA
4.00'					03	3-4-5-4	9	ML	Dk brown-black (10 YR 2/2) clayey siltst. (flyash?); moist-wet; med. stiff; trace 0.25 to 0.50" dk. gray-brown (10 YR 4/6) clay clasts.	FLYA
6.00'					04	3-4-4-5	9	ML	Dk. brown-black (10 YR 2/2) clayey siltst. (flyash?) grading downward into red-gray (10 R 6/1) clayey siltst.; very moist; med. stiff; some dk. gray-brown (10 YR 4/6) clay.	FLYA
8.00'					05	2-3-3-3	6	ML	Red-gray clayey siltst. (?) (10 YR 6/1); wet to moist; soft; trace dk. brown-gray (10 YR 4/6) clay.	SLDG
10.00'					06	3-3-4-4	8	ML	Same as interval 8-10'; also some Lt. gray (5 YR 7/1) silt (?) clasts; trace organics	SLDG
12.00'										

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COMMENTS: Notebook 46 pp 43-45

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

Borehole 2, Pit 01

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMP LOCATION ID: Pit Borehole 2

SITE COORDINATES (ft.):
N S 1465 E 1800

GROUND ELEVATION (ft. MSL): N/K

DRILLING METHOD: Hollow Stem Auger

DRILLING CONTR.: Bowser-Morner

DATE STARTED: 87/04/15

DATE COMPLETED: 87/04/15

FIELD REP.: Eddie R. Mignardot

Checked by John Dougherty

GROUNDWATER LEVELS

DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION Very wet, grass covered, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0.00'		18"	18"	S	01	3-25-125-127	252	CL	Dk gray-brown (10 YR 5/3) clay grading downward into Lt. brown-gray (10 YR 6/1) clayey (?) material (sludge); abundant roots; slightly moist; med. stiff. (1' clay cover) (SLDG)
2.00'		24"	14.5"	S	02	10-28-31-29	60	OT	Lt. brown-gray to white (10 YR 7/1) clayey (?) material (sludge?); moist; soft; trace yellow (2.5 Y 8/8) clayey (?) material (sludge?)
4.00'		24"	22"		03	13-15-34-95	129	OT	Same as interval 2-4'
6.00'		24"	20"		04	38-52-38-55	93	OT	Same as interval 2-6'
8.00'		24"	24"		05	3-5-4-8	12	OT	Same as interval 2-8' although slightly more yellow (2.5 YR 8/8) greasy material (sludge?); slightly more moist; material grades downward into med.-course sandy clay. (SLDG)
10.00'		24"	24"		06	5-5-4-5	9	OT	Lt. gray (10 YR 7/2) med. sands grading downward into white (10 YR 7/1) course sands wet-moist; soft; trace black (10 YR 2/2) friable (powder-like) material and yellow (10 YR 8/6) greasy material (sludge?)
12.00'									

COMMENTS: Notebook 46 pp. 55-58

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-01, B-04
SITE COORDINATES (ft.):
N 5 1425 S E 1705 E
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 4-16-87
DATE COMPLETED: 4-16-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Pit 1, boring 4 center of pit 4.
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		18"	18"	U	T 200 B2000	3-33-52-43	95	CL-CH	(0'-7") Yellowish brown (10YR 5/8) CLAY, little (+) Silt, Trace fine to medium Gravel, roots and grass, damp.
								ML	(7"-1'6") Dark gray (10YR 4/1) SILT, Trace (+) Clay, damp to dry, dense, crumbles easily.
2'-4'		17½"	17½"	U	2000	13-17-12-12	24	ML	Same as above (7"-1'6"), Trace (+) white (5YR 8/1) in layers at (2'7" and 2'1").
4'-6'		22"	22"	U	HP-210T Temporarily none functional	13-12-12-12	24	ML	Same as above (7"-4'), increase in moisture to damp, occasional layers (1/8"-1/2") of white (5YR 8/1) SILT, Trace (+) Clay, white (5YR 8/1) specks (1/16-1/8 dia) through out sample.
6'-8'		16½"	16½"	U	HP-210T none functional	4-3-4-4	8	ML	Same as above 7"-6', moist to wet, trace small roots, pieces of brown paper.

COMMENTS: Logs for P-01, B-04 are in Field Book 440 pg. 67-70. *CPM Taken with Eberline HP-210T conversion for HP-210T: 1mRad/hr/1489 CPM, T-Top of sample, B-bottom of sample.

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SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

AD 9/1/87

WESTON

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BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-01, B-04
SITE COORDINATES (ft.):
N 1425 S E 1705 E
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-16-87
DATE COMPLETED: 4-16-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION See page 1

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
8'-10'	X	15"	15"	U	HP-210 temporarily none functional	2-3-3-2	~~6~~ 5	ML-	Same as above (7"-8'), saturated, red(2.5YR 5/8) speck in trace amounts through out, organic material present.
10'-12'	X	18"	18"	U	HP-210 temporarily none functional	2-2-2-3	~~4~~ 5	ML-	Same as above (7"-10'), saturated, top 9" is softer than bottom 9".

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COMMENTS: Seepage 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

GMS 9/3/87

WESTON

Borehole 05, Pit 01 864

BOREHOLE LOG (SOIL)

Page 1 of 1
Pit 1

LOCATION MAP:

SITE ID: FMP LOCATION ID: Borehole 5
SITE COORDINATES (ft.):
N S 1325 E 1680
GROUND ELEVATION (ft. MSL): N/K
DRILLING METHOD: Hollow Stem Auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 87/04/14
DATE COMPLETED: 87/04/14
FIELD REP.: Eddie R Mignardet
Checked by J. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION
SITE CONDITION Very wet, grass-covered, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	
0.00'		20"	20"	S	01	3-4-11-30	41	CL	Brown (10 YR 5/3) clay; moist, med. stiff; some roots (organics?) and dk. brown-black (10 YR 5/2) sandy siltst. (flyash?)	\clay FLYA
2.00'		13.5"	13.5"	S	02	7-12-11-10	21	CL	Brown (10 YR 5/3) silty clay grading downward into a coarser sandy siltst; trace roots (organics); trace Lt. gray (5 YR 7/1) siltst., slightly moist; med. stiff.	$FMN
4.00'		15"	15"	S	03	3-5-7-5	12	CL	Yellowish-brown (10 YR 5/4) clay; slightly moist, med. stiff; trace white (2.5 YR 8/2) clayey(?) material; some dark brown-black (10 YR 5/2) clayey siltst.(?)	SFMN
6.00'		23"	23"	S	04	7-9-7-6	13	CL	Yellowish-brown (10 YR 5/4) clay grading downward into black (7.5 YR 2/2) silty (gritty), grease-like material; some 0.5-1.0" rock clasts and red-yellow clayey (7.5 YR 7/2) material: slightly moist, soft.	SFMN
8.00'		14"	14"	S	05	6-10-9-10	19	OT	Black (7.5 YR 2/2) silty (gritty), greasy material (sludge?); slightly moist; soft	SLDG
10.00		17.5"	17.5"	S	06	6-6-4-4	8	OT	Black (7.5 YR 2/2) silty (gritty), greasy material (sludge?) grading downward into yellow (10 YR 8/8) laminated greasy, clayey (?) material (sludge?); slightly moist; soft	SLDG
12.00'										

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COMMENTS: Notebook 46 pp. 47-50

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

FMPC Pit 2 Boring Logs

WESTON

Borehole 01, Pit 02

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BOREHOLE LOG (SOIL)

Pit 2

LOCATION MAP:

SITE ID: EMP- LOCATION ID: Borehole 1

SITE COORDINATES (ft.):

N S 1175 E 1975

GROUND ELEVATION (ft. MSL): N/K

DRILLING METHOD: Hollow Stem Auger

DRILLING CONTR.: Bowser- Morner

DATE STARTED: 87/04/16

DATE COMPLETED: 87/04/16

FIELD REP.: Eddie R. Mignardot

Checked by J Dougherty 4/22/87

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION very wet, grass covered, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0.00'		16"	16"	S	01	2-6-50-67	117	CL	Brown (7.5YR 4/4) organic (?) clay grading downward into Black (7.5YR 2/0) sandy silts (?) at bottom; some roots; slightly moist; med. stiff
2.00'		13"	13"	S	02	17-29-31-18	49	SM	Black (7.5YR 2/0) med. to coarse sands (flyash ?); dry-moist; med. stiff; trace filters containing red hairs (strans); some silts.
4.00'		22"	19"	S	03	18-35-40-34	74	SM	Black (7.5YR 2/0) to pale red (2.5YR 6/2) sandy silts (flyash ?); trace lime-green (UF) clayey(?) material, and 0.25 to 1.00" rock (qtz) clasts; slightly moist; med. stiff.
6.00'		24"	19"	S	04	3-6-36-36	72	OT	Black (10YR 2.5/1) med. silty sands grading downward into silty clays (?); soft; med. stiff; wet; trace Lt. yellowish brown (10YR 6/4) clayey (?) material and white (10YR 8/2) clayey (?) material (sludge ?).
8.00'		NR	NR	S	05	2-1-0-0	0		No Recovery
10.00									
12.00'									

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COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

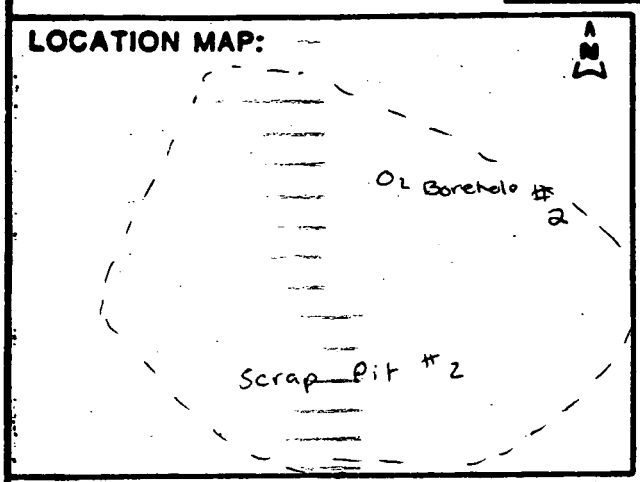
WESTON

Borehole 02, Pit 02

BORE HOLE LOG (SOIL)

Pit 2

LOCATION MAP:



SITE ID: FMP LOCATION ID: Borehole 2
SITE COORDINATES (ft.):
N S 1250 E 2035
GROUND ELEVATION (ft. MSL): N/K
DRILLING METHOD: Hollow Stem Auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 4-14-87
DATE COMPLETED: 4-14-87
FIELD REP.: Ed. Mignardot
Checked by Jon. Dougherty 4/22/87

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Approx. 50' from road in NE section of Pit 2
SITE CONDITION Grass-covered, flat surface, very wet

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'		17.5"	17.5"	S	01	4-7-20-24	44	CL	9" Dk. grayish-brown to yellowish brown (10YR 5/6) clay underlain by dk. brown (10YR 2/2) clayey siltst. (?); minor (0 to 5%) lime-green to olive yellow (5YR 6/8) clayey material; abundant roots; moist.
2'		0	0	S	02	39-59-139-39	178	OT	No recovery; chunks (up to 1" in diameter) of concrete w/ rocks up to 1" in diameter
4'		0	0	S	03	18-5-3-5	8	OT	Same as interval 2-4'
6'		0	0	S	04	11-8-4-1	5	OT	Same as interval 2-6'
8'		20.5"	20.5"	S	05	1-1-1-1	2	OT	Uniform lt. gray (10YR 7/1) to white (10YR 8/2) clayey material (sludge?) banded appearance (lt. and dk. colors approx. 2" thick separated by clear to white 1/8" to 1/4" bands, slightly wet.
10'		0	0	S	06	12-7-9-10	19	OT	No Recovery

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COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-02, B-03
SITE COORDINATES (ft.):
N S 1255 E 1925
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger.
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-17-87
DATE COMPLETED: 4-17-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Pit 2, boring 3, west central section of pit 2.
SITE CONDITION grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		15½"	15½"	U	*250	6-31-53-30	~~84~~ 83	CL-CH	0"-7" Yellowish brown (10YR 5/8) CLAY trace Silt, wet on top moist toward bottom.
					*1200			SM-	(7"-1') Very dark gray (10YR 3/1) coarse to fine SAND, little (+) Clay, trace Silt, damp, translucent coarse sand size material mixed throughout-concentrated at top, grayish green 5G 4/2 medium sand size material near top. (1'-1'1") white (5Y 8/1) fiberous material.
					*600			CL-CH	(1'1"-1'3½") Yellowish brown (10YR 5/8) CLAY, Trace Silt, Trace medium to fine Gravel, damp.
2'-4'		18"	18"	U	1600	5-12-23-34	57	CL-CH	(2'-2'4") Yellowish brown (10YR 5/8) CLAY, Trace Silt, trace medium to fine Gravel. damp.
								CL-CH	(2'4"-3') Light olive gray 5Y 6/2 CLAY, little Silt, moist, small pieces wood and chard material.
								SP	(3'-3'6") white 5Y 8/1 coarse to medium SAND size material, moist, hard clumps.

COMMENTS: Logs for P-02, B-03 are in Field Book 440, pg 135.
*CPM taken with Eberline HP-210T, conversion for HP-210T 1mRad/hr/1489 CPM

73-76 SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

JAD 9/2/87

WESTON

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BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-02, B-03
SITE COORDINATES (ft.):
N S 1255 E 1925
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-17-87
DATE COMPLETED: 4-17-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
4'-6'	X	1/2"	0	U	—	200/6		—	Plug in end of sample spoon from the white 5Y 8/1 material above 3'-4', plug material is hard, cemented.
6'-8'	X	13"	13"	U	150	7-9-9-14	~~18~~ 23	CL-CH	Light yellowish brown 10YR 6/4 CLAY Trace fine Sand toward bottom 4", wet, mottled, trace(-) medium Gravel, gravel is flat.
8'-10'	X	7"	7"	U	150	50-26-25-17	~~51~~ 42	CL-CH	(8'-8'6") Same as above (6'-8'), with little medium to fine(+) Gravel, white (5Y 8/1) specks throughout, saturated.
								SC	(8'6"-8'7") Black (10YR 2/1) medium to fine SAND and Clay, hard, forms plug in end of sample spoon.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

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Page 1 of 2

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-02, B-04
SITE COORDINATES (ft.):
N S 1300 E 2000
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-20-87
DATE COMPLETED: 4-20-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Pitz, boring 4, South central section
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		16"	16"	U	280	3-6-9-30	~~15~~ 39	CL-CH	0"-7" Yellowish brown (10YR 5/4) CLAY, Trace (+) Silt, damp, roots and grass.
								SP	7"-9" Black (10YR 2/1) fine SAND, cemented, damp.
								CL-CH	9"-1'4" Yellowish brown (10YR 5/4) CLAY, Trace (+) Silt, Trace fine Gravel, damp.
2'-4'		15"	15"	U	150	10-10-10-11	21 ~~20~~	CL-CH	Yellowish brown (10YR 5/3) CLAY, Trace (+) Silt, some (+) medium to fine Gravel, moist, gravel is angular to subrounded.
4'-6'		11"	11"	U	T-180 B-280	3-6-7-11	18 ~~13~~	CL-CH	Same as above (2'-4'), less gravel, now little medium (+) to fine (+) Gravel, moist, gravel is subrounded to rounded
6'-8'		9"	9"	U	180	4-4-6-13	~~10~~ 19	CL-CH	Same as above (2'-6'), with little medium to fine Gravel, gravel is angular.

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COMMENTS: Logs for P-02, B-04 are in Field Book 440.
*CPM taken with Eberline HP-210T, conversion for HP-210 1mRad/hr/1489 CPM. T - Top of sample, B - bottom of sample

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

064

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-02, B-04
SITE COORDINATES (ft.):
N 51300 E 2000
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-20-87
DATE COMPLETED: 4-20-87
FIELD REP.: Vance A. Peers.

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
8-10		16"	16"	U	T-500	2-4-6-3	~~10~~	CL-CH	(8'-8'3") Same as (2'-8').
					B-4000		9	CL-	(8'3"-8'6") Light gray (2.5Y 7/2) CLAY and Silt size material, soft, wet.
								CL-	(8'6"-8'8") Very pale brown (10YR 7/4) CLAY and Silt size material, soft, wet.
								CL-	(8'8"-8'10") Yellow (10YR 8/6) CLAY and Silt size material, more firm than above layers, forms soft blocky chunks (like apple chunks) wet
								CL-	(8'10"-9'1") White (10YR 8/1) CLAY and Silt size material.
								CL-	(9'1"-9'3") Brownish yellow (10YR 6/8) CLAY and Silt size material, moist, small clumps form.
								CL-	(9'3"-9'4") White (10YR 8/1) CLAY and Silt size material.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-02B-05
SITE COORDINATES (ft.):
N 5 1200 E 2035
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-20-87
DATE COMPLETED: 4-20-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Pit 2, Boring 5, North east section of pit 2
SITE CONDITION grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		19"	19"	U	T-250 B-200	2-9-15-27	24	CL-CH	(0"-8") Yellowish brown (10YR 5/4) CLAY, trace Silt, trace medium to fine Gravel, wet on surface, damp below 3", grass and small roots.
								SP-	(8"-10") Black (10YR 2/1) medium to fine SAND, moist, loose.
								CL-CH	(10"-1'4") Same as (0"-8") above
									(1'4"-1'7") Light olive brown (2.5Y 5/4)
								CL-CH	CLAY, little Silt, dry to damp, white (10YR 8/1) fiberous material present
2'-4'		11"	11"	U	T-300 B-250	6-120/5	120/5	CL-CH	(2'-2'10") Yellowish brown (10YR 5/4) CLAY trace, Silt, trace fine Gravel, damp, mottled
								SP-	(2'10"-2'11') Black (10YR 2/1) fine SAND size material.
									Subround coarse gravel stuck in end of sample spoon.
4'-6'		16½"	16½"	U	HP-210T Temporarily none functional	4-7-27-17	34	CL-CH	Same as above (2'-2'10"), yellowish red (5YR 4/6) fiberous medium gravel size object at 4'4".

COMMENTS: Log for P-02, B-05 are in Field Book 440 pg. 83-86. *CPM taken with HP-210T. Conversion for HP-210T: 1mRad/hr/1489 CPM. T-Top of sample, B-bottom of sample

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SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

864

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: P-02, B-05
SITE COORDINATES (ft.):
N 51200 E 2035
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow Stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 4-20-87
DATE COMPLETED: 4-20-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID * CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		12"	12"	U	600	20-20-22-12	42	CL-CH	(6'-6'5") Yellowish brown (10YR 5/4) CLAY Trace Silt, trace coarse to fine Gravel, saturated, gravel is subrounded.
								SP-	(6'5"-7') Black (5Y 2.5/1) coarse to fine SAND size material with horizontal layers of a hard fiberous material throughout, small 1 inch diameter stained reddish yellow (5YR 7/8) area at bottom of sample.
8'-10'		15"	15"	U	T-1100 B-1000			SP-	(8'-8'1") same as above (6'5"-7') (8'1"-9'3") Alternating horizontal layers of SILT size material of the following colors - white (10YR 8/1), Very pale brown (10YR 7/4), white (2.5Y 8/0) layers vary in size from ½" to 4".

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

FMPC Pit 3 Boring Logs

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-03, B-02
SITE COORDINATES (ft.):
N S 915 E 1925
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-10-87
DATE COMPLETED: 4-10-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Pit 3 boring 2 north east section of pit 3.
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		17"	17"	U	250	2-2-6-14	8	CL-CH	(0'-9") Redish brown (5YR 5/3) CLAY, little Silt, trace Gravel, numerous rootlets, damp.
								SM-SC	(9"-1'5") Black (5YR 2.5/1) coarse to fine SAND, little Silt, trace(+) Clay, moist. fly ash
2'-4'		20"	20"	U	400	20-19-7-17	26	SM-SC	Black (5YR 2.5/1) coarse to fine SAND size material, fly ash little Silt, trace(+) Clay, trace medium to fine Gravel, some gravel appears to be white glass, gravel is angular, damp, at 2'4" a 2" CLAY and sand layer occurs.
4'-6'		0	0	U	—	8-13-14-14	26	—	No recovery, coarse gravel stuck in end of sample spoon.

