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Geologist

Walter J. Osterhoudt
Walter J. Osterhoudt
Geophysicist

Durango, Colorado,
June 16, 1954

Table of Hole Data

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Enclosures:

1 Map showing test hole locations with elevations.

1 Sketch Cross-Section.

13 A.E.C. Gamma Ray logs.

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1 Copy of the original geological report by S. C. Brown.

Shallow Drilling and Logging Report on

The Sprecher Uranium Prospect

McKinley County, New Mexico

Introduction

This report on the shallow test holes and the Gamma Ray Logging on the Sprecher Uranium Prospect supplements the report of March 6, 1954 by Silas C. Brown, Consulting Geologist, Durango, Colorado.

Following Brown's recommendations on Page 3 of the above dated report, 14 holes were drilled at certain locations to test the lower Dakota and/or the upper Morrison formations. The lower strata of the Dakota were examined and detailed by surface geology. Two Geiger counters, a Geiger probe and a Precision Scintillator were used to check the formations in situ, and as exposed by the bulldozer work for radio-active emanations. The shallow hole Geiger-counter probe was used in Hole 5 and in Holes 7 and 9, but it was too erratic to be dependable in Holes 7 and 9, largely due to poor cable insulation and water leaks into the probe and into the cable.

Finally, in order to evaluate the possible commercial value of the uranium-bearing formations, Brown and Osterhoudt recommended that all holes be logged by an Atomic Energy Commission unit, which should provide permanent records of the data.

Geology and Discussion

Detailed examination of the lower Dakota and upper Morrison formations, as commonly called and accepted by local geologists, disclosed two zones in the lower Dakota (or perhaps in the Morrison-to-Dakota transition zone) which contained gray or dark colored shales and siltstones sometimes bearing enough carbonaceous material to be called "coal". The local uranium enrichments on the Sprecher Prospect were associated with these dark shales and siltstones. True coal did not possess much radio-active material. The upper shale zone contained more pseudo "coal" or carbonaceous constituents, and was more consistent in appearance than the lower shale. The lower shale zone was subject to variable lensing, pinchouts and subdivision by sandstone strata. A cross-section is included with this report to illustrate these local characteristics.

Field Operations

Mr. Ben Case of Aztec, New Mexico superintended the bulldozer and drilling operations. A heavy duty Allis-Chalmers bulldozer was run by "Kelley" Noland of Aztec to score cuts across the Dakota formations, to prepare roads for the drill and to place the drill and air compressor trucks on locations. These operations were well planned and capably managed.

The drilling was done by a Mayhew shot-hole drill equipped with dual air compressors. The drilling equipment was presumably owned by a contractor, Coffee, from Gallup, New Mexico. Rotary drills with air to blow out cuttings are used effectively in dry rock country provided no ground water is encountered. If necessary, Coffee's drilling unit could be serviced by a water truck and fluid mud pump. Although water was encountered in three shallow holes, Nos. 6, 7 and 8, the results of the testing of the other holes did not seem at the time to warrant deeper drilling by fluids.

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Butler Bond

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S.05-24' E
to cor#2

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1275
~~320~~' to
S.05-24' E - 320'
cor#3

