

APPENDIX I

The following site data forms are designated as "open sites; not sampled." The sites described herein are depicted on the county materials maps as a "○".

LEGEND

----- Trail or lane

———— Road

+++++ Railroad

~~~~~ Hedge or trees

~~~~~  
Name Major streams

~~~~~ Intermittent streams

~~~~~ Pond or lake

● Open materials site:
not sampled

○ Center of section

□ Farm site

⊕ Cemetery

⌚ School

⌚ Church

▣ Town or city

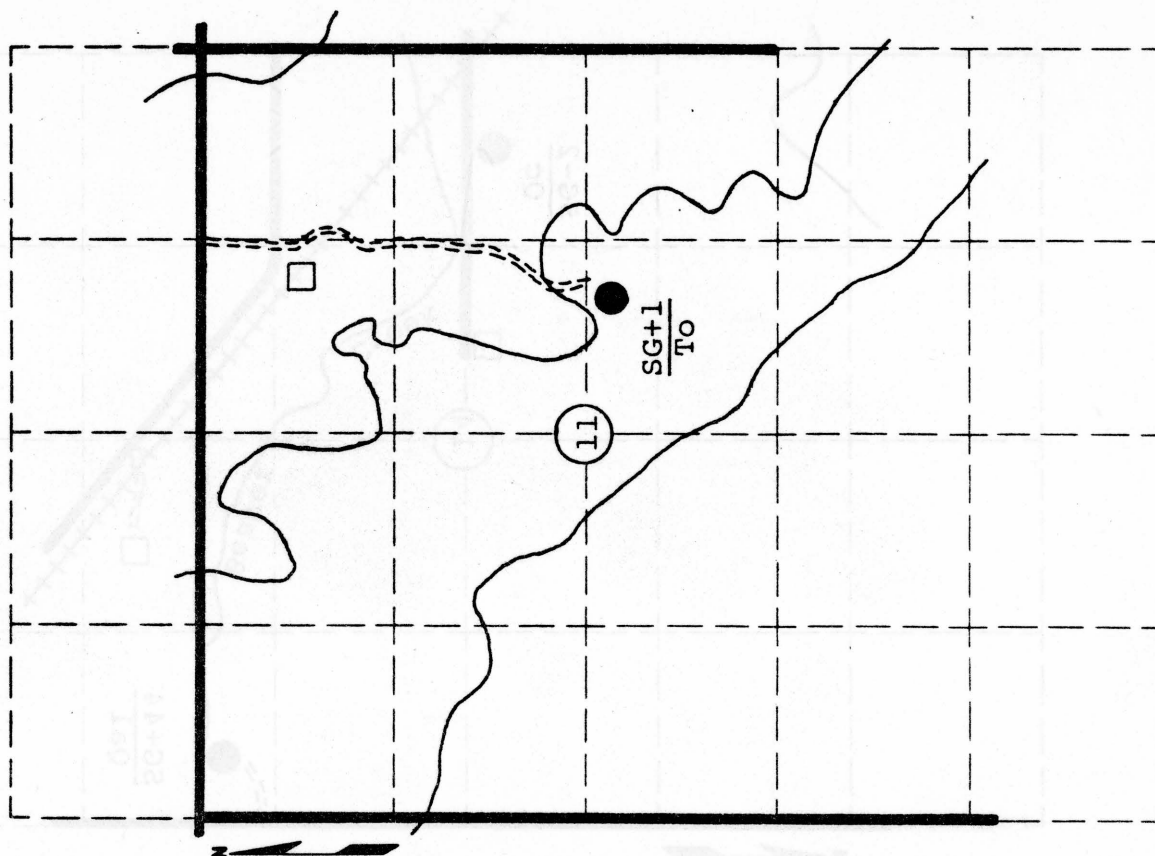
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu. Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

Geological Age Quaternary
Geological Source Crete Formation
Material Similar To Site #44

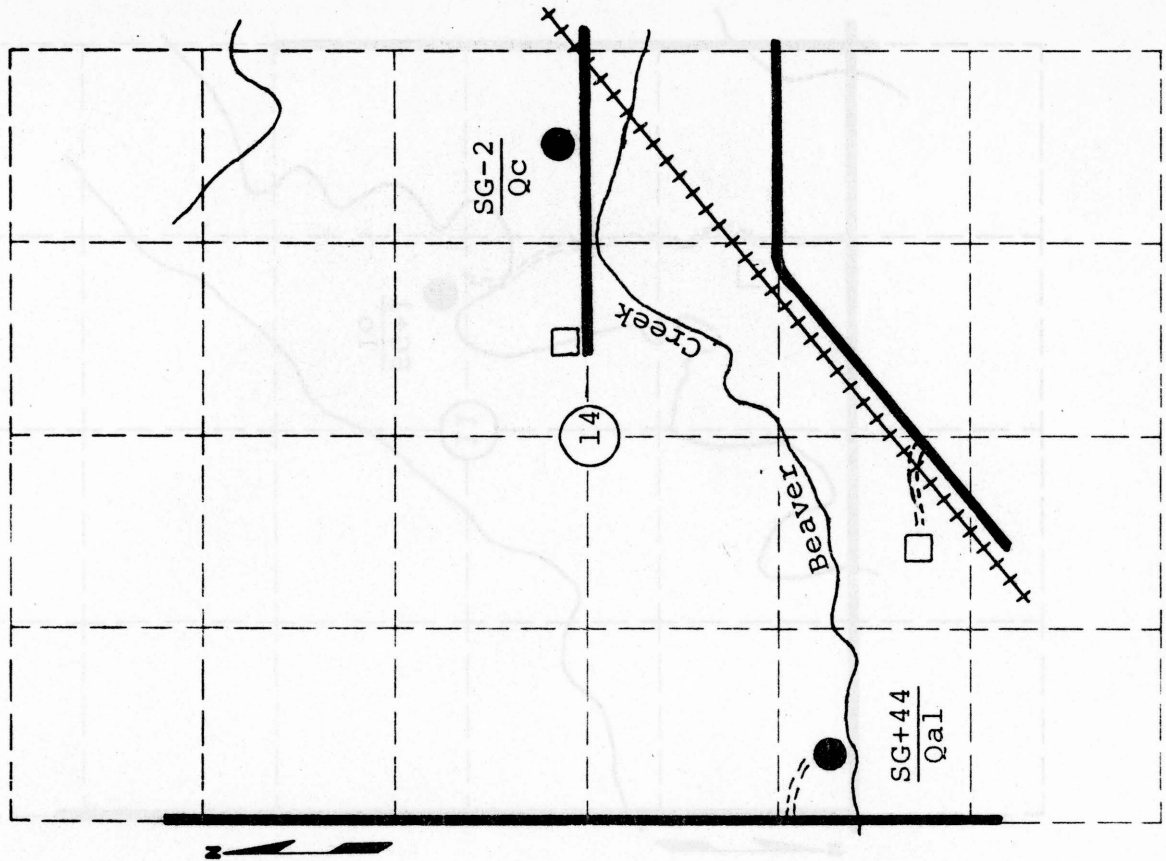
Specific Gravity (Sat.) _____ (Dry) _____

Los Angeles Wear _____

Absorption _____ Soundness _____

Wt. Cu. Ft. _____ Str. Ratio _____

Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

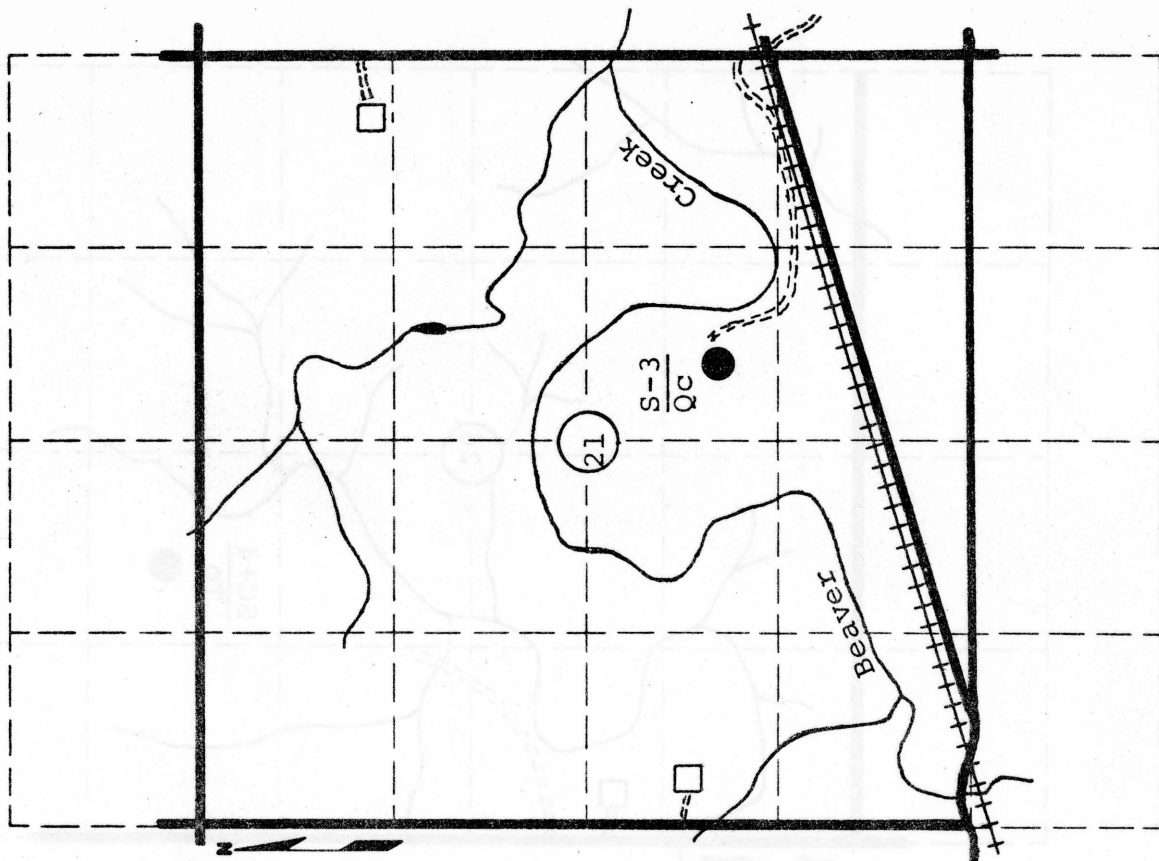
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Quaternary
Geological Source Crete Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

