

WELL 73-78 (Stevens) HBY-21
LOCATION 520°N. & 380°E. of the SW/c
SEC. 35 T. 82 N R. 31 W

HYDROCARBON SURVEY

627 Union Center Bldg.
WICHITA, KANSAS
67202

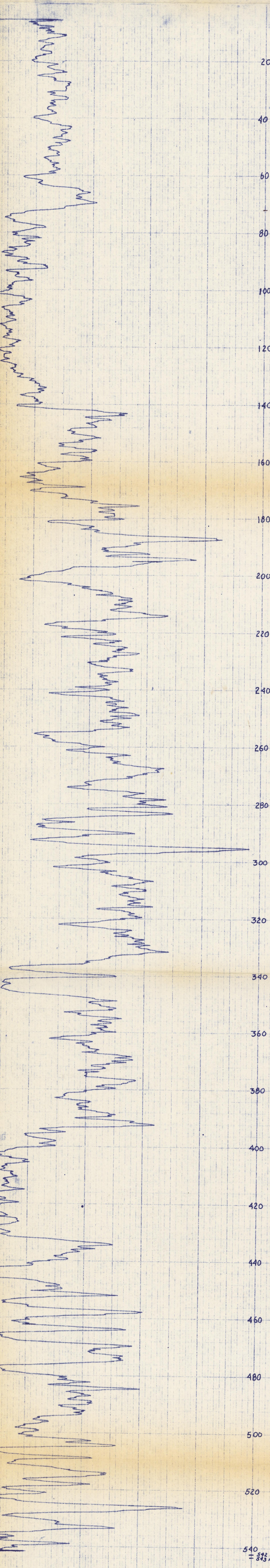
Geo-Log

49106

COMPANY NORTHERN NATURAL GAS CO.
WELL 73-78 (Stevens) HBY-21
LOCATION 520°N. & 380°E. of the SW/corner
SEC. 35 T. 82 N R. 31 W
COUNTY Greene STATE Iowa

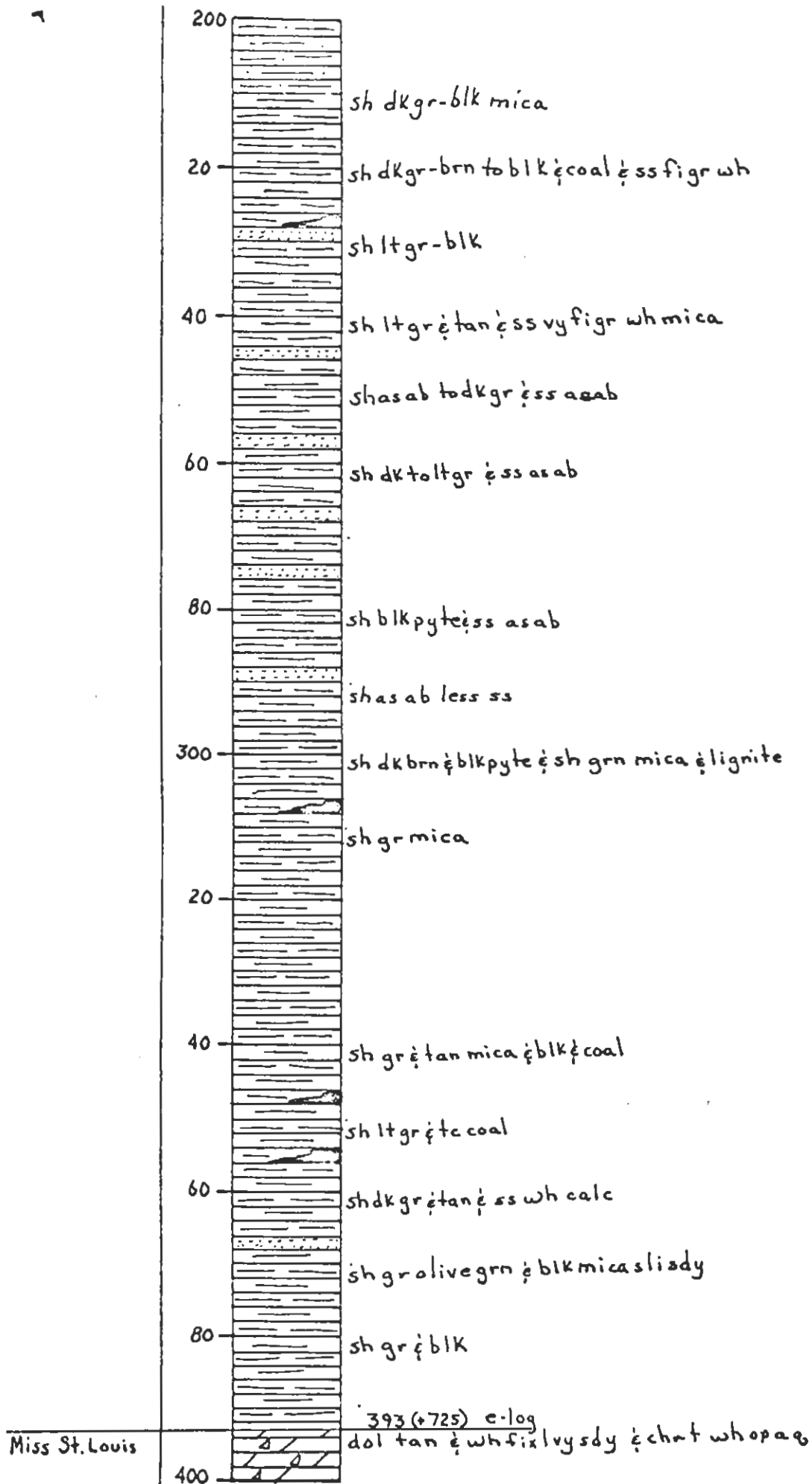
ELEVATION
D.F. _____
G.L. 1118
K.B. _____