214.83
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89.91
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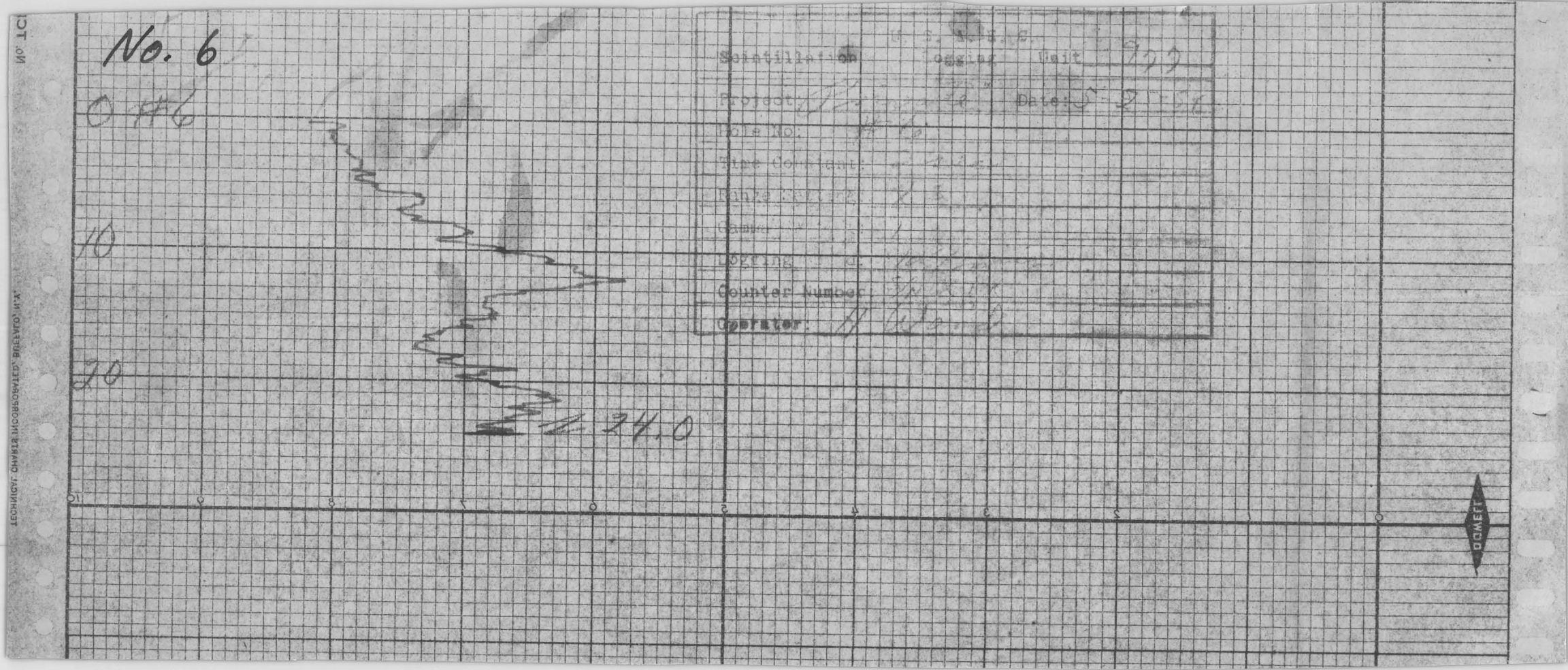
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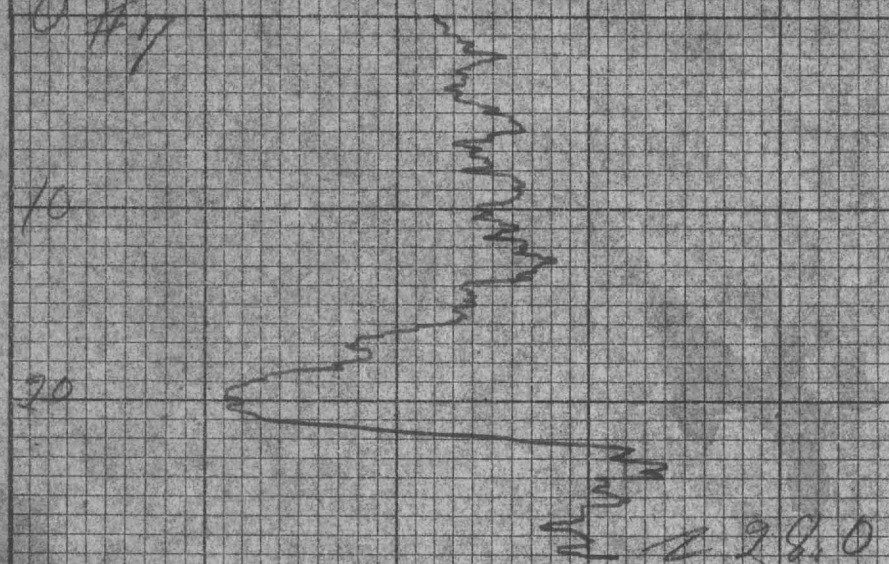

U. S. A. E. C.

Scintillation Logging Unit 222

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Hole No: #7

Tube Constant: [illegible]

Range: [illegible]

Gain: [illegible]

Logging: [illegible]

Counter Number: [illegible]

Operator: [illegible]

No. 8.

operulei 72 Senita
Wrocław

9-6516

150
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01

0254
02
08

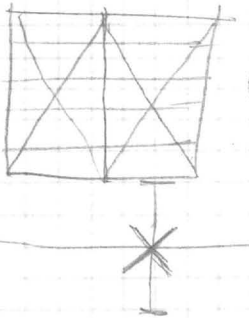
Hole

	Logged depths
#14	78
#13	178'
#12	— } not depths from gamma logs
#11	—
#10	138'
#9	120
#8	22
#7	28
#6	24'
#5	98'
#4	11' not run w/ Gamma Ray
#3	53'
#2	74'
#1	199' (230')

— .01-.02 ~~tot~~ about 80-85'

