Cities Service #1-Q U.S.A.
(Preston 119)
Preston County, West Virginia

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION /2

Rotary ☒
Spudder ☐
Cable Tools ☐
Storage ☐

Quadrangle Parsons 1 SW

WELL RECORD

Oil or Gas Well Gas (KIND)

Permit No. Pres-119

Company Cities Service Oil Company
Address Box 873, Charleston 23, W. Va.
Farm United States of America Acres 640
Location (waters) Twenty Mile Run
Well No. Q-1, GW-1466 Elev. 2172.12'
District Union County Preston
The surface of tract is owned in fee by Bureau of Land Management, etal
Interior Building Address Washington, D. C.
Mineral rights are owned by same
(for further add, contact Cities Service Oil Co) Address
Drilling commenced 10-5-63
Drilling completed 3-17-64
Date Shot not shot From To
With
Open Flow /10ths Water in Inch
/10ths Merc. in Inch
Volume Cu. Ft.
Rock Pressure lbs. hrs.
Oil bbls., 1st 24 hrs.
WELL ACIDIZED not acidized
WELL FRACTURED not fractured

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
~~xx~~ 20" 94#	73'	73'	Kind of Packer
~~13~~ 13 3/8" 48#	1209'	1209'	none
~~xx~~ 9-5/8" 36# 40#	4985'	4985'	Size of
8¼			
~~xx~~ 7" 23#	7787'	7787'	Depth set
5 3/16			
3			Perf. top
2 3/8" 4.7#	7259'	7259'	Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED SIZE No. Ft. Dat
see reverse side
COAL WAS ENCOUNTERED AT none FEET INCHE
FEET INCHES FEET INCHE
FEET INCHES FEET INCHE

RESULT AFTER TREATMENT (Perforating) 108/10 M. 7" 23# = 16, 300 MCF (Tuscarora)
ROCK PRESSURE AFTER TREATMENT 160 hrs. deadwt. 2620# B. H.; 2600# tubing
Fresh Water 140' Feet Salt Water 4585-90' Feet

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Top Soil			0	25			
Shale and Slate			25	70			
Lime			70	150	F. water	140'	show
Shale			150	185			
Sandy Lime			185	245			
Lime and Shale			245	255			
Sandy Lime			255	1120			
Sandy Shale			1120	1210			
Sandy Lime			1210	1440			
Lime			1440	1715			
Lime and Shale Shells			1715	2020			
Sand			2020	2050			
Shale and Shells			2050	2165			
Sandy Lime			2165	2205			
Lime			2205	2232			
Lime and Shale			2232	2515			
Lime			2515	2880			
Lime and Shale			2880	3900			
Shale			3900	4550			
Chert			4550	4739	S, water	4585-90'	
Sand - Orisk			4739	4906	4924' Rotary	4921-1/2'	Sch. Meas
Lime and Sand			4906	5204			
Lime and Shale			5204	5465			
Sandy Lime			5465	5550			
Sand and Shale			5550	5625			
Sand			5625	5655			
Sand and Shale			5655	5870			

(over)

RECEIVED
West Virginia
Dept. of Mines

Lead mine field

Formation	Color	Hard or Soft	Top 12	Bottom	Oil, Gas or Water	Depth Found	Remarks
Lime			5870	5940			
Sandy Lime			5940	6218			
Lime and Shale			6218	6696			
Shale			6696	6908			
Sandy Lime			6908	7005			
Sand Tuscarora 7005-7464			7005	7717	7717'DLM=7715'Schl. Meas.		
Shale and Siltstone			7717	7830	Schlumberger showed gas:		
Red Shale			7830	7910	7058' show		
Shale			7910	7980	7083' gaug. 16/10 W. 2" =169M		
Sand			7980	7997	7118' incr. to 44/10 W. 7"= 2,832M		
Red Shale			7997	8003	7123' incr. to 83/10 W. 7"=3,889M		
Sandy Lime			8003	8007	7146' incr. to 65/10 M. 7"=12,701M		
Red Shale			8007	8030	then to 70/10 M. 7"=13,179M		
Shale and Sandy Lime			8030	8085			
Shale			8085	8350			
Sand and Shale			8350	8445			
Sand and Lime			8445	8525			
Sand and Shale			8525	8715			
Sand			8715	8860			
Sand and Shale			8860	9190			
Sand			9190	9207			
Lime and Sand			9207	9320			
Sand			9320	9345			
Sand and Lime			9345	9565			
Lime			9565	9635			
Lime and Sand			9635	9925'DLM= MARTINSBURG 9910'Schlumberger Meas.			
Total depth----------				9910'Schlumberger Meas.			
Plugged back depth----------				7450'			
Samples show:							
Tuscarora			7005	7464'			

Casing Record

10-8-63 Ran 20" at 84'-cemented with 160 bags.

10-17-63 Ran 13-3/8" at 1212'DLM-cemented with 200 bags.

11-8-63 Ran 9-5/8" at 4924'Rotary=4921-1/2' Schl. Meas. Baker Whirler Guide Shoe on bottom. Differential fill up collar in top of bottom joint. 7 Centralizers spaced every 3rd joint from bottom. Cemented with 300 sacks.

2-17-64 Ran 7" at 7715'Schl. Meas. Differential shoe on bottom-differential fill up collar on top of first joint. Centralizers each 100' from bottom to 6900'. Metal petal basket at 7100' and 6495'. Stage Collar at 6006'. Centralizers 6,000', 5121', 5,020', 4920', 4820' and 4720'. Cemented bottom section 7715-6005' with 105 sacks Salt Water Cement-followed with 1155 gallons Cealment.

Additional Data:

11-8-63 - Depth 4921-1/2' Schl. Measurement. Logged well (Chert and Oriskany)Ran Gamma Ray Gamma Gamma, Induction and Caliper Logs.

2-14-64 - Depth 7715' Schl. Meas. Logged Tuscarora. Ran Gamma Ray, Caliper, Gamma Gamma Induction and Dipmeter.

3-17-64 - T. D. 9910' Schl. Meas. Ran Gamma Ray, Caliper, Gamma Gamma and Induction Log from 7715' (bottom of pipe) to T. D.

Filled hole with thick Aquagel from T. D. to 7,650'. Set Baker Bridge plug 7,650'-set cement plug 7,650'-7,450' - 40 bags (Plugged back depth 7,450')

Started coring well 1-17-64 - cored from 7,164' to 7,473' - completed 2-7-64.

3-22-64-Perforated 7115-7123'; 7142-7147'; 7151-7156'; 7160-7165' 5 shots/foot-each interval bullets turned so would cover 360° - 119 shots total.

Date April 9, 1964

APPROVED Cities Service Oil Company, Owner

By W. S. Moore, Division Sup't
(Title)

CITIES SERVICE RESEARCH AND DEVELOPMENT COMPANY
(INCORPORATED)
PRODUCTION & EXPLORATION RESEARCH LABORATORIES
920 EAST THIRD STREET
P. O. BOX 938
TULSA 1, OKLAHOMA

[illegible]

Mr. R. L. Bird, Jr.
Cities Service Oil Company
P. O. Box [illegible]
Charleston, West Virginia

Dear Mr. Bird:

Enclosed are copies of our core laboratory's report on cores from the [illegible], [illegible] [redacted] as well as comments by Ed Biederman about the nature of the rock based on a brief examination of petrographic thin sections. The anomalously high permeability values obtained for samples P-[illegible] and P-[illegible], compared with the duplicate samples for the same depths may be due to minute cracks being formed during drilling the plugs.

Inasmuch as Mr. R. V. [illegible] is in charge of our core laboratory, please send your future requests for core analysis to him. I will be delighted to handle requests of a geological nature.

Very truly yours,

[illegible]

[illegible]

[illegible]

Enclosures

[illegible]

M E M O R A N D U M

TO: Dr. T. L. Brein

March 6, 1966

RE: General comments on thin sections from [redacted] West Virginia cores.

Thin sections were obtained on a foot-by-foot basis from the core materials of the GW-1466, U. S. of America Q-1 [redacted] The following descriptions are very general and can be augmented, upon request.

GW-1466, U. S. of America Q-1

Footage	Description
7164'	Well cemented, almost pure orthoquartzite - very little pore space.
7165'	Same as above, some thin finer-grained zones may represent healed fractures.
7188'	Orthoquartzite with alternating layers of fine and coarse grained quartz. Minor amounts of clay are present around some of the quartz grains.
7189'	Well cemented orthoquartzite; a few large quartz grains; minor amounts of clay around some of the quartz grains.
7209'	Orthoquartzite with alternating thin zones which are well cemented and those which have relatively little quartz cement.
7210 1/2'	Orthoquartzite with numerous bubble trains cutting across several grains at a time, indicating considerable structural stress. Alternating layers of relatively coarse and relatively fine grains occur in the scale of the thin section.
7211'	Same as above only parallel bubble trains cutting across grains are not numerous.
7225'	Very fine-grained sand and silt in clay matrix with minor amounts of carbonate.
7240'	Orthoquartzite with thin alternating coarse-grained and fine-grained quartz layers. Appears to have more open pores than other specimens. Minor amounts of clay [illegible] are present.