SG+4
To April, 1967
Site No. _____ Date _____
Material Sand & Gravel County Rawlins
Location SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 26 Twp. 2S Range 32W
Owner Vernida F. Rippe Ludell, Kansas
name _____ address _____
Nature of Deposit Dry Accessibility Poor Site Located on Plate IV
Status of Site Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To Site No. 24 & 72

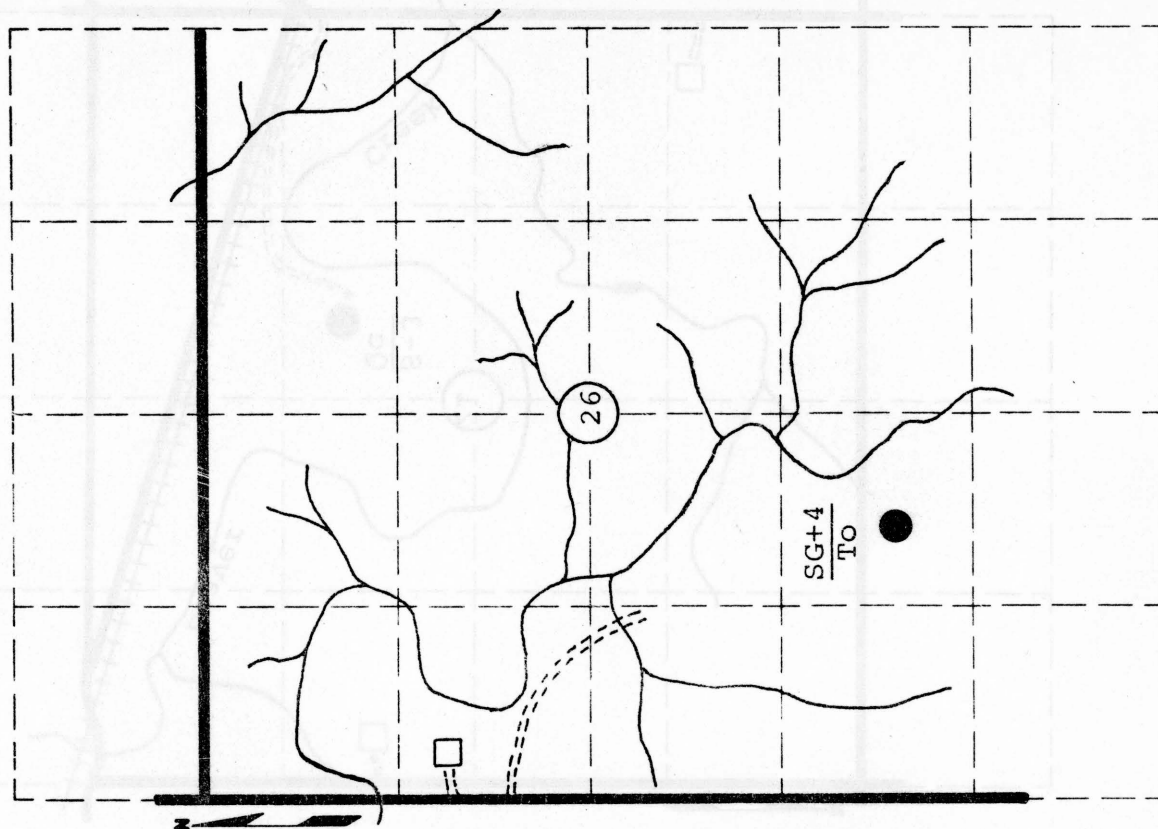
Specific Gravity (Sat.) _____ (Dry) _____

Los Angeles Wear _____

Absorption _____ Soundness _____

Wt. Cu.Ft. _____ Str. Ratio _____

Remarks _____



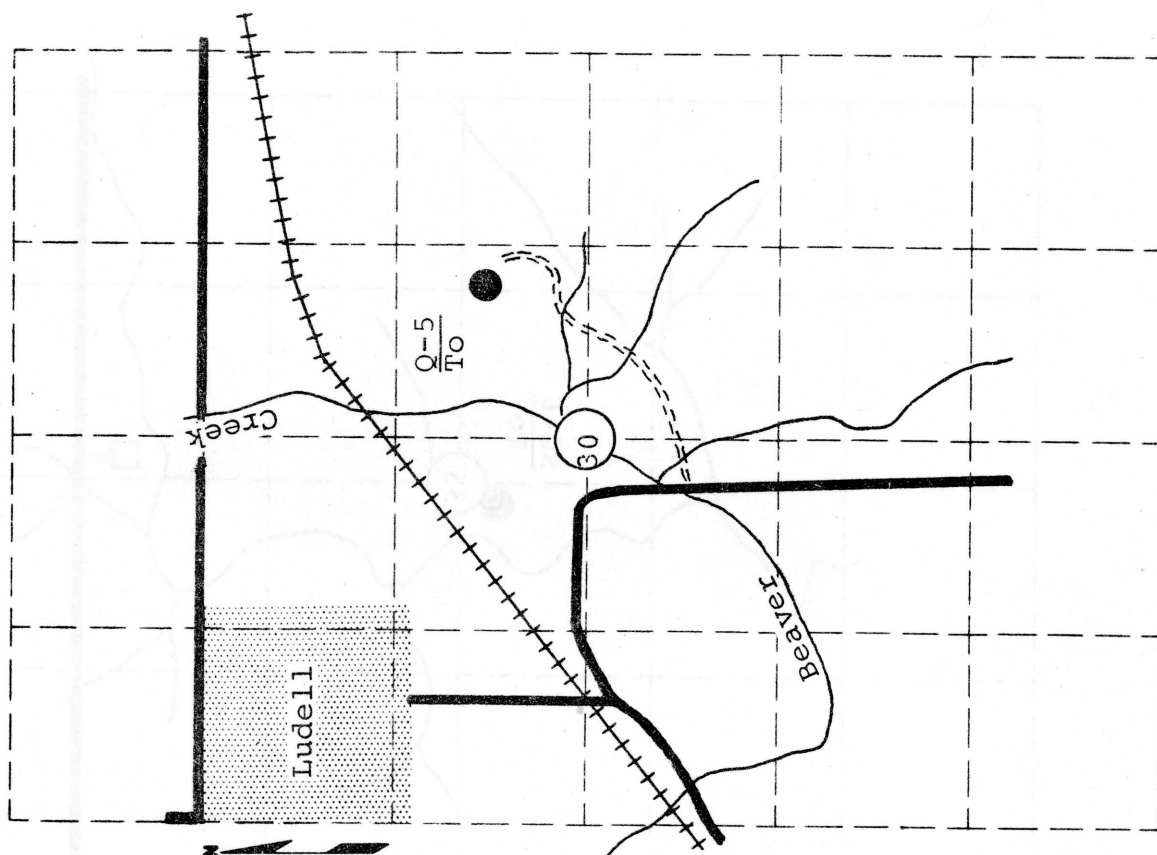
Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Scale: 1" = $\frac{1}{4}$ Mile



MATERIAL SURVEY REPORT

SG+6
To _____ Date April, 1967

Material Sand & Gravel County Rawlins

Location Center Sec. 35 Twp. 2S Range 32W

Owner Aubrey & Golda Briney McDonald, Kansas
name address

Nature of Deposit Dry Accessibility Poor Site Located on Plate IV

Status of Site Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

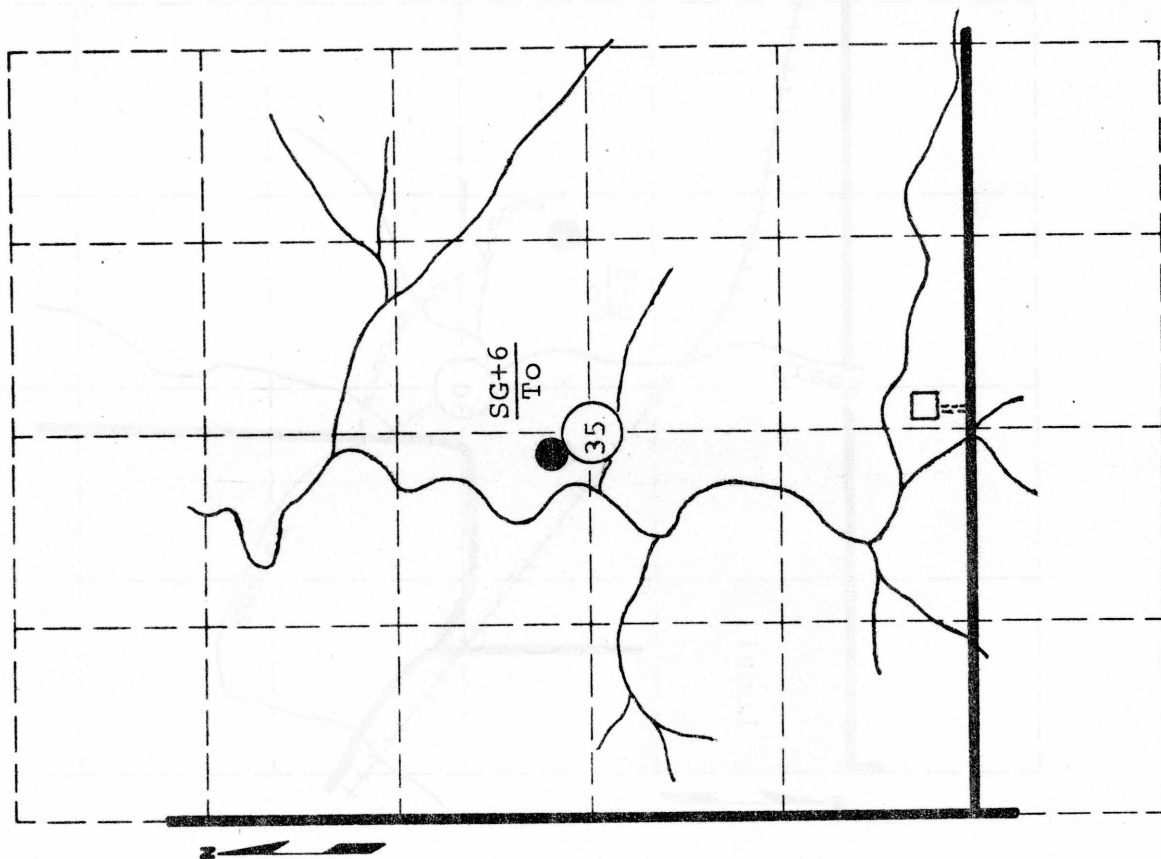
Tertiary
 Geological Age _____
 Ogallala Formation
 Geological Source _____
 Site No. 24 & 72
 Material Similar To _____