— .01+0.02 at 140-[illegible] — 130-25

340 counts per sec



R, Hor Hec

Sta	Dist	Bearin	Rod	diff	AI	Elev	Remark
0'				Assumed Elev. 6750'			Core Hole #(5) 105' in J mn
A'	270	56 +6	1.4	−14.8	6735.2		AI
02	425	56 +6	3.9	+21.6		6756.8	Lower BIK. Sh. N54-40W About 7' below
03	100	54 +4	1.1	+ 2.9		6738.1	Core Hole 6 60' Add
04	60	54 +4	1.1	+ 1.3		6736.5	" " 7A 35 Add
05	60	level	1.2	− 1.2		6734.0	" " 8B 30
06	95	56 +6	0.7	+3.8		6739.0	Top of Lower SS. top peak SC set 6737
07	Mitten Butte						
08	260	level	13.9	−13.9		6721.3	Hole 4 - East of Arroyo 30' in Fill
09	195	47-3	13.4	− 5.9		6729.3	" 3 - " " " 30' in Fill
010	370	48 -2	12.3	−19.7		6715.5	" 2 - " " " 75' in Jm
011 TP	420	47-3	14.0	−26.6		6708.6	TP
012 TP	400	68+18	3.4	+68.6		6803.8	TP 75% correction on Dist
A12	195	49 -1	15.00	+17.0	6820.8		
013	125	47-3	14.7	−18.5		6802.3	Hole #9
014	10	level	4.0	− 4.0		6816.8	" #10
015 TP	245	level	11.4	− 11.4		6809.4	TP
A15	185	54 +4	3.0	− 4.4	6805.0		A15
016	350	47-3	12.1	− 22.6		6782.4	Hole #11
017	64	level	5.4	− 5.4		6782.4	Hole #12
018	170	level	12.2	−12.2		6792.8	" #14
A18	45	level	7.0	+ 7.0	6799.8	6793.2	" #13
A11	470	53 +2	1.0	− 10.4	6698.2	(6709.6)	A11
019	(740 ft 1450)	53+3	5.6	+ 38.8		6737.0	O Hole #1
020 TP	725 A20=020	49-1	13.7	− 21.5	6680.3	6676.7	TP
021	750	45 -5	10.0			6632.8	SE cor Sec 36

MAY 22-25, 1954.

SPRECHER PROSPECT, GALLUP, NEW MEXICO

S.C. BROWN

John P. McCloskey
319-12 St S.W.
Albuquerque
N.M.

AEC

Harly Ward
Grants, NM
Box 487

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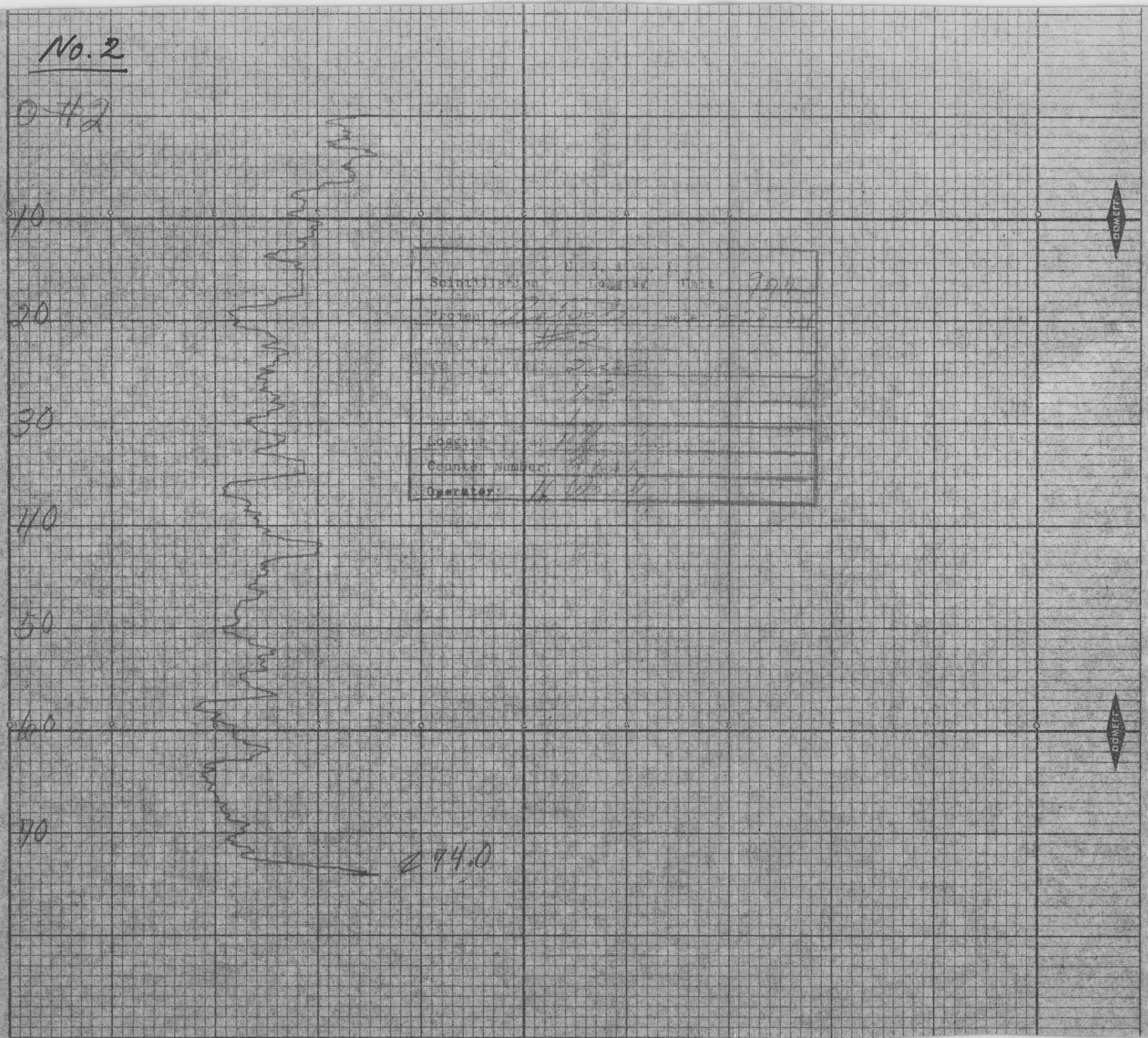
m. Pettigrew