A second thin section from this footage reveals a [illegible] sutured layer of orthoquartzite wherein the largest grains are orthoquartzite fragments.

Footage	Description
7294'	Well cemented medium-grained orthoquartzite with occasional large grains. One or two spots within the sand are not well cemented and appear to be highly porous.
7299'	Contains well-cemented coarse-grained orthoquartzite and finer-grained orthoquartzite with minor amounts of clay. Some fracturing visible on the scale of the thin section.
7302 1/2'	Medium to fine grained, well cemented orthoquartzite.
7305'	Same as above.
7304'	Same as above with minor amounts of chert.
7327'	Coarser grained orthoquartzite.
7328	Alternating layers of fine grained and medium grained orthoquartzite.

MEMORANDUM

To: Mr. R. L. Bird, Jr.

March 6, 1964

Re: Core Analysis on GW-1466, USA Q-1 [redacted] Parsons Area
No. 250 (blk C), West Virginia

As per your request of February 17, 1964, porosity, permeability, (both horizontal and vertical) grain density, bulk density, and per cent carbonate have been run on selected core samples from the GW-1466, USA Q-1 [redacted] Results of these tests are shown on the table below:

Test Data

GW-1466, USA Q-1

Sample Number	Depth, Ft.	Perm., md.	Por., %	Carbonate, %	Bulk Density, gm/cc	Grain Density, gm/cc
P-1 Horizontal	7164	0.00	1.1	0.39	2.61	2.64
P-1V Vertical	7164	0.00	1.0		2.61	2.64
P-2	7188	10.70	8.9	0.34	2.41	2.64
P-2V	7188	1.13	8.7		2.42	2.65
P-3	7209	0.00	2.3	0.06	2.57	2.64
P-3V	7209	0.00	2.2		2.58	2.64
P-4	7243	0.32	5.8	0.32	2.49	2.64
P-4V	7243	0.54	4.9		2.51	2.64
P-5	7254	1.52	2.6	0.19	2.57	2.64
P-5V	7254	12.20	2.2		2.58	2.64
P-6	7302	0.00	3.9	0.35	2.54	2.64
P-6V	7302	0.00	3.9		2.54	2.64
P-7	7327	0.00	5.5	0.36	2.50	2.65
P-7V	7327	0.00	5.6		2.50	2.65
P-8	7425	0.00	1.0	2.00	2.64	2.67
P-8V	7425	0.00	1.8		2.64	2.69

M E M O R A N D U M

TO: Dr. T. Leo Broin

March 4, 1964

RE: Grain densities of selected samples from C.S.O. G.W.-1466, United States of America, Q-1 West Virginia.

The amount of sample for each footage was too small for the standard core laboratory measurement of grain density. In order to handle this problem, thin sections were made and mineralogical counts of 100 points per section were obtained. The following grain densities are based upon the sum of the densities for the individual minerals weighted according to their abundance.

It should be noted that most of the samples are fine-grained orthoquartzite fragments which are well cemented with quartz. The average grain density, therefore, does not differ appreciably from that of pure quartz.

Bag Footage	Schlumberger Footage	Grain Density
7010-7015'	7008-7013'	2.657
7025-7030'	7023-7028'	2.656
7030-7035'	7028-7033'	2.656
7080-7085'	7081-7082'	2.658
7085-7090'	7082-7088'	2.657
7090-7095'	7088-7093'	2.656
7120-7125'	7118-7123'	2.655
7135-7140'	7133-7138'	2.662
7140-7145'	7138-7143'	2.656

E. W. Biederman, Jr.

EWB/pah EW

COLUMBIAN CARBON COMPANY

Monroe, Louisiana

Serial No. 32818 August 13, 1964

Gas sample from GW-1466, U.S. of America Q-1, Preston County, West Virginia, Parsons No. 250 Operating District.

Gas Chromatography (x)

Compound	Volume % or Mol %	G.P.M.	
Nitrogen	16.73		Specific Gravity (Dry) Calc. .636
Methane	81.26		
Ethane	1.62		Calculated Heating Value @ 60 Deg. F and 30" Hg. 848.9 B.T.U./cu. ft. (Saturated)
Propane	0.22		
Iso-butane	0.06		
N-Butane	0.06		
Di Iso Propyl	0.02	.008	Gasoline Content (35% Butanes-65% Pentanes) .034 G.P.M.
Heptane and Heavier	0.03	.014	

mll

Leadmine field

CITIES SERVICE #1 U.S.A. "Q" PRESTON 119
PRESTON COUNTY, WEST VIRGINIA

CORE DESCRIPTION

Perfs 7115-7123, 7142-7147, 7151-7156, 7160-7165

7167-69 - Light gray fine to medium grained angular to subround poorly sorted tightly silica cemented sandstone (orthoquartzite). Scattered very coarse sand grains and pebbles. Grains difficult to discern due to tight cementing. Trace of scattered black heavy mineral grains. Unbedded to faintly cross-bedded. Fractured. Both horizontal and vertical fractures. Fractures both open and healed. Some fractures "clay" filled. Faint vertical structures which interrupt horizontal or cross-laminations possibly associated with silicification. Top half of 7167 contains larger vertical "fracture" filled with darker colored loosely cemented sandstone with some intergranular porosity and vugs. May be solution channel.

7170-74 - Largely as above. Base of 7171 contains irregular edge on side of core covered with small quartz crystals. Probably one side of a large open fracture lined with quartz crystals. 7174 contains large "solution channel" (see description above) with included clasts of host rock.

7175 - Light gray siliceous orthoquartzite as above with "pockets" or lenses of darker gray more loosely cemented orthoquartzite. This has been attributed previously (see J.S.P., V. 30, #4, pp. 568-577) to differential cementation; but could possibly be due to differential solution. These differentially non-cemented zones may or may not extend downward in a digitate manner.

7176 - Darker gray fine to medium grained (with some coarser grained) subangular to subround poorly sorted more loosely cemented orthoquartzite. Scattered black heavy mineral grains. Appears to have some intergranular porosity. Some beds appear to be graded. Near base there occurs a thin horizon of tightly cemented sandstone with "fingers" extending upward into less cemented sandstone (differential cementation?). Some thin cross-bedded units. Cross-beds appear to be graded. Predominantly horizontally laminated.

7177-79 - Alternating beds of tightly cemented and loosely cemented orthoquartzite as described above. Lenses of tightly cemented sandstone in loosely cemented beds and vice versa. Some conglomeratic lenses and thin beds. Predominantly horizontally laminated. Horizontal laminations cannot be discerned in tightly cemented sandstone beds. Fractures predominantly restricted to tightly cemented beds. When fractures are seen in loosely cemented beds they are well healed.

7180-83 - As above

7184 - About 2" bed of coarse conglomeratic orthoquartzite. Below that through about a 2" interval, loosely cemented orthoquartzite interfingers vertically with more tightly cemented orthoquartzite below.

7185-7220 - Alternating beds of tightly cemented and loosely cemented orthoquartzite as described above. Lenses of tightly cemented sandstone in loosely cemented beds and vice versa. Local beds of conglomeratic orthoquartzite. Argillaceous content increases in local areas making thin beds darker in color. Predominantly horizontally laminated.

7221 - Upper 6" black shale. Lower 6" sandstone as above.

7226-26 - Alternating beds of tightly cemented and loosely cemented orthoquartzite as described above.

7227 - About 6" of conglomeratic orthoquartzite; remainder as above.

7228-37 - Orthoquartzite as described above.

7238 - Coarse conglomeratic orthoquartzite.

7239-48 - Orthoquartzite as described above interbedded with conglomerate as above. Sandstone predominates but incidence of conglomeratic interbeds increases.

7249-57 - Tightly cemented orthoquartzite as described above with loosely cemented laminae and interbeds as described above. Predominantly tightly cemented sandstone. Very little conglomerate.

7258-59 - Orthoquartzite as above. Lower 4" of 7258 and upper 2" of 7259 faintly cross-bedded.

7260-68 - Orthoquartzite as above.

7269 - Orthoquartzite as above; cross-bedded.

7270 - Orthoquartzite as above with wispy argillaceous laminae. Lower 6" dark gray and quite argillaceous.

7271 - Light gray fine grained silica cemented orthoquartzite. Some coarse grains. Fractured.

7272 - Orthoquartzite as above with about a 3" zone of dark gray argillaceous sandstone.

7273-75 - Alternating beds of tightly cemented and loosely cemented orthoquartzite as described above. Lenses of tightly cemented sandstone in loosely cemented beds and vice versa.

7276-94 - Tightly cemented orthoquartzite as described above with loosely cemented laminae and interbeds as described above. Predominantly tightly cemented sandstone with some conglomeratic zones. Scattered 2-3" zones faintly cross-bedded. Cross-bedded zones appear to be a little coarser grained than non cross-bedded zones; but all coarser zones are not necessarily cross-bedded.

7295-7308 - Orthoquartzite as described above. Incidence of cross-bedding has increased.

7309-12 - Orthoquartzite as above with two zones, each being about 3" thick that are very coarse sandstone to conglomerate that are cross-bedded.

7313 - Tightly cemented fine to very fine grained tightly cemented orthoquartzite with scattered very coarse sand grains and white wispy clay partings. Some dark gray widely separated shale partings.