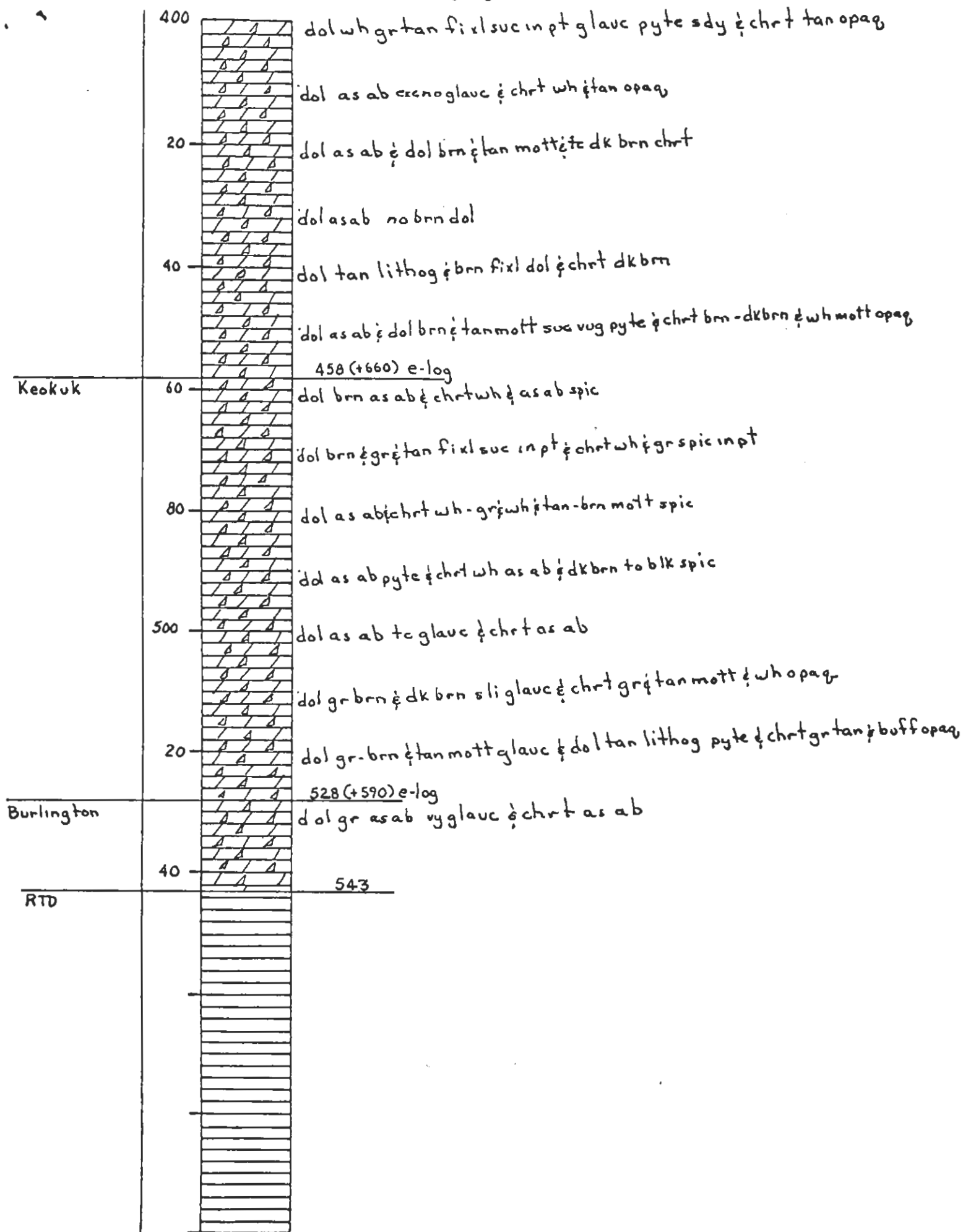
DATE July 24, 1973
RUN NO. 1
DEPTH REACHED LOG 542 DRILLER 543
OPERATOR L.J. Richardson CSG, None
REMARKS:



GAMMA				
1	2	3	4	
Logged Depth	542			
Rate	100 (9)			
Time Constant	1			
Logging Speed	25	ft/min		

ELECTRIC				
1	2	3	4	
Logged Depth	ft			
r-Ra	Ohms/Div			
Spacing				
Zero Disp "R"				
Sp Scale (Pos)	MV/in			
Sp Scale (Neg)	MV/in			
IP Scale	MV/in			
Vertical Scale	20	ft/in		
Zero Disp SP				





100



Permit

Permit No. 521

Issued to: Maude Freida J. StevensDate: 11/1/50

Permission is granted to Northern Natural Gas Company, 2223 Dodge St., Omaha,
Nebraska 68102 to drill a well for geologic exploration, located in the SW $\frac{1}{4}$,
SW $\frac{1}{4}$, sec. 35, T. 2 N., R. 31 W., Greene County, Iowa

This permit is granted subject to the provisions of Chapter 111, Iowa Code, as amended, and the rules, regulations, requirements, and orders of the Iowa Natural Resources Council.

State Geologist.

STATE GEOLOGIST

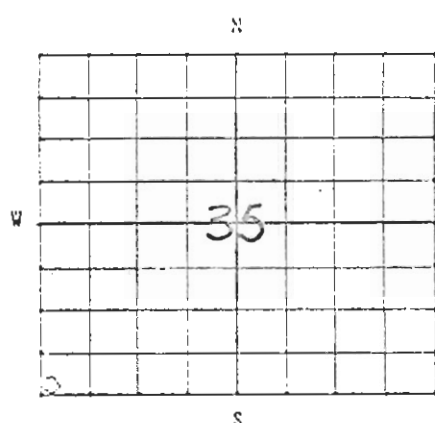
STATE OF IOWA
Iowa Natural Resources Council

49106

594

APPLICATION TO DRILL OR DEEPEN A WELL FOR OIL, GAS, GEOLOGICAL INFORMATION,
STORAGE OF DRY NATURAL GAS OR LIQUID PETROLEUM GAS