Pettigrew
Bapt. - 1867
Wabash

Grp

No. 2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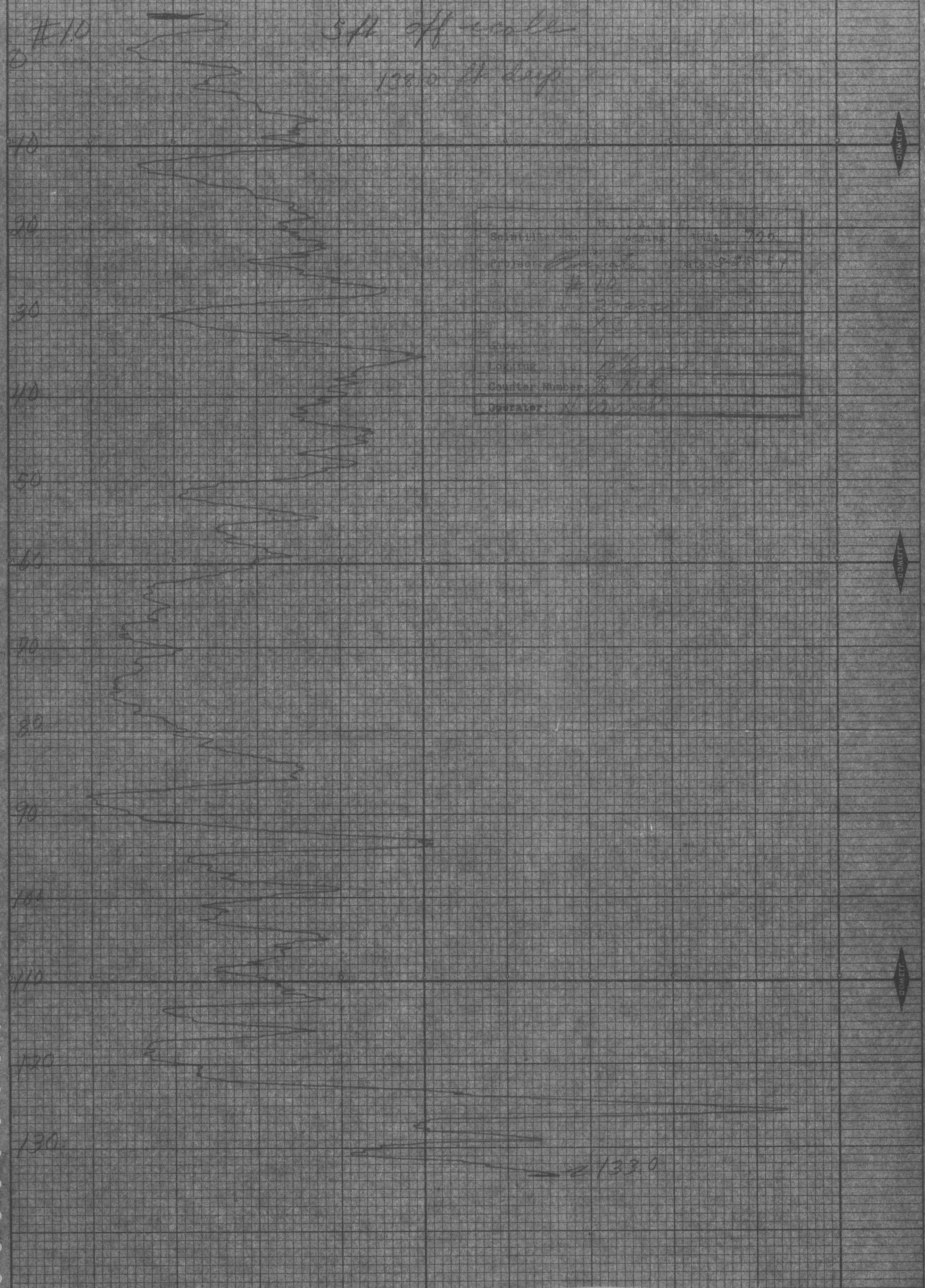