7314-17 - Light gray fine to very fine grained tightly silica cemented orthoquartzite with thin interbeds of coarse to very coarse grained silica cemented sandstone. Thin interbeds of dark gray fine to very fine grained more argillaceous sandstone. Prominant cross-bedding and horizontal laminations.

7318-20 - Predominantly coarse to very coarse grained tightly silica cemented orthoquartzite. Lower 6" predominantly fine grained orthoquartzite.

7321-28 - Dark gray argillaceous to very argillaceous, fine to very fine grained siliceous sandstone with thin black shale interbeds, wispy black shale partings and locally some angular clay clasts (clay galls). One 6" zone predominantly shale.

7329-33 - Light gray fine to very fine grained tightly silica cemented orthoquartzite with thin interbeds of coarse to very coarse grained silica cemented sandstone. Thin interbeds of dark gray fine to very fine grained more argillaceous sandstone. Prominant cross-bedding and horizontal laminations.

7334-41 - Gray to greenish gray argillaceous fine to very fine grained sandstone. Some thin very coarse grained interbeds. Wispy shale partings. One or two thin zones of maroonish argillaceous sandstone. Possible burrowing. Predominantly horizontally laminated with some faint cross-laminations.

7342-43 - As at 7329-33 with some vugs filled with white clay.

7344-45 - Gray to greenish gray argillaceous fine to medium grained siliceous sandstone.

7346-63 - Light gray fine to very fine grained silica cemented sandstone interbedded with coarse to very coarse grained silica cemented sandstone. Fine grained sandstone structureless. Coarse grained sandstone prominantly horizontally and cross laminated. High angle cross-laminations prominant. White clay filled vugs as described above.

7364-67 - Green to grayish green interbedded fine and coarse grained argillaceous sandstone as above.

7368-70 - Light gray fine to very fine grained silica cemented sandstone interbedded with coarse to very coarse grained silica cemented sandstone. Prominant cross-beds.

7371-73 - Light greenish gray fine to medium grained argillaceous siliceous sandstone. Faintly cross-laminated locally.

7374-90 - Light gray fine to very fine silica cemented sandstone interbedded with coarse to very coarse grained silica cemented sandstone with scattered 2-3" zones of light greenish gray fine to medium grained argillaceous siliceous sandstone. Prominant horizontal and cross-laminations.

7391 - Light greenish gray fine to medium grained argillaceous siliceous sandstone.

7392 - Light greenish gray fine to medium grained argillaceous siliceous sandstone interbedded with light gray cross-laminated sandstone. Some pure clay laminae. Clay clasts in thin zone.

7393-95 - Light gray to gray green fine to medium grained cross-laminated silica cemented sandstone. Becomes more argillaceous and greenish in color toward base of interval.

7396-98 - Dark greenish-gray fine to very fine grained argillaceous horizontal to cross-laminated siliceous sandstone.

7399-7404 - Light greenish gray fine to very fine grained siliceous sandstone with interbeds and laminae of darker grayish green argillaceous sandstone. Horizontal laminations predominate.

7405-11 - Dark gray to greenish gray very fine grain to silty very argillaceous silica cemented sandstone to silty or sandy siliceous shale with interbeds of fairly clean cross-laminated fine to very fine grained silica cemented sandstone. Some of the argillaceous beds are contorted by soft sediment deformation and possible burrowing. Some clay clasts present locally. Unconformable contacts between sand rich and clay rich beds show some relief.

7412-18 - Predominantly cleaner fine to very fine grained gray silica cemented sandstone with laminae of darker greenish gray and reddish more argillaceous sandstone. Some dark greenish gray interbeds of silty shale or very argillaceous siltstone or very fine grained sandstone. Some high angle, truncated cross-laminations.

7419 - Dark gray laminated argillaceous fine to very fine grained sandstone. One 1" zone very brecciated. Cross-laminated.

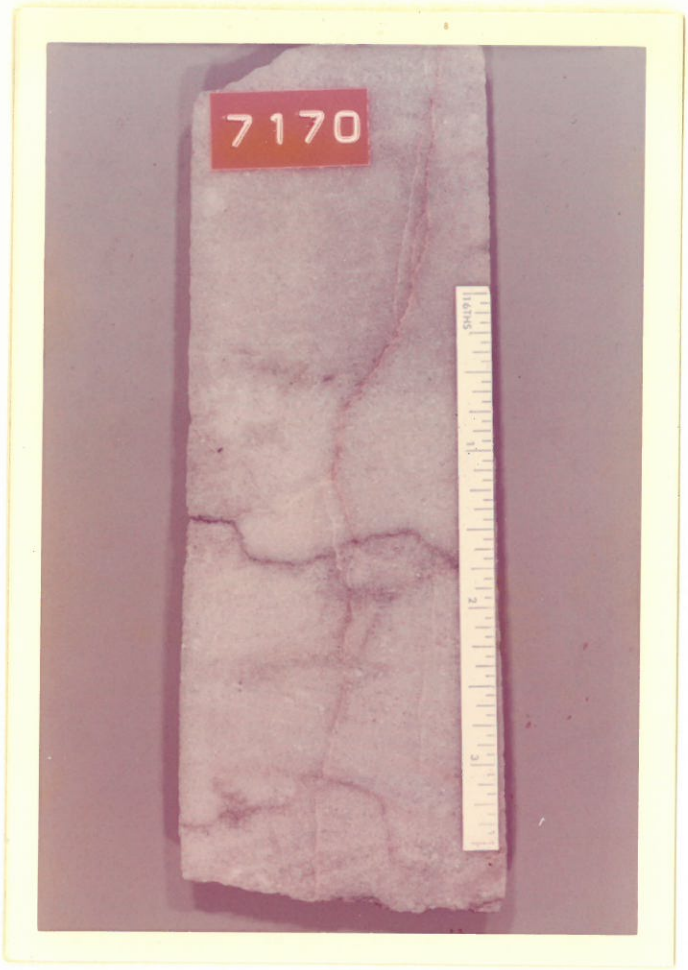
7420-21 - Dark gray fine to very fine grained to silty argillaceous siliceous sandstone interbedded with light gray fine to very fine grained fairly clean silica cemented sandstone. Lower 6" is clean light gray fine to very fine grained silica cemented sandstone containing angular clay clasts. This clean sandstone rests unconformably on dark gray shale. Contact shows considerable relief.

7422-30 - Dark gray very fine grained very argillaceous siliceous sandstone to siltstone. Predominantly horizontally laminated. Some apparent soft sediment deformation. Trace of cross-laminations.

7431 - Red argillaceous siltstone to silty shale.

7432-35 - Dark gray very fine grained very argillaceous sandstone to siltstone. Thin interbeds of reddish very fine grained sandstone. Some horizons more argillaceous, other horizons cleaner.


7167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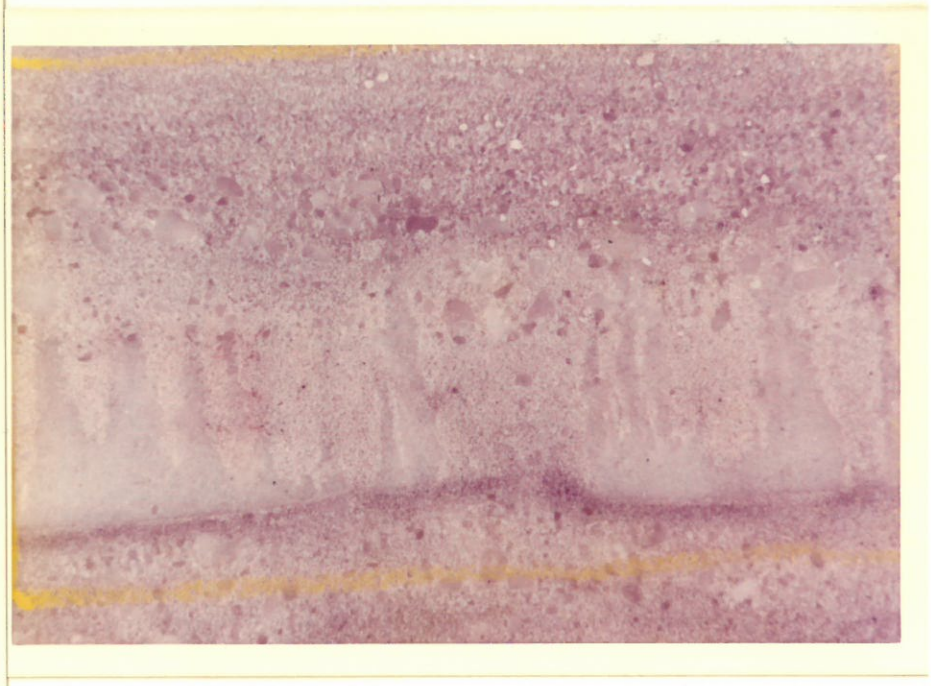