FILE WITH: STATE GEOLOGIST, GEOLOGICAL SURVEY BUILDING, IOWA CITY, IOWA 52240

 LOCATE WELL AND LEASE ACCURATELY ON THIS SECTION PLAT - 640 ACRES	1. APPLICATION IS MADE TO DRILL A WELL FOR: Geological Information	2. ENCLOSED FEES: None
	3. LESSEE (OWNER OF LEASE RIGHTS) Northern Natural Gas Company	
	4. ADDRESS 2223 Dodge St., Omaha, Nebr. 68102	5. PHONE 348-4683
	6. LESSOR (OWNER OF LAND) FREIDA J. STEVENS	7. WELL NO.
	8. DRILLING CONTRACTOR Hydrocarbon Survey, Inc.	
	9. ADDRESS 627 Union Center Bldg. Wichita, Kansas	10. PHONE 627-3234
	11. OPERATOR Hydrocarbon Survey, Inc.	
	12. ADDRESS 627 Union Center Bldg. Wichita, Kansas	13. PHONE 267-3234
	14. WELL LOCATION: SW 1/4 of SW 1/4 of SW 1/4, SEC. 35 T. 82 N. R. 31 E.	
	15. COUNTY GREENE	16. ACRES IN DRILLING LEASE
18. LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION, AND PROPERTY OWNERSHIP LINES: ____ FT. FROM _____ LINE OF 1/4 SEC. _____ FT. FROM _____ LINE OF 1/4 SEC. (NORTH-SOUTH) (EAST-WEST) ____ FT. FROM _____ PROPERTY LINE _____ FT. FROM _____ PROPERTY LINE (NORTH-SOUTH) (EAST-WEST)		
19. NUMBER OF FEET FROM NEAREST PRODUCING WELL	20. KIND OF TOOLS TO BE USED (CABLE, ROTARY, COMB.) Rotary	
21. WELL IS TO BE COMPLETED IN (FORMATION) Keokuk/Burlington	22. INTENDED DEPTH OF WELL 400'	23. INTENDED STARTING DATE
24. PROGRAM OF CASING, SEALING, AND COMPLETING WELL WILL BE SUBMITTED WHEN DETERMINED		

25. ADDRESS CORRESPONDENCE AND PERMIT TO:

Robert R. Miller - Northern Natural Gas Co. - Gas Supply Div. - 2223 Dodge St. Omaha, Nebr.

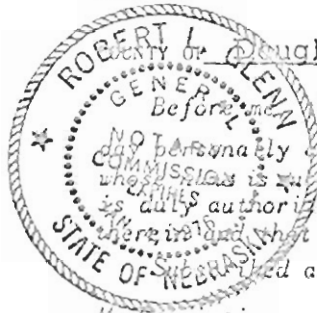
Applicant agrees to comply with provisions of Chapter 84, Iowa Code 1962, as amended and Rules and Regulations pertaining to the Location, Drilling, Casing, Sealing, Completing, Producing, and Plugging of Wells; and agrees to furnish complete samples, cores, and logs.

STATE OF Nebraska)
) ss.
Robert R. Miller)

Northern Natural Gas Co.

LESSEE OR OPERATOR

Robert R. Miller
(SIGNATURE) Geologist Consultant



I, the undersigned, a Notary Public in and for the County and State of Nebraska, do hereby certify that the facts stated in said application are true and correct:
My Commission expires January 4, 1976.



FORM OG-7
9-18-63
CP.34954

Iowa Natural Resources Council

49106

WELL PLUGGING RECORD

Permit No. 594 Date July 25, 19 73Lessee or Operator Northern Natural Gas Co. Address Omaha, NebraskaLease Name Stevens Well No. 73-78 County GreeneLocation SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$, Sec. 35 T. 82 N., R. 31 W E.W.Type of well Geological Information Total depth 543 Formation Miss.
(OIL, GAS, GEOLOGICAL INFORMATION, ETC.)Date well was plugged July 25, 1973 Give results of all drill stem tests on reverse side.Electric or other logs run? Gamma Ray and Sample LogsWas this well cored? No If so, give intervals

*NAME OF EACH FORMATION CONTAINING OIL, GAS, OR WATER	FLUID CONTENT EACH FORMATION	DEPTH INTERVAL EACH FORMATION	**SIZE, KIND, AND DEPTH OF PLUGS USED
<u>Drift</u>	<u>Water</u>	<u>0-142'</u>	<u>5sx. cement 40' to 2'</u>
<u>Penn.</u>	<u>Water</u>	<u>142-393'</u>	<u>5sx. cement @ 145'</u>
<u>Miss.</u>	<u>Water</u>	<u>393-543'</u>	<u>5sx. cement @ 400'</u>

*Indicate which formation open to well bore at time of plugging.

**Indicate zones squeeze cemented, giving amount of cement.

CASING SIZE	WHERE SET	AMOUNT RECOVERED	PERFORATED	BRIDGE OR PLUGS	DEPTH PLACED	NUMBER SACKS CEMENT

Describe in detail how well was plugged Pumped through the drill pipe 5 sx. cement at the top of the Miss., 5 sx. cement at the top of the Penn., 4 sx. cement at 40' and dumped 1 sack cement filling hole to 2' of surface. Filled hole with cuttings.

(Use reverse side, if needed)

Was circulation lost? No If so, give detailsWas any equipment, etc., lost or left in the hole before or during plugging? No If so, give details

Was notice given before plugging to all available adjoining lease and land owners?