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Scintillation
Project
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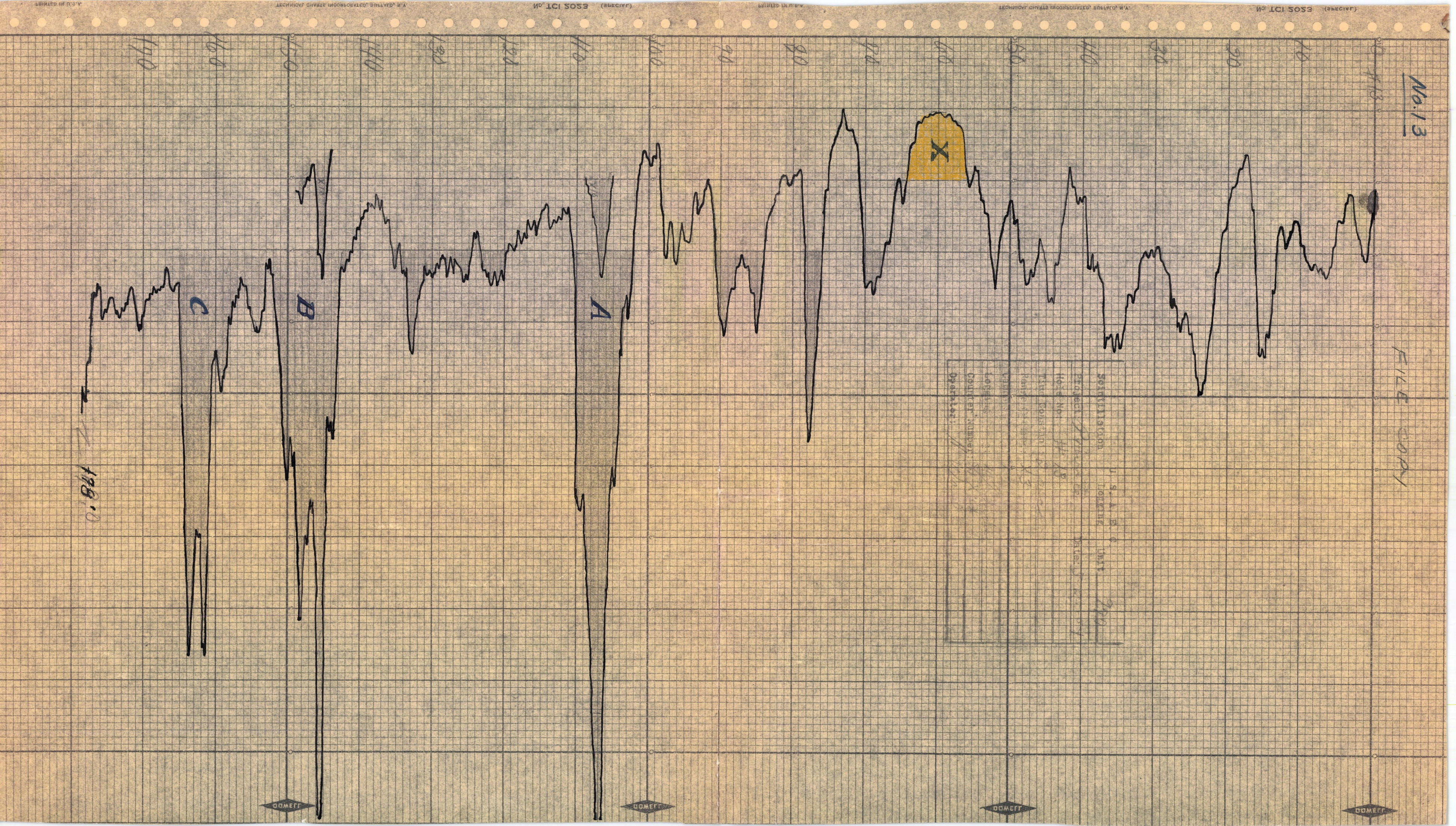
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Fig. 8