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COMMENTS: Logs for P-03, B-02 are Field Book 44.0 pg 55-60
*CPM taken with Eberline HP-210T conversion for HP-210T 1mRad/hr/1489 CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D drive sample
U - 3" O.D 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

861

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-03, B-02
SITE COORDINATES (ft.):
N 5915 E 1925
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow Stem augers
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-10-87
DATE COMPLETED: 4-10-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID #CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		20"	20"	U	500	7-4-7-12	11	SM-SC	Black (5YR 2.5/1) same material as above (1'-4'), organic material present (decaying grass and roots) within sample, layers of (5YR 5/3) CLAY, little Silt mixed throughout.
8'-10'		21"	21"	U	500	4-4-5-4	9	SM-SC	Same as above (1'-4') and (6'-8'), moist.
10'-12'		22"	22"	U	480	5-7-4-4	11	SM-SC	Same as above (1'-4') and (6'-10'), wet, gravel is angular to subrounded.
12'-14'		22"	22"	U	530	4-2-3-2	5	SM-SC	(12'-13'6") Same as above (1'-4') and (6'-12') with trace coarse Gravel, saturated, gravel is angular to subrounded.
								CL	(13'6"-13'10") light brownish gray (10YR 6/2) CLAY and Silt size material, with little white (10YR 8/1) and yellowish red (5YR 4/6) present, saturated.

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D drive sample
U - 3" O.D 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

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WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-03, B-02
SITE COORDINATES (ft.):
N 5915 E 1925
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-10-87
DATE COMPLETED: 4-10-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID #CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
14'-16'		13"	13"	U	500	3-2-3-3	5	CL-	(14'-14'5") same as above (1'-4') and (6'-13'6") (14'5"-15'1") yellowish red (5YR 4/6) and white (10YR 8/1) CLAY and silt size material, light brownish gray (10YR 6/2) occurs as secondary color, layering is not well defined, saturated.
16'-18'		20"	20"	U	800	3-2-3-3	5	CL-	Same as above (14'5"-15'1")
18'-20'		24"	24"	U	700	2-1-1-1	2	CL-	Same as above material (14'5"-18') with well defined layering of white (10YR 8/1), yellowish red (5YR 4/6) and lesser amount of light brownish gray (10YR 6/2).

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

Borehole 3, Pit 3 864

BORE HOLE LOG (SOIL)

Pit 3

LOCATION MAP:

SITE ID: FMP LOCATION ID: Borehole 3

SITE COORDINATES (ft.):

N S 1100 E 1750

GROUND ELEVATION (ft. MSL): N/K

DRILLING METHOD: Hollow Stem Auger

DRILLING CONTR.: Bowser - Morner

DATE STARTED: 87/04/06

DATE COMPLETED: 87/04/06

FIELD REP.: Eddie R. Mignardot

Checked by JN Dougherty 4/22/87

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION Grass - covered, flat surface; very wet

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0.00'		19"	19"	S	01	5-9-11-4	15	CL	Grayish-brown (10YR 5/3) silty clay, grading downward into black (2.5 YR 2.5/0) sandy silt (flyash ?); moist med. soft; trace roots
2.00'		6"	6"	S	02	5-4-1-1	2	CL	Lt. brownish-gray (10 YR 5/3) sandy clay; moist; soft; trace roots
4.00'		24"	24"	S	03	1-0-0-0	0	ML	Dk. brown to black (10 YR 6/1) sandy silt (flyash ?) grading downwards into reddish Brown (2.5 YR 4/8) clayey (?) material (sludge ?); very moist; soft
6.00'		24"	24"	S	04	1-0-0-0	0	OT	Reddish-brown (2.5 YR 4/8) clayey (?) material (sludge ?); soft; very moist F/SLO
8.00'		22"	22"	S	05	1-0-0-0	0	OT	Same as interval 6-8'
10.00'		17"	17"	S	06	1-1-1-1	2	OT	Same as interval 6-10'
12.00'									

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COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

Borehole 3 Pit 3

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Pit 3

BOREHOLE LOG (SOIL)

LOCATION MAP: A N

See page 1

SITE ID: FMP **LOCATION ID:** Borehole 3
SITE COORDINATES (ft.):
N 51100 E 1750
GROUND ELEVATION (ft. MSL): N/K
DRILLING METHOD: Hollow Stem Auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 87/04/06
DATE COMPLETED: 87/04/06
FIELD REP.: Eddie R. Mignardot
JND 4/22/87

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION
SITE CONDITION Grass-covered flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
12.00'		20"	20"	S	07	2-1-1-2	3	OT	Same as interval 6-12'
14.00'		23"	23"	S	08	1-0-0-1	1	OT	Same as interval 6-14'; also some brownish-black (2.5 YR 2.5/0) organics (?) clay at bottom 2" of sample.
16.00		8"	8"	S	09	1-1-1-1	2	OT	Same as interval 14-16'
18.00		24"	24"	S	10	1-1-2-1	3	OT	Reddish-brown (2.5 YR 4/8) clayey (?) material (sludge?); very moist-wet; soft; lt. gray (10 YR 7/2) clay at bottom 5" of sample.
20.00'									

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COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

Borehole 4, Pit 3 864

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMP LOCATION ID: Borehole 4
SITE COORDINATES (ft.):
N S1225 E 1575
GROUND ELEVATION (ft. MSL): N/K
DRILLING METHOD: Hollow Stem Auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 87/04/08
DATE COMPLETED: 87/04/08
FIELD REP.: Eddie R. Mignardot
Checked by: JN Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Waste Storage Area, Waste Pit 3
SITE CONDITION Grass-Covered wet flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0.00'		12"	12"	S	01	6-14-19-20	39	CL	Lt. brownish-gray (10YR 3/3) clay grading downwards into dk. brown to black (10 YR 6/1) silty clay; moist; soft; trace organics
2.00'		17.5"	17.5"	S	02	5-3-3-2	5	CL	Lt. brownish-gray (10YR 5/3) clay underlain by 10" reddish-brown (2.5 YR 3/4) clayey (?) material (sludge?); very moist; med. stiff.
4.00'		18"	18"	S	03	2-1-1-1	2	OT	Reddish-brown clayey (?) material (sludge?) trace dk. brown to black (7.5 YR 2/2) gritty organic (?), clayey silt; very moist; soft.
6.00'		12"	12"	S	04	1-1-1-1	2	OT	Same as interval 4-6'
8.00'		18.5"	18.5"	S	05	3-2-2-1	3	OT	Reddish-brown (2.5 YR 5/8) clayey (?) material (sludge?); very moist; soft
10.00'		22"	22"	S	06	1-1-1-1	2	OT	Same as interval 4-6'
12.00'									

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COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

Borehole 04 PIP3

BORE HOLE LOG (SOIL)

Pit 3

LOCATION MAP: See page 1

SITE ID: EMP LOCATION ID: Borehole 4

SITE COORDINATES (ft.):

N S 1225 E 1575

GROUND ELEVATION (ft. MSL): N/K

DRILLING METHOD: Hollow Stem Auger

DRILLING CONTR.: Bowser - Morner

DATE STARTED: 87/04/08

DATE COMPLETED: 87/04/08

FIELD REP.: Eddie R. Mignardot

JND: 4/22/87

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1

SITE CONDITION See page 1

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
12.00'		24"	24"	S	07	2-3-2-1	3	OT	Reddish - brown clayey (?) material (2.5 YR 5/8), sludge (?), very moist, soft, trace Lt. brownish - gray (2.5 YR 5/4) to black (2.5 YR 2.5/0) organics (?) clay.
14.00'		24"	24"	S	08	2-1-1-1	2	OT	Same as interval 12-14'
16.00'		24"	24"	S	09	3-1-0-0	0	OT	Same as interval 12-16'
18.0'		24"	24"	S	10	1-1-1-1	2	OT	Reddish - brown (2.5 YR. 5/8) clayey (?) material (sludge?) grading downwards into dk. grayish-brown (2.5 YR 4/2) clay, very moist - wet, soft
20.0'									

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COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

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BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-03, B-05
SITE COORDINATES (ft.):
N 1085 S E 1525
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-9-87
DATE COMPLETED: 4-9-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Pit 3 boring 5, north central section of Pit 3
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		19½"	19½"	U	140	2-2-5-20	7	OH	(0-2") Very dark gray (5YR 3/1) CLAY, little Silt, organic with grass and grass roots, damp.
								CL-CH	(2"-11") Very dark gray (5YR 3/1) CLAY little, Silt, damp, numerous rootlets.
								CL-CH	(11"-13") Very dark gray (10YR 3/1) CLAY and Silt, damp.
								CL-CH	(13"-19½") Very dark gray (5YR 3/1) CLAY little Silt, damp, rootlets.
2'-4'		20"	20"	U	90	5-16-21-24	37	CL-CH	Yellowish brown CLAY and Silt, trace coarse to fine Sand, little coarse to fine Gravel, rootlets, damp, pocket of very dark gray (10YR 3/1) CLAY and Silt.
4'-6'		21"	21"	U	84	5-6-13-16	19	CL-CH	(4'-4'10") Brown (10YR 5/3) CLAY, little Silt, rootlets, damp. (4'10"-5'9") Yellowish brown (10YR 5/6) CLAY and Silt, trace fine Gravel, rootlets, damp.

COMMENTS: Logs for P-03, B05 are in Field Book 440 pg 47-52. CPM taken with Eberline HP-210T conversion: for HP-210T 1m Rad/hr/1489 CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

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WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-03, B-05
SITE COORDINATES (ft.):
N S 1085 E 1525
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-9-87
DATE COMPLETED: 4-9-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'	X	0	0	U	—	5-10-12-3	22	—	
8'-10'	X	19"	19"	U	150	1-0-0-0	0	CL-	Light brownish gray (10YR 6/2) CLAY and Silt with occasional layers of white (10YR 8/1) and light gray 10YR 7/2 CLAY and Silt, bottom 4" contains layers (1/8" thick) of dark gray brown (10YR 4/2) CLAY and Silt. saturated - sludge
10'-12'	X	21"	21"	U	500	weight of hammer	0	CL-	(10'-10'8") Brown (10YR 5/3) CLAY and Silt size material with yellowish red (5YR 4/6) mixed throughout. sludge (10'8"-11'9") Same as (8'-10') above, with dark gray brown (10YR 4/2) layers (1/8" thick) toward bottom 3". sludge

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

864

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-03, B-05
SITE COORDINATES (ft.):
N 5 1085 E 1525
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-9-87
DATE COMPLETED: 4-9-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
12'-14'		21"	21"	U	600	2-2-1-1	3	CL	Light brownish gray (10YR 6/2) SILT and Clay with layers of white (10YR 8/1) and light gray (10YR 7/2) SILT and Clay throughout, brown (10YR 5/3) SILT and Clay layer at 13', saturated. sludge
14'-16'		19½"	19½"	U	300	1-1-1-1	2	CL	Same as above (12'-14') with little more white (10YR 8/1), brown (10YR 4/2) CLAY with organic material (decayed grass) occurs at 13' and 13'4", saturated. sludge
16'-18'		22"	22"	U	700	1-1-1-0	2	CL	Same as above, 12'-16' vertical dark lines and a trace yellow 5Y 7/6 at bottom of sample, saturated. sludge

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-03, B-05
SITE COORDINATES (ft.):
N S 1085 E 1525
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-9-87
DATE COMPLETED: 4-9-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
18'-20'		22"	22"	U	700	1-0-0-0	0	CL	(18'-18'4") same as above (12'-18') (18'4"-19'10") white (5Y 8/1) and light gray (5Y 7/1) CLAY and silt size material, blotches of little pale red (2.5 YR 6/2) and trace yellow (5Y 7/6) throughout, saturated. sludge

173

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

Borehole 6, Pit 3

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BOREHOLE LOG (SOIL)

Pit 3

LOCATION MAP:

SITE ID: FMP-
LOCATION ID: Borehole 6
SITE COORDINATES (ft.):
N S 975 E 1640
GROUND ELEVATION (ft. MSL): N/K
DRILLING METHOD: Hollow Stem Auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 87/04/10
DATE COMPLETED: 87/04/10
FIELD REP.: Eddie R. Mighardat
Checked by: J.N. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION
SITE CONDITION Grass-covered, wet, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0.00'		16"	16"	S	01	6-7-17-21	38	CL	Dk brownish-black (10YR 4/6) organics(?) clay with trace roots grading downwards into brown-black (10YR 2/2) sandy siltst. (flyash?); moist -- very moist; med. stiff.
2.00'		16"	16"	S	02	10-9-7-6	13	ML	Dk. brown-black (10YR 2/2) sandy siltst. (flyash?); very moist; med. stiff; trace dk. brown-gray clay (10YR 2/6); trace roots
4.00'		NR	NR	S	03	4-2-to	1	OT	No Recovery
6.00'		15"	15"	S	04	1-0-0-0 (wt. of hammer)	0	OT	Reddish-brown (2.5 YR 5/8) clayey (?) material (sludge?); some (0.5 to 1.0") rock clasts; very moist; soft
8.00'		13"	13"	S	05	1-2-1-3	4	CL	Dk brown-gray (10YR 4/6) organic(?) clay with 0.13 to 0.25" rock clasts grading downward into dk. brown-gray (10YR 4/6) silty clay; very moist; soft; trace black (10YR 2/2) flyash(?) near bottom; trace black-brown (2.5YR 5/8) clayey(?) material (sludge?)
10.00'		18.5"	18.5"	S	06	1-2-3-3	6	CL	Same as interval 8-10'; also slightly larger rock clasts.
12.00'									

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COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

Borehole 6 , Pit 3 864

BOREHOLE LOG (SOIL)

LOCATION MAP: A N

See page 1

SITE ID: FMP LOCATION ID: Borehole 6
SITE COORDINATES (ft.):
N 5975 E 1640
GROUND ELEVATION (ft. MSL): N/K
DRILLING METHOD: Hollow Stem Auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 87/04/10
DATE COMPLETED: 87/04/10
FIELD REP.: Eddie R. Mignardot

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION
SITE CONDITION Grass covered, wet, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
12.00'	X	16"	16"	S	07	4-6-6-6	12	CL	Dk brown-gray (10YR 4/6) clay with some (0.5-1.5") rock clasts, some dk. brown-black (10YR 2/2) siltst. (flyash?) trace reddish-brown (2.5YR 3/8) clayey(?) material (sludge?); very moist, med stiff.
14.00'									stopped drilling at 14'
16.00'									

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COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

Borehole 7, Pit 3 864

BOREHOLE LOG (SOIL)

Page 1 of 1
Pit 3

LOCATION MAP:

SITE ID: FMP- LOCATION ID: Borehole 7
SITE COORDINATES (ft.):
N S 1025 E 1800
GROUND ELEVATION (ft. MSL): N/K
DRILLING METHOD: Hollow Stem Auger
DRILLING CONTR.: Bauser - Morner
DATE STARTED: 87/04/13
DATE COMPLETED: 87/04/13
FIELD REP.: Eddie R. Mignardot
Checked by J Dougherty 4/22/87

GROUNDWATER LEVELS

DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Waste Storage Area, Waste Pit 3
SITE CONDITION Grass covered, wet, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0.00'		20"	20"	S	01	4-9-4-2	6	CL	5" Dk gray-brown (10YR 4/3) clay underlain by 6" very dark brown-black (10YR 2/1) sandy siltst. underlain in turn by 9" red-brown (2.5YR 5/8) clayey (?) material (sludge?); moist, soft - med. stiff.
2.00'		15"	15"	S	02	2-1-3-4	7	OT	Reddish-brown (2.5 YR 5/8) clayey (?) material (sludge?); moist; soft; some dk brown-black (10 YR 2/1) sandy siltst. (flyash?); trace dk. grayish-brown (10 YR 4/3) clay.
4.00'		22"	22"	S	03	3-1-3-5	8	OT	Reddish-brown (2.5 YR 5/8) clayey (?) material (sludge?); moist; soft; some dk. brown-black (10 YR 2/1) sandy siltst (flyash?)
6.00'		22"	22"	S	04	5-5-7-7	14	OT	Same as interval 2-4'; also trace lime-green material (UF) or green salt mixed in with grayish-brown (10 YR 4/3) clay.
8.00'		18"	18"	S	05	3-4-5-7	12	CL	Brown (10 YR 4/3) clay; trace lime-green (UF) or green salt; trace silt; wet; soft
10.00'		24"	24"	S	06	4-4-4-1	5	CL	Brown (10YR 4/3) clay; some 0.5" to 1.0" rock clasts; wet to very moist; soft; trace silt. May be top of clay liner. End of boring.
12.00'									

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COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

FMPC Pit 4 Boring Logs

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-04, B-01
SITE COORDINATES (ft.):
N S 925 E 2350E
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-22-87
DATE COMPLETED: 4-22-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Pit 4 boring 1 East section of pit 4.
SITE CONDITION Bare soil, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		10"	10"	U	50.	8-9-14-16	23	CL-CH-	Brown (10YR 5/3) CLAY, trace fine to medium gravel, black (7.5YR) stain at 7½"-10", dry to slightly damp, mottled.
2'-4'		20"	20"	U	HP-210T Temporarily none functional	7-21-40-43	61	CL-CH	(2'-2'10") Same as above (0-2') with little medium to fine Gravel, damp.
								SW-	(2'10") Light brownish gray (10YR 6/2) coarse to fine SAND and medium to fine Gravel, moist, angular gravel and sand grains, trace black (7.5YR 2/0) gravel size conglomerates composed of sand size materials.
4'-6'		14"	14"	U	HP-210T none functional	21-30-19-57	49	-	(4'-4'2") Concrete
								SW-	(4'2"-5') Same as above (2'10"-3'8") with trace (+) Clay.
								-	(5'-5'2") Broke concrete in end of sample spoon.

COMMENTS: Logs for P-04, B-01 are in Field Book 44.0 pg 97-102. CPM taken with Eberline HP-210T conversion for HP-210T: 1 mRad/hr/1489 CPM. T - top half of sample B - bottom half of sample.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

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WESTON

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BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-04, B-01
SITE COORDINATES (ft.):
N S 925 E 2350E
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-22-87
DATE COMPLETED: 4-22-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		15"	15"	U	T-7000 B-11000	27-26-25-25	51	SM-ML	Very dark gray (10YR 3/1) very fine SAND and Silt, damp, some light brown (7.5YR 6/4), trace yellow.
8'-10'		8"	8"	U	1000	13-100/4		SM-ML	Same as above (6'-8'), moist, no yellow.
10'-12'		17"	17"	U	T 4000 B 500	17-11-8-9	19	SM-ML	Same as above (6'-10'), saturated, no light brown or yellow, trace amount of white (2.5Y 8/0) specks through out. (specks are white grains), top 4" of sample mostly clear plastic.
12'-14'		0	0	U	—	3-3-3-3	6	—	—

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-04, B-01
SITE COORDINATES (ft.):
N S 925 E 2350 E
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-22-87
DATE COMPLETED: 4-22-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID +CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
14'-16'		9½"	9½"	U	1100	32-35-22-24	57	SM-ML	Same as (6'-12') above, slightly damp, yellow (2.5Y 7/8) stain in small area at 14'4" (¼" dia area) gives 7000 CPM on HP-210T.
					7000				
16'-18'		12"	12"	U	900	6-6-6-5	12	SM-ML	Same as above (6'-16'), saturated, pieces of clear plastic, no yellow or white.
18'-20'		10½"	10½"		1200	4-4-3-7	7	SM-ML	Same as above (6'-18'). Top 4" of sample contains trace (-) medium to fine Gravel size light gray (10YR 7/1) material with little reddish yellow (7.5YR 6/6) staining, crumbles easily in hand, appears dry.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-04, B-02
SITE COORDINATES (ft.):
N 5975 E 2262
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-24-87
DATE COMPLETED: 4-24-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Pit 4, boring 2, center area of pit 4
SITE CONDITION Bare, soil, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		18"	18"	U	60	9-14-18-18	32	CL-CH	(0"-17") Yellowish brown (10YR 5/4) CLAY, trace Silt, little medium to fine Gravel, dry to slightly damp, hard.
					350			ML-SM	(1'5"-1'6") - Very dark gray (10YR 3/1) SILT and very fine Sand, slightly damp, crumbles easily in hand.
2'-4'		12"	12"	U	100	3-100/4		CL-CH	Same as above (0'-1'5"), slightly damp to damp.
4'-6'		16½"	16½"	U	T-300 M-1000 B-14000	9-14-16-19	30	CL-CH	(4'-4'5½") Same as above (0'-1.5") and (2'-4'), damp.
								SM-ML	(4'5½"-5'4") Very dark gray (10YR 3/1) very fine SAND, and Silt, damp, grass roots present.
6'-8'		19½"	19½"	U	T-2000C M-2000 B-1400	4-5-7-12	12	SM-ML	Same as above (4'5½"-5'4"), Trace mica and red (10YR 4/6) staining at 7'. Material with the appearance of Table salt occurs at bottom of sample.