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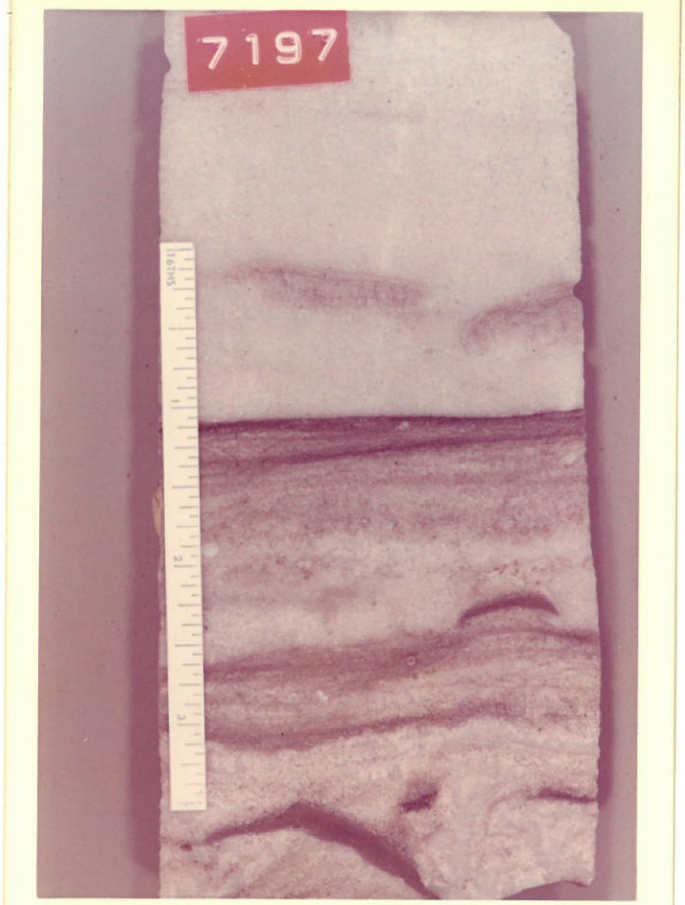
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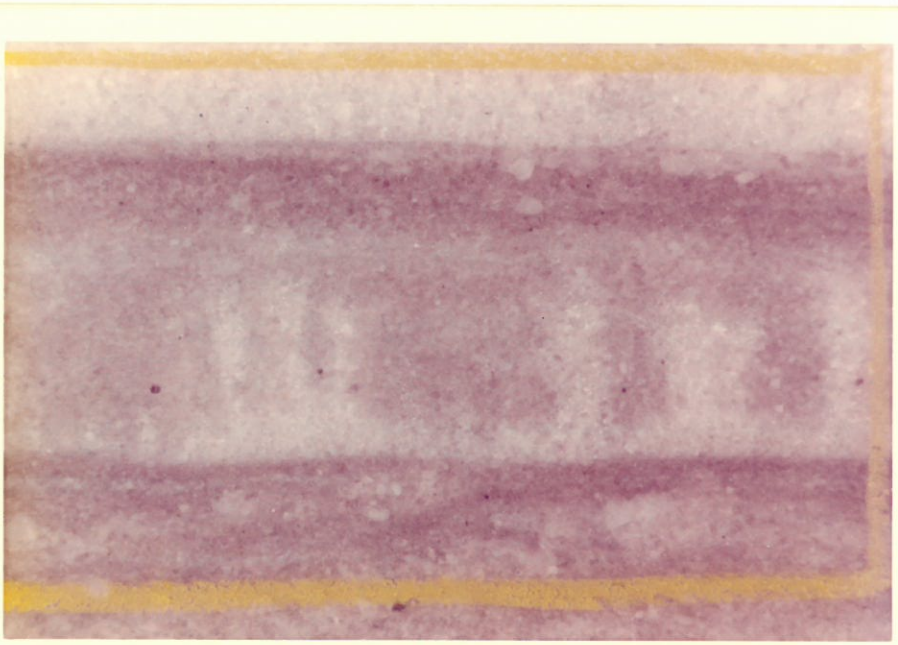


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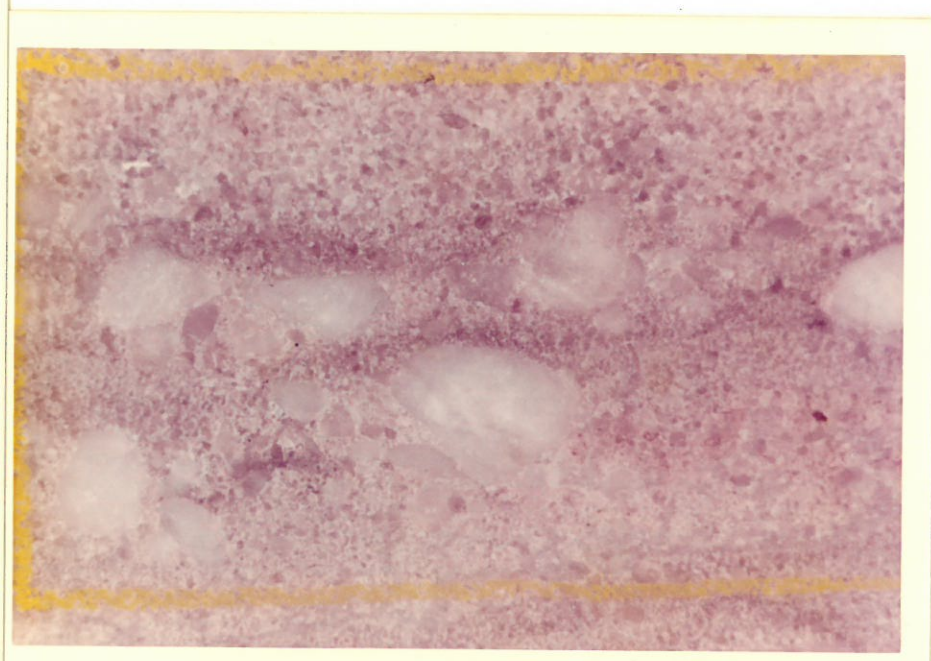