 Specific Gravity (Sat.) _____ (Dry) _____

 Los Angeles Wear _____
 Absorption _____ Soundness _____

 Wt. Cu.Ft. _____ Str. Ratio _____

 Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

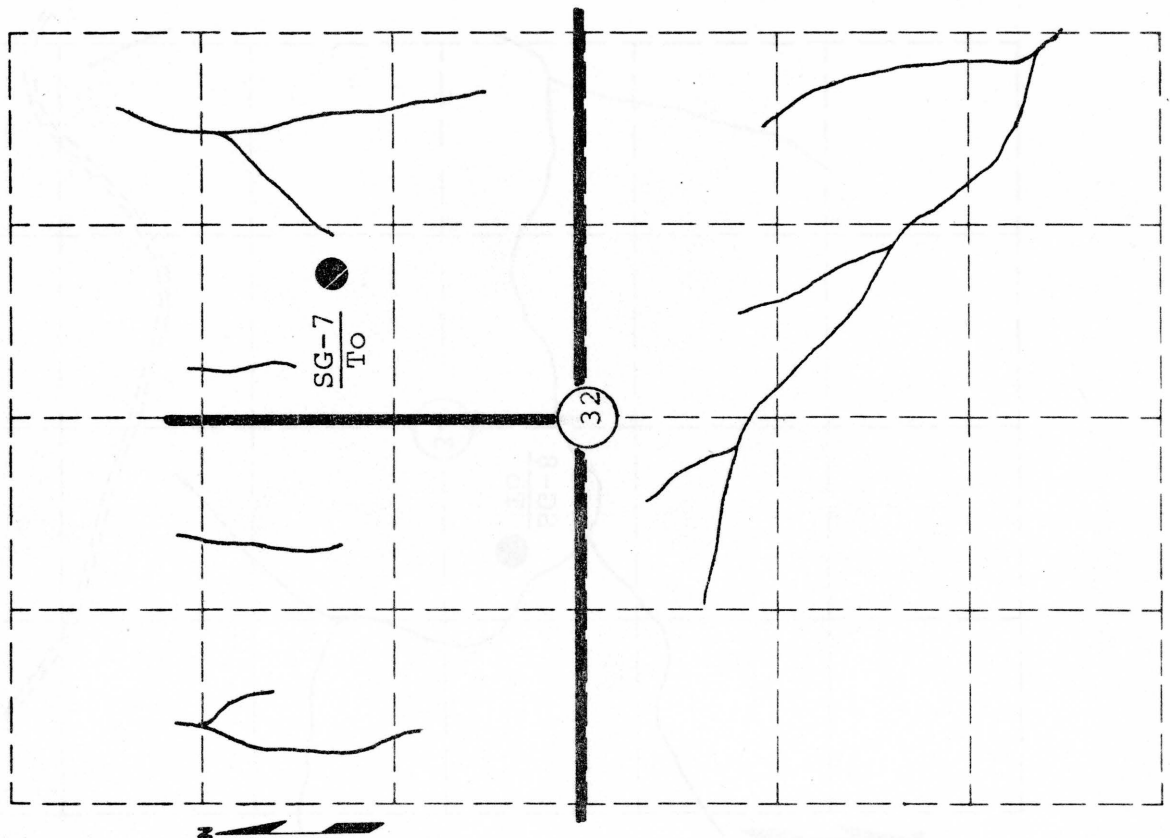
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



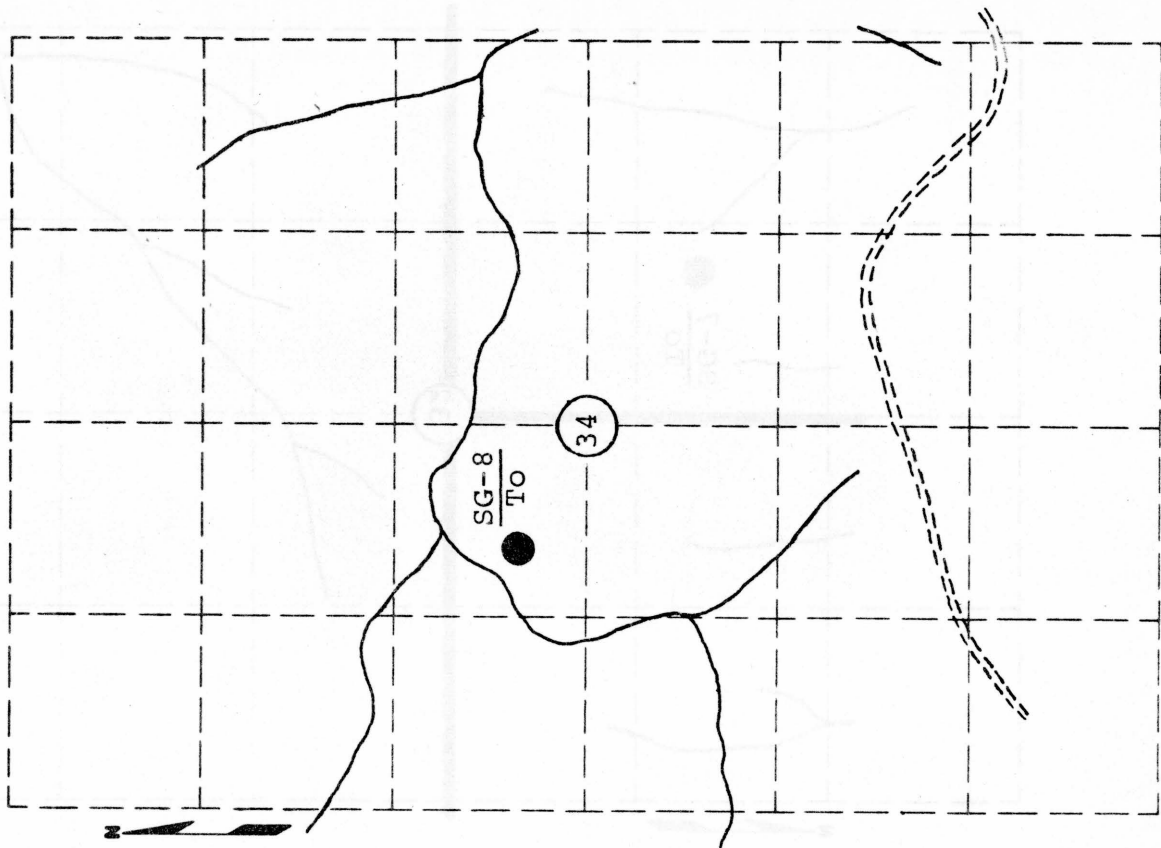
scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Geological Age _____ Tertiary _____
Geological Source _____ Ogallala Formation _____
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.-ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

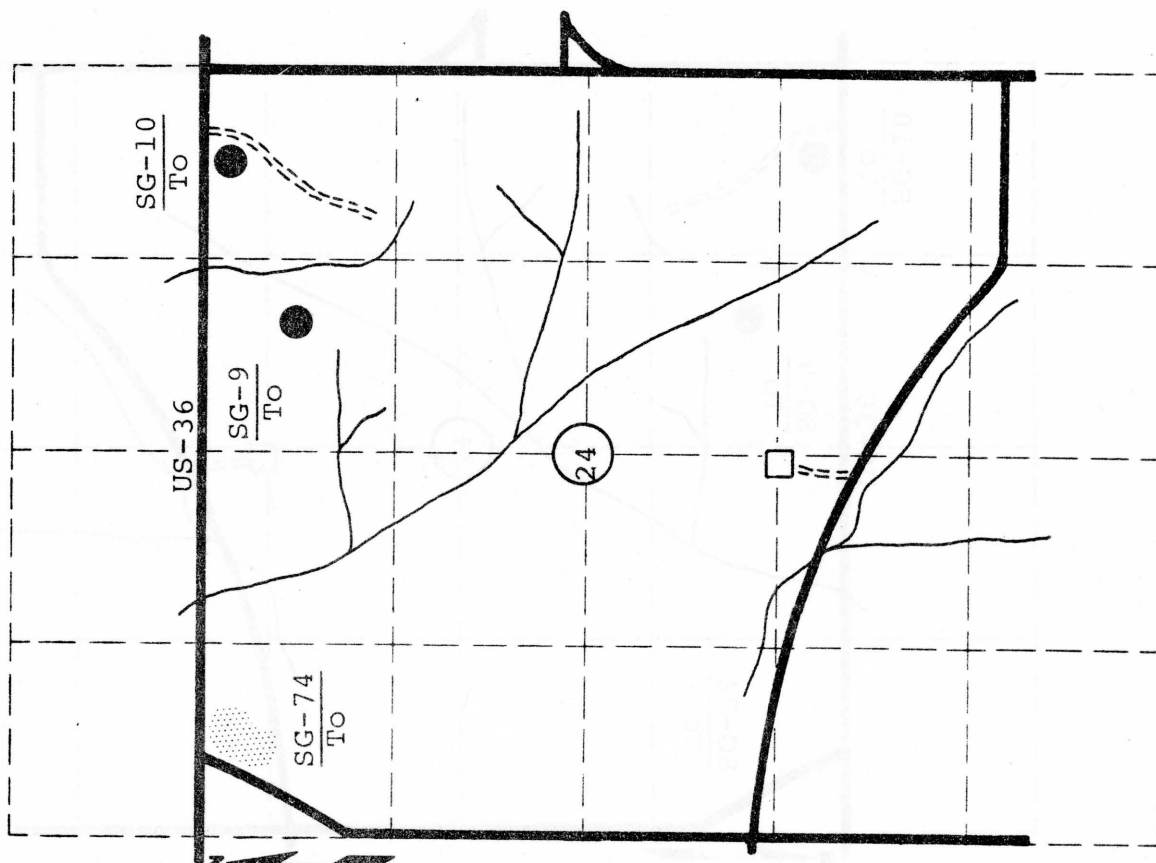
SG-9
 Site No. To Date April, 1967
 Material Sand & Gravel County Rawlins
 Location NW 1/4 NE 1/4 Sec. 24 Twp. 3S Range 35W
 Owner Delbert V. Hawkins Atwood, Kansas
 Name address
 Nature of Deposit Dry Accessibility Good Site Located on Plate III
 Status of Site Open site; not sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-Burden | Depth of Material | Percent Retained | | | | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|---|----|----|----|-----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 1/4 | 8 | 16 | 30 | 50 | 100 | | | | |
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CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To _____
 Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