COMMENTS: Logs for P-04 B-01 are in Field Book 44.0 pg 113 - 116. CPM Taken with Eberline HP-210T Conversion for HP-210T: 1mRad/hr/1489 CPM. T - Top of sample, M - middle of sample, B - bottom of sample.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-04, B-02
SITE COORDINATES (ft.):
N 5975 E 2262
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow Stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 4-24-87
DATE COMPLETED: 4-24-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
8'-10'		16½"	16½"	U	T-1000 M-3000 B-800	4-4-5-6	9	SM-ML	Same as above (4'5½"-8'), moist to wet, trace(-) white (2.5Y 8/0) specks throughout.
10'-12'		24"	24"	U	T 1300 B 3000	1-1-3-3	4	SM-ML	Same as above (4'5½"-10'), saturated, weak red (10R 5/3) staining (11'6"-12'), trace brownish yellow 10YR 6/6 clay size material (10'4"-10'8").
12'-14'		19"	19"	U	T-15000 B-500	3-4-3-3	7	SM-ML	Same as above (4'5½"-12'), weak red staining (12'-12'5½"), saturated.
14'-16'		24"	24"	U	T-2000 B-650	1-4-4-5	8	SM-ML	Same as above (4'5½"-14'), weak red (10YR 5/3) occurs as blotches staining 50% of sample, trace white (2.5Y 8/0) as specks throughout sample.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-04, B-02
SITE COORDINATES (ft.):
N S 975 E 2262
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-24-87
DATE COMPLETED: 4-24-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
16'-18'	X	21"	21"	U	T-2500 B-1000	1-2-3-3	5	SM-ML	Same as above (4'5½"-16'), with brownish yellow (10YR 6/6) CLAY layer at 17'3", saturated.
18'-20"	X	18"	18"	U	HP-210 Temporarily none functional	1-1-2-4	3	SM-ML	Same as above (4'5½"-18') saturated.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-04, B-03
SITE COORDINATES (ft.):
N 5900 E 2300
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bauser-Morner
DATE STARTED: 4-21-87
DATE COMPLETED: 4-22-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Pit 4, boring 3 North east section of pit 4.
SITE CONDITION Bare, soil, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'	X	18"	18"	U	T-275 B-300	12-15-55-35	70	CL-CH	Brown (7.5YR 5/4) CLAY, trace (-) silt, little (-) medium to fine Gravel, slightly damp to dry, piece of coal present.
2'-4'	X	8"	8"	U	375	100/5		CL-CH	Same as above (0'-2'), damp, one large gravel-light gray-subrounded
4'-6'	X	0	0	U	—	36-19-24-85	43	—	No recovery, chunk of concrete in end of sample spoon.
6'-8'	X	17"	17"	U	HP-210T Temporarily none functional	16-15-17-15	32	CL-CH- ML-	(6'-6'3") same as above (0'-4') (6'3"-7'5") Black (10YR 3/1) SILT size material, some (+) very fine Sand, soft, damp, trace yellow (5Y 8/6) color.
8'-10'	X	19½"	19½"	U	HP-210T none functional due to sun	3-3-3-3	6	ML-	Same as above (6'3"-8'), with no yellow colored material, moist to wet on top, saturated on bottom.
10'-12'	X	24"	24"	U	HP-210T none functional due to Heat.	weight of hammer		ML-	Same as above (6'3"-10'), no yellow, ½" diameter light yellowish brown (10YR 6/4) area at 10'1".

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COMMENTS: Logs for P-04, B-03 are Field Book 440 pg 89-94. *CPM taken with Eberline HP-210T conversion for HP-210T: 1mRad/hr/1489 CPM. T-top half of sample, B-bottom half of sample.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: P-04, B-03
SITE COORDINATES (ft.):
N S 900 E 2300
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-21-87
DATE COMPLETED: 4-21-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
12'-14'		24"	24"	U	700	1-3-5-9	8	ML-	Same as above (6'3"-12'), specks (1/16"-1/4" diameter) of white (2.5Y 8/0) through out sample in trace amount (0%-10% of sample)
14'-16'		15"	15"	U	T-2700 B-500	15-16-15-25	31	ML	Same as above (6'-3"-14'), increase in white (2.5Y 8/0) specks; blotches of white (2.5Y 8/0) at (14'3"-14'5") and (15'1"-15'3"), reddish yellow color (7.5YR 6/8) layer (1/8" thick) at 14'2", saturated.
16'-18'		18½"	18½"	U	T-500 B-800	11-32-38-21	70	ML	Same as above (6'3"-16'), with white specks, trace fine Gravel, saturated firm, crumbles easily.
18'-20'		15"	15"	U	HP-210T none fuctional due to heat	6-6-4-5	10	ML	Same as above (6'3"-18'), saturated.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

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BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-04, B-04
SITE COORDINATES (ft.):
N 1025 S E 2315
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-4-87
DATE COMPLETED: 5-5-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Pit 4, boring 4 center section of pit 4
SITE CONDITION Bare, soil, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0-2'	X	9½"	9½"	U	300	12-13-18-25	31	CL-CH	Dark brown (10YR 3/3) CLAY, little coarse to fine Gravel, damp to dry, gravel angular to rounded.
2'-4'	X	12"	12"	U	T-12000 B-900	55-12-10-14	22	CL-CH	(2'-2' 7") Same as above (0'-2')
								CL-CH	(2' 7"-3') above material grades to dark olive (5Y 3/2) CLAY with black color mixed throughout. Clay with black color is softer than surrounding dark olive clay. cloth is present in black clay, higher moisture content in black clay, shinny flakes in black clay.
4-6'	X	0	0	U	—	27-16-9-9	—	—	—
6-8	X	0	0	U	—	—	—	—	—

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COMMENTS: Logs for P-04, B-04 are in Field Book 44.1 pg (12-13, 16-19). CPM taken with Eberline HP-210T, Conversion for HP-210T: 1 mRad/hr/1489 CPM. T- Top of sample, B- Bottom of sample

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-04, B-04
SITE COORDINATES (ft.):
N 10255 E 2315
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-4-87
DATE COMPLETED: 5-5-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID #CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
8'-10'		19"	19"	U	120,000	4-2-2-2	4	CL-CH	Same as above (2'7"-3') with trace (-) fine Gravel, trace yellow and (2.5YR 3/4) dark reddish brown mixed throughout, clear plastic, wood and fibers present.
10'-12'		0	0	U	—	4-7-4-1	11	—	Liquid only, ran out of sample as it was pulled from hole.
12'-14'		16"	16"	U	90000	12-12-3-10	15		Same as above. (2'7"-10'), more firm than above, wet, Pink 5YR 8/3 fine Sand and Silt size material occurs at 12'4" as a pocket area 2" in diameter. Small piece of metal, fibers, paper, clear plastic in sample.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-04, B-04
SITE COORDINATES (ft.):
N 1025 S E 2315
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-4-87
DATE COMPLETED: 5-5-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
14'-16'	X	4"	4"	U	55000	12-10-6-6	16	CL-CH	Same as above (2'7"-14') with weak red (10R 4/4) staining throughout, brown heavy strapping cloth present (small piece).
16-18	X	0	0	U	—	5-5-3-4	8	—	Dark colored liquid ran from sample spoon as it was brought out of hole.
18-20	X	2"	2"	U	HP-210T Temporarily none functional	2-2-3-3	5	CL-CH.	Same as (2'7"-16') above, saturated mostly liquid.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

FMPC Pit 5 Boring Logs

SEE NOTEBOOK # 43.0 pp 116-117

WESTON

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BOREHOLE LOG (SOIL)

Pit 5, Borehole 1

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 1
SITE COORDINATES (ft.):
N S 650 E 2375
GROUND ELEVATION (ft. MSL):
DRILLING METHOD: Tube Sampler
DRILLING CONTR.: Bowser Morner
DATE STARTED: 3/30/87
DATE COMPLETED: 3/30/87
FIELD REP.: Brian N. Houghtaby

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION
SITE CONDITION Dry at Surface - no standing water

DEPTH (inches)	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0-16						N/a		OT	Dr. Brown (10YR 4/3) viscous liquid w/ tr. med. sand sized grit
16-28								OT	16-22: Dr. Brown (7.5YR 4/4) semi solid with pink (7.5YR 7/4) & yellow (10YR 8/8) patches 22-28 Lt. gray (7.5YR N 7/0) semi-solid with streakes of v. dr. gray (7.5YR N 3/0) SAMPLER REFUSAL AT 36" (3')

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COMMENTS: n/a = not applicable

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

See Notebook # 43.0 pp 102-109

See attached notes regarding instruments

WESTON

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BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 2

SITE COORDINATES (ft.): S 650 E 2275

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bowser Morner

DATE STARTED: 3/26/87

DATE COMPLETED: 3/26/87

FIELD REP.: Sam N. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
0-20					ND	Na		OT	Brown (7.5YR 5/2) liquid with brown, white + black med. sand size grit	350	100
20-40					ND			OT	Dr. brown (7.5YR 4/4) liquid with dr. brown med. sand size grit, some grains are red (2.5YR 4/8) + some white (7.5YR N 8/0)	900	200
40-60					ND			OT	40-54: Pink ~~(7.5YR N 8/0)~~ (7.5YR 7/4) semi-solid + dr. brown (10YR 4/3) semi solid w/ streaks of red (2.5YR 4/8). Trace med. sand size grit in sample. 54-60: H. blue gray (5B 7/1) semi solid w/ yellow (5Y 8/8) streaks	1100	200
60-80					1-2			OT	Red (10R 5/8) + pinkish white (5YR 8/2) semi-solid w/ streaks of pale green (5G 6/2) + strong brown (7.5YR 5/6)	1000	350

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COMMENTS: N/A = not applicable

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

See attached notes regarding instruments

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Pit 5

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 2

SITE COORDINATES (ft.): N 650 E 2275

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bauser Morner

DATE STARTED: 3/26/87

DATE COMPLETED: 3/26/87

FIELD REP.: ~~Sam N. Dougherty~~

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
60-80						N/a			and yellow (5Y 8/8)		
80-100					<1			OT	Yellowish red (5YR 5/8) + Strong brown (7.5YR 5/8) Semi Solid with trace med. Sand size grit.	1100	45
100-120					1-3			OT	Red (2.5YR 5/8) + pinkish gray (7.5YR 6/2) Semi Solid w/ streaks of v. dr. gray (7.5YR N 3/0) + white (7.5YR N/8)	700	200
~~120-138~~					~~1-3~~						
120-138					1-3			OT	Red (2.5YR 5/8) dr. grayish brown semi solid w/ streaks of lt. gray (10YR 7/1), trace med. sand size grit.	No reading taken	
138-148					1-3			OT	Red (2.5YR 5/8) + dr. grayish brown (10YR 4/2) Semi solid w/ streaks of v. dr. gray (10YR 3/1), brownish yellow (10YR 5/6) + lt. gray (10YR 7/1) trace med. sand size grit	900	200

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COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

See attached notes regarding instruments

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BOREHOLE LOG (SOIL)

Pt 5

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 2

SITE COORDINATES (ft.):

N 5 650 E 2275

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bowser Morner

DATE STARTED: 3/26/87

DATE COMPLETED: 3/26/87

FIELD REP.: Tom N. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
148-168					2-7*	N/a		OT	Alternating	800	200

COMMENTS: * readings only when sample stirred

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

(1) CPM - Counts per minute. All readings taken with an Eberline HP-210T, conversion factor 1486 cpm = 1 mR/hr. "Top" readings are taken above the sample while in a stainless steel mixing bowl, thus these readings represent gamma + beta. "Bottom" readings were taken below the bowl thus giving a reading of gamma.

(2) HNu observations were made on the sample as it was extruded into the bowl + as it was containerized. NR = not recorded, ND = no deflection above background, see daily HNu sheet for calibration + background readings. Generally background less than 1 ppm.

See Notebook 43.0 pp 82-93

See attached notes regarding instruments

WESTON

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Pt 5

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: Borehole 3

SITE COORDINATES (ft.):

N 5625 E 2175

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bowser Morner

DATE STARTED: 3/24/87

DATE COMPLETED: 3/25/87

FIELD REP.: Tom N. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH (inches)	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
0-20						N/a		OT	Dark greenish gray (5BY4/1) clay with silt and medium coarse sand sized white grains		
20-40									V. dark grayish brown (2.5Y3/2) semi-solid with clumps of dark brown (7.5YR3/4) fine sand material, streaks of black		
40-60									40-45: Red (10R 4/8) trace grit, med. sand size material. 45-55: Pinkish-white (5YR8/2) with white, green, very dark gray 55-60 - light greenish gray (5BG7/1) semi-solid with streaks of yellow		
60-80									Bluegreen (5G7/2) semi-solid changing to Red (10R5/6) semi solid. Chunks of gray green (5Y7/1) with white specks	195	

COMMENTS: N/A = Not applicable

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

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See attached notes regarding instruments

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 3

SITE COORDINATES (ft.):

#S 2075 E 3150

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bowser Morner

DATE STARTED: 3/24/87

DATE COMPLETED: 3/25/87

FIELD REP.: Tom N. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH (inches)	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
80-100"						Ma		OT	Green-yellow (5G 7/2) and blue green (5Y 8/8) semi-solid. Abundant yellow streaks		
100-120									110-115: Creamy white semi-solid w/ streaks of blue-gray (5B 5/1), black and pale green. 115-120 ~~orgn~~ orangish red semi-solid.		
120-140									Reddish yellow (5YR 6/8) semi-solid with alternating, very thin layers (2-3 mm) of light gray (5B 5/1) semi-solid with white specks		
140-160									Light yellowish brown white + black medium to fine grained sand sized particles. Streaks of strong brown (7.5Y 5/8) and gray (5B 5/1) semi-solid		

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COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

See attached notes regarding instruments

WESTON

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Pit 5

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: borehole 3

SITE COORDINATES (ft.):

#S 2075 E 3150

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bauser Morner

DATE STARTED: 3/24/87

DATE COMPLETED: 3/25/87

FIELD REP.: ~~Sam N. Douglas~~

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM bottom
160-180						n/a		OT	Dark red (10R 4/6) semi solid with white, black and green (5G 7/2) streaks, no visible structure.		
180-200									Reddish brown (2.5YR 4/4) semi solid with a white patch at 190".		
200-220									Reddish black (10R 2.5/1) with some brownish yellow (10YR 6/6) streaks; some yellow (5Y 8/8) granules and a trace blue gray (5BG 6/1), pudding like texture		
220-240									Reddish black (10R 2.5/1) semi-solid with streaks of pale red (10R 4/6) ~~Red~~		
220-240									Same as from 220-240 but with medium sand size white particles in some of the sample.		
240-260									Reddish brown (5YR 4/3) semi-solid with trace medium sand size grit. Patches of blue green (5G 6/1) and streaks of white semi-solid		

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COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

See attached notes regarding instruments

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Pit 5

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 3

SITE COORDINATES (ft.):

S 2075 E 3150

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bauser Morner

DATE STARTED: 3/24/87

DATE COMPLETED: 3/25/87

FIELD REP.: ~~Sam N. Dougherty~~

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
260-280						N/a		OT	Reddish brown (5YR 4/2) Semi-solid with trace medium sand sized grit and layered streaks of dark gray (5Y 4/0) and gray (5Y 5/1) with streaks of lt. gray semi-solid.		
280-300									Reddish brown semi-solid (5YR 4/3) with trace medium sand sized grit and streaks of yellow (10YR 4/4) and white semi-solid.		
300-316									Reddish brown (5YR 4/4) semi solid with streaks of lt. yellowish brown (5Y 6/4) and white semi solid. No grit present.		
316-336									Reddish brown (5YR 4/4) semi solid with thin streaks of reddish black (10R 2.5/1) and clumps of med. sand size grain material, reddish brown ~~clo~~ color, streaks of lt. yellow brown (5Y 6/4) and brown. Trace medium sand size particles.		

COMMENTS: REFUSAL AT 281 (336")

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

See notebook 43.0 pp 60-79

See attached notes regarding instruments

WESTON

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Page 1 of 3 pt 5

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 4

SITE COORDINATES (ft.): N 5625 E 2075

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bowser Morner

DATE STARTED: 3/20/87

DATE COMPLETED: 3/23/87

FIELD REP.: Tom N. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH (inches)	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
0-20					NR	Na		OT	Brown, watery material, traces of black grains and streaks of yellowish brown semi-solid. Some med. sand size material mixed in.	900	550
20-40					NR				Dark brown semi-solid, small clumps of darker material. Streaks of light blue and yellow (5Y 8/8) semi-solid.	600	NR
40-60					B				Dark brown semi-solid with clumps of darker material and streaks of blue-white semi-solid	700	400
60-80					B				Red (2.5YR 4/6) & light gray (5YR 7/1) semi-solid with trace sand size particles		
80-100					B				Lt. gray (5YR 7/1) + pinkish gray (5YR 6/2) semi-solid with trace sand size grit.		

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COMMENTS: B = Background

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

See attached notes regarding instruments

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 4 Pit 5

SITE COORDINATES (ft.):

N 5 1625 E 2075

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bauser Morner

DATE STARTED: 3/20/87

DATE COMPLETED: 3/20/87

FIELD REP.: Sam N. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
100-120					B	N/A		OT	Lt. gray (2.5Y 7/2) + yellowish red (5YR 5/6) semi-solid with patches of yellow (5Y 8/8) and gray, trace sand size particles.	700	150
120-140					B				Yellowish red (5YR 5/6) semi solid w/ streaks of gray (10YR 6/1), trace med. grain sand size material.	750	300
140-160					B				Yellowish brown (10YR 5/6) w/ streaks of gray (10YR 6/1) w/ trace medium sand size material.	400	200
160-180					B				Yellowish brown (10YR 5/6) + gray (10YR 6/1) semi-solid w/ streaks of yellow (5Y 8/8) w/ trace medium grain sand size material.	500	250
										200	

COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

See attached notes regarding instruments

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 4
SITE COORDINATES (ft.): S 625 E 2075
GROUND ELEVATION (ft. MSL):
DRILLING METHOD: TUBE SAMPLER
DRILLING CONTR.: Bauser Morner
DATE STARTED: 3/20/87
DATE COMPLETED: 3/23/87
FIELD REP.: ~~Sam N. Douglas~~

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION
SITE CONDITION

DEPTH (inches)	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
180-200					B	N/A		OT	180-190" : H. greenish gray (5BG 7/1) semi solid.	1200	250
									190-200 : Dr. brown (7.5YR 3/4) Semi-solid		
200-220					B				Very dark brown (10YR 2/2) semi solid with trace med. sand sized grit.	600	300
220-240					B				Very dark brown (10YR 2/2) semi solid with streaks of yellowish brown (10YR 5/6) and H. gray (10YR 7/1) Semi solid with trace medium sand sized grit.	600	300
240-260					B				Very dark brown (10YR 2/2) Semi-solid.	Instrument malfunction	
260-280					B				Very dark brown (10YR 2/2) and reddish brown (5YR 5/3) semi solid w/streaks of H. olive brown and very dark gray (2.5YN 3/0)	201	

COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

See attached notes regarding instruments

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BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 4

SITE COORDINATES (ft.): N 625 E 2075

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bowser Morner

DATE STARTED: 3/20/97

DATE COMPLETED: 3/23/97

FIELD REP.: John N. Coughenour

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
280-300					B	N/a		OT	Dark brown (10YR 3/3) semi-solid	Instrument malfunction	
300-312					B				Dark brown (10YR 4/3) + very dark grayish brown (10YR 3/2) semi solid.		
312-332					B				Reddish gray (5YR 5/2), dark brown (10YR 4/3) and very dark grayish brown (10YR 3/2) semi-solid		
332-352					B				Reddish brown (5YR 4/3), very pale brown (10YR 7/4) and dark yellowish brown (10YR 4/6) w/ streaks of very dark gray (10YR 3/1) semi-solid		
									REFUSAL AT 29.3 Feet	202	

COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

(1) CPM = Counts per minute. All readings taken with an Eberline HP-210T, conversion factor 1486 cpm = 1 mR/hr. "Top" readings are taken above the sample while in a stainless steel mixing bowl, thus these readings represent gamma + beta. "Bottom" readings were taken below the bowl thus giving a reading of gamma.