Name and address of person in charge of plugging Charley V. Shank, Wichita, KansasRepresentatives of owner, operator, company, or contractor who witnessed plugging
L. J. Richardson

STATE OF)

) SS.

COUNTY OF Dallas)Hydrocarbon Survey, Inc.

(LESSEE OR OPERATOR)

Charley V. Shank Geologist

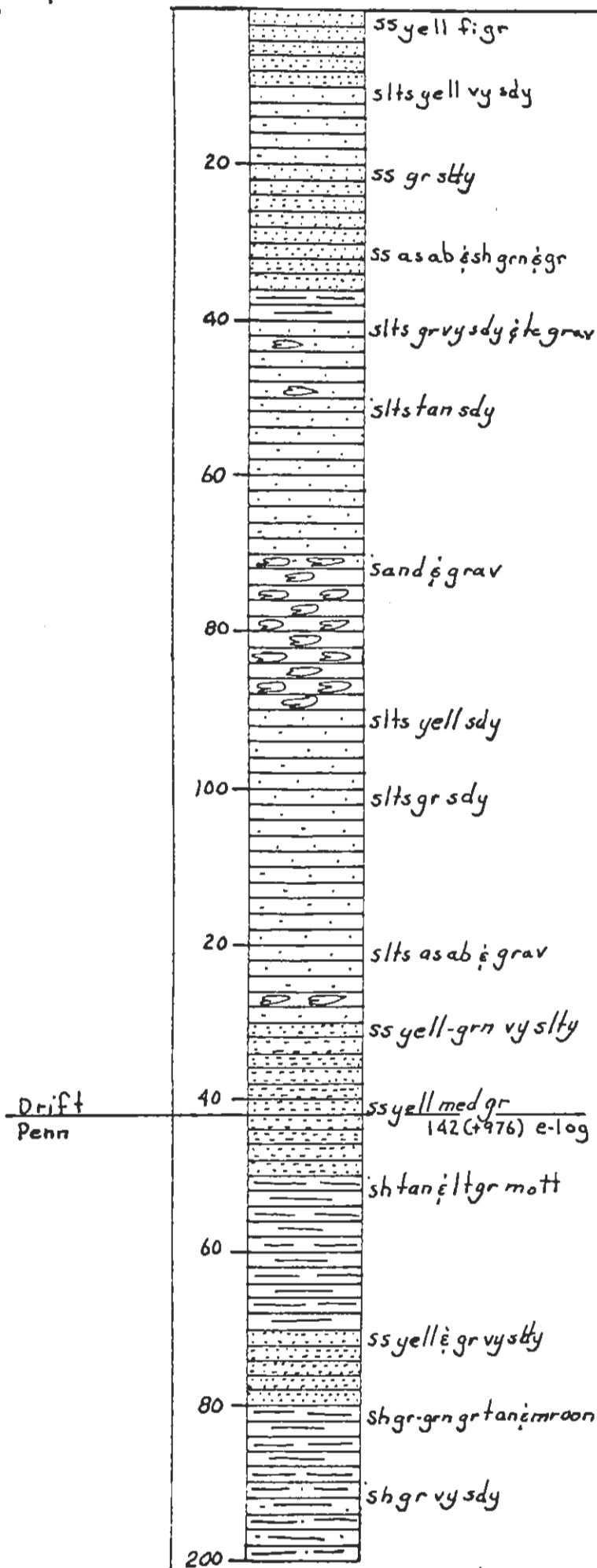
(SIGNATURE)

(TITLE)

Before me, the undersigned, a Notary Public in and for the County and State aforesaid, on this day personally appeared Charley V. Shank known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein and that the report is true and correct.

Subscribed and sworn to before me this 10 day of August, 19 73My commission expires 9-30-76Elaine A. McMichael

NOTARY PUBLIC



NORTHERN NATURAL GAS CO.