SG-10
To

Site No. _____ Date April, 1967

Material Sand & Gravel County Rawlins

Location NE~~1~~ NE~~4~~ Sec. 24 Twp. 3S Range 35W

Owner Delbert V. Hawkins

name _____ address _____

Moisture of Deposit Dry Accessibility Good Site Located on Plate III

Status of Site Open site; not sampled

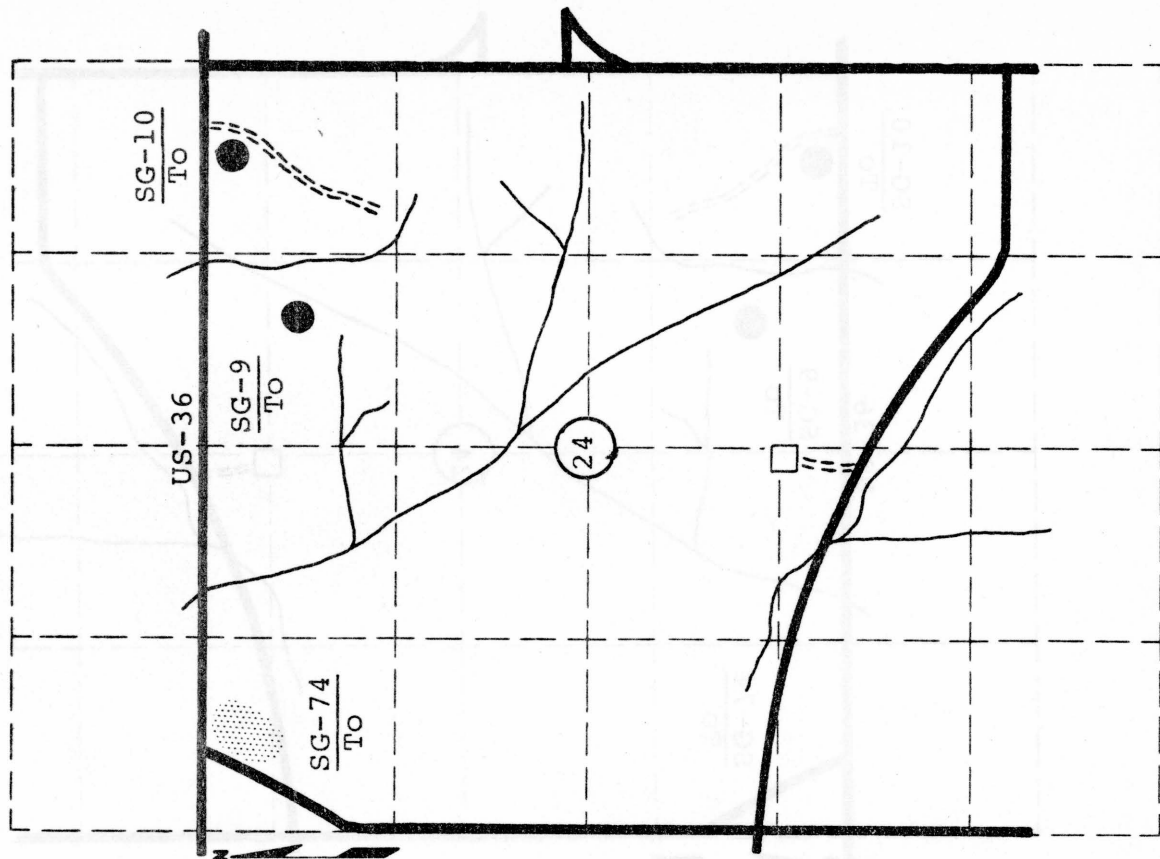
EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age _____ Tertiary _____
Geological Source _____ Ogallala Formation _____
Material Similar To _____

Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

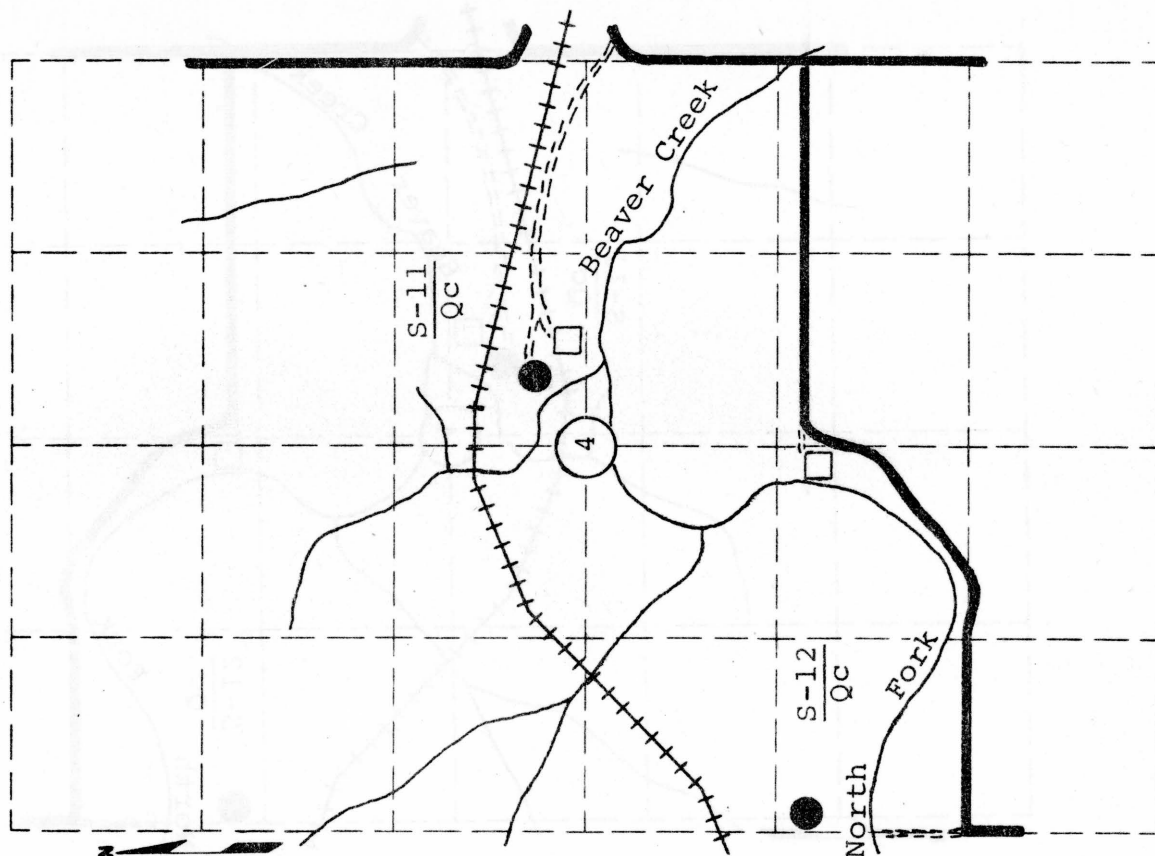
S-11
Site No. QC Date April, 1967
Material Sand County Rawlins
Location SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 4 Twp. 3S Range 34W
Owner Albert L. Harden Atwood, Kansas
name
Nature of Deposit Dry Accessibility Good Site Located on Plate III
Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Quaternary
Geological Source Crete Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