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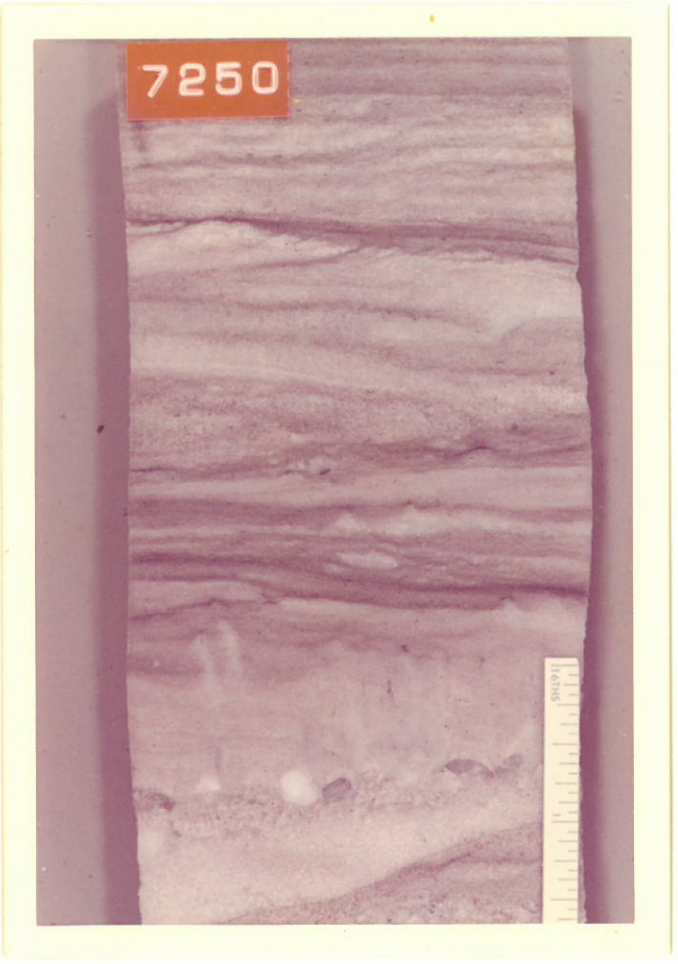
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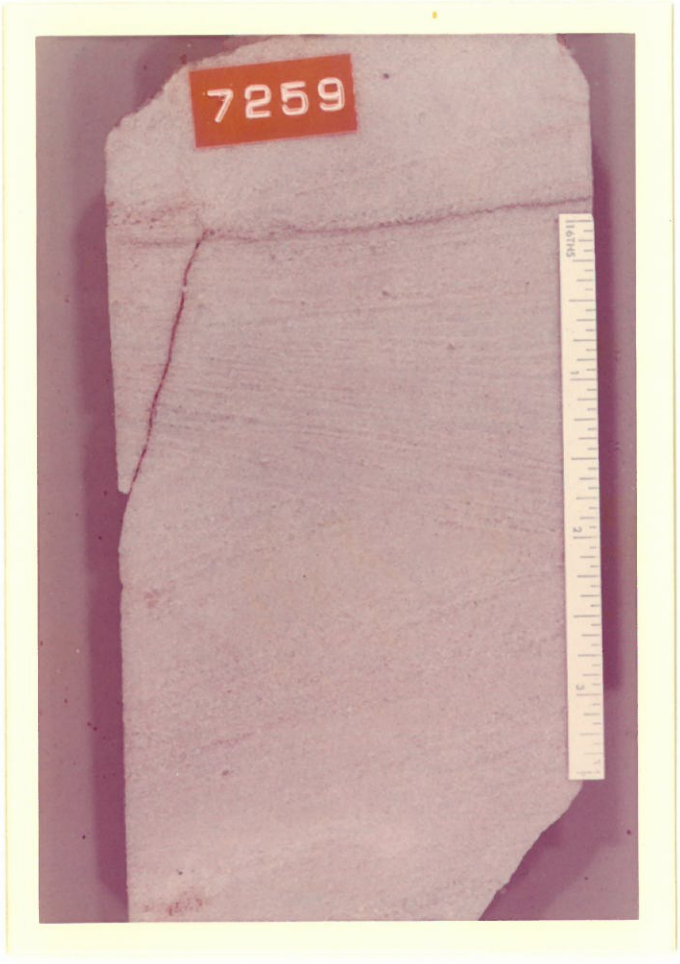
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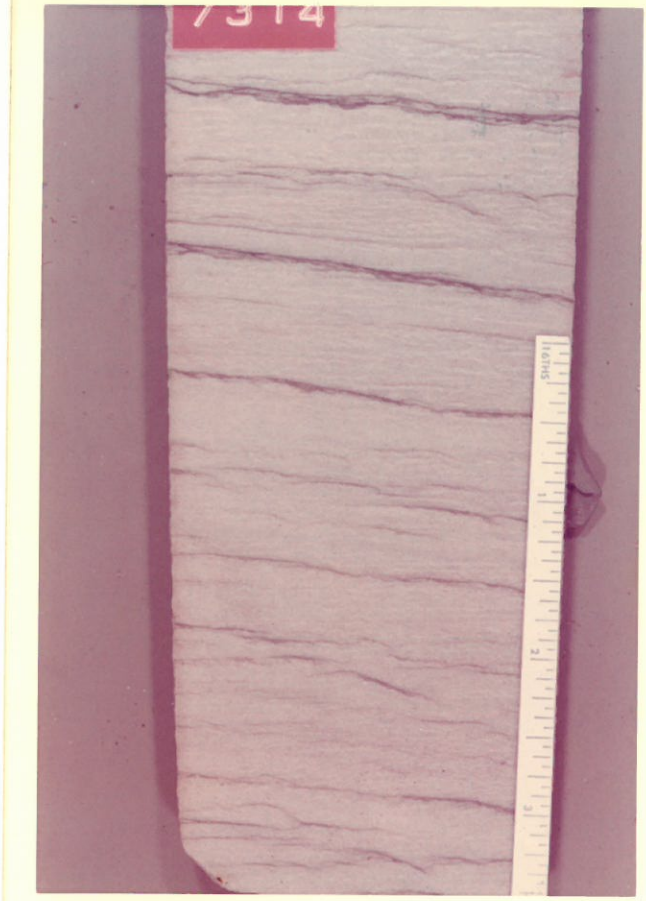
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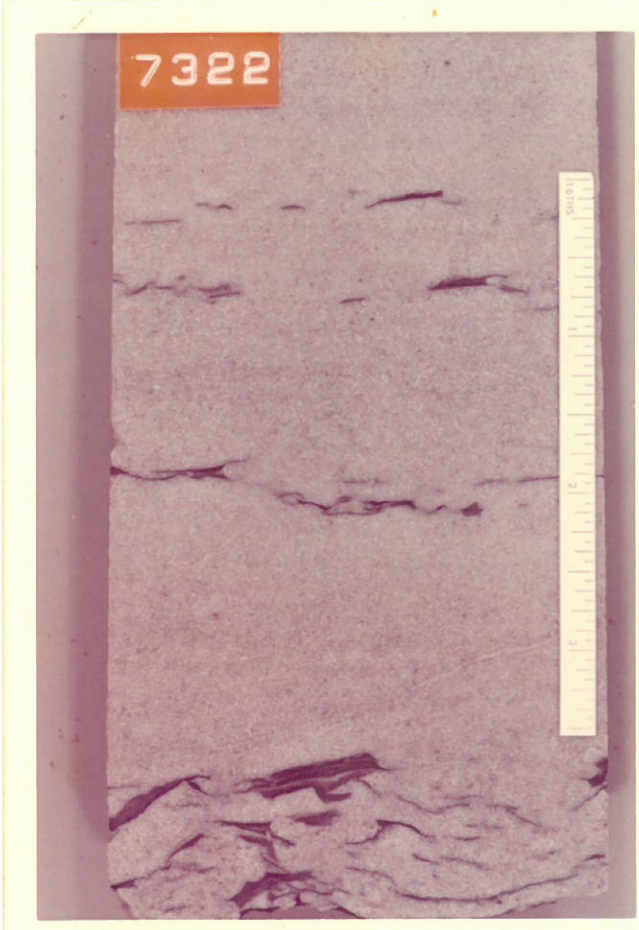
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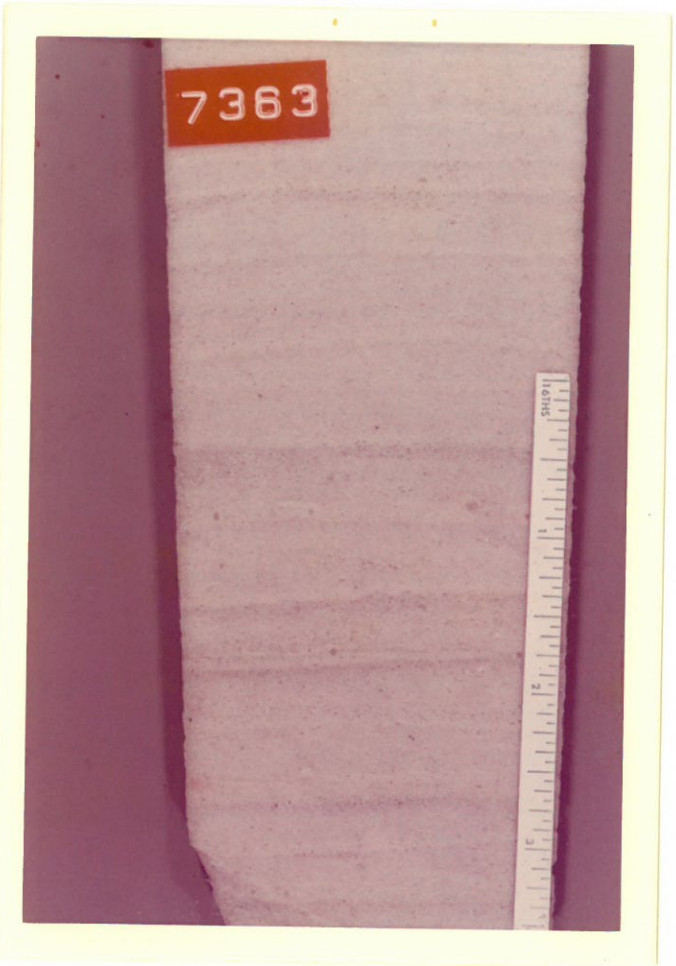
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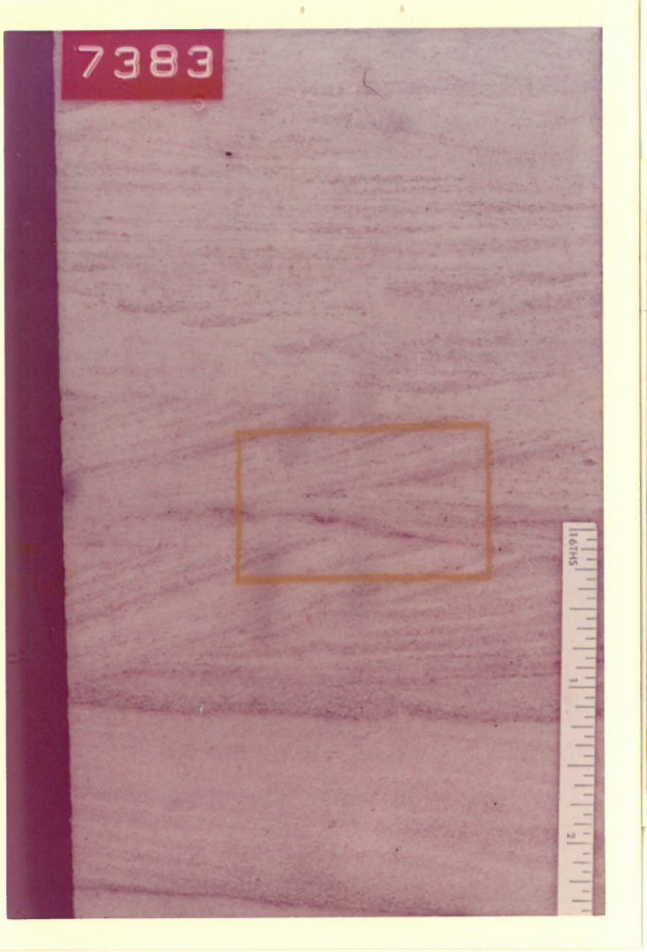
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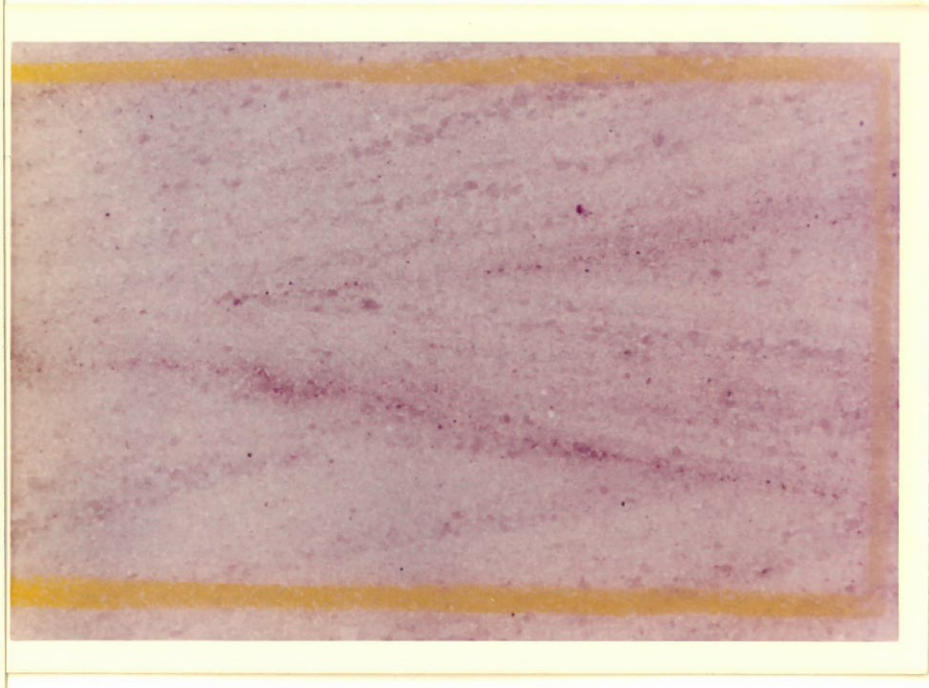