(2) HNu observations were made on the sample as it was extruded into the bowl + as it was containerized. NR = not recorded, ND = no deflection above background, see daily HNu sheet for calibration + background readings. Generally background less than 1 ppm.

See Notebook #43 pp 47-55

See attached notes regarding instruments

WESTON

BOREHOLE LOG (SOIL)

Page 4 of 4

LOCATION MAP:

SITE ID: EMPC LOCATION ID: Borehole 5 Pit 5

SITE COORDINATES (ft.): N 5650 E 1925

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bowser Morner

DATE STARTED: 3/19/87

DATE COMPLETED: 3/19/87

FIELD REP.: Sam N. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
0-20					NA	NA		OT	Brown (10YR 5/3) semi-solid with streaks of black and some light red (2.5YR 6/6) trace med. sand size grit.	750	400
20-40									Brown (10YR 5/3), red (2.5YR 5/8) and white (7.5YR N8/0) semi solid with streaks of very dark gray semi-solid.	3500	850
40-60									Red (2.5YR 5/8) and very pale brown (10YR 8/3) semi-solid w/ streaks of dark gray (10YR 4/1) and yellow (5Y 8/8)	600	250
60-80									Yellowish ~~brown~~ red (5YR 5/6) and lt. gray (5YR 7/1) semi-solid with streaks of very dark gray semi solid	1100	550

204

COMMENTS: WATER DEPTH: 3'

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

See attached notes regarding instruments

8644

BOREHOLE LOG (SOIL)

Page 1 of 1

Pit 5

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 5

SITE COORDINATES (ft.): N 5650 E ~~1925~~ 1925

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bowser Morner

DATE STARTED: 3/19/87

DATE COMPLETED: 3/19/87

FIELD REP.: ~~Dan N. Dougherty~~

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
80-100					N/a	N/a		OT	Reddish yellow (5YR 6/8) & lt. brown semi solid with streaks of light gray (7.5 YR 7/0) Several clods (1" to 2" across) of white (7.5 YR N 8/0) med. grained sand size material.	700	250
100-120									Yellow (5Y 8/8) streaks in pinkish gray (7.5YR 7/2), yellowish red (5YR 5/6) and light gray (5YR 7/1) semi-solid.	600	350
120-140									Pinkish gray (5YR 6/2) semi solid	Instrument malfunction	
140-160									Patches of yellow (5Y 8/8) in yellowish red (5YR 5/6) and light gray (5YR 7/1) semi-solid with streaks of dark gray (5YR 4/1)	205	

COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

See attached notes regarding instruments

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 5 Pit 5

SITE COORDINATES (ft.):

S 650 E 1925

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bauser Morner

DATE STARTED: 3/19/87

DATE COMPLETED: 3/19/87

FIELD REP.: Sam N. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
160-180					N/C	N/a		OT	As above but without yellow patches.	Instrument Malfunction	
									Refusal at 5' (160").		

206

COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

(1) CPM - Counts per minute. All readings taken with an Eberline HP-210T, conversion factor 1486 cpm = 1 mR/hr. "Top" readings are taken above the sample while in a stainless steel mixing bowl, thus these readings represent gamma + beta. "Bottom" readings were taken below the bowl thus giving a reading of gamma.

(2) HNu observations were made on the sample as it was extruded into the bowl + as it was containerized. NR = not recorded, ND = no deflection above background, see daily HNu sheet for calibration + background readings. Generally background less than 1 ppm.

WESTON

See attached notes regarding instruments

8614

BOREHOLE LOG (SOIL)

Page 1 of 4 Pt 5

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 6

SITE COORDINATES (ft.):

N 525 E 1750

GROUND ELEVATION (ft. MSL):

DRILLING METHOD: TUBE SAMPLER

DRILLING CONTR.: Bowser Morner

DATE STARTED: 3/13/87

DATE COMPLETED: 3/13/87

FIELD REP.: Dan N. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
0-20					N/a	N/a		OT	Red (10R 4/6) and dark reddish gray semi-solid	900	NR
20-40									Red (2.5YR 5/6) semi-solid	700	
40-60									Pinkish gray (5YR 6/2) and reddish yellow (7.5YR 8/6) semi-solid with streaks of greenish gray (5G 6/1) and black (2.5YR N2.5/0)	550	
60-80									Red (2.5YR 5/6) semi-solid	800	
80-100									Yellow (5Y 7/4) and brownish yellow (10YR 6/6) semi solid.	250	

208

COMMENTS: WATER DEPTH: ONE FOOT

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

See attached notes regarding instruments

864

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 6
SITE COORDINATES (ft.): N 5325 E 1750
GROUND ELEVATION (ft. MSL):
DRILLING METHOD: TUBE SAMPLER
DRILLING CONTR.: Bowser Morner
DATE STARTED: 3/13/87
DATE COMPLETED: 3/13/87
FIELD REP.: Tom N. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
100-120					N/a	N/a		OT	Approximately 10" of white (10YR 8/1) semi solid with sand size grains of material. Red (2.5YR 5/6) rind on outside of a white material. Above that: pale green (5G 7/2) semi-solid with sand sized lumps and bright yellow (5Y 8/8) streaks	250	
									STOPPED WORK DUE TO IRRITATING ODORS, RESUMED WORK IN LEVEL B.		
120-140									Red (2.5YR 5/6) semi solid with pale green 5G 7/2 and brownish yellow (10YR 6/6) streaks		

COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

See attached notes regarding instruments

864

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Borehole 6
SITE COORDINATES (ft.): N 585 E 1750
GROUND ELEVATION (ft. MSL):
DRILLING METHOD: TUBE SAMPLER
DRILLING CONTR.: Bowser Morner
DATE STARTED: 3/13/87
DATE COMPLETED: 3/13/87
FIELD REP.: Sam N. Dougherty

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	HNu	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION	CPM TOP	CPM Bottom
140-150					N/a	N/a		OT	Vaugated dark gray (2.5 YR N/3) reddish yellow (7.5YR 7/8) yellow (5Y 8/8) and white (7.5YR N/8) semi-solid		N/a

210

COMMENTS:

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

(1) CPM - Counts per minute. All readings taken with an Eberline HP-210T, conversion factor 1486 cpm = 1mR/hr. "Top" readings are taken above the sample while in a stainless steel mixing bowl, thus these readings represent gamma + beta. "Bottom" readings were taken below the bowl thus giving a reading of gamma.

(2) HNu observations were made on the sample as it was extruded into the bowl + as it was containerized. NR = not recorded, ND = no deflection above background, see daily HNu sheet for calibration + background readings. Generally background less than 1 ppm.

FMPC Pit 6 Boring Logs

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-06, B-1
SITE COORDINATES (ft.):
N S 785 E 2635 E
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Ring Sampler
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-7-87
DATE COMPLETED: 4-7-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Approx. center of pit 6 waste storage area
SITE CONDITION Lagoon filled with approx. 2' of water, covering sludge

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0"-8"		2"	2"		T-16000 B-2000	N/A	N/A	SC-	Black (5Y 2.5/1) coarse, medium(+) to fine SAND size material, some Silt, Trace Clay, Trace yellow (5Y 8/8) and Trace white (10YR 8/1) staining, saturated, loose, Trace fine Gravel.
8"-28"		10"	10"		28000	N/A	N/A	SC-	Same as above (0"-8").
28"-48"		8"	8"		35000	N/A	N/A	SC-	Same as above (0"-28"), clear plastic in bottom of sample.

213

COMMENTS: Logs for P-06, B- are in Field Book 44.0 pg 37-38
CPM Taken with Eberline HP-210T- conversion: 1mRad/hr/1484 CPM.
*Ring sample could only penetrate 4½ ft., T- stands for top of sampler, B- stands for bottom of sample.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-06, B-2
SITE COORDINATES (ft.):
N S 800 E 2560
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Ring Sampler
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 4-7-87
DATE COMPLETED: 4-7-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION North west sector of pit 6, waste storage area.
SITE CONDITION Lagoon filled with approx. 2' of water, covering sludge.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID #CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0"-8"	X	0	0		—	N/A	N/A	—	—
8"-28"	X	8"	8"		40,000	N/A	N/A	SC-	Black (5Y 2.5/1) coarse medium(+) to fine SAND, some(-) Silt, trace Clay, trace fine Gravel, saturated, loose, some yellow (5Y 8/8) and trace white (10YR 8/1) staining, piece of yellow plastic
28"-48"	X	9"	9"		31000	N/A	N/A	SC-	Same as above (8"-28"), less yellow 5Y 8/8 staining

214

COMMENTS: Logs for P-06, B are in Field Book 440 pg 39-40. CPM taken with Eberline HP-210T - conversion: 1mRad/hr/1489CPM
Ring sampler could only penetrate 4½ ft

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-06, B-3
SITE COORDINATES (ft.):
N 5775 E 2620
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Ring sampler
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-6-87
DATE COMPLETED: 4-6-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Lagoon #6, waste storage area
SITE CONDITION Lagoon with approx. 2' of water, covering sludge

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0"-20"		8"	8"		17000	N/A	N/A	SC -	Black (5Y 2.5/1) coarse To fine SAND, little Clay, little Silt, Trace Gravel, little yellow (5Y 8/8) and trace white (10YR 8/1) staining throughout, saturated, loose, yellow color is associated with larger grain size material (Coarse Sand and Gravel)
20"-40"		5"	5"		3500	N/A	N/A	SC-	Same as above (0"-20"), color change - Dark olive gray is (5Y 3/2) predominant with yellow (5Y 8/8) and white (10YR 8/1) more abundant than above (0"-20").
40"-60"		8"	8"		3500	N/A	N/A	SC	Black (5Y 2.5/1) coarse, medium (+) To fine SAND, little Clay, little Silt Trace, fine Gravel, Clay occurs in fine to medium gravel size nodules - nodules crumble easily, little yellow (5Y 8/8) and trace white (10YR 8/1) staining throughout.

215

COMMENTS: Logs for P-06, B- are in Field Book 44.0 pg 29-32. T-stands for Top half of sample, B-stands for bottom half of sample. CPM Taken with HP-210T. - Conversion for HP-210T : 1m Rad/hr / 1489 CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-06, B-3
SITE COORDINATES (ft.):
N 5775 E 2620
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Ring Sampler
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-6-87
DATE COMPLETED: 4-6-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID * CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
60"-80"		4"	4"		B-2000 T-22000	N/A	N/A	SC-	Same as above (40"-60")
80"-100"		6"	6"		25000	N/A	N/A	SC-	Same as above (40"-80")
100"-120"		6"	6"		B-4000 T-21000	N/A	N/A	SC-	Same as above (40"-100")
114"-134"		8"	8"		HP-210 Temporarily none functional	N/A	N/A	SC-	Yellow (5Y 8/6) and white (10YR 8/1) coarse medium(+) to fine SAND, some silt, little Clay, trace fine Gravel, nodules of clay with gray, yellow white and dark olive green occuring in nodules, saturated loose.
134"-154"		10"	10"		30000	N/A	N/A	SC-	Same as above (114"-134") with less yellow and more white.

216

COMMENTS: See page 1
last sample 114"-134", sampler could only penetrate to depth of 14½ ft.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-06, B-3
SITE COORDINATES (ft.):
N 5775 E 2620
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Ring Sampler
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-6-87
DATE COMPLETED: 4-6-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
154"-174"	X	10"	10"		25000	N/A	N/A	SC-	Same as above (114"-154"), less water, more firm than above, less clay nodules, wet.

217

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

864

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-06, B-4
SITE COORDINATES (ft.): 2650
~~N~~ S825 E ~~2675~~
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Ring Sampler
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-1-87
DATE COMPLETED: 4-3-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Lagoon #6, waste storage area
SITE CONDITION Lagoon with approx 2' of water, covering sludge.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0"-20"		10"	10"		12500[1] 65[2]	N/A	N/A	SC -	Dark olive gray (5Y 3/2) coarse to fine SAND size material, trace fine Gravel, some Clay, saturated, loose, fine to medium gravel sized nodules that crumble easily make up 25% of the sample - nodules are yellow (5Y 8/8) and formed of Clay size material ~~Sludge~~
20"-40"		20"	20"		25000[1] 120[2]	N/A	N/A	SC -	Black (5Y 2.5/1) medium to coarse SAND size material, some Clay, same yellow nodules of Clay as (0'-20") as 25% of sample, petrolium sheen on liquid in sample, saturated, loose. ~~Sludge~~
40"-60"		20"	20"		1700[1] 60[2]	N/A	N/A	SC -	Same as (20"-40"), occasional specks of green medium sand. ~~Sludge~~

218

COMMENTS: Logs for P-06, B-03 are in Field Book 44.0 pg 11-12. *CPM Taken with Eberline-1 HP-210, 2-Eberline HP-270. Conversion for HP-210T: 1mRad/hr/1489 CPM. Conversion for HP-270 1mR/hr/1380 CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: P-06, B-04
SITE COORDINATES (ft.):
N 5825 E 2650
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Ring Sampler
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-1-87
DATE COMPLETED: 4-3-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
60"-80"		20"	20"		15,000[1]	N/A	N/A	SC	Black (5Y 2.5/1) coarse to fine SAND size material, trace fine Gravel, some Clay, saturated, loose, Dark olive gray (5Y 3/2) yellow (5Y 8/8) and little white (10YR 8/1) staining mixed throughout. ~~sludge~~
80"-100"		20"	20"		20,000[1]	N/A	N/A	SC-	(80"-94") Same as (60"-80") above, with dark olive gray 5Y 3/2 staining mixed throughout.. ~~sludge~~
								SC-	(94"-100") Yellow (5Y 8/8) coarse to fine SAND size material, trace fine Gravel, some Clay, black (5Y 2.5/1) staining mixed throughout, saturated.
100"-120"		20"	20"		10,000[1]	N/A	N/A	SC-	Black (5Y 2.5/1) coarse, medium(+) to fine SAND size material, trace fine Gravel, some Clay, abundant yellow (5Y 8/8) and white (10YR 8/1) mixed throughout, saturated, loose.

219

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

FMPC Burn Pit Boring Logs

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: BP, B-01
SITE COORDINATES (ft.):
N 5850 E 2085 E
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-27-87
DATE COMPLETED: 4-27-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Burn pit, boring #1, North west section of pit.
SITE CONDITION Grass covered, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		19"	19"	U	100	9-20-25-22	~~55~~ 47	CL-CH	(0"-5") Brown (10YR 5/3) CLAY, Trace Silt, damp, grass roots
								SM-	(5"-1'4") Black (7.5 YR 2/0) medium To fine SAND, some Silt, damp.
								CL-CH	(1'4"-1'7") Same as above (0"-5") damp.
2'-4'		22"	22"	U	60-70	5-2-1-1	~~3~~ 2	SM-	(2'-2'2") Same as above (5"-1'4")
								SM-	(2'2"-2'4") Light yellowish brown (2.5 Y 6/4) medium to fine SAND, some Silt, hard, cemented, damp.
								ML-	(2'4"-3'10") White 2.5 Y 8/0 SILT size material, Trace Clay size material, moist, soft, clean pure white.
4'-6'		9"	9"	U	75	2-4-13-13	~~17~~ 26	ML-	(4'-4'4½") Same as above (2'4"-3'10")
									(4'4½"-4'9") Same as above (2'2"-2'4")

221

COMMENTS: Logs for BP-B-01 are in Field Book 440 pg 119-122, *CPM taken with HP-210T conversion for HP-210T: 1mRad/hr/1469 CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: BP.B-01
SITE COORDINATES (ft.):
N 5850 E 2085
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem augers
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-27-87
DATE COMPLETED: 4-27-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		15½"	15½"	U	70	4-5-8-13	~~13~~ 21	SM	(6'-6'2") white (2.5Y 8/0) medium to fine SAND and Silt size material, wet, hard.
								CL-CH	(6'6'2"-7'3½") Gray (10YR 5/1) and brown (10YR 5/3) CLAY, trace Silt, moist, piece of plastic, moderate to high plasticity.
8'-10'		22"	22"	U	60	8-12-20-21	~~32~~ 41	CL-CH	Same as above (6'6'2"-7'3½"), with trace fine Gravel, moist.

222

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: BP, B-02
SITE COORDINATES (ft.):
N S 900 E 2100
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-27-87
DATE COMPLETED: 4-27-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Burn pit, boring #2. North section of pit
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		19½"	19½"	U	300	4-12-47-58	~~59~~ 105	CL-CH	(0'-10½") Yellowish brown (10YR 5/6) CLAY, trace Silt, damp, trace medium to fine Gravel, grass roots.
								SM	(10½"-1'7½") Black (7.5 YR 2/0) coarse to fine SAND and Silt size material, trace fine Gravel, damp, plastic white cap (½ dia) present.
2'-4'		12"	12"	U	14000	11-30-31-24	~~61~~ 55	CL-CH	Brown 10YR 5/4 CLAY, trace (+) Silt, trace coarse to fine Gravel, damp. Black (7.5 R 2/0) mixed throughout, pieces of glass, aluminum wire.
4'-6'		20½"	20½"	U	300	34-38-38-46	~~76~~ 84	CL-CH	(4'-4'4") Grayish brown (2.5 Y 5/2) CLAY, trace Silt, trace medium to fine Gravel, damp, mottled.
								CL-CH	(4'4"-5'8½") Same as 4'-4'4" above with color change to light yellowish brown (2.5 Y 6/4), contains one medium gravel-light weight, porous, like pumice.

223

COMMENTS: Log for BP, B-02 are in Field Book 440 pg 123-126, *CPM is taken with Eberline HP-210T. Conversion for HP-210T: 1 mRad/hr / 1489 CPM

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

864

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: BP, B-02
SITE COORDINATES (ft.):
N 5900 E 2100
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-27-87
DATE COMPLETED: 4-27-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		0	0	U	—	14-20-20-20	40	—	
8'-10'		20½"	20½"	U	250	6-10-17-18	27 35	CL-CH	(8'-8'2") Light olive brown CLAY, Trace Silt, Trace medium to fine Gravel (8'2"-9'8½") Olive (5Y 4/4) CLAY, Trace Silt, Trace medium to fine Gravel, Trace wood splinters. Blotches of (7.5 YR 2/0) Black staining mixed Throughout.
10'-12'		20½"	20½"	U	250	10-12-17-18	29 35	CL-CH	(10'-10'10") Very dark grayish brown (10YR 3/2) CLAY, little Silt, moist, soft, decaying organic material present (roots of grass, deayed vegitation). (10'10"-11'8½") Same as above (10'-10'10") color change to dark grayish brown (10YR 4/2)

224

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: BP, B-03
SITE COORDINATES (ft.):
N 51000 E 2066
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-28-87
DATE COMPLETED: 4-28-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Burn pit, boring 3 center section of pit.
SITE CONDITION Gass covered, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		20"	20"	U	1500	4-8-48-21	~~56~~ 69	CL-CH	(0'-10") Yellowish brown (10YR 5/6) CLAY, trace Silt, damp, grass roots present. (10"-1'8") Black (7.5YR 2/0) coarse to fine SAND and(-) Silt size material, damp, glass present.
2'-4'		12"	12"	U	170	7-14-22-62	~~36~~ 84	SM-	Black (7.5YR 2/0) coarse(-) medium to fine(+) SAND, some Silt size material, moist, trace(-) clay lenses throughout.
4'-6'		0	0	U	—	44-17-100/4	117	—	wood chips in sample spoon, wet
6'-8'		0	0	U	—	21-100/3	100	—	wood chips in sample spoon. wet

225

COMMENTS: Logs for BP, B-03 are in Field Book 440 pg 129-132, *CPM is taken with Eberline HP-210T Conversion for HP-210T: 1mRad/hr/1489 CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

864

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: BP, B-03
SITE COORDINATES (ft.):
N S 1000 E 2066
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem augers
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-28-87
DATE COMPLETED: 4-28-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
8'-10'	X	0	0	U	—	12-11-10-13	~~21~~ 23	—	wood chips in sample spoon wet
10'-12'	X	8	8	U	300.	21-46-104-58	150 162	SW-	Oily black coarse to fine SAND, little fine Gravel, saturated, glass present.
12'-14'	X	10"	10"	U	250	6-8-14-8	22	CL-CH	Light olive brown CLAY, trace silt, moist, piece of twisted aluminum (from pop can).
14'-16'	X	2"	0	U	—	5-10-21-14	~~31~~ 35	—	Loose piece of glass, few medium gravel, few small balls of clay-sluff from above.
16'-18	X	0	0	U	—	12-14-11-14	25	—	NO Recovery

226

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: BP B-04
SITE COORDINATES (ft.):
N S 1000 E 2025
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-5-87
DATE COMPLETED: 5-5-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Burn pit, boring 4, South west corner of pit
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		15½"	15½"	U	200	6-11-14-22	~~25~~ 36	CL-CH	Dark brown (10YR 3/3) CLAY, trace Silt, trace fine Gravel, mottled. One gravel is lite weight, porous, appears to be coke, damp.
2'-4'		19½"	19½"	U	200	11-13-19-16	~~32~~ 35	CL-CH SM-	(2'-2'10") Same as above (0'-2'). (2'10"-3'7½") Very dark gray (5Y 3/1) medium To fine SAND, little (+) Silt size material, Trace fine Gravel, moist, loose, gravel is rounded and lighter in color than surrounding material (gravel has faint reddish brown 2.5YR 3/4 color), all material has a chard appearance.
4'-6'		16"	16"	U	180	7-7-5-5	~~12~~ 10	SM	Same as above (2'10"-3'7½"), wet, with trace (-) medium Gravel.