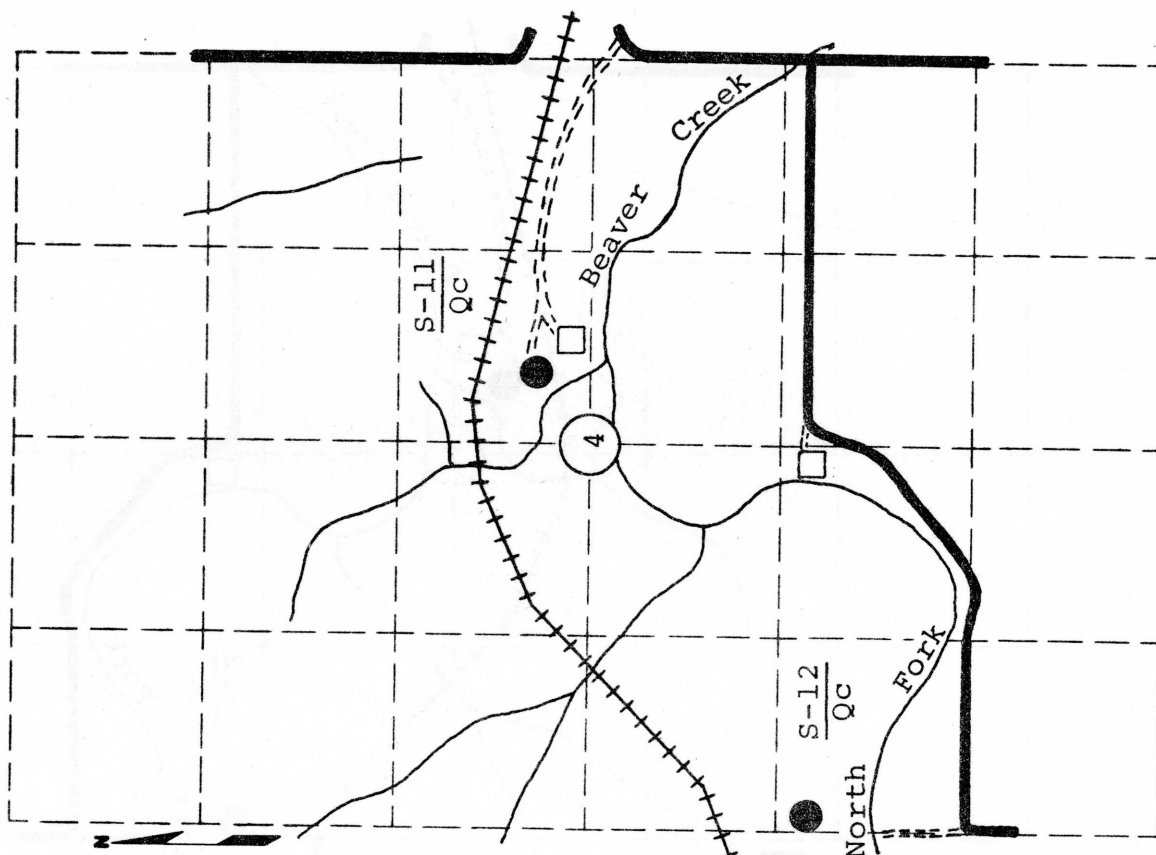
Scale: 1" = $\frac{1}{4}$ Mile

Site No. Qc Date April, 1967
 Material Sand County Rawlins
 Location SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 4 Twp. 3S Range 34W
 Owner Jessie Argabright Atwood, Kansas
 name address
 Nature of Deposit Dry Accessibility Poor Site Located on Plate III
 Status of site Open site; not sampled

[illegible]

CORRELATION DATA

Geological Age Quaternary
Geological Source Crete Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

S-13
Qc Date April, 1967

Material Sand County Rawlins

Location SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 5 Twp. 3S Range 34W

Owner Arthur J. & Anna Samson Atwood, Kansas

Name _____ address _____

Mature of Deposit Dry Accessibility Poor Site Located on Plate III

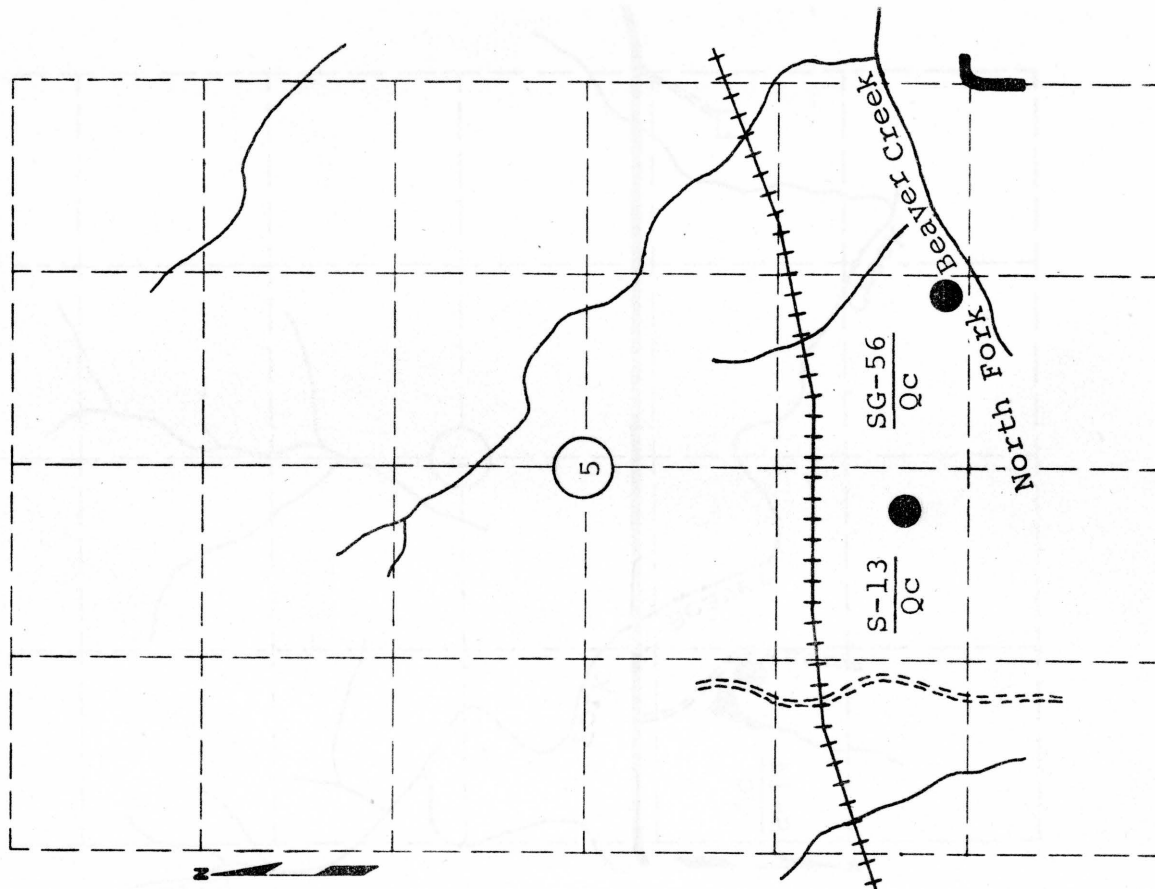
Status of site Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age _____ Quaternary _____
Geological Source _____ Crete Formation _____
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

S-14
QC

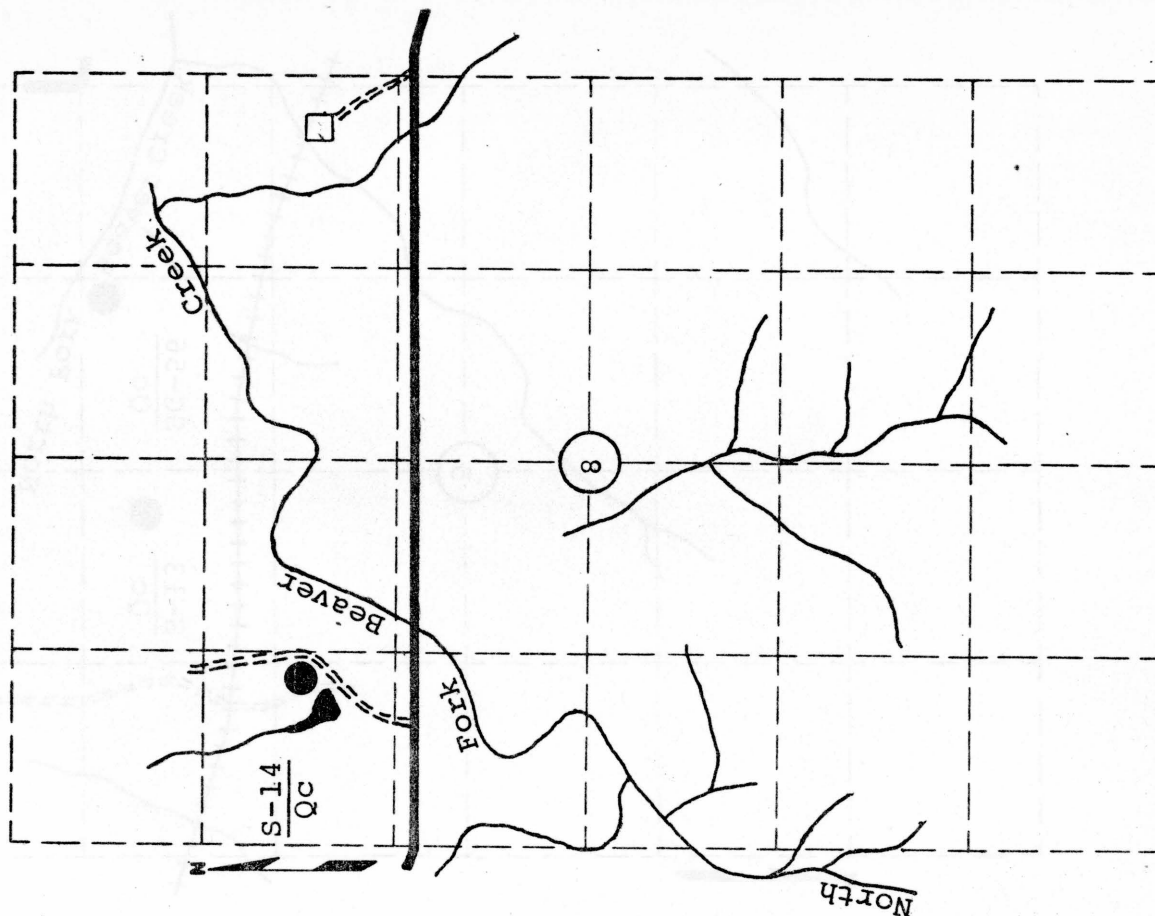
Site No. Qc Date April, 1967
Material Sand County Rawlins
Location NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 8 Twp. 3S Range 34W
Owner Arthur J. & Anna Samson Atwood, Kansas
Name _____ address _____
Nature of Deposit Dry Accessibility Fair Site located on Plate III
Status of site. Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Quaternary
Geological Source Crete Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu. Ft. _____ Str. Ratio _____
Remarks _____