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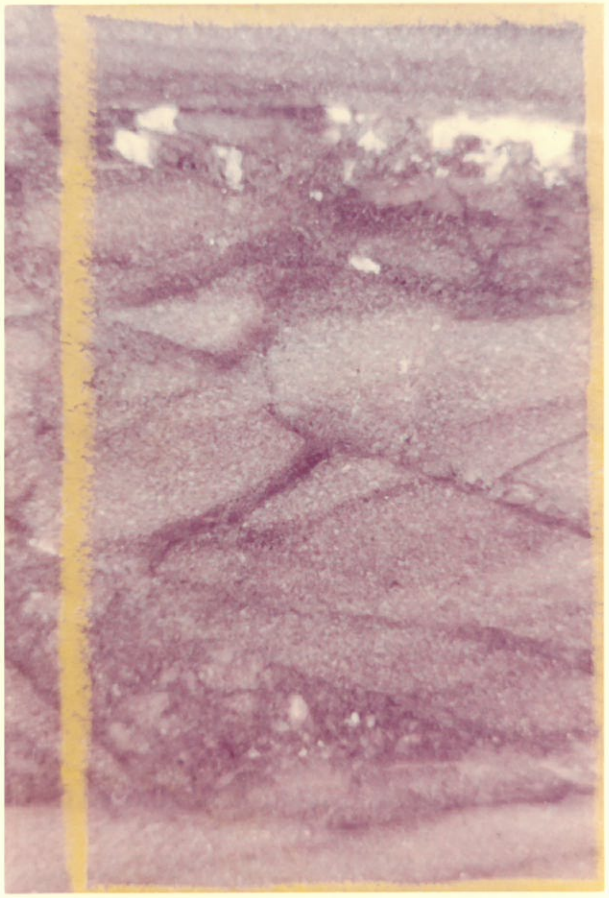