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A
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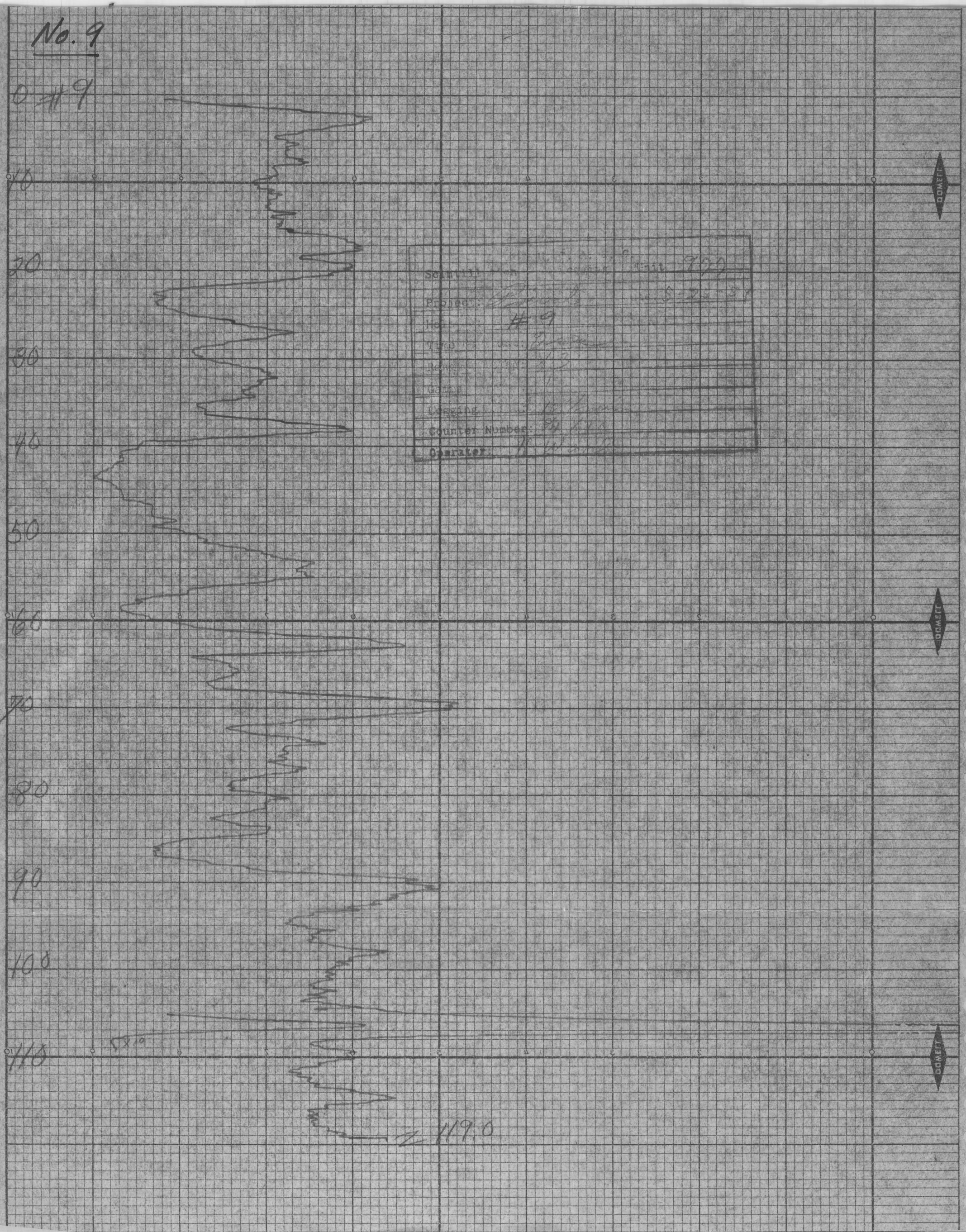
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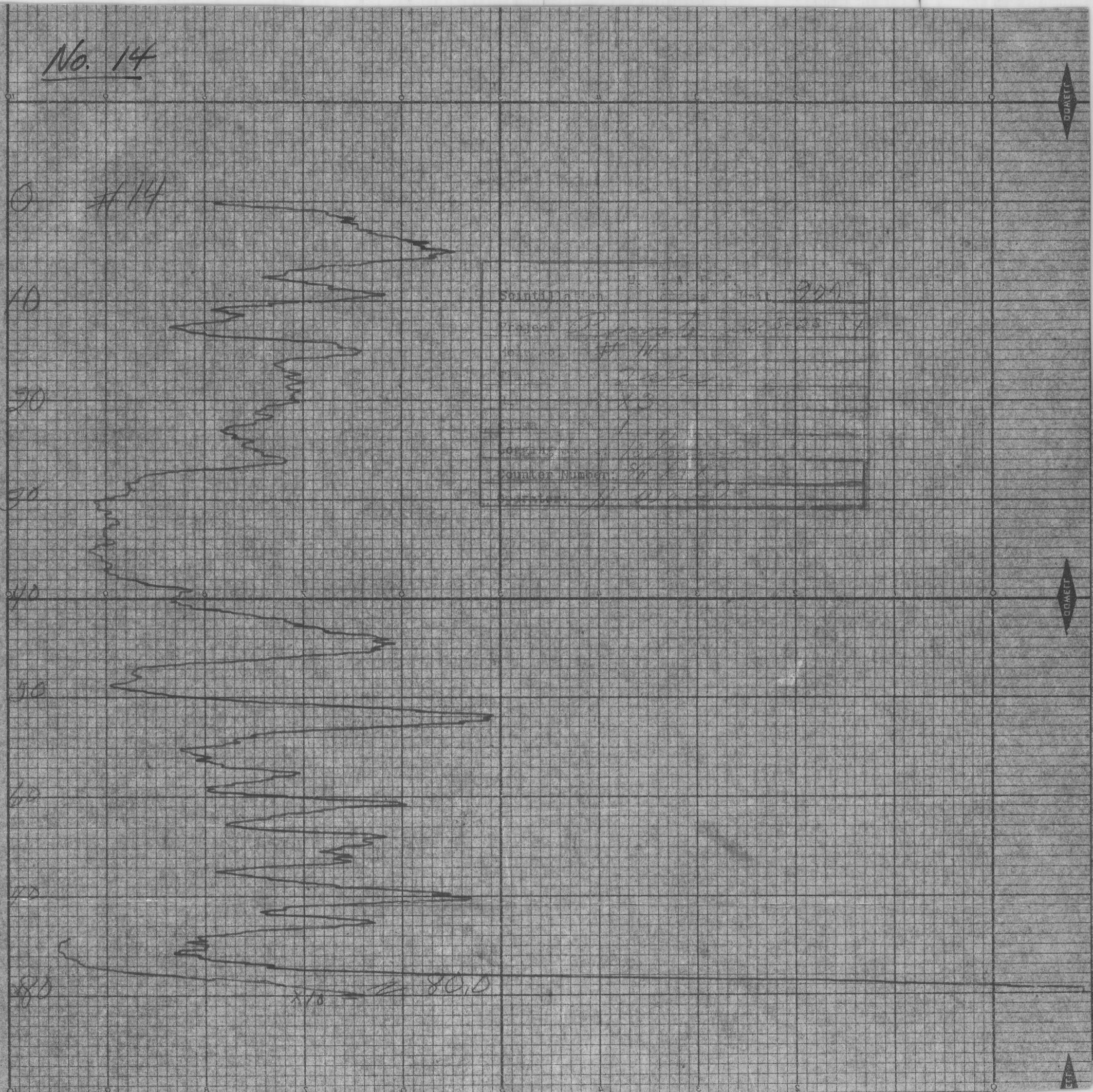