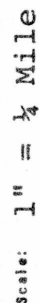
Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Geological Age Quaternary
Geological Source Crete Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



MATERIAL SURVEY REPORT

SG+16
To _____ date April, 1967

Material Sand & Gravel county Rawlins

Location NW $\frac{1}{4}$, NE $\frac{1}{4}$ Sec. 27 Twp. 3S Range 34W

Owner Joseph C. Kogal name _____ address _____

Nature of Deposit Dry Accessibility Good Site Located on Plate III

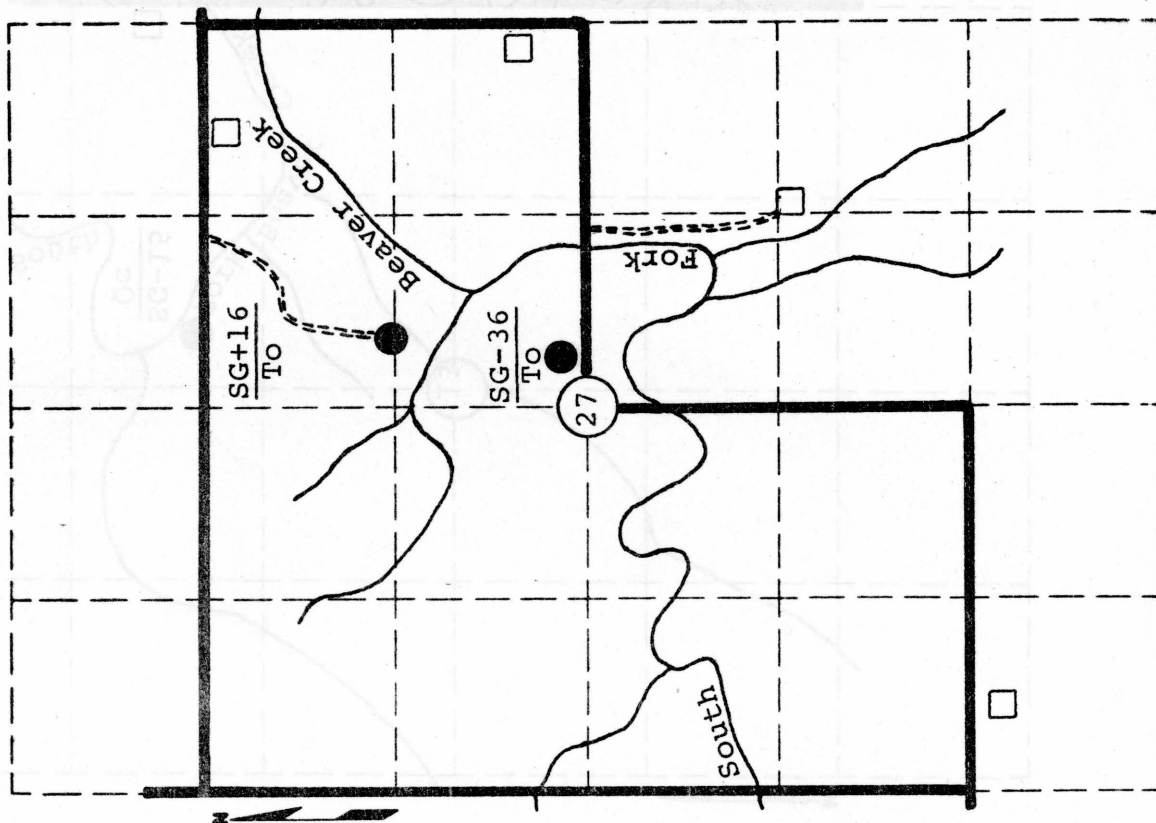
Status of Site Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.ft. _____ Str. Ratio _____
Remarks _____



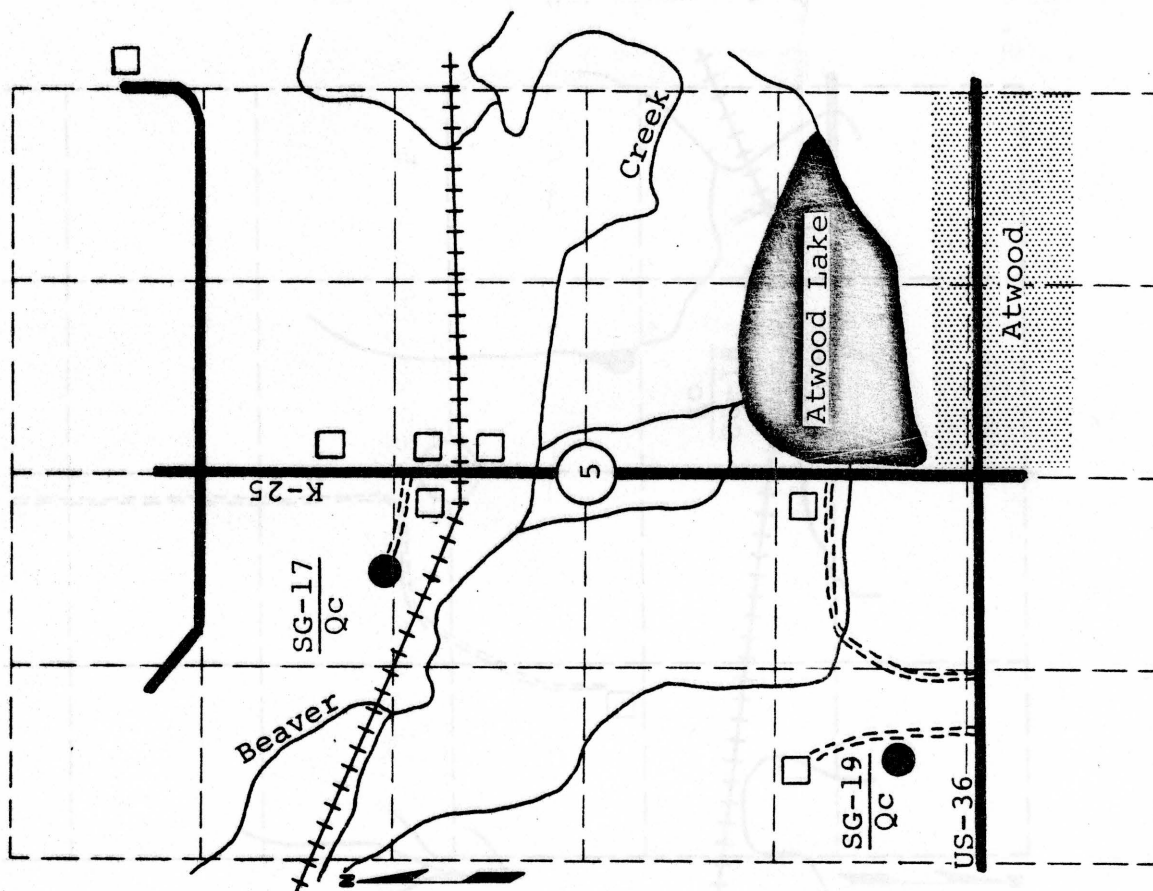
Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Scale: 1" = $\frac{1}{4}$ Mile

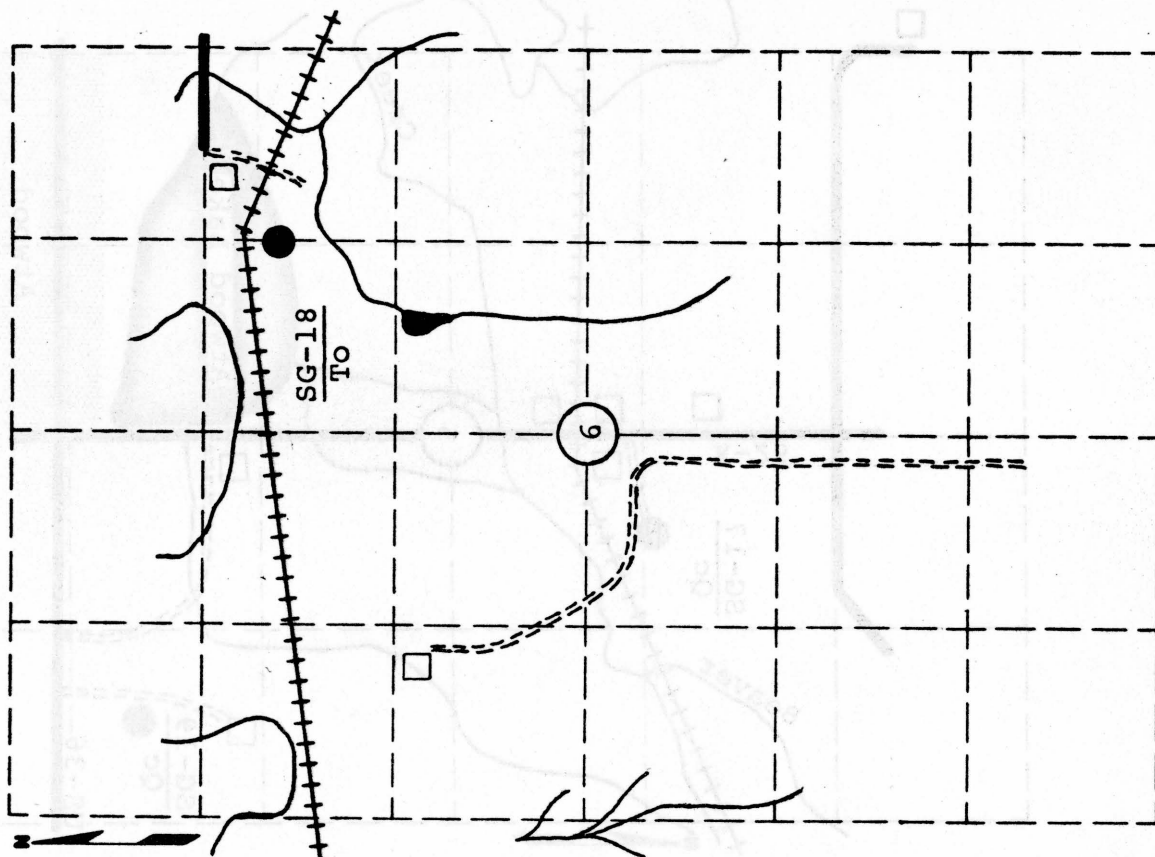


MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Scale: 1" = $\frac{1}{4}$ Mile