227

COMMENTS: Logs for BP B-04 are in Field Book 44.1 pg 20-25. CPM taken with Eberline HP-210T. Conversion for HP-210T: 1 mRad/hr/1489 CPM

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: BP-B-04
SITE COORDINATES (ft.):
N S 1000 E 2025
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-5-87
DATE COMPLETED: 5-5-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		10"	10"	U	200	3-4-5-5	~~9~~ 10	SM-	Same as above (4'-6').
8'-10'		17½	17½	U	190	3-3-1-1	~~4~~ 2	SM- ML-	(8'-8'11½") Same as above (4'-8') (8'11½"-9'5½") SILT size material with all the following colors - from top to bottom - weak red (10YR 4/4), reddish gray (10YR 6/1), reddish yellow (7.5YR 6/6), pinkish white (7.5YR 8/2), pinkish gray (7.5YR 6/2) and gray (10YR 5/1). Each color forms one or more well defined layers (¼"-½" thick), material is wet and soft.

223

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D 2.42" I.D. tube sample
T - 3" O.D thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: BP, B-04
SITE COORDINATES (ft.):
N S 1000 E 2025
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-5-87
DATE COMPLETED: 5-5-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
10'-12'		16"	16"	U	500	0-0-0-3	Ø 3	ML -	(10'-10'8") Same as above (8'11½"-9'5½") with the addition of a lime green similar to pale green (5G 7/2). weak red (2.5 YR 4/2), pink (7.5 YR 7/4) and very dark gray (2.5Y 3/0). material is wet.
								CH -	(10'8"-11'4") Light olive brown (2.5Y 5/6) CLAY, moist.
12'-14'		0	0	U	—	4-7-8-11	Ø 19	—	No Recovery
14'-16'		12"	12"	U	150	10-17-14-19	31 33	CH -	Light olive brown (2.5Y 5/6) CLAY, moist, soft in spots, mottled throughout (mottled areas are dark grayish brown 2.5Y 4/2).

229

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: BP-B-05
SITE COORDINATES (ft.):
N 1075 S E 2000
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-6-87
DATE COMPLETED: 5-6-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Burn pit boring 5 Southwest section of pit
SITE CONDITION Grass covered flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0-2'		15"	15"	U	220	12-24-25-26	49	CL-CH	(0-13") Dark yellowish brown (10YR 4/4) CLAY, some Silt, trace fine Gravel damp, mottled.
								SM	(1'1"-1'3") Very dark gray (10YR 3/1) coarse to fine SAND, little (+) Silt size material, trace fine Gravel, moist, soft.
2'-4'		17"	17"	U	80	10-12-9-9	21	SM	Same as above (1'1"-1'3"), wet.
4'-6'		19"	19"	U	80	7-6-6-4	12	SM	Same as above (1'1"-4'), wet.

230

COMMENTS: Logs for BP, B05 are in Field Book 44.1 pg. 28-31. CPM Taken with Eberline HP-210T. HP-210T conversion: 1 mRad/hr/1489 CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: BP, B-05
SITE COORDINATES (ft.):
N 1075 S E 2000
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-6-87
DATE COMPLETED: 5-6-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		9"	9"	U	600	2-5-2-2	7	SM ML	(6'-6'3") Same as above (1'1"-6'). (6'3"-6'9") SILT size material with the following colors - from top to bottom - weak red (10YR 4/4), reddish gray (10YR 6/1), reddish yellow (7.5YR 6/6), pinkish white (7.5YR 8/2) pinkish gray (7.5YR 6/2) and gray (10YR 5/1), well defined layers 1/4"-1/2" thick, wet
8'-10'		13"	13"	U	400	2-2-7-7	9	ML-	(8'-9') Same as above (6'3"-8') (9'-9'1") Light olive brown (2.5Y 5/6) CLAY, moist.
10'-12'		9"	9"	U	1	2-2-7-7	9	ML-	Same as above (9'-9'1"), moist mottled, soft in places, dense.

231

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: BP, B-06
SITE COORDINATES (ft.):
N S 1100 E 1980
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-6-87
DATE COMPLETED: 5-6-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
14'-16'	X	6½"	6½"	U	400	6-7-9-12	16	CH-	Same CLAY as above (12'1½"-12'4½") color - light olive brown (2.5Y 5/6) mottled.

232

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: BP, B-06
SITE COORDINATES (ft.):
N S 1100 E 1980
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-6-87
DATE COMPLETED: 5-6-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Burn Pit boring 6, Southwest section
SITE CONDITION Grass covered, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		19"	19"	U	200	9-16-33-44	49	CL-CH	(0'-8') Strong brown (7.5 YR 4/6) CLAY trace Silt, trace fine Gravel, damp, grass and grass roots present.
								*SM	(8'-1'5") Strong brown (7.5YR 4/6) coarse to fine SAND, trace coarse to fine Gravel, little Silt, moist.
								SM	(1'5"-1'7") Very dark gray medium to fine SAND and Silt size material, trace fine Gravel, damp.
2'-4'		23"	23"	U	130	9-13-14-10	27	SM	Same as above (1'5"-1'7"), moist.
4'-6'		21"	21"	U	170	8-7-6-6	13	SM	Same as above (1'5"-4'), slight moisture increase.
6'-8'		15½"	15½"	U	90	6-7-10-5	17	SM	(6'-6'6") Same as above (1'5"-6') with trace coarse SAND. 233

continued on page 2

COMMENTS: Logs for BP, B-06 are in Field Book 44.1 pg 32-35. CPM taken with HP-210T (Eberline). HP210T conversion: 1mRad/hr/1489 CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D 1.38" I.D. drive sample
U - 3" O.D 2.42" I.D. tube sample
T - 3" O.D thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: BP, B-06
SITE COORDINATES (ft.):
N S 1100 E 1980
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-6-87
DATE COMPLETED: 5-6-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'						continued from page 1		ML-	(6'6"-7'3½") - SILT size material with the colors - from top to bottom - weak red (10YR 4/4), reddish gray (10YR 6/1), reddish yellow (7.5 YR 6/6), pinkish white (7.5 YR 8/2), pinkish gray (7.5 YR 6/2), gray (10 YR 5/1), pale green (5G 7/2), weak red (2.5YR 4/2), pink (7.5 YR 7/4) and very dark gray (2.5Y 3/0), layers are well defined, ¼'-½' thick, wet.
8'-10'		3"	0		300	1-2-2-2	4	ML	Same as above (6'6"-7'3½").
10'-12'		4"	0		200	4-5-2-1	7	ML	Same as above (6'6"-10')
12'-14'		4½"	0		300	5-7-10-17	17	ML	(12'-12'½") Same as above (6'6"-12') (12'½"-12'4½") Olive gray (5Y 4/2) CLAY, moist, dense. Toward bottom light olive brown (2.5Y 5/6) color - due to oxidation.

234

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D thin-walled Shelby tube

FMPC Dry Lime Sludge Pond

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Dry Lime Sludge Lagoon Boring 1 and 1A
SITE COORDINATES (ft.): N ~~2025~~ 2150 E ~~3050~~ 3100
GROUND ELEVATION (ft. MSL):
DRILLING METHOD: Hollow Stem Auger
DRILLING CONTR.: Bowser Morner
DATE STARTED:
DATE COMPLETED:
FIELD REP.: John N. Dougherty
Checked by:

GROUNDWATER LEVELS

DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Football field size area, formerly used a settling basin
SITE CONDITION Flat, Covered in ankle high grass

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	CPM ~~ID~~	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
~~0.00~~		14"	14"	U	100	1-1-1-1	2	CL	4" grayish brown (10YR 5/2) clay with rootlets underlain by 10" of white (10YR 8/2) clay like material (No CGI or HNu deflection)
~~2.00~~		20	20	U	130	1-0-1-0	1	OT	white (10YR 8/2) clay like material with a 2" streak of grayish brown (10YR 5/2) clay like material. No CGI or HNu deflection
~~4.00~~		24"	24"	U	50	1-1-0-1	1	OT	White (10YR 8/1) clay like solid material, at 4.5' streak of grayish brown (10YR 5/2 material with some rootlets. Occ. 1 to 2" thick layers of greenish gray (5B 7/1) clay like material.
~~6.00~~		22"	22"	U	60	1-2-2-1	4	OT	White (10YR 8/2) clay like solid streaked with greenish gray (5B 7/1) and dark bluish gray (N/4) colors.
~~8.00~~		24	24		85	1-1-1-1	2	OT	8'-9'5": lt. gray (5Y 7/1) semi-solid, puddins consistency. streaked with v. pale brown (10YR 8/3) color.
~~10.00~~		24"	24"		60	1-6-9-18	15		9'5"-9'9": lt. greenish gray (5GY 7/1) damp clay like material 9'9"-9'11": Black (2.5Y N2/0) damp clay like material 9'11"-10" - v. pale brown (10YR 7/4) damp clay like material
12.00									

236

COMMENTS: See notebook #43.0 pp. 113-115, 122-123
CPM readings taken w/ an Eberline HP-210 T. ~~3/30~~ B-1 was completed to 8' samples were not sent. Then on 3/31 B-1 was advanced to 12'. B-1A was then completed to 8' to provide sample for analysis. So analytical samples came from B-1 for 8-12' and from B-1A for 0-8'

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

864

Dry Lime Sludge

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: Lagoon B-1 + B-1A

SITE COORDINATES (ft.):

N _____ E _____

GROUND ELEVATION (ft. MSL): _____

DRILLING METHOD: Hollow Stem Auger

DRILLING CONTR.: Bowser Morner

DATE STARTED: 3/27/87

DATE COMPLETED: 3/31/87

FIELD REP.: JOHN N. DOUGHERTY

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION _____

SITE CONDITION _____

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
									DESCRIPTION OF 10-12 INTERVAL:
								OT	White (10YR 8/1) semi-solid with clumps of clay like, lt. greenish gray (5G7/1) material grading into v. dr. gray (10YR3/1) clay like material. At 11'-2"
								CL	changes abruptly to dr. grayish brown (2.5Y4/2) clay with some silt grading into dr. grayish brown (10YR 4/2) clay with patches of olive brown (2.5Y4/4), some silt
									BORING TERMINATED AT 12'.

237

COMMENTS: _____

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

#0025

WESTON

BOREHOLE AND TEST PIT SUMMARY

SITE ID: Dry Lime Sludge Pond
LOCATION ID: Borehole 2
LOCATION COORDINATES:
~~N~~ E 3200
~~E~~ S 2175
GROUND ELEVATION (FT. MSL):

BH-BOREHOLE/TP-TEST PIT: 2
DRILLER/EXCAVATOR: Bowser - Morner
COMPLETION DATE: 3-31-87
BOREHOLE DIAMETER (IN): 2"
TOTAL DEPTH (FT.): 12'

WELL SUMMARY

WELL OWNER: NA
INSTALLER:
INSTALLATION DATE:
CASING ELEV. (FT. MSL):
CASING LENGTH (FT.):
CASING DIA. (IN.):
SEAL (END) DEPTH (FT.):

FILTER PACK LENGTH (FT.):
FORMATION OF COMPLETION:
STRATIGRAPHIC ORDER:
OPEN/SCREEN DEPTH (FT.):
OPEN/SCREEN LENGTH (FT.):
OPEN/SCREEN AREA (IN.^{2}/FT.):
•FLOW RELATIONSHIP:

LITHOLOGICAL SUMMARY

SOIL/ROCK PROFILE				STD. PENETRATION TEST			
DEPTH (FT.)	UNIFIED SOIL/ROCK CLASS	STRAT. ORDER	VISUAL DESCRIPTION	SAMPLE ID	DEPTH INTERVAL (FT.)	SAMPLE METHOD	N VALUE
0'-2'			Grey (7.5 YR 5/6) and yellowish				
			brown (10 YR 5/4) and white				
			(2.5 Y 8/2) clayey material,				
			abundant rootlets, wet.				
2'-4'			White (2.5 Y 8/2) clay like				
			material, numerous rootlets,				
			horizontal dark layers,				
			brown specks throughout-				
			more abundant at bottom				
			half.			238	

Vance A. Peers. 4-1-87

FLOW RELATIONSHIP:
U-Upgradient
D-Downgradient
C-Cross Gradient
O-On Site
N-Not Known

SAMPLE METHODS:
A-Auger Cuttings
S-2"O.D. 1.38"I.D. drive sample
U-3"O.D. 2.42"I.D. tube sample
T-3" O.D. thin-walled Shelby tube
H-6 1/2 Hollow Stem Auger
C-4 1/2 Continous Flight Auger
GB-Gear Bit
NX-NX Rock Coring
NQ-NQ Wireline Rock Coring
B-Undisturbed Block Sample
D-Disturbed Bulk Sample

#0026

WESTON

BOREHOLE AND TEST PIT SUMMARY

SITE ID: Dry lime Sludge Pond
LOCATION ID: Borehole 2
LOCATION COORDINATES:
~~N~~ E 3200
~~E~~ S 2175
GROUND ELEVATION (FT. MSL):

BH-BOREHOLE/TP-TEST PIT: 2
DRILLER/EXCAVATOR: Bowser-Morner
COMPLETION DATE: 3-31-87
BOREHOLE DIAMETER (IN): 2"
TOTAL DEPTH (FT.): 12'

WELL SUMMARY

WELL OWNER: NA
INSTALLER:
INSTALLATION DATE:
CASING ELEV. (FT. MSL):
CASING LENGTH (FT.):
CASING DIA. (IN.):
SEAL (END) DEPTH (FT.):

FILTER PACK LENGTH (FT.):
FORMATION OF COMPLETION:
STRATIGRAPHIC ORDER:
OPEN/SCREEN DEPTH (FT.):
OPEN/SCREEN LENGTH (FT.):
OPEN/SCREEN AREA (IN.^{2}/FT.):
•FLOW RELATIONSHIP:

LITHOLOGICAL SUMMARY

SOIL/ROCK PROFILE				STD. PENETRATION TEST			
DEPTH (FT.)	UNIFIED SOIL/ROCK CLASS	STRAT. ORDER	VISUAL DESCRIPTION	SAMPLE ID	DEPTH INTERVAL (FT.)	SAMPLE METHOD	N VALUE
4'-7'1"			White (2.5 Y 8/2) clay like				
			material, horizontal dark				
			layers < 1/8" thick.				
7'1"-8'			Light greenish grey (5G 7/1)				
			clay like material, some				
			dark specks				
8'-9'			white (10YR 8/2) clay like				
			material, dark specks +				
			dark vertical streaks				

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Vance A. Peers 4-1-87

FLOW RELATIONSHIP:
U-Upgradient
D-Downgradient
C-Cross Gradient
O-On Site
N-Not Known

SAMPLE METHODS:
A-Auger Cuttings
S-2" O.D. 1.38" I.D. drive sample
U-3" O.D. 2.42" I.D. tube sample
T-3" O.D. thin-walled Shelby tube
H-6 1/2 Hollow Stem Auger
C-4 1/2 Continous Flight Auger
GB-Gear Bit
NX-NX Rock Coring
NQ-NQ Wireline Rock Coring
B-Undisturbed Block Sample
D-Disturbed Bulk Sample

#0027

WESTON

BOREHOLE AND TEST PIT SUMMARY

SITE ID: Dry lime sludge Pond
LOCATION ID: Borehole 2
LOCATION COORDINATES:
~~N~~ E 3200
~~E~~ S 2175
GROUND ELEVATION (FT. MSL):

BH-BOREHOLE/TP-TEST PIT: 2
DRILLER/EXCAVATOR: Bowser - Morner
COMPLETION DATE: 3-31-87
BOREHOLE DIAMETER (IN): 2"
TOTAL DEPTH (FT.): 12'

WELL SUMMARY

WELL OWNER: NA
INSTALLER:
INSTALLATION DATE:
CASING ELEV. (FT. MSL):
CASING LENGTH (FT.):
CASING DIA. (IN.):
SEAL (END) DEPTH (FT.):

FILTER PACK LENGTH (FT.):
FORMATION OF COMPLETION:
STRATIGRAPHIC ORDER:
OPEN/SCREEN DEPTH (FT.):
OPEN/SCREEN LENGTH (FT.):
OPEN/SCREEN AREA (IN.^{2}/FT.):
•FLOW RELATIONSHIP:

LITHOLOGICAL SUMMARY

SOIL/ROCK PROFILE				STD. PENETRATION TEST			
DEPTH (FT.)	UNIFIED SOIL/ROCK CLASS	STRAT. ORDER	VISUAL DESCRIPTION	SAMPLE ID	DEPTH INTERVAL (FT.)	SAMPLE METHOD	N VALUE
9'-10'			White (10YR 8/2) clay like				
			material, with light greenish				
			gray (5G 7/1) clay like				
			material through out				
			(blotches), less (5G 7/1)				
			toward last 3", wet.				
10'-11'6"			White (10YR 8/2) clay like				
			material, dark specks				
			through out, ligh greenish grey				
			(5G 7/1) throughout and forms			240	

FLOW RELATIONSHIP:
U-Upgradient
D-Downgradient
C-Cross Gradient
O-On Site
N-Not Known

SAMPLE METHODS:
A-Auger Cuttings
S-2"O.D. 1.38"I.D. drive sample
U-3"O.D. 2.42"I.D. tube sample
T-3" O.D. thin-walled Shelby tube
H-6 1/2 Hollow Stem Auger
C-4 1/2 Continous Flight Auger
GB-Gear Bit
NX-NX Rock Coring
NQ-NQ Wireline Rock Coring
B-Undisturbed Block Sample
D-Disturbed Bulk Sample

Vance A. Peers 4-1-87

#0028

WESTON

BOREHOLE AND TEST PIT SUMMARY

SITE ID: Dry Lime Sludge Pond
LOCATION ID: Bore hole 2
LOCATION COORDINATES:
N F 3200
E S 2175
GROUND ELEVATION (FT. MSL):

BH-BOREHOLE/TP-TEST PIT: 2
DRILLER/EXCAVATOR: Bowser Morner
COMPLETION DATE: 3-31-87
BOREHOLE DIAMETER (IN): 2"
TOTAL DEPTH (FT.): 12'

WELL SUMMARY

WELL OWNER: NA
INSTALLER:
INSTALLATION DATE:
CASING ELEV. (FT. MSL):
CASING LENGTH (FT.):
CASING DIA. (IN.):
SEAL (END) DEPTH (FT.):

FILTER PACK LENGTH (FT.):
FORMATION OF COMPLETION:
STRATIGRAPHIC ORDER:
OPEN/SCREEN DEPTH (FT.):
OPEN/SCREEN LENGTH (FT.):
OPEN/SCREEN AREA (IN.^{2}/FT.):
•FLOW RELATIONSHIP:

LITHOLOGICAL SUMMARY

SOIL/ROCK PROFILE				STD. PENETRATION TEST			
DEPTH (FT.)	UNIFIED SOIL/ROCK CLASS	STRAT. ORDER	VISUAL DESCRIPTION	SAMPLE ID	DEPTH INTERVAL (FT.)	SAMPLE METHOD	N VALUE
			horizontal layers toward				
			bottom. Wet				
11'6"-12'			Light olive brown CLAY,				
			and Silt, Wet.				