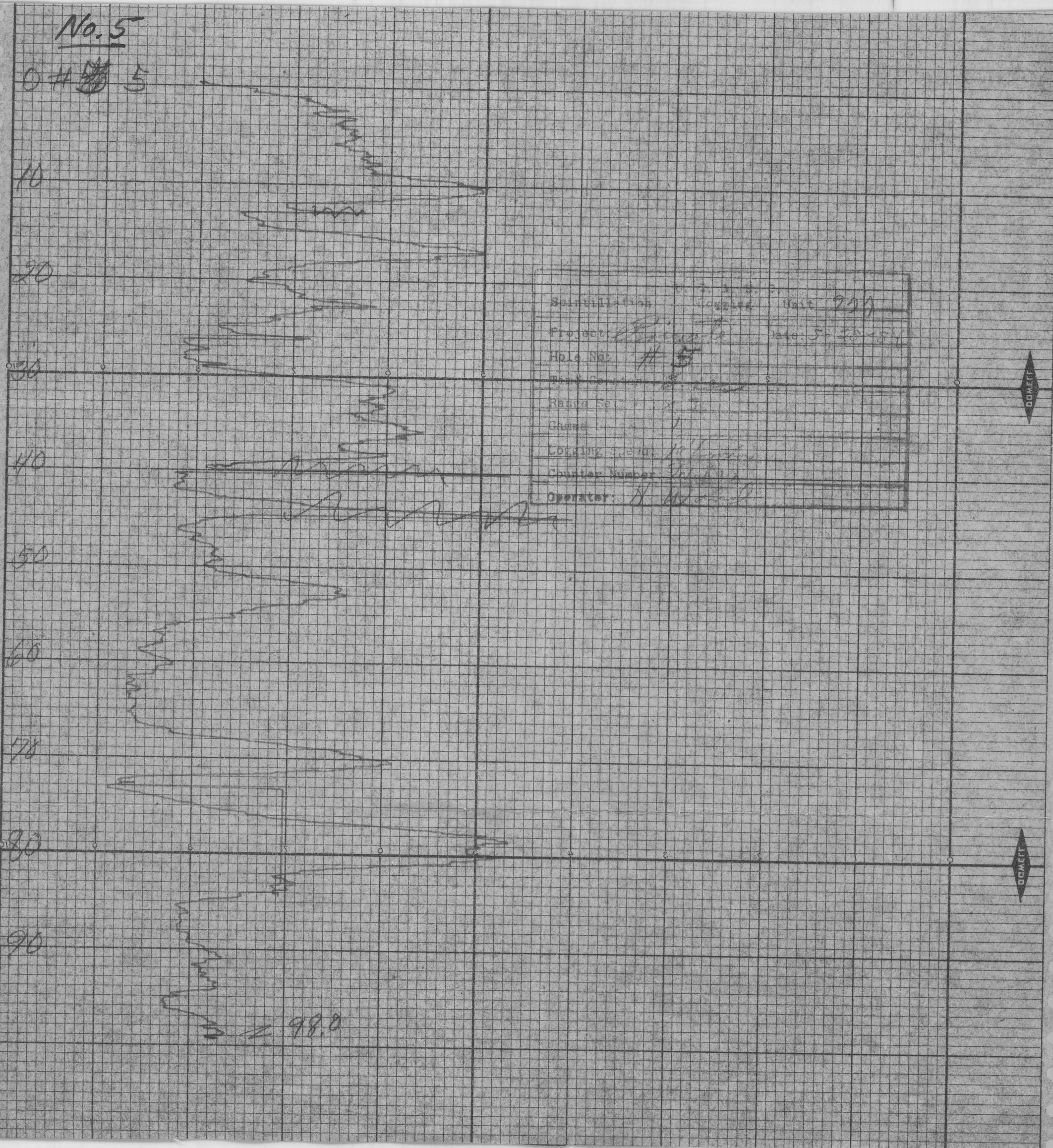
No. 5
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Unit 221
Project:
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Hole No: # 5
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Counter Number:
Operator:
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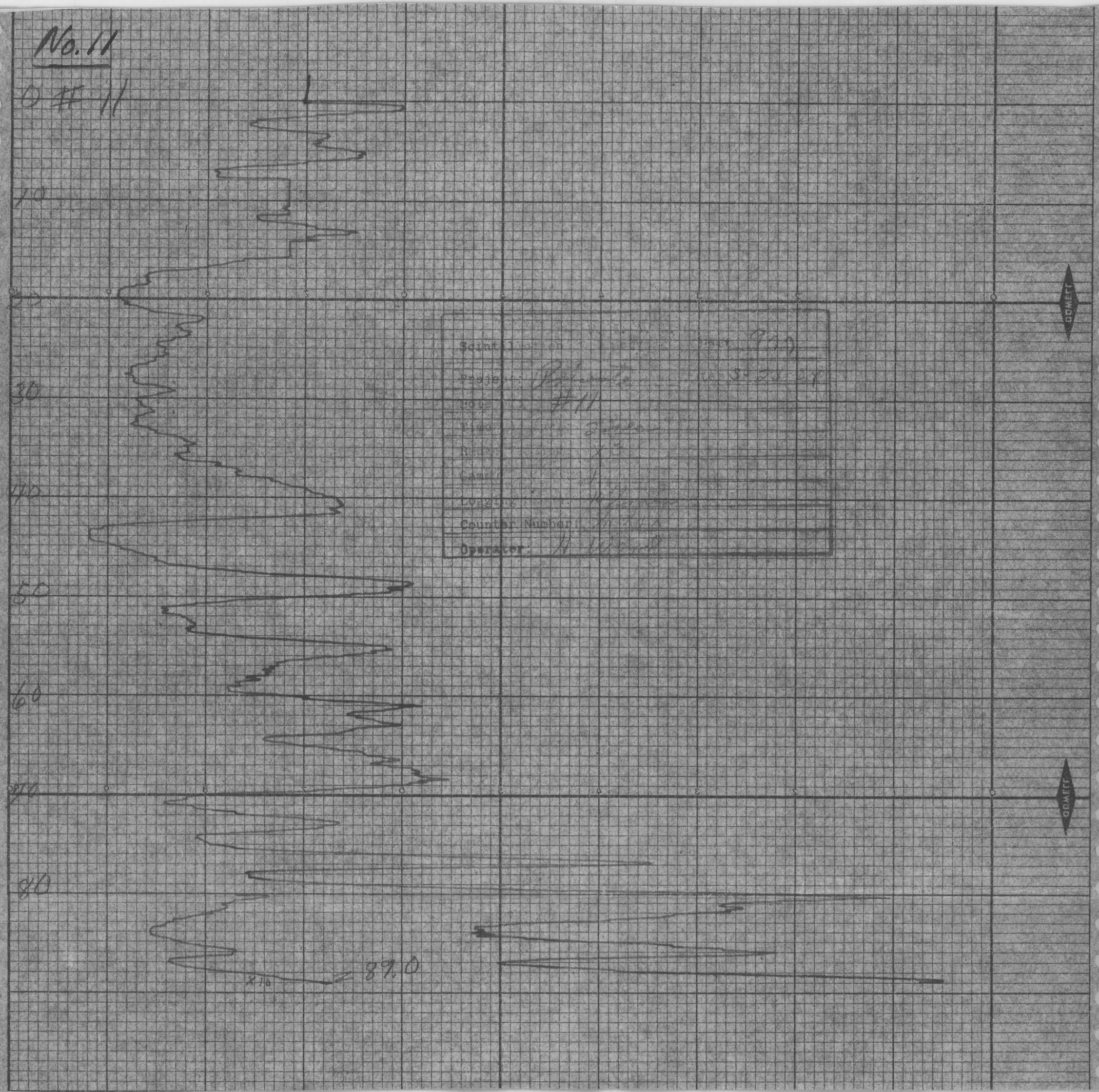
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Point
Project
Counter Number
Operator
x 10
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PALEOZOIC PALEOGEOGRAPHY OF ARIZONA

BY

ALEXANDER STOYANOW

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CORRELATION OF ARIZONA PALEOZOIC FORMATIONS

BY

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BY A. A. STOYANOW

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BY

C. A. REPENNING AND H. G. PAGE

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BY

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