MATERIAL SURVEY REPORT

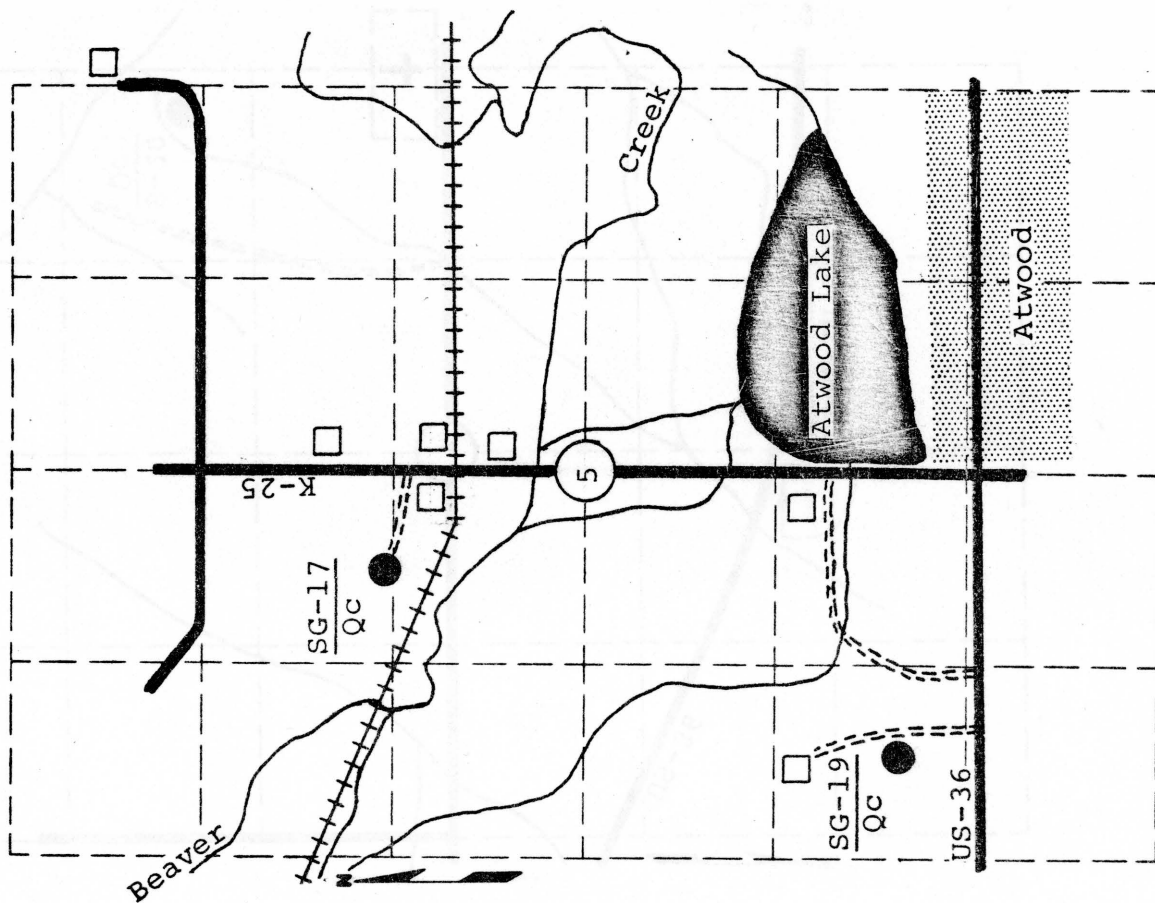
SG-19
 Site No. Qc Date April, 1967
 Material Sand & Gravel County Rawlins
 Location SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 5 Twp. 3S Range 33W
 Owner Louis Prochazka Atwood, Kansas
 Name address
 Nature of Deposit Dry Accessibility Good Site Located on Plate IV
 Status of Site Open site; not sampled

EXPLORATION DATA

| Test Hole | Material at bottom of hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|---|---|----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | 100 | |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar To Site No. 50
 Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Near _____
 Absorption _____ Soundness _____
 Mt. Cu. Ft. _____ Str. Ratio _____
 Remarks _____



MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Geological Age Quaternary
Geological Source Crete Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
St. Co. Ft. _____ Str. Ratio _____
Remarks _____

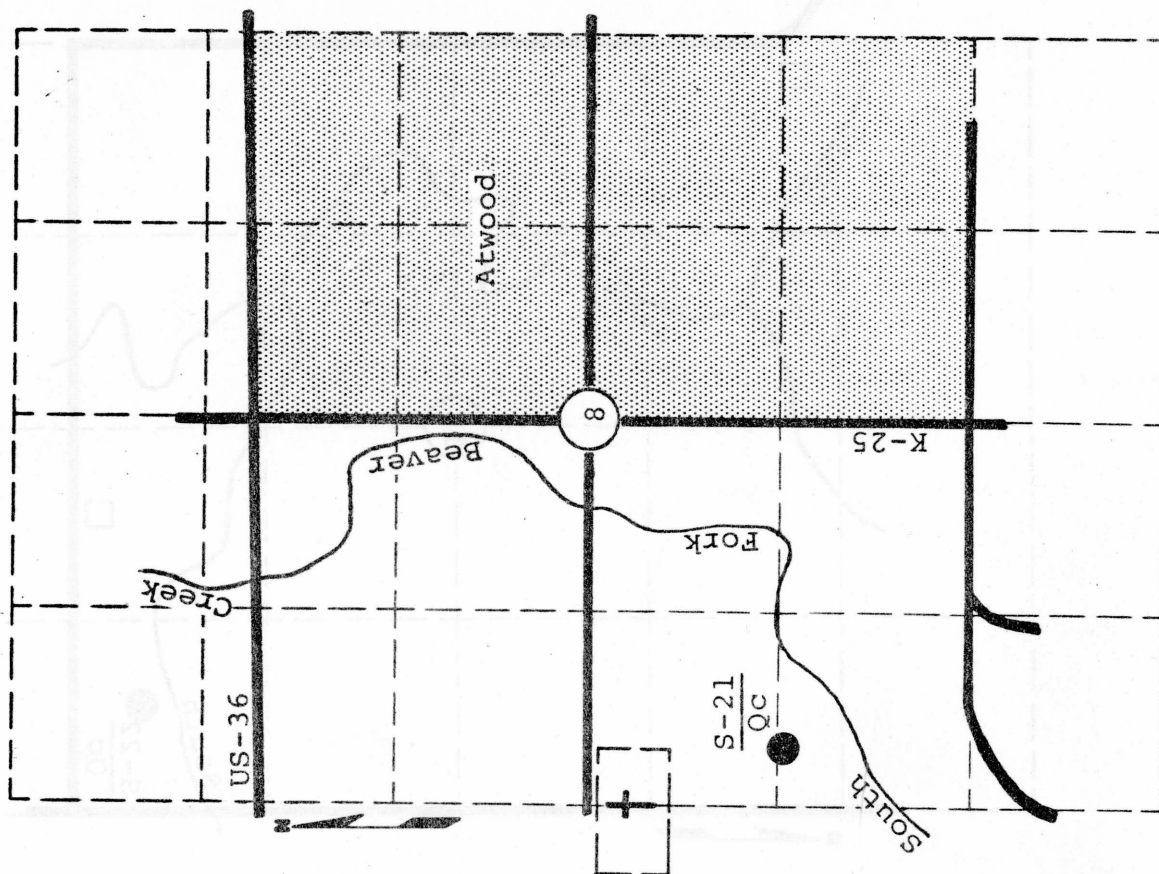


MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Scale: 1" = $\frac{1}{4}$ Mile