Well: 73-78 HBY-21

State: Iowa

Field: Freida Stevens

County: Greene

Contractor: Hydrocarbon Survey

Rig: B

Sec.: 35

Commenced Drilling: 7-17-73

T. 82 N-R. 31W

Completed Drilling: 7-24-73

Loc.: 520' N. & 380' E. of the SW/corner

Bore-Hole Record

Bit Size	From	To
4 3/4	0	543

Casing Record

Pipe Size	From	To
None Used		

None Used

Sample Log By: L.J. Richardson

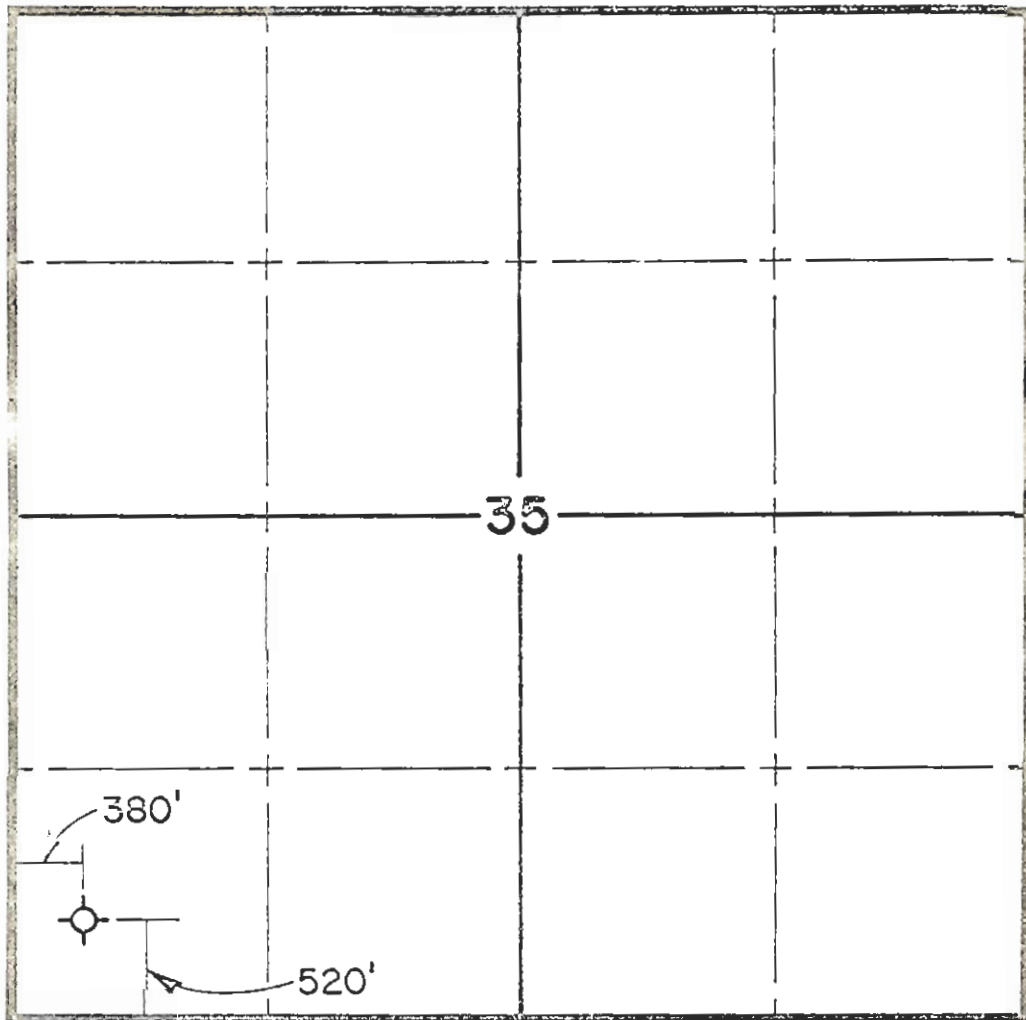
Total Depth: 543

Samples:	Wet	Dry*	Date Sample Log Prepared:
			7-24-73

EXPLANATION

- Drift
- Sand & Gravel
- Shale
- Sandstone
- Limestone
- Dolomite
- Chert
- Gypsum

R 31 W

T
82
NLESSEE: NORTHERN NATURAL GAS CO. - OMAHA, NEB.LESSOR: Frieda J. Stevens WELL NO. 73-78WELL LOCATION: App. SW SW SW SEC. 35 TWP. 82N RNG. 31WSTATE: Iowa COUNTY: GreeneWELL ELEVATION: 1118  METHOD: Altimeter (Accurate to 1 ft.)SCALE: 1" = 1,000' DATE: 8-9-73PREPARED BY: K.R. Frost APPROVED BY: A.R. Miller