241

Vance A Peers 4-1-87

FLOW RELATIONSHIP:
U-Upgradient
D-Downgradient
C-Cross Gradient
O-On Site
N-Not Known

SAMPLE METHODS:
A-Auger Cuttings
S-2"O.D. 1.38"I.D. drive sample
U-3"O.D. 2.42"I.D. tube sample
T-3" O.D. thin-walled Shelby tube
H-6 1/2 Hollow Stem Auger
C-4 1/2 Continous Flight Auger
GB-Gear Bit
NX-NX Rock Coring
NQ-NQ Wireline Rock Coring
B-Undisturbed Block Sample
D-Disturbed Bulk Sample

WESTON

Installation

Site

864 Location

Page 1 of 3

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: DLSL, B-03

SITE COORDINATES (ft.):

N 52225 E 3225

GROUND ELEVATION (ft. MSL): NA

DRILLING METHOD: Hollow Stem Auger

DRILLING CONTR.: Bowser-Morner

DATE STARTED: 4-1-87

DATE COMPLETED: 4-1-87

FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Dry lime sludge pond, boring #3

SITE CONDITION Open, covered with short grass, soft ground surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		19"	19"	U	61	weight of hammer		ML -	(0-4")-Very pale brown (10 YR 7/3) Clayey SILT, numerous rootlets, damp.
								CL -	(4"-15")- white (10YR 8/1) CLAY size material, brown specks in upper 7", Alternating firm and soft layers, damp to moist, low plasticity.
2'-4'		16.5"	16.5"	U	53	weight of hammer		CL -	white (10 YR 8/1 + 10YR 8/2) CLAY size material, alternating firm and soft layers, horizontal layering present, brown specks - more prevalent in firm layers, wet.
									(4'-5'8")
4'-6'		24"	24"	U	50	weight of hammer		CL -	Same as above (4"- 3'4.5"), both white (10YR 8/1 + 10YR 8/2) occur throughout as blotches of color (not layers), wet.
								CL -	(5'8"-6) Dark grey (7.5 YR 4/0) Light greenish grey (5BG 7/1) blotches in Pink (7.5 YR 8/4) CLAY size material.

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COMMENTS: Logs for DLSL, B-03 are in Field Book 44.0 pg. 5-10. CPM taken with Eberline HP210T - conversion for HP-210T: 1mRad/hr/1489 CPM

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP: N

SITE ID: FMPC LOCATION ID: DLSL, B03
SITE COORDINATES (ft.):
N 52225 E 3225
GROUND ELEVATION (ft. MSL): NA
DRILLING METHOD: Hollow Stem Auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-1-87
DATE COMPLETED: 4-1-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		23"	23"	U	60	Weight of hammer		CL	(6'-6'6") White (10YR 8/2) CLAY size material, some rootlets, layers with brown specks, soft, wet, low plasticity.
								CL	(6'6"-6'9.5") Light greenish grey (5G 7/1) CLAY size material, more solid than above, wet, Low plasticity
								CL	(6'9.5"-7'7") White (10YR 8/2) CLAY size material, firm, wet, low plasticity
								CL	(7'7"-7'11") Light greenish grey (5G 7/1) CLAY size material, blotches of white (10YR 8/2), firm, wet, low plasticity.
8'-10'		24"	24"	U	50	Weight of hammer		CL	(8'-9') white (10YR 8/2) CLAY size material with blotches of very pale brown 10YR 8/4 toward top, wet, firm.
								CL	(9'-10') Same as (8'-9') color change to Light greenish grey (5G 7/1), 1/8" brown layer at (9'9"). last 2" contains greenish grey (5BG 6/1), wet.

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

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WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: DLSL, B03
SITE COORDINATES (ft.):
N S 2225 E 3225
GROUND ELEVATION (ft. MSL): NA
DRILLING METHOD: Hollow Stem Augers
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-1-87
DATE COMPLETED: 4-1-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
10'-12'		24"	24"	U	80	Weight of hammer		CL –	(10'-10'10") Light green grey (5BG 7/1) with blotches of greenish grey (5BG 6/1) CLAY size material, wet.
								CL-CH	(10'10"-11'2") Olive grey (5Y 5/2) CLAY size material, medium plasticity, not lime sludge.
								SC –	(11'2"-12') Light yellowish brown (2.5Y 6/4) medium to fine SAND, trace Clay, moist to damp, saturated near top, moisture decreases toward bottom, Clay occurs as 1/4" thick seams.

244

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

FMPC Lime Sludge Lagoon

#2004

864 WESTON

BOREHOLE AND TEST PIT SUMMARY *

SITE ID: Lime Sludge Lagoon
LOCATION ID: NW Corner, Borehole 1
LOCATION COORDINATES:
S N 2025
E 3050
GROUND ELEVATION (FT. MSL):

BH-BOREHOLE/~~TP-TEST PIT~~: 1
DRILLER/~~EXCAVATOR~~: Bowser Morner
COMPLETION DATE: 3/12/87
BOREHOLE DIAMETER (IN): 2"
TOTAL DEPTH (FT.): 3.5'
Water Depth: 6.5', Waste Thickness: 3.5'

WELL SUMMARY

WELL OWNER: n/a
INSTALLER:
INSTALLATION DATE:
CASING ELEV. (FT. MSL):
CASING LENGTH (FT.):
CASING DIA. (IN.):
SEAL (END) DEPTH (FT.):

FILTER PACK LENGTH (FT.):
FORMATION OF COMPLETION:
STRATIGRAPHIC ORDER:
OPEN/SCREEN DEPTH (FT.):
OPEN/SCREEN LENGTH (FT.):
OPEN/SCREEN AREA (IN.^{2}/FT.):
*FLOW RELATIONSHIP:

LITHOLOGICAL SUMMARY

By: John N. Dougherty — John Dougherty 4/2/87

SOIL/ROCK PROFILE				STD. PENETRATION TEST			
DEPTH (FT.)	UNIFIED SOIL/ROCK CLASS	STRAT. ORDER	VISUAL DESCRIPTION	SAMPLE ID FMP-PS-47	DEPTH INTERVAL (FT.)	SAMPLE METHOD	N VALUE
0"-6"			Light gray (10YR 7/1)		0-20"	Ring Sampler	
			liquid with some silt or				
			fine gr. sand like particles				
6-42"			Grayish brown (10YR 5/2)		20"-40"	"	
			and v. dr. gray (2.5YR N3)				
			Semi-solid, pudding like				
			consistency				
			Black (2.5YR N2.5)		40"-60"	"	
			silty semi-solid with				
			grease like consistency				246
42'-?			Dr. brown (10YR 4/3) silt with clay, rootlet or grass fragments present } looks like "clay liner" or original material.				

FLOW RELATIONSHIP:
U-Upgradient
D-Downgradient
C-Cross Gradient
O-On Site
N-Not Known

SAMPLE METHODS: -SAMPLER REFUSAL AT 3.5'
A-Auger Cuttings
S-2"O.D. 1.38"I.D. drive sample
U-3"O.D. 2.42"I.D. tube sample
T-3" O.D. thin-walled Shelby tube
H-6 1/2 Hollow Stem Auger
C-4 1/2 Continous Flight Auger
GB-Gear Bit
NX-NX Rock Coring
NQ-NQ Wireline Rock Coring
B-Undisturbed Block Sample
D-Disturbed Bulk Sample

* over for notes.

0005

WESTON

BOREHOLE AND TEST PIT SUMMARY*

SITE ID: Lime Sludge Lagoon
LOCATION ID: Middle, Borehole 2
LOCATION COORDINATES:
S N 2050
E 3100
GROUND ELEVATION (FT. MSL):

BH-BOREHOLE/~~TP-TEST PIT~~: 2
DRILLER/EXCAVATOR: Bowser Morner
COMPLETION DATE: 3/12/87
BOREHOLE DIAMETER (IN): 2"
TOTAL DEPTH (FT.): 5.5' (Waste Thickness)
Water Depth: 4.5'
Sampled from: 0.5' to 5.5'

WELL SUMMARY

WELL OWNER: N/a
INSTALLER:
INSTALLATION DATE:
CASING ELEV. (FT. MSL):
CASING LENGTH (FT.):
CASING DIA. (IN.):
SEAL (END) DEPTH (FT.):

FILTER PACK LENGTH (FT.):
FORMATION OF COMPLETION:
STRATIGRAPHIC ORDER:
OPEN/SCREEN DEPTH (FT.):
OPEN/SCREEN LENGTH (FT.):
OPEN/SCREEN AREA (IN.²/FT.):
*FLOW RELATIONSHIP:

LITHOLOGICAL SUMMARY

By John N. Dougherty

SOIL/ROCK PROFILE				STD. PENETRATION TEST			
DEPTH (FT.)	UNIFIED SOIL/ROCK CLASS	STRAT. ORDER	VISUAL DESCRIPTION	SAMPLE ID	DEPTH INTERVAL (FT.)	SAMPLE METHOD	N VALUE
6"-26"			lt. gray (10YR 7/1) soupy	FMP-PS-47-07 through 012 Soil profile Soil borehole @ 14'-47'	0"-20"	Ring Sampler	N/a
			liquid with some silt				
26"-46"			Grayish brown (10YR 5/2)		20"-40"	"	"
			semi-solid, pudding consist				
46"-66"			V. dr. gray (2.5YR N3) to		40"-60"	"	"
			black (2.5YR N2.5) semi-				
			solid with a grease like consist				
			Some fragments of dr. brown				
			(10YR 4/3) silt with clay				
			SAMPLER REFUSAL AT 66"			247	

FLOW RELATIONSHIP:
U-Upgradient
D-Downgradient
C-Cross Gradient
O-On Site
N-Not Known

SAMPLE METHODS:
A-Auger Cuttings
S-2" O.D. 1.38" I.D. drive sample
U-3" O.D. 2.42" I.D. tube sample
T-3" O.D. thin-walled Shelby tube
H-6 1/2 Hollow Stem Auger
C-4 1/2 Continous Flight Auger
GB-Gear Bit
NX-NX Rock Coring
NQ-NQ Wireline Rock Coring
B-Undisturbed Block Sample
D-Disturbed Bulk Sample

*See note 2 on back of 109 for borehole 1, lime sludge lagoon

#0006

BOREHOLE AND TEST PIT SUMMARY*

SITE ID: Lime Sludge Lagoon
LOCATION ID: SE, boring #3, near discharge pipe
LOCATION COORDINATES:
S N 2075
E 3150
GROUND ELEVATION (FT. MSL):

BH-BOREHOLE/~~TP-TEST PIT~~: 3
DRILLER/EXCAVATOR: Bauser Morner
COMPLETION DATE: 3/12/87
BOREHOLE DIAMETER (IN): 2" (nominal)
TOTAL DEPTH (FT.): 7'
WATER DEPTH: 1'
WASTE Thickness: 7' SAMPLED from: 2' to 7'

WELL SUMMARY

WELL OWNER: n/a
INSTALLER:
INSTALLATION DATE:
CASING ELEV. (FT. MSL):
CASING LENGTH (FT.):
CASING DIA. (IN.):
SEAL (END) DEPTH (FT.):

FILTER PACK LENGTH (FT.):
FORMATION OF COMPLETION:
STRATIGRAPHIC ORDER:
OPEN/SCREEN DEPTH (FT.):
OPEN/SCREEN LENGTH (FT.):
OPEN/SCREEN AREA (IN.²/FT.):
*FLOW RELATIONSHIP:

LITHOLOGICAL SUMMARY By J.N. Dougherty

4/2/87

SOIL/ROCK PROFILE				STD. PENETRATION TEST			
DEPTH (FT.)	UNIFIED SOIL/ROCK CLASS	STRAT. ORDER	VISUAL DESCRIPTION	SAMPLE ID FMP-PS-47	DEPTH INTERVAL (FT.)	SAMPLE METHOD	N VALUE
24"-44"			H. gray (10YR 7/1) semi	FMP-PS-47	0"-20"	Ring Sampler	N/a
			solid w/ pudding consistency	FMP-PS-48			
44"-64"			Grayish brown (10YR 5/7)	FMP-PS-49	20"-40"	"	"
			and Very dark gray (2.5YR	FMP-PS-50			
			N3) semi solid with pudding	FMP-PS-47			
			like consistency				
64"-84"			64" to ~76": Very dark	FMP-PS-51	40"-60"	"	"
			gray (2.5YR N3) semi solid	FMP-PS-52			
			with pudding or grease like	FMP-PS-53 through 010			
			consistency				
			~76" to 84": Dr. gray				
			(10YR 4/1) Clay. When worked with spoon clay is stiff, slightly moist			248	

SAMPLER REFUSAL AT 84"

FLOW RELATIONSHIP:
U-Upgradient
D-Downgradient
C-Cross Gradient
O-On Site
N-Not Known

SAMPLE METHODS:
A-Auger Cuttings
S-2" O.D. 1.38" I.D. drive sample
U-3" O.D. 2.42" I.D. tube sample
T-3" O.D. thin-walled Shelby tube
H-6 1/2 Hollow Stem Auger
C-4 1/2 Continous Flight Auger
GB-Gear Bit
NX-NX Rock Coring
NQ-NQ Wireline Rock Coring
B-Undisturbed Block Sample
D-Disturbed Bulk Sample

* see note 2 on back of log for Lime Sludge Lagoon, borehole 1

FMPC Lower Flyash Pile Boring Logs

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: LFA, B-01
SITE COORDINATES (ft.):
N 5 5687.5 E 3512.5
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-19-87
DATE COMPLETED: 5-19-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Lower fly ash area, boring 1, below fly ash pile
SITE CONDITION Grass covered, flat surface, old road through woods.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		14"	14"	U	75	13-31-17-15	48	CL-CH	Very dark brown (10YR 2/2) CLAY, some(+) Silt, trace fine Sand, little medium to fine (+) Gravel, moist, decaying organic material in upper 7", concrete and brick pieces near surface, gravel is angular to rounded.
2'-4'		20"	20"	U	90	10-29-32-14	61	CL-CH	(2'-3') Same as above (0'-2') with little coarse to fine Gravel, gravel angular to round, piece of plastic at 3'. (3'-3'8") Yellowish brown (10YR 5/4) CLAY, trace Silt, some(+) medium to fine Sand, trace medium to fine Gravel, moist, undisturbed.

250

COMMENTS: Logs for LFA, B-01 are in Field Book 441 pg 104-105. CPM taken with HP-210T. Conversion for HP-210T: 1 mRad/hr/1489 CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: LFA, B-01
SITE COORDINATES (ft.):
N 5 5687.5 E 3512.5
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-19-87
DATE COMPLETED: 5-19-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
4'-6'		20"	20"	U	30	10-10-10-9	20	SW-	Yellowish brown (10YR 5/6) coarse to fine SAND, some medium to fine(+) Gravel, Trace Silt, Trace Clay, moist, gravel is rounded, undisturbed.
6'-8'		20"	20"	U	45	8-10-12-13	22	SP-	Same as above (4'-6'), decrease in Silt, Clay and Gravel toward bottom.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: LFA, B-02
SITE COORDINATES (ft.):
N S 5778 E 3465
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-20-87
DATE COMPLETED: 5-20-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Lower fly ash area, boring 2, drain below fly ash
SITE CONDITION Wet weather drain, flat surface, in woods.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		16"	16"	U	50	2-2-20-40	22	CL-OH	(0"-2") Dark brown (10YR 4/3) CLAY, trace coarse to fine Sand, some decaying organic material.
								SW	(2"-4") Dark brown (10YR 4/3) SAND, trace fine Gravel, decaying organic material.
								SW	(4"-1'4") Dark brown (10YR 4/3) coarse to fine SAND, trace fine Gravel, moist, clean (no fines), organic material throughout. Grains are rounded to well rounded.
2'-4'		15"	15"	U	75	17-8-12-17	20	SW	(2'-2'7") Dark brown (10YR 4/3) interbedding of (coarse to fine SAND, little fine Gravel) and (CLAY, trace coarse to fine Sand) moist.
								CL	
								SW	(2'7"-3'3") Yellowish brown (10YR 5/4) coarse to fine(+) SAND, trace(+) fine Gravel, moist to slightly

COMMENTS: Logs for LFA, B-02 are in Field Book 44.1 pg. 108 - 111 CPM taken with Eberline HP-210T. Conversion for HP-210T: 1mRad/hr/1489 CPM

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: LFA, B-02
SITE COORDINATES (ft.):
N S 5778 E 3465
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-20-87
DATE COMPLETED: 5-20-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
4'-6'		15"	15"	U	50	6-5-3-4	8	SW	(4'-4'7") Same as above (2'7"-3'3") with slight increase in fines
								SW	(4'7"-5'3") Yellowish brown (10YR 5/4) coarse to fine(+) SAND, little medium to fine Gravel, clean, gravel is rounded to well rounded.
6'-8'		9"	9"	U	50	10-12-13-15	25	SW	Same as above (4'7"-5'3") grading to light yellow brown (10YR 6/4) coarse medium(+) to fine SAND, little(+) medium to fine(+) Gravel, moist, clean.
8'-10'		16"	16"	U	75	12-8-7-15	15	SW	(8'-8'8") Light yellowish brown (10YR 6/4) coarse medium(+) to fine SAND and medium to fine(+) Gravel, clean
								SW	(8'8"-9'4") Brown (10YR 5/3) coarse medium(+) to fine SAND, Trace(+) medium to fine Gravel, Clean, moist, medium gravel near bottom of sample.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: LFA, B-02
SITE COORDINATES (ft.):
N S 5778 E 3465
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-20-87
DATE COMPLETED: 5-20-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
10'-12'		20"	20"	U	40	22-24-22-21	46	SW-	Same as above (8'8"-9'4") grading (in first 3") to Brown (10YR 5/3) coarse to fine SAND and(+) medium to fine (+) Gravel, moist, clean.
12'-14'		17"	17"	U	60	20-24-20-21	44	SW	Same as above (10'-12'), wet, gravel is subangular to well rounded.

254

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

FMPC Sanitary Landfill Boring Logs

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF, B-01
SITE COORDINATES (ft.):
N 5600 E 3180
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-29-87
DATE COMPLETED: 4-29-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Sanitary land fill, boring 1, South east section.
SITE CONDITION Grass covered, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		17"	17"	U	90	16-26-53-46	79	CL-CH	Yellowish brown (10YR 5/6) CLAY, Trace Silt, some(+) medium to fine Gravel, dry to slightly damp, gravel is angular to rounded, pieces of plastic present, grass roots present.
2'-4'		9"	9"	U	95	28-42-22-36	64	CL-CH	Same as above (0'-2') with one coarse Gravel.
4'-6'		9"	9"	U	750	16-27-100/3		CL-CH	(4'-4'4") Same as above (0'-4'), damp.
					220			SM	(4'4"-4'9") Black (2.5Y 2/0) very fine SAND and Silt, little(-) Clay, Trace medium to fine Gravel, saturated, piece of wood, piece of plastic, oily film on everything.

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COMMENTS: Logs for SLF, B-01 are in Field Book 440 pg 135-140. CPM taken with Eberline HP-210T. Conversion for HP-210T: 1mRad/hr/1489 CPM

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF, B-01
SITE COORDINATES (ft.):
N 5600 E 3180
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-29-87
DATE COMPLETED: 4-29-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		21"	21"	U		11-27-20-17	47	CL-CH	(6'-6'6") Brown (10YR 5/3) CLAY, trace Silt, trace fine Sand, moist.
								CL-CH	(6'6"-7') Same as above (6'-6'6") with color change to yellowish brown (10YR 5/6), moist.
								CL-CH	(7'-7'9") Grayish brown (10YR 5/2) CLAY, trace Silt, some fine SAND, wet, piece of wood.
8'-10'		0	0	U	—	11-27-20-17	47	—	Piece of wood in end of sample spoon
10'-12'		17"	17"	U	150	17-21-23-24	44	CL-CH	(10'-10'5") Black (2.5Y 3/0) CLAY, trace Silt, moist, wood splinters. (10'5"-11'5") Mixture of Grayish brown (10YR 5/2) and Yellowish brown (10YR 5/6) CLAY, trace Silt, dense, moist, trace specks decayed organic material.