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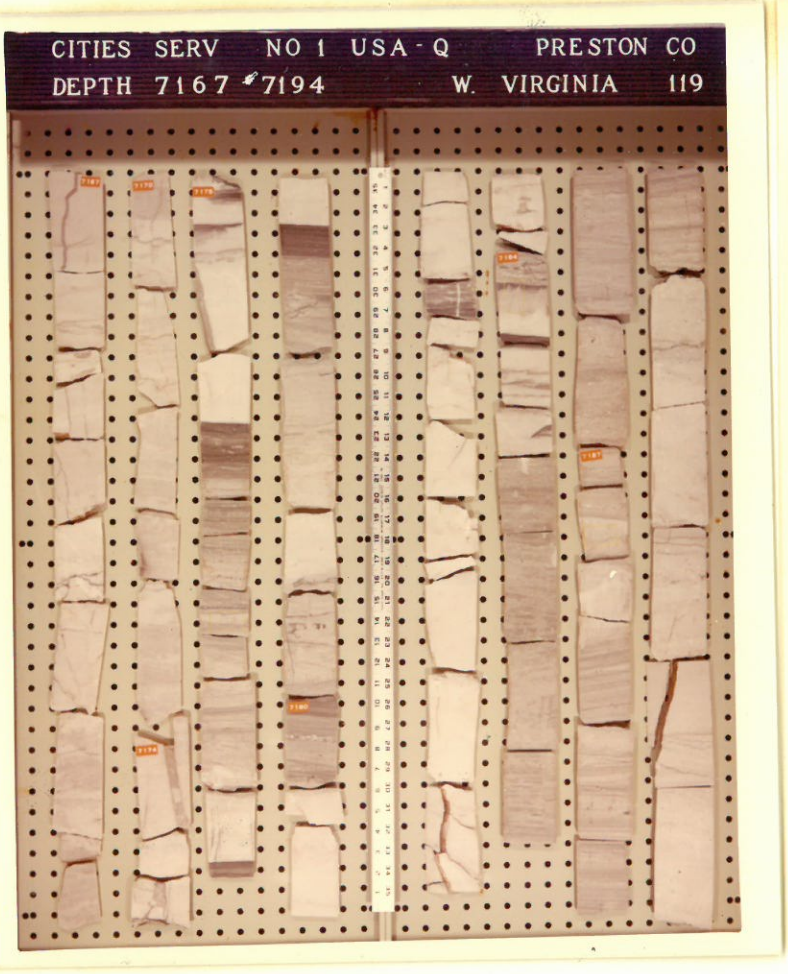
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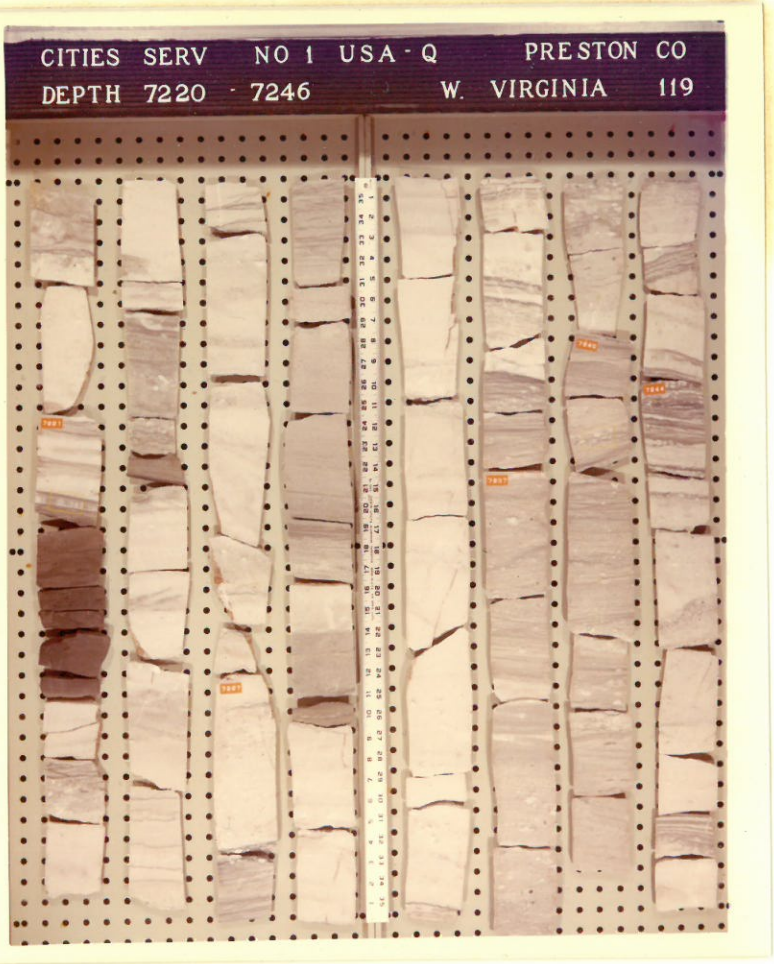
DEPTH 7167 - 7194 W. VIRGINIA 119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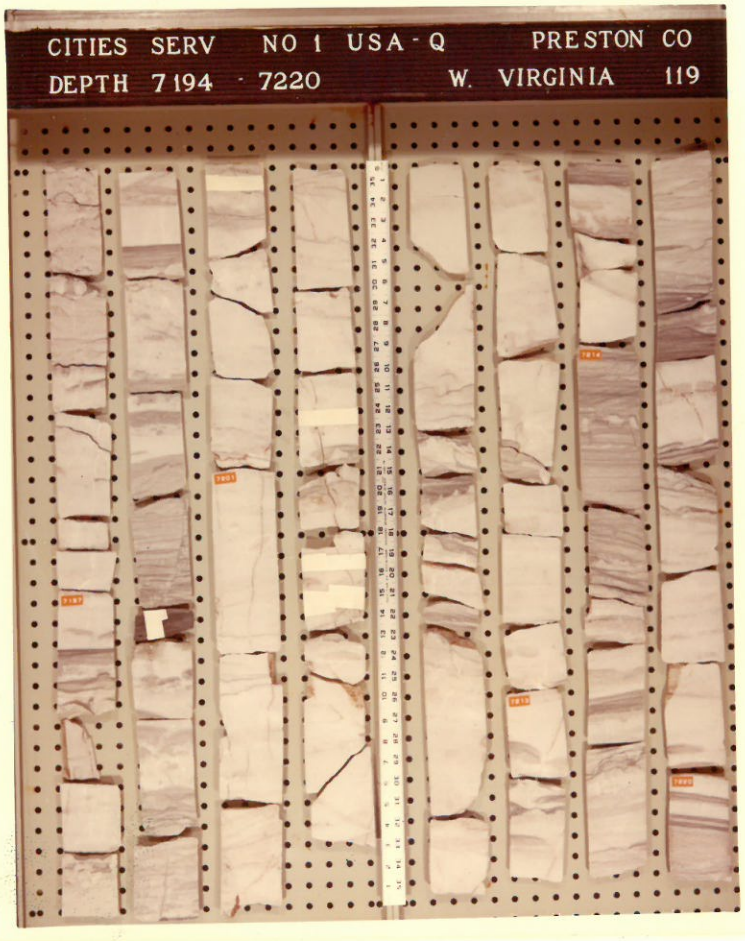
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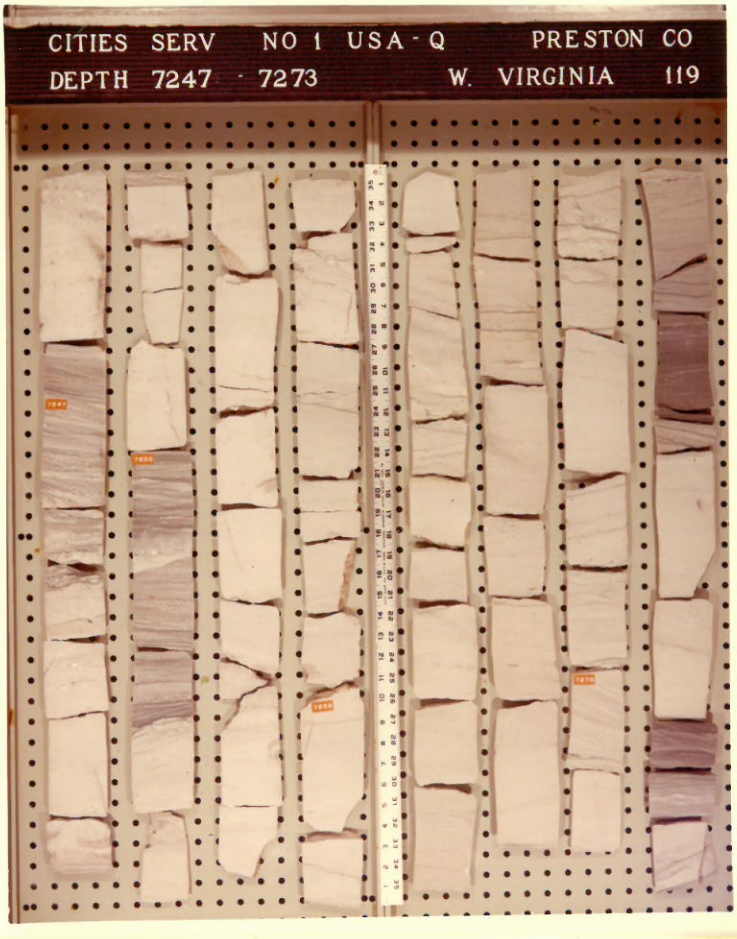
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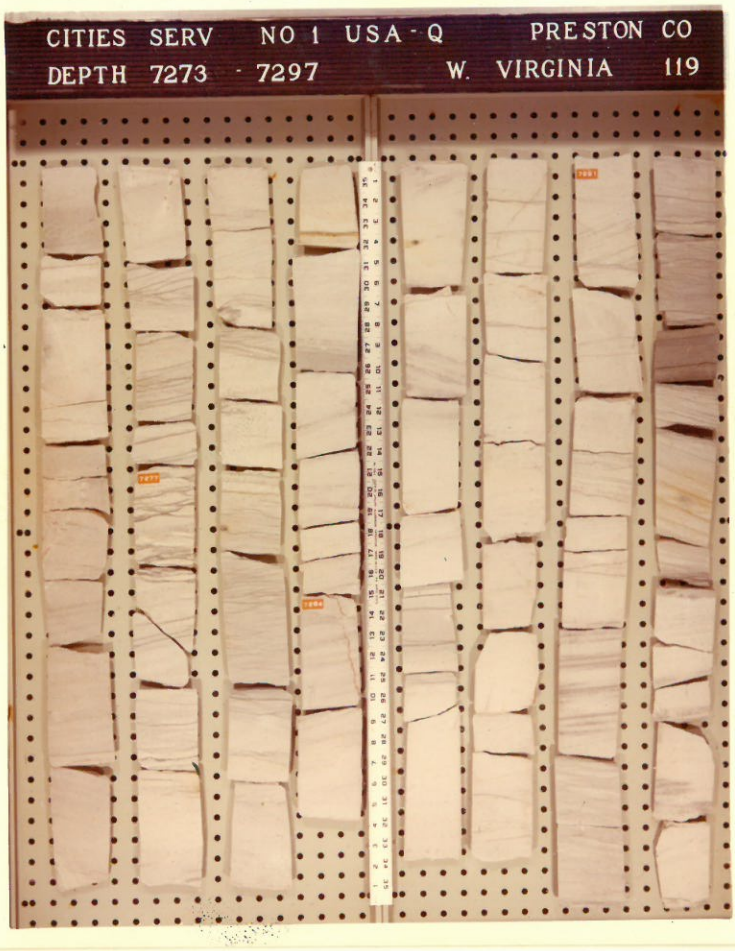
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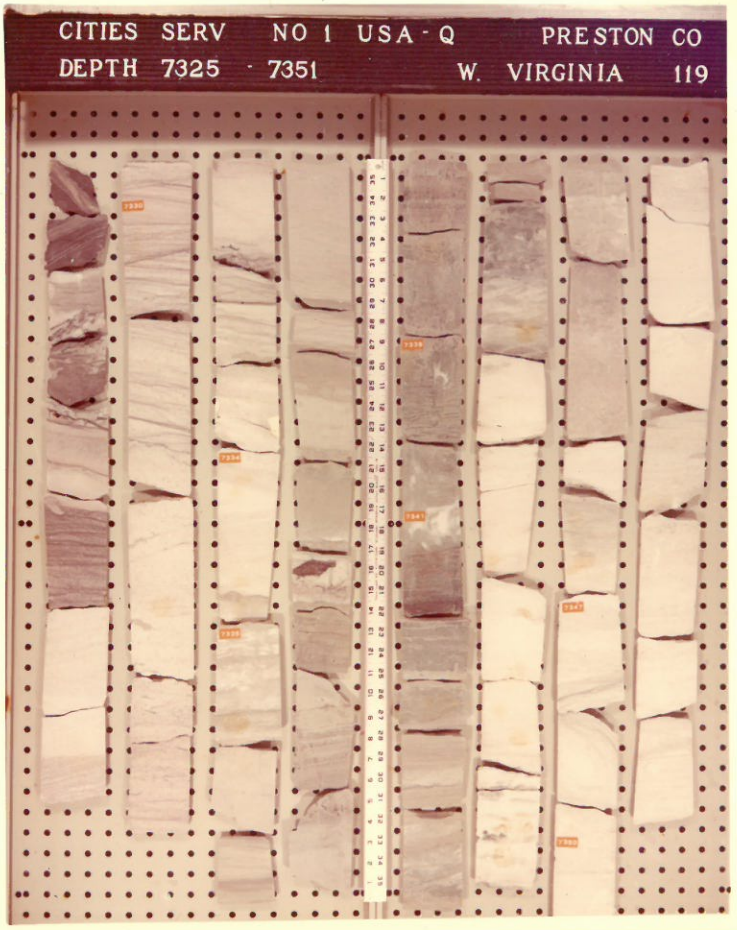