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF, B-01
SITE COORDINATES (ft.):
N 5600 E 3180
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-29-87
DATE COMPLETED: 4-29-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION See page 1

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
12'-14'		20"	20"	U	100	21-13-21-27	34	CL-CH	(12'-12'4") Black (2.5Y 2/0) CLAY, trace Silt, trace fine Gravel, moist, wood splinters present.
								CL-CH	(12'4"-13'8") Brownish yellow (10YR 6/6) CLAY, trace Silt, dense, mottled areas.
14'-16'		10"	10"	U	125	13-28-36-46	64	CL-CH	Same as above (12'4"-13'8"), damp, small layers (1/16" thick) of white (10YR 8/1) mixed throughout.
16'-18'		24"	24"	U	85	20-50-80-110	130	CL-CH	(16'-17'1") Reddish yellow CLAY, trace fine Gravel, hard, dense, damp.
								CL-CH	(17'1"-18) Grayish brown (10YR 5/2) CLAY, trace fine Gravel, hard dense, damp. Natural.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF, B-2
SITE COORDINATES (ft.):
N S 525 E 3150
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 4-29-87
DATE COMPLETED: 4-29-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Sanitary landfill, boring 2, Center section of pit
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		16"	16"	U	180	9-20-17-25	37	CL-CH	Yellowish brown (10YR 5/4) CLAY, trace (+) medium to fine Gravel, trace Silt, trace fine Sand, dry to slightly damp.
2'-4'		16"	16"	U	300	16-24-28-28	52	CL-CH	Same as above (0'-2') with little medium to fine Gravel, damp, ½" thick waffer of hard fiberous material (white) present.
4'-6'		17"	17"	U	200	5-7-9-11	16	CL-CH	Light olive brown (2.5Y 5/4) same as above (0'-4'). damp to slightly moist, mottled, dense, gravel is angular to well rounded.

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COMMENTS: Logs for SLF, B-02 are in Field Book 440 pg 141 - 144. CPM taken with HP-210T, conversion for HP-210T: 1 mRad/hr/1489 CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF-B-2
SITE COORDINATES (ft.):
N 5525 E 3150
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-29-87
DATE COMPLETED: 4-29-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Same as above
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		13"	13"	U	225	6-10-10-3	20	CL-CH	(6'-6'6") - Same as above (0-6).
								CH -	(6'6"-7'1") - Yellowish brown (10YR 5/4) CLAY, damp, white fiberous waffer at 6'7".
8'-10'		22"	22"	U	320	25-30-35-40	65	CH -	(8'-8'2") - Same as above (6'6"-7'1"). (8'2"-8'9") - Dark gray CLAY, hard, dense. (8'9"-9'1") - Dark gray CLAY, with orange oxidation specks throughout.
10'-12'		19"	19"	U	250	10-13-20-22	33	CH -	Same as above (8'9"-9'1").

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COMMENTS: Same as above

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF, B-03
SITE COORDINATES (ft.):
N S 550 E 3075
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 4-30-87
DATE COMPLETED: 4-30-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Sanitary Landfill, boring 3, West central section
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'	X	7"	7"	U	80	9-10-13-17	23	CL-CH	Light olive brown (2.5Y 5/6) CLAY, trace silt, trace medium to fine Sand, little (-) medium to fine Gravel, dry to slightly damp, mottled in places, some grass roots. Fill
2'-4'	X	13"	13"	U	80	7-12-16-15	28	CL-CH	Same as above (0'-2') with color change to olive brown (2.5Y 4/4), Trace fine Gravel, damp. Fill
4'-6'	X	20"	20"	U	T-65 B-100	7-15-25-25	40	CL-CH	Dark yellowish brown (10YR 4/4) same as above (0'-4'). Fill
6'-8'	X	4"	4"	U	T-80 B-2300	13-11-50-90	61	CL-CH	(6'-6'2") Same above (4'-6') Fill (6'2"-6'-4") Black (5Y 2.5/1) fine SAND, and Silt size material, slightly cemented, damp, shiny flakes in black material. Light gray (10YR 7/1) coloring of the same material mixed in spots, layered fiber board present

COMMENTS: Logs for SLF, B-03 are in Field Book 44.0 pg. 147-152 *CPM taken with HP-210T (Eberline), Conversion for HP210T: 1mRad/hr/1489 CPM. T-Top of sample, B-Bottom of sample. M-Middle of sample

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

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WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF, B-03

SITE COORDINATES (ft.):

N S 550 E 3075

GROUND ELEVATION (ft. MSL): N/A

DRILLING METHOD: Hollow stem auger

DRILLING CONTR.: Bowse - Morner

DATE STARTED: 4-30-87

DATE COMPLETED: 4-30-87

FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
8'-10'	X	3"	3"	U	385	7-7-30-62	37		Same as above (6'-2"-8'), moist to slightly wet, Black material appears to be roofing material
10-12'	X	4"	4"	U	1150	50-33-85-35	118		Same as above (6'2"-10'), saturated, waffer of black hard layered material (built up roofing material)
12'-14'	X	14"	14"	U	T-240 M-130 B-240	15-34-7-18	41		(12'-12'10") Same as material above (6'2"-12'), hard dense white foam like material is attached to some of the layered fiber board material.
								CH -	(12'10"-13'2") Light olive brown (2.5Y5/4) CLAY, moist.
14'-16'	X	20"	20"		100	25-40-57-92	97	CH -	Yellowish brown (10YR5/6) CLAY, trace fine Gravel, dense, fairly hard,

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF, B-04
SITE COORDINATES (ft.):
N S 525 E 3250
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 4-30-87
DATE COMPLETED: 4-30-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Sanitary land fill boring 4, Northeast section
SITE CONDITION Grass and bare soil, flat surface, edge of gravel road.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'	X	11"	11"	U	HP-210T temporarily none functional	85-100-100/3	200/9	CL	Yellowish brown (10YR 5/4) CLAY and Silt, trace fine Sand, trace medium to fine Gravel, dry to slightly damp. Natural
2'-4'	X	17"	17"	U	200	35-33-30-43	63	SM	(2'-3') Brownish yellow (10YR 6/6) very fine SAND, little (+) Silt, trace fine Gravel, dry, crumbles easily. Natural
								CL-CH	(3'-3'2") Yellowish brown (10YR 5/6) CLAY little(+) Silt, little fine Sand, black sand grains. Natural
								SM	(3'2"-3'5") Same as above (2'-3'). Natural
4'-6'	X	21"	21"	U	220	15-18-15-17	33	SM	Same as above (2'-3') and (3'2"-3'5") with occassional layers of same material at (3'-3'2"), layer < 1/2" thick. Natural
6'-8'	X	16"	16"	U	150	7-15-17-18	32	SM	(6'-7'1") Same as above (4'-6'), damp. Natural
								SM	(7'1"-7'4") Olive gray (5Y 4/2) CLAY and silt, damp to slightly moist. Natural

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COMMENTS: Logs for SLF, B-04 are in Field Book 44.0 pg 153-154. CPM taken with Eberline HP-210T conversion for HP-210T: 1mRad/hr/1489 CPM

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF, B-05
SITE COORDINATES (ft.):
N 5 489 E 3208
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-1-87
DATE COMPLETED: 5-1-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Sanitary landfill, boring 5. Northeast section.
SITE CONDITION Partially grass covered, generally flat with small mounds of dirt.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'	X	12"	12"	U	125	3-6-25-23	31	CL-CH	Yellowish brown (10YR 5/6) CLAY, Trace Silt, trace medium to fine Gravel, damp, dense.
2'-4'	X	23"	23"	U	T-120 B-80	7-14-20-25	34	CL-CH	Same as above (0'-2') with color change to olive brown (2.5Y 4/4), damp, dense.
4'-6'	X	24"	24"	U	80-90	9-13-13-14	26	CL-CH	Same as above (0'-4'), with strong brown (7.5YR 4/6) and white (10YR 8/1) staining at (4'4"-4'7"), damp to slightly moist.
6'-8'	X	20"	20"	U	1000	3-8-18-25	26	CL-CH	(6'-6'5") Light olive brown (2.5Y 5/6) CLAY Trace Silt, trace medium to fine Gravel, damp to slightly moist, dense.
								CL-CH	(6'5"-7'8") Olive brown (2.5Y 4/4) CLAY, Trace Silt, trace fine Gravel, slightly less dense than above, soft at (7'4"-7'8"), damp to moist, black staining.

COMMENTS: Logs for SLF, B-05 are in Field Book 44.1 pg. 2-5, CPM taken with Eberline HP-210T, conversion for HP-210T: 1mRad/hr/1489 CPM. T-Top of sample, B-Bottom of sample.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

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BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF, B-05
SITE COORDINATES (ft.):
N 5489 E 3208
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger.
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-1-87
DATE COMPLETED: 5-1-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
8'-10'		24"	24"	U	HP-210T Temporarily none functional	7-13-20-25	33	CL-CH CH-	(8'-8'4") Same as above (6'5"-7'8") (8'4"-10') Olive gray CLAY, moist, speck of oxidation are numerous toward bottom (9'3"-10') causing an overall color change to olive yellow (2.5Y 6/8), decaying organic material present.
10'-12'		24"	24"	U	100	6-12-23-39	35	CH-	Same as above (8'4"-10'), fairly dense toward bottom, worm holes are filled with a gray (7.5YR 5/6) clay material.
12'-14'		24"	24"	U	60	9-13-17-25	30	CH	(12'-12'4") Same as above (8'4"-12') (12'4"-14") Light olive brown CLAY, trace fine Gravel, trace Silt, moist, dense, mottled with an array of gray and olive green colors.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF, B-06
SITE COORDINATES (ft.):
N S 450 E 3250
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-4-87
DATE COMPLETED: 5-4-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Sanitary Landfill, Boring 6. Northeast section
SITE CONDITION Partially grass covered, generally flat with small dirt mounds

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'	X	13"	13"	U	150	16-16-27-40	43	CL-CH	Yellowish brown (10YR 5/6) CLAY some Silt, trace fine Sand, trace medium to fine Gravel, dry to slightly damp. some grass roots present.
2'-4'	X	0	0	U	—	100/2		—	No recovery, wood chips in cuttings
4'-6'	X	8"	8"	U	55	7-14-12-13	26	CL-CH	Light olive brown (2.5Y 5/4) CLAY trace Silt, moist, fiberous material mixed in (4'4"-4'8"). white material that resembles fertilizer occurs mixed throughout (4'4"-4'8") (dry lawn fertilizer)
6'-8'	X	20"	20"	U	50	8-12-16-21	28	CL-CH	(6'-6'4") Same as above (4'-6') (6'4"-7'8") Dark brown (7.5YR 4/4) CLAY, trace Silt, mottled, orange from oxidation mixed throughout, aluminum wire, rubber, piece of metal present, moist, more firm than above.

266

COMMENTS: Logs for SLF B-06 are in Field Book 44.1 pg 8-11. CPM taken with Eberline HP-210T, Conversion for HP-210: 1mRad/hr/1489 CPM T-Top of sample, B-bottom of sample.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF, B-06
SITE COORDINATES (ft.):
N 5450 E 3250
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-4-87
DATE COMPLETED: 5-4-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
8'-10'	X	0	0	U	—	25-40-52-57	92	—	
10'-12'	X	19"	19"	U	55	45-68-52-47	120	CL-CH	Yellowish brown (10YR 5/4) CLAY, trace Silt, trace (+) medium to fine Gravel, piece of aluminum wire, (2" x 3") piece of aluminum, mottled, oxidation, small piece of decaying wood, damp.
12'-14'	X	24"	24"	U	50	22-47-46-43	93	CL-CH	Same as above (10'-12'), gravel is angular to rounded, piece of aluminum, isolated areas of mottling, dense, hard.
14'-16'	X	19"	19"	U	75	25-37-47-53	84	CL-CH	Brown (10YR 5/3) CLAY, trace (+) coarse to fine Gravel, damp to slightly moist, slightly softer than above, gravel is subangular to rounded,

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: SLF B-06
SITE COORDINATES (ft.):
N 5450 E 3250
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-4-87
DATE COMPLETED: 5-4-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
16'-18'		24"	24"	U	T 45 B 75	58-65-68-66	133	CL-CH CH	(16'-17'6") Same as above (14'-16') (17'6"-18') Dark gray (5Y 4/1) CLAY, moist, softer than above, less dense than above.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D thin-walled Shelby tube

FMPC Upper Flyash Pile Boring Logs

WESTON

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BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-01
SITE COORDINATES (ft.):
N S 5485 E 3207
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-8-87
DATE COMPLETED: 5-8-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Upper fly ash area
SITE CONDITION Slight slope, grass covered.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'	X	6"	6"	U	100	5-6-7-7	13	CL-CH	Yellowish brown (10YR 5/4) CLAY, trace (+) Silt, damp, slightly mottled, soft, grass and grass roots
2'-4'	X	16"	16"	U	T 30 B 40	10-14-14-14	28	CL-CH	Same as above (0'-2'), grass roots, mottled.
4'-6'	X	5½"	5½"	U	55	8-9-40-57	49	CL-CH	Dark yellowish brown CLAY, trace (-) Silt, little (+) medium to fine Gravel, trace coarse to fine Sand, damp, harder than above, undisturbed.
6'-8'	X	17"	17"		75	27-34-37-44	71		Very dark grayish brown (10YR 3/2) CLAY, dense, hard. Transition from material at (4'-6') to materia at (6'-8') occurs at (6'-6'1").

270

COMMENTS: Logs for UFA, B-01 are in Field Book 44.1 pg 40-41. CPM taken with HP-210T (Eberline) - conversion for HP210T : 1mRad/hr/1489 CPM. T - Top of sample B - Bottom of sample.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-02
SITE COORDINATES (ft.):
N S 5468 E 3069
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-12-87
DATE COMPLETED: 5-12-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Upper fly ash area, boring 2.
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		12"	12"	U	110	13-24-100/3	124/9	CL-CH	Yellowish brown (10YR 5/4) CLAY, little (+) Silt, trace fine Sand, little medium to fine Gravel, dry to slightly damp, crumbles easily, burned pieces of coal present (coke), piece of fiber board present.
2'-4'		16"	16"	U	75	14-15-20-30	35	CL-CH	Dark yellowish brown (10YR 3/6) CLAY, trace Silt, little medium to fine Gravel, damp, dense, mottled, dark staining from burned coal in isolated areas.
4'-6'		11"	11"	U	90	8-10-13-18	23	CL-CH	Olive gray 5Y 4/2 CLAY, damp to slightly moist, trace medium to fine Gravel, mottled, piece of metal present, soft.

271

COMMENTS: Logs for UFA, B-02 are in Field Book 44, pg 46-53. CPM Taken with Eberline HP-210T. Conversion for HP-210T: 1mRad/hr/1489CPM

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-02
SITE COORDINATES (ft.):
N S 5468 E 3069
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-12-87
DATE COMPLETED: 5-12-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		12"	12"	U	75	5-7-8-9	15	CL-CH	Same as above (4'-6'), moist, soft, mottled, trace amounts of coke and chard material.
8'-10'		0	0	U	—	5-5-8-10	13	—	
10'-12'		24"	24"	U	50	5-7-9-14	16	CL-CH	Same as above (4'-8'), moist, softer than above, trace(-) fine Gravel, black staining from chard material in isolated areas.
12'-14'		24"	24"	U	50	6-7-11-20	18	CL-CH	(12'-13') Same as above (4'-12'), trace amount chard material, trace amount white lime or fertilzer like materials in pockets.
								CL-CH	(13'-14') Light olive brown (2.5Y 5/4) CLAY (same clay as above with color change), soft, moist, trace chard material, decaying organic material.

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-02
SITE COORDINATES (ft.):
N 5 5468 E 3069
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-12-87
DATE COMPLETED: 5-12-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
14'-16'	X	4"	4"	U	55	10-10-12-14	22	CL-CH	Same as above (13'-14'), undisturbed.
16'-18'	X	24"	24"	U	50	10-42-45-32	87	CL-CH	(16'-16'7½") Same as above (13'-16'). moist.
								CL	(16'7½"-17'4") Dark gray (5Y4/1) CLAY and fine Sand, moist to slightly wet, hard, black staining from decaying organic material. Grain size increases with depth with same overall color to 18'
								SW-	(17'4"-18') The above dark gray 5Y4/1 CLAY and fine Sand grades into coarse to fine SAND and (-) medium to fine Gravel, grains are rounded to well rounded.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-02
SITE COORDINATES (ft.):
N S 5468 E 3069
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-12-87
DATE COMPLETED: 5-12-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION See page 1

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	* PID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
18'-20'		23"	23"	U	45	32-36-44-45	80	SW	(18'-19'6") Same as above (16'-18') Top is coarse to fine SAND, trace (+) medium to fine Gravel.
								CL	* This grades to a dense CLAY trace medium to fine Sand Bottom, damp.
								CL	(19'6"-19'11") Dark yellowish brown CLAY, slightly softer than above, moist, trace medium to fine Sand.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: UFA, B-03
SITE COORDINATES (ft.):
N S 5212.5 E 3070E
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-12-87
DATE COMPLETED: 5-12-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Upper fly ash area, boring 3
SITE CONDITION Grass covered, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		13"	13"	U	200	24-20-31-32	51	CL-CH	Brown (10YR 5/4) CLAY, little Silt, trace medium to fine Gravel, dry, crumbles easily.
2'-4'		14"	14"	U	90	13-17-52-52	69	CL-CH	Very dark grayish brown (10YR 3/2) CLAY, trace Silt, dense, hard, trace amount of decaying organic material, trace medium to fine Gravel, roots present (from grass), piece of concrete present.
4'-6'		16"	16"	U	50	15-17-21-41	38	CL-CH	Olive brown (2.5Y 4/4) CLAY, little coarse to fine Gravel, piece of concrete, decaying organic material, gravel is angular to rounded. material is damp.

275

COMMENTS: Logs for UFA, B-03 are in Field Book 44.1 pg 54-57. CPM taken with Eberline HP-210T. HP-210T conversion: 1 mRad/hr/1489 CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-03

SITE COORDINATES (ft.):

N S 5212.5 E 3070 E

GROUND ELEVATION (ft. MSL): N/A

DRILLING METHOD: Hollow stem auger

DRILLING CONTR.: Bowser-Morner

DATE STARTED: 5-12-87

DATE COMPLETED: 5-12-87

FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1

SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		20"	20"	U	50	11-13-36-43	49	CL-CH	(6'-6'3") Same as above (4'-6')
								CL-CH	(6'3"-7'8") Dark gray (5Y 4/2) CLAY, mottled, little fine Gravel, decaying organic material throughout in trace amounts, undisturbed.
8'-10'		20"	20"	U	50	19-20-27-29	47	CL-CH	(8'-8'10") Same as above (6'3"-7'8"), damp, dense, hard.
								CH	(8'10"-9'8") Dark yellowish brown (10YR 3/4) CLAY, slightly softer than above, damp.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

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BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-04
SITE COORDINATES (ft.):
N 4799 S E 3369
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-13-87
DATE COMPLETED: 5-13-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Upper fly ash area boring 4
SITE CONDITION Grass covered flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		17"	17"	U	50	15-40-21-21	61	CL-CH	Dark yellowish brown (10 YR 4/4) CLAY little Silt, little coarse to fine Gravel, damp to slightly dry, roots, decaying organic material, gravel is angular to rounded, disturbed.
2'-4'		23"	23"	U	T 80 B 50	11-26-21-21	47	CL-CH	(2'-2'2") Same as above (0'-2')
								CL-CH	(2'2"-3'11") Dark grayish brown (10 YR 4/2) CLAY, Trace Silt - grades to dark yellowish brown (10YR 3/4) color. Orange spots of oxidation through out.

277

COMMENTS: Logs for UFA, B-04 are Field Book 44.1 pg 60-61. CPM taken with Eberline HP-210T conversion for HP-210T: 1mRad/hr/1489 CPM. T-Top of sample B-Bottom of Sample.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-05
SITE COORDINATES (ft.):
N 54700 E 3082
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-13-87
DATE COMPLETED: 5-13-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Upper fly ash area, boring 5
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		16"	16"	U	T-300 B-500	15-17-33-23	50	CL-CH	Dark yellowish brown 10YR 4/3 CLAY, little Silt, little medium to fine Gravel, hard, moderately dense, slightly dry, gravel is rounded to angular.
2'-4'		19"	19"	U	100	24-34-24-39	58	CL-CH	(2'-3'2") Same as above (0'-2') with color grading to gray (5Y 5/1) toward bottom, dense, at (2'9") pocket of slightly cemented white coarse sand size material occurs, hard. (3'2"-3'7") Yellowish brown (10YR 5/6) CLAY, trace Silt, slightly softer than above, undisturbed material; dense.

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COMMENTS: Logs for UFA, B-05 are in Field Book 44.1 pg 62-65. CPM taken with Eberline HP-210T, HP-210T conversion: 1mRad/hr/1489 CPM. T- Top of Sample B- Bottom of sample

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-05
SITE COORDINATES (ft.):
N 54700 E 3082
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-13-87
DATE COMPLETED: 5-13-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
4'-6'	X	16"	16"	U	70	13-16-18-20	34	CL-CH	Same as above (3'2"-3'7"), dense, softer than above.
6'-8'	X	16	16	U	70	13-15-17-20	32	CL-	Same color as above (3'2"-6') with increase in sand. Now- Yellowish brown (10YR 5/6) CLAY, some medium to fine(+) Sand, trace Silt, moist, soft, mottled, well defined layering.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-06
SITE COORDINATES (ft.):
N 54662.5 E 2980
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-13-87
DATE COMPLETED: 5-13-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Upper fly ash area, boring 6
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		20"	20"	U	45	21-42-56-26	98	CL-CH	(0"-10") Very dark grayish brown (10YR 3/2) CLAY, some (+) Silt, dry, some organic material, layered.
								CL-CH	(10"-1'8") Yellowish brown (10YR 5/6) CLAY, trace fine Gravel, damp, dense, undisturbed, grass and tree root present.
2'-4'		21"	21"	U	65	10-17-20-24	37	CL-CH	Same as above (10"-1'8") with no gravel.
4'-6'		21"	21"	U	65	6-7-11-20	18	CL-CH	(4'-5'4") Same color as above (10"-4"). Same CLAY as above down to 4'10". at 4'10" gradual increase in fine sand.
								SC.	(5'4"-5'9") Yellowish brown fine SAND and Clay, trace(+) Silt, moist. Alternate layering of lighter and darker shades.

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COMMENTS: Logs for UFA, B-06 are in Field Book 44.1 pg 66-67. CPM taken with Eberline HP-210T. Conversion for HP-210: 1mRad/hr/1489 CPM

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-06
SITE COORDINATES (ft.):
N 54662.5 E 2980
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-13-87
DATE COMPLETED: 5-13-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION See page 1

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		10"	10"	U	65	9-12-24-36	36	SC-	Yellowish brown (10YR 5/4) fine SAND and Clay, Trace (+) silt, moist to slightly wet, layering

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-07
SITE COORDINATES (ft.):
N 54675 E 2857
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-14-87
DATE COMPLETED: 5-14-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Upper fly ash area, boring 7
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	* ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		16"	16"	U	100	25-87-72-56	159	CL-CH	Dark yellowish brown (10YR 3/4) CLAY, little silt, trace (-) medium to fine Gravel, dry (top) to slightly (damp) (bottom), grass and grass roots, pieces of medium gravel size chunks of concrete with white paint on one surface.
2'-4'		13½"	13½"	U	90	38-29-23-27	52	CL-CH	Same as above (0'-2') with no medium gravel, damp, decaying organic material in trace amounts throughout, occasional layers (⅛" thick) of decaying organic material.
4'-6'		17"	17"	U	60	9-17-23-31	40	CL-CH	Same as above (0'-4') with no gravel, gradual color change to yellowish brown (10 YR 5/4), damp, last 4" contain little (-) white nodules (1/16"-⅛") throughout.

282

COMMENTS: Logs for UFA, B-07 are in Field Book 44.1 pg 70-71. CPM taken with Eberline HP-210T. conversion for HP-210T: 1mRad/hr/1489CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

864

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: UFA, B-07
SITE COORDINATES (ft.):
N 5 4675 E 2857
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem augers
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-14-87
DATE COMPLETED: 5-14-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		13	13	U	50	8-19-23-35	42	CL-CH	Same as above (0'-6') with color change to brown (10YR 5/3), damp, white nodules (1/16-1/8 dia.) throughout.

283

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

864

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: UFA, B-08
SITE COORDINATES (ft.):
N S 4694 E 2687
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-14-87
DATE COMPLETED: 5-14-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Upper fly ash area, boring 8
SITE CONDITION Grass covered, flat surface

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID +CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		14"	14"	U	450	30-44-100/4	144/10	CL-CH	Dark yellowish brown (10YR 3/4) CLAY, little Silt, little coarse to fine Gravel, dry to slightly damp, grass and grass roots, gravel is angular to rounded.
2'-4'		0	0	U	—	57-98-100/4	198/10	—	—
4'-6'		24"	24"	U	T-75 B-100	8-17-19-23	36	CL-CH CL-CH	(4'-4'2") same as above (0'-2'), damp. (4'2"-4'10") Dark gray (5Y 4/1) CLAY, Trace (-) Silt, damp to slightly moist. (4'10"-6') Brown (10YR 5/3) CLAY, damp * (4'2"-6') looks undisturbed.

284

COMMENTS: Logs for UFA, B-08 are in Field Book 44.1 pg 72-73, CPM taken with Eberline HP-210T. Conversion for HP-210T: 1mRad/hr/1489 CPM. T-Top of sample B-bottom of sample.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-08
SITE COORDINATES (ft.):
N S 4694 E 2687
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-14-87
DATE COMPLETED: 5-14-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		15"	15"	U	50	10-13-12-22	25	SC-	Same color as above grading To brownish yellow (10YR 5/6). Medium To fine SAND and Clay at Top grading To a coarse to fine SAND, and medium to fine (+) Gravel, Trace (+) Clay - near bottom, wet.
								SP-	

285

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

864

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: UFA, B-09
SITE COORDINATES (ft.):
N S 4825 E 2761.5
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-14-87
DATE COMPLETED: 5-14-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Upper fly ash area, boring 9
SITE CONDITION Grass covered, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID +CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		18"	18"	U	50	12-56-34-15	90	CL-CH	Yellowish brown (10YR 5/4) CLAY, some medium to fine Gravel, trace Silt, dry to slightly damp, grass and grass roots present, gravel is angular, small piece of brick present.
2'-4'		8"	8"	U	150	32-54-98-18	152	CL-CH	Same color as above grading to dark yellowish brown (10YR 3/4) CLAY, little Silt, little (-) coarse to fine Gravel, damp, gravel is angular to rounded, piece of concrete, piece of chard material.
4'-6		7"	7"	U	120	34-21-10-9	31	CL-CH	Dark yellowish brown (10YR 4/4) CLAY, trace Silt, trace (-) Gravel, damp, soft, gravel is rounded.

286

COMMENTS: Logs for UFA, B-09 are in Field Book 441, pg 74-77. CPM taken with Eberline HP-210T, conversion for HP-210T: 1 mRad/hr/1489 CPM

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-09
SITE COORDINATES (ft.):
N S 4825 E 2761.5
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-14-87
DATE COMPLETED: 5-14-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'		4"	4"	U	100	18-10-4-6	14	CL-CH	Same as above (4'-6') with trace medium to fine Gravel. Contains some soft white grease like material with fibers in it, some black chard material present.
8'-10'		17"	17"	U	80	5-6-6-10	12	CL-CH	Same as above (4'-8') with trace (-) medium to fine Gravel, chard material in trace amounts, gravel is angular to rounded, moist, material is disturbed (not in natural state).
10-12'		13"	13"	U	60	26-20-24-45	44	CL -	Top color - dark yellowish brown (10YR 4/4) grades to a light yellowish brown (10YR 6/4). Material is CLAY, trace fine Gravel, moist, hard, dense, mottled, areas of oxidation.

287

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

864

BOREHOLE LOG (SOIL)

LOCATION MAP: N

SITE ID: EMPC LOCATION ID: UFA, B-09
SITE COORDINATES (ft.):
N S 4825 E 2761.5
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-14-87
DATE COMPLETED: 5-14-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	* ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
12'-14'		21"	21"	U	75	15-22-36-40	58	CL	Same as above (10'-12') with increase in fine Sand toward bottom, moist on top half, wet near bottom.

288

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-10
SITE COORDINATES (ft.):
N S 4590 E 2517
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-15-87
DATE COMPLETED: 5-15-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Upper fly ash area, boring 10
SITE CONDITION On a slight slope (<10%), grass covered, tree canopy overhead.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		19"	19"	U	100	15-16-30-31	46	CL-CH	(0'-6") Dark grayish brown (10YR 4/2) CLAY, trace Silt, damp, mottled, (grass, roots, humus near top.).
								ML-SM	(6"-1'7") Very dark gray (2.5Y 3/0) SILT, some(+) coarse medium(+) To fine(+) Sand, some fine Gravel, damp. Most fine gravel size grains have a reddish tint in bright light. (Fly ash) Trace(+) amount of gravel and sand is white
2'-4'		20"	20"	U	90	5-14-14-30	28	ML-SM	Same as above (6"-1'7").
4'-6'		22"	22"	U	85	10-11-14-18	25	ML-SM	Same as above (6"-4')
6'-8'		23"	23"	U	55	10-8-8-5	16	ML-SM	Same as above (6"-6'), damp, soft, loose. Strong brown (7.5YR 4/6) staining occurs throughout sample in isolated areas as blotches.

289

COMMENTS: Logs for UFA, B-10 are Field Book 44.1 pg 80-87. CPM taken with Eberline HP-210T. HP-210T conversion: 1mRad/hr/1489 CPM

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

864

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: UFA, B-10
SITE COORDINATES (ft.):
N 54590 E 2517
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem augers
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-15-87
DATE COMPLETED: 5-15-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION See page 1

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
8'-10'	X	24"	24"	U	50	8-8-8-7	16	ML-SM	Same as above (6"-8') with strong brown (7.5YR 4/6) staining throughout sample as blotched.
10'-12'	X	24"	24"	U	50	8-9-9-8	18	ML-SM	Same as above (6"-10'), slightly more compact than above, still soft, crumbles easily.
12'-14'	X	19"	19"	U	70	4-6-8-12	14	ML-SM	Same as above (6"-12') moist on top - wet near bottom, slightly more white fine gravel and medium to fine sand.
14'-16'	X	23"	23"	U	60	14-15-23-41	38	ML-SM	(14'-14'3") Same as above (6"-14') wet, slightly cemented.
								CH.	(14'3"-15'11") Olive gray (5Y 4/2) CLAY, trace (-) fine Gravel (white in color), moist to slightly wet, soft, decaying tree roots.

290

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-10
SITE COORDINATES (ft.):
N S 4590 E 2517
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-15-87
DATE COMPLETED: 5-15-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
16-18'		17½"	17½"	U	CLAY-300 Fly ash-150	8-7-7-11	14	ML-SM CH.	Alternating layer of the above mentioned olive gray clay and the above mentioned fly ash, moist to slightly wet, piece of brown glass in sample.
18'-20'		21"	21"	U	300	4-4-8-10	12	ML-SM CH	(18'-18'10") Same as above 16'-18' alternating layers of clay and fly ash, slightly wet. (18'10"-19'9") Olive gray (5Y 4/2) CLAY, slightly wet, abundant decaying roots and pieces of wood, one piece of wood has a nail in it.
20'-22'		15'	15'	U	100	5-6-8-7	14	CH	Dark olive gray (5Y 3/2) CLAY, trace Silt, moist to slightly wet, high plasticity, piece of clear glass, abundant decaying organic material.

COMMENTS: See page 1 T- Top of sample
B- Bottom of sample.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: EMPC LOCATION ID: UFA, B-10
SITE COORDINATES (ft.):
N S 4590 E 2517
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-15-87
DATE COMPLETED: 5-15-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
22'-24'	X	6"	6"	U	250	8-12-12/6	132	CH	Same as above (20'-22'), soft, saturated, trace organic material.
24'-26'	X	18"	18"	U	50	45-85-110/1	195/7	CH	(24'-24'3") Same as above (20'-24').
								CH	(24'3"-25'3") Dark gray (5Y 4/1) CLAY, damp, hard, trace medium to fine Gravel.
								CH	(25'3"-25'6") Same as above above CLAY at (24'3"-25'3"), lighter color, looks undisturbed.
26'-28'	X	2"	2"	U	45	45-85-100/0	185/6	SC.	Dark gray (5Y 4/1) coarse to fine SAND, some Clay, trace coarse to fine Gravel, wet, large gravel stuck in end of sample spoon.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA-B-11
SITE COORDINATES (ft.):
N S 5000 E 2800
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-18-87
DATE COMPLETED: 5-18-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Upper fly ash area, boring 11
SITE CONDITION Small fly ash mounds, no ground cover.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		13"	13"	U	50	1-3-6-8	9	ML-SM	(0"-7") Very dark gray (2.5Y 3/0) SILT, some coarse to fine (+) Sand, little (-) fine Gravel, damp, loose. Fly-ash
					75			CL-SC	(7"-13") Brown 10YR 5/3 CLAY, little coarse to fine Sand, trace medium to fine Gravel, damp.
2'-4'		16½"	16½"	U	60	6-8-7-8	15	CL	Brown 10YR 5/3 CLAY, little fine Sand, trace medium to fine Gravel, damp, trace white staining.
4'-6'		23"	23"	U	65	10-21-28-33	49	CL	(4'-4'1½") Same as above (2'-4')
								ML-SM	(4'1½"-4'3") Same as above (0"-7")
								CL	(4'3"-4'5") Same as above (2'-4')
								ML-SM	(4'5"-5'11") Very dark gray (2.5Y 3/0) SILT, some coarse to fine (+) Sand, trace (-) fine Gravel.

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—Continued on next page—

COMMENTS: Logs for UFA, B-11 are in Field Book 44.1 pg 90-97.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: VFA, B-11
SITE COORDINATES (ft.):
N 55000 E 2800
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-18-87
DATE COMPLETED: 5-18-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
4'-6'	X					Continued from page 1	—	ML-SM	(4'5"-5'11")(continued) more dense than fly ash above, damp, trace white staining throughout.
6'-8'	X	20½"	20½"	U	75	16-19-17-15	36	ML-SM	Same as above (4'5"-5'11"), ½" clay layer at 6'8".
8'-10'	X	20½"	20½"	U	50	6-6-4-4	10	ML-SM	Same as above (4'5"-8'), last 5" has no Gravel and is predominately finer grained, less white staining.
10'-12'	X	24"	24"	U	55	3-3-3-3	6	ML-SM	Same as above (4'5"-10'), Trace (-) white staining, Trace (-) fine Gravel.
12'-14'	X	24"	24"	U	50	2-2-2-2	4	ML-SM	Same as above (10'-12'), slightly damp.
14'-16'	X	24"	24"	U	50	3-3-3-3	6	ML-SM	Same as above (10'-14'), slightly damp.

294

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP: N

SITE ID: FMPC LOCATION ID: UFA, B-11
SITE COORDINATES (ft.):
N S 5000 E 2800
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-18-87
DATE COMPLETED: 5-18-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	*ID CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
16'-18'	X	24"	24"	U	55	2-4-6-5	10	ML-SM	Same as above (10'-16') slightly more dense, crumbles easily in hand, slightly damp.
18'-20'	X	24"	24"	U	65	2-2-3-3	5	ML-SM	Same as above, (10'-18') slightly damp.
20'-22'	X	24"	24"	U	HP-210 Temporarily none functional	2-2-4-4	6	ML-SM	Same as above (10'-20'), slightly more dense than above, slightly damp.
22'-24'	X	24"	24"	U	50	2-3-3-4	6	ML-SM	Same as above (10'-22'), slightly damp.
24'-26'	X	24"	24"	U	50	3-2-3-4	5	ML-SM	Same as above (10'-24') slightly damp.
26-28	X	24"	24"	U	50			ML-SM	Same as above (10'-26'), thin flakes of grout like material with orange staining on one side occur in trace amounts.

295

COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-11
SITE COORDINATES (ft.):
N S5000 E 2800
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-18-87
DATE COMPLETED: 5-18-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
28'-30'		24"	24"	U	50	4-4-3-6	7	ML-SM	Same as above (10'-28'), damp, increase in thin grout like flakes with orange staining on one side.
30'-32'		24"	24"	U	50	5-6-11-18	17	ML-SM	(30'-31'2") Same as above (28'-30'), moist.
								CH -	(31'2"- 32') Dark gray 5Y 4/1 CLAY, moist, areas of oxidation.
32-34		22"	22"	U	50	10-16-24-28	40	CL-CH	Very dark grayish brown CLAY, trace(-) fine Sand, little Silt, slightly moist, crumbles in hand easily, looks undisturbed.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-12
SITE COORDINATES (ft.):
N S 4925 E 2875
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser - Morner
DATE STARTED: 5-19-87
DATE COMPLETED: 5-19-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION Upper fly ash area, boring 12.
SITE CONDITION No vegitation, bare soil, flat surface.

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
0'-2'		17"	17"	U	100	7-12-9-11	21	CL-CH	(0'-1'2") Brown (10YR 4/3) CLAY, little Silt, trace medium to fine(+) Gravel, damp.
								ML-SM	(1'2"-1'5") Very dark gray (2.5Y 3/0) Silt, some coarse to fine(+) Sand, trace(-) very fine Gravel, (Fly ash), moist.
2'-4'		10"	10"	U	50	7-12-10-11	22	ML-SM	(2'-2'3") Same as above (1'2"-1'5") fly ash with above (0'-1'2") Clay mixed in, moist.
								CL-CH	(2'3"-2'10") Brown (10YR 4/3) CLAY, little
								CL-CH	Silt, trace medium to fine Gravel, damp. Gravel is angular to well rounded.
4'-6'		6"	6"	U	60	9-13-17-20	30	CL-CH	Same as above 2'3"-2'10" with areas of mottling, large porous gravel light color stuck in end of sample spoon, trace fly ash.

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COMMENTS: Logs for UFA, B-12 are in Field Book 44.1 pg 100-103. CPM taken with Eberline HP-210T. HP210T conversion: 1mRad/hr/1489 CPM.

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-12
SITE COORDINATES (ft.):
N 54925 E 2875
GROUND ELEVATION (ft, MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser-Morner
DATE STARTED: 5-19-87
DATE COMPLETED: 5-19-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
6'-8'	X	14"	14"	U	75	17-42-26-13	70	CL-CH	Same as above (2'3"-6'), trace fly ash.
8'-10'	X	2"	2"	U	50	37-29-21-21	50	CL-CH	Same as above (2'3"-8'), piece of concrete, no fly ash.
10'-12'	X	12"	12"	U	55	12-31-49-42	80	CL-CH	Very dark grayish brown (10YR 3/2) grading to yellowish brown (10YR 5/4) near bottom. Material is CLAY, trace Silt, little (-) medium to fine Gravel. Dark red area (1" in dia.) at 11', piece of concrete present, porous light colored rock near top.
12'-14'	X	10"	10"	U	50	14-18-35-37	53	CL-CH	Yellowish brown (10YR 5/4) CLAY, trace Silt, little (-) medium to fine Gravel, moist, dense, looks undisturbed.
14'-16'	X	0	0	U	—	15-18-24-29	42	—	

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
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T - 3" O.D. thin-walled Shelby tube

WESTON

BOREHOLE LOG (SOIL)

LOCATION MAP:

SITE ID: FMPC LOCATION ID: UFA, B-12
SITE COORDINATES (ft.):
N S 4925 E 2875
GROUND ELEVATION (ft. MSL): N/A
DRILLING METHOD: Hollow stem auger
DRILLING CONTR.: Bowser Morner
DATE STARTED: 5-19-87
DATE COMPLETED: 5-19-87
FIELD REP.: Vance A. Peers

GROUNDWATER LEVELS		
DATE	TIME	DEPTH (ft.)

LOCATION DESCRIPTION See page 1
SITE CONDITION

DEPTH	SAMPLE INTERVAL	SAMPLE RECOVERY	SAMPLE RETAINED	TYPE	ID *CPM	BLOWS PER 6 in.	N VALUE	USCS	VISUAL CLASSIFICATION
16'-18'	X	16"	16"	U	30	54-35-100/5	135/11	CH	Yellowish brown 10YR 5/4 CLAY, trace Silt, trace fine Gravel, very dense, hard, damp, mottled.

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COMMENTS: See page 1

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. drive sample
U - 3" O.D. 2.42" I.D. tube sample
T - 3" O.D. thin-walled Shelby tube