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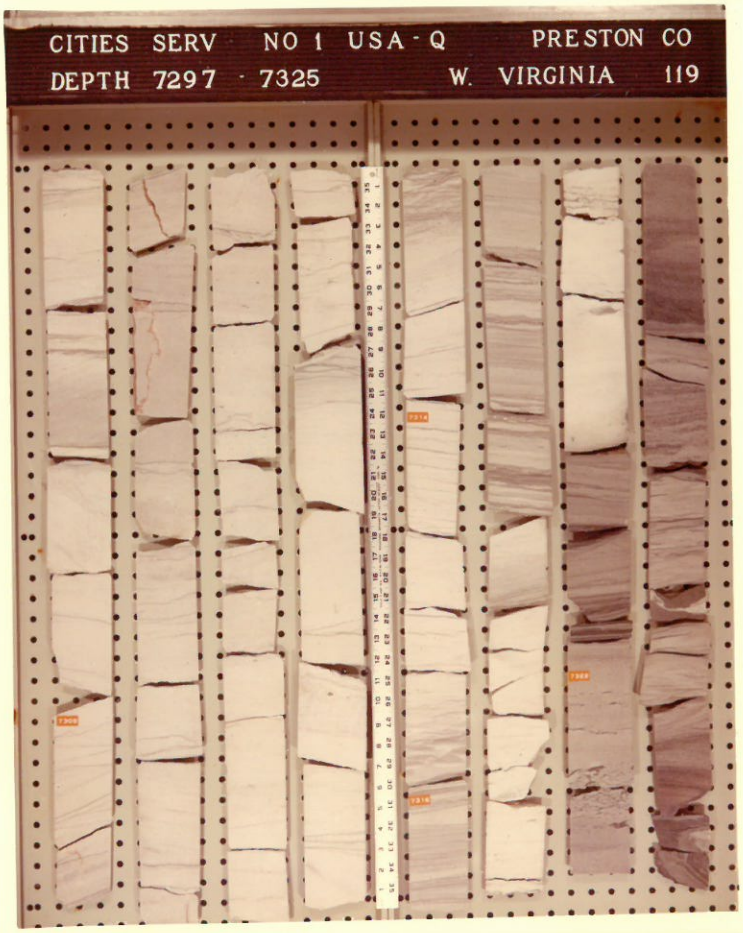
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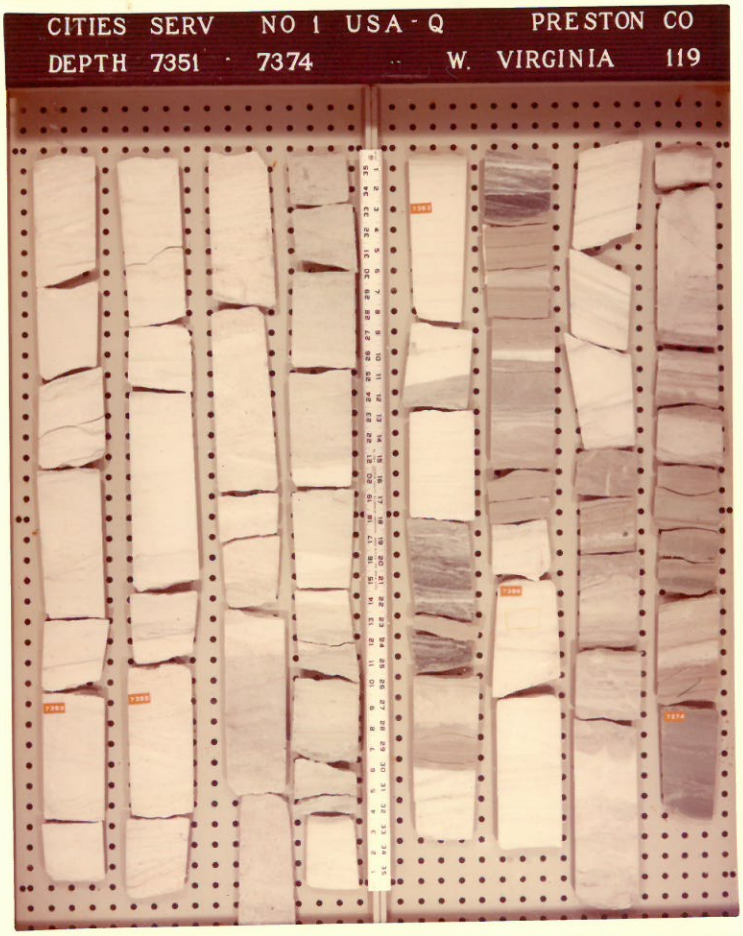
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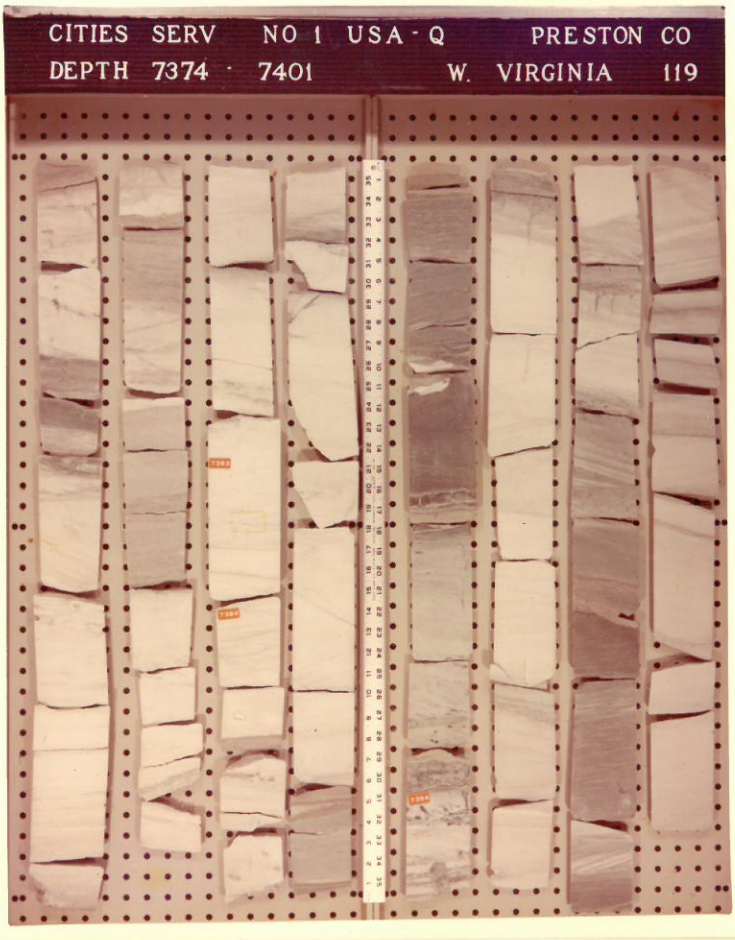
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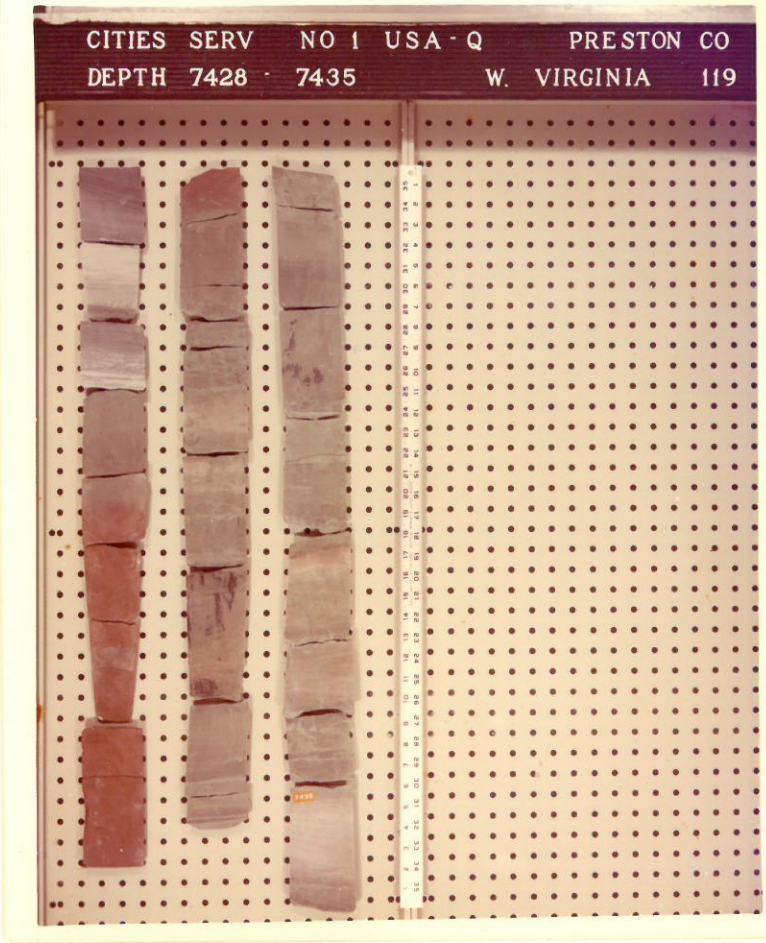
CITIES SERV NO 1 USA-Q PRESTON CO
DEPTH 7428 - 7435 W. VIRGINIA 119


CITIES SERV NO 1 USA-Q PRESTON CO
DEPTH 7401 - 7428 W. VIRGINIA 119