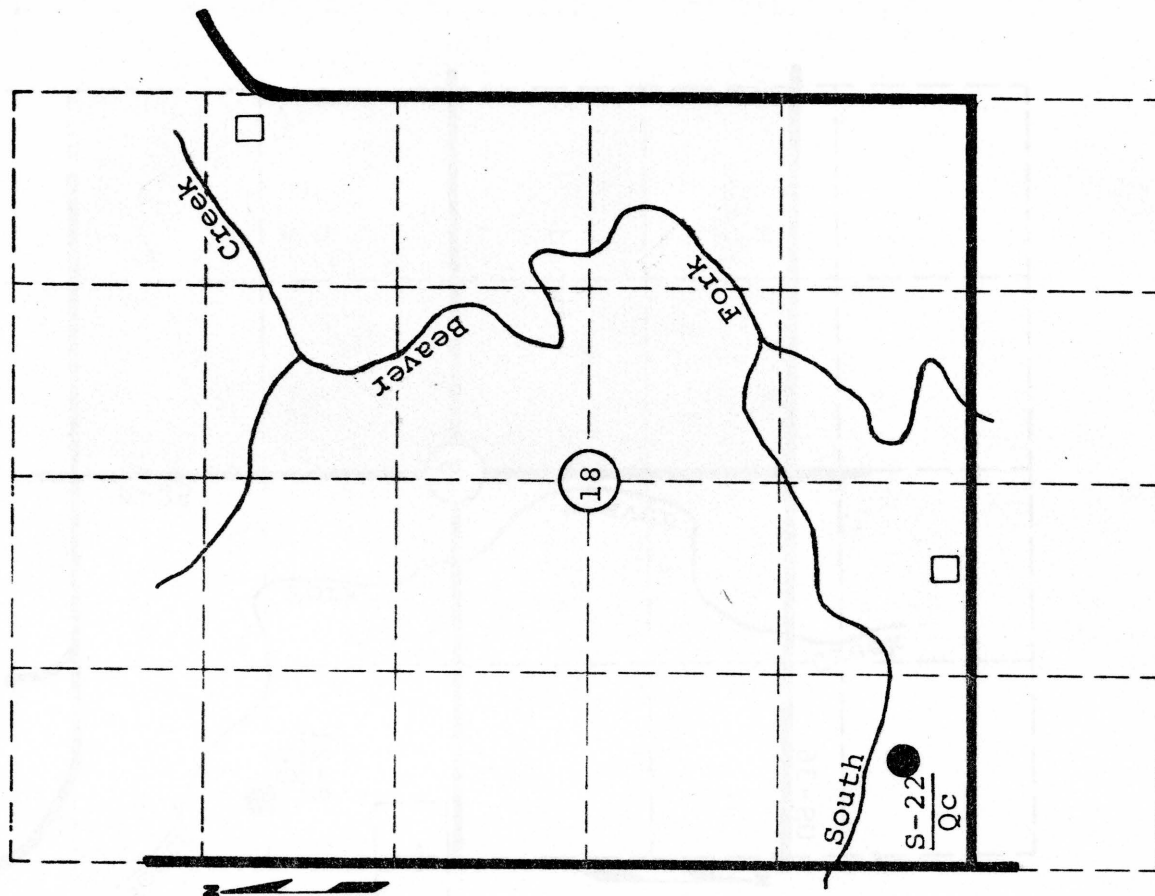


MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Scale: 1" = $\frac{1}{4}$ Mile



STATE HIGHWAY COMMISSION OF KANSAS

MATERIAL SURVEY REPORT

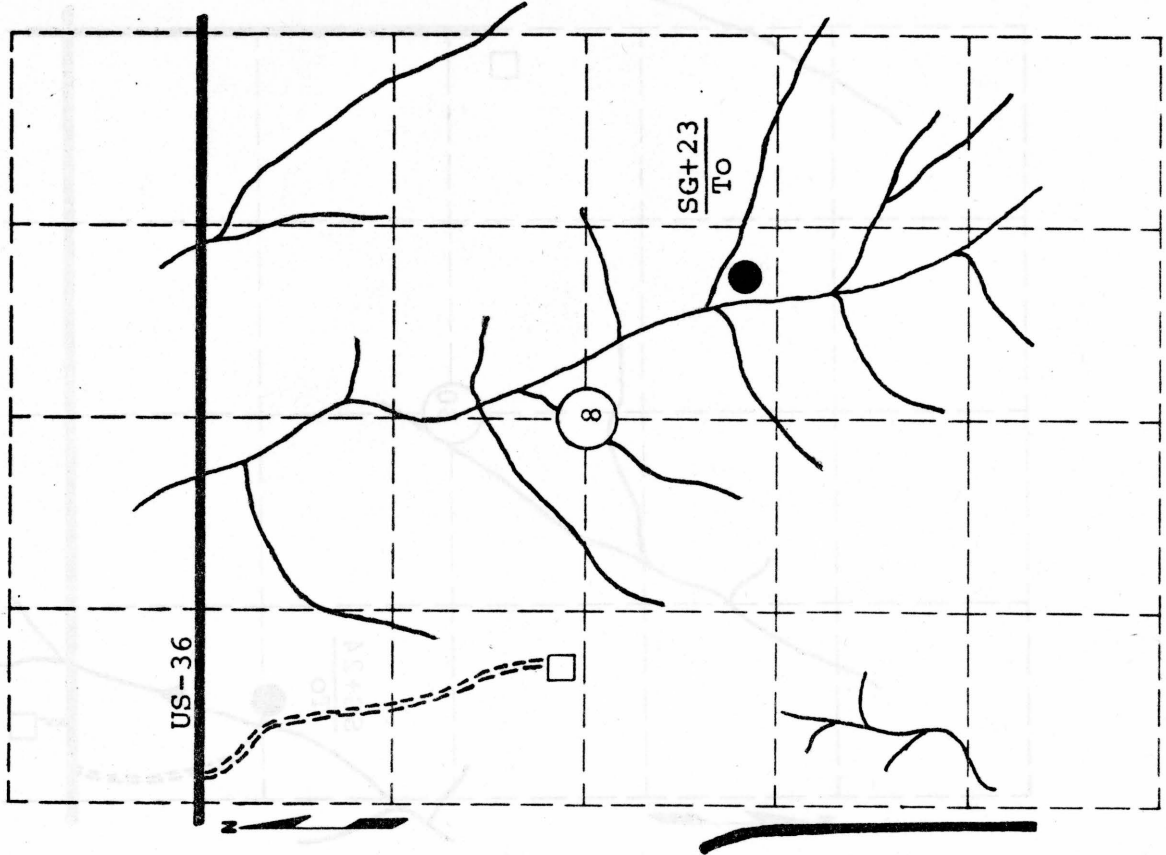
SG+23
To
Site No. _____ Date April, 1967
Material Sand & Gravel County Rawlins
Location Center SE 1/4 Sec. 8 Twp. 3S Range 32W
Owner Jolius Runge address Ludell, Kansas
Nature of Deposit Dry Accessibility Poor Site Located on Plate IV
Status of Site Open site; not sampled

EXPLORATION DATA

| Test Hole | Material at bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | Wash 200 | G.F. | L.L. | P.I. | |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|---|---|----|----|----------|------|------|------|----|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | | | | | 50 |
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CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material similar to Site No. 72
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = 1/4 Mile

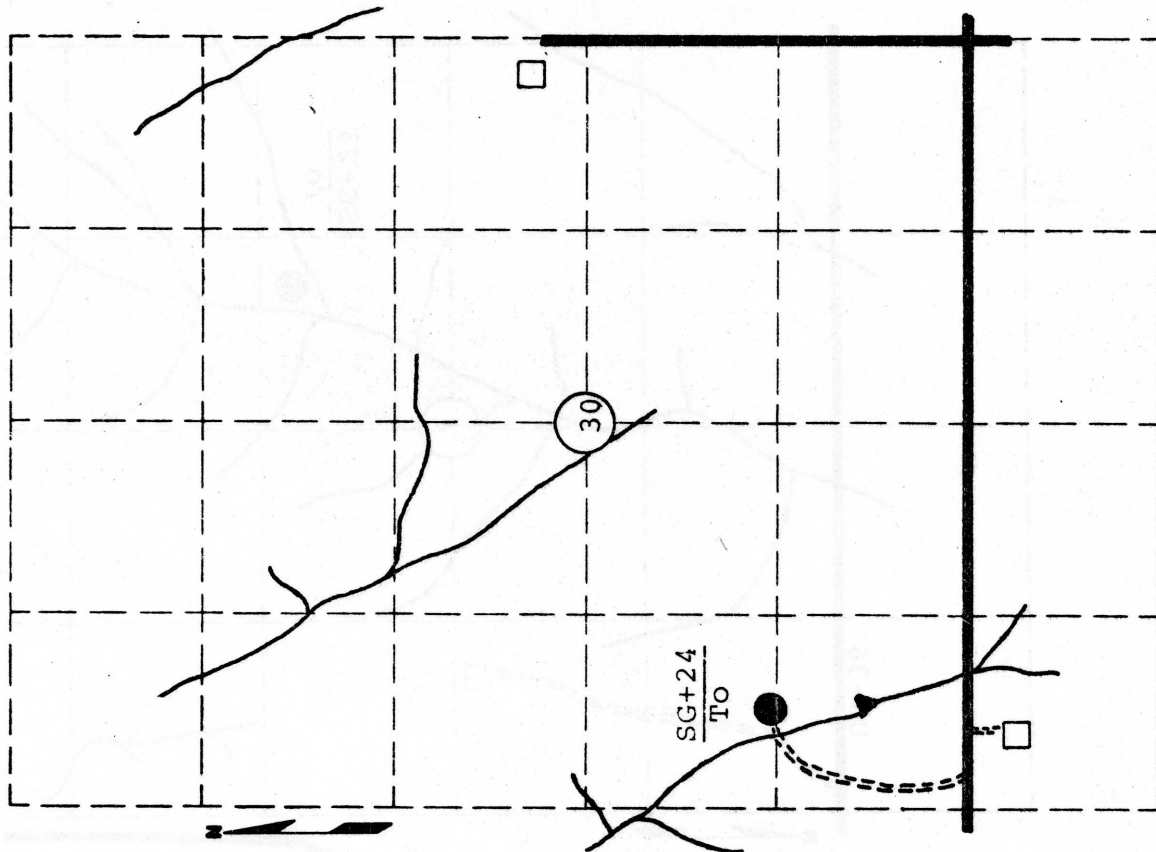
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu. Ft. _____ Str. Ratio _____
Remarks County pit



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

SG-25
QC

Site No. _____ Date April, 1967

Material Sand & Gravel County Rawlins

Location NW 1/4 NE 1/4 Sec. 15 Twp. 4S Range 31W

Owner Walter & Edith Cederberg Oberlin, Kansas
address

Nature of Deposit Dry Accessibility Fair Site Located on Plate VI

Status of Site Open site; not sampled

EXPLORATION DATA

| Test
Hole | Material
at
Bottom
of Hole | Depth
of
over-
Burdan | Depth
of
Material | Percent Retained | | | | | | | | | Wash
200 | G.F. | L.L. | P.I. |
|--------------|-------------------------------------|--------------------------------|-------------------------|------------------|-----|-----|---|---|----|----|----|-----|-------------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | 100 | | | | |
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CORRELATION DATA

Geological Age Quaternary

Geological Source Crete Formation

Material Similar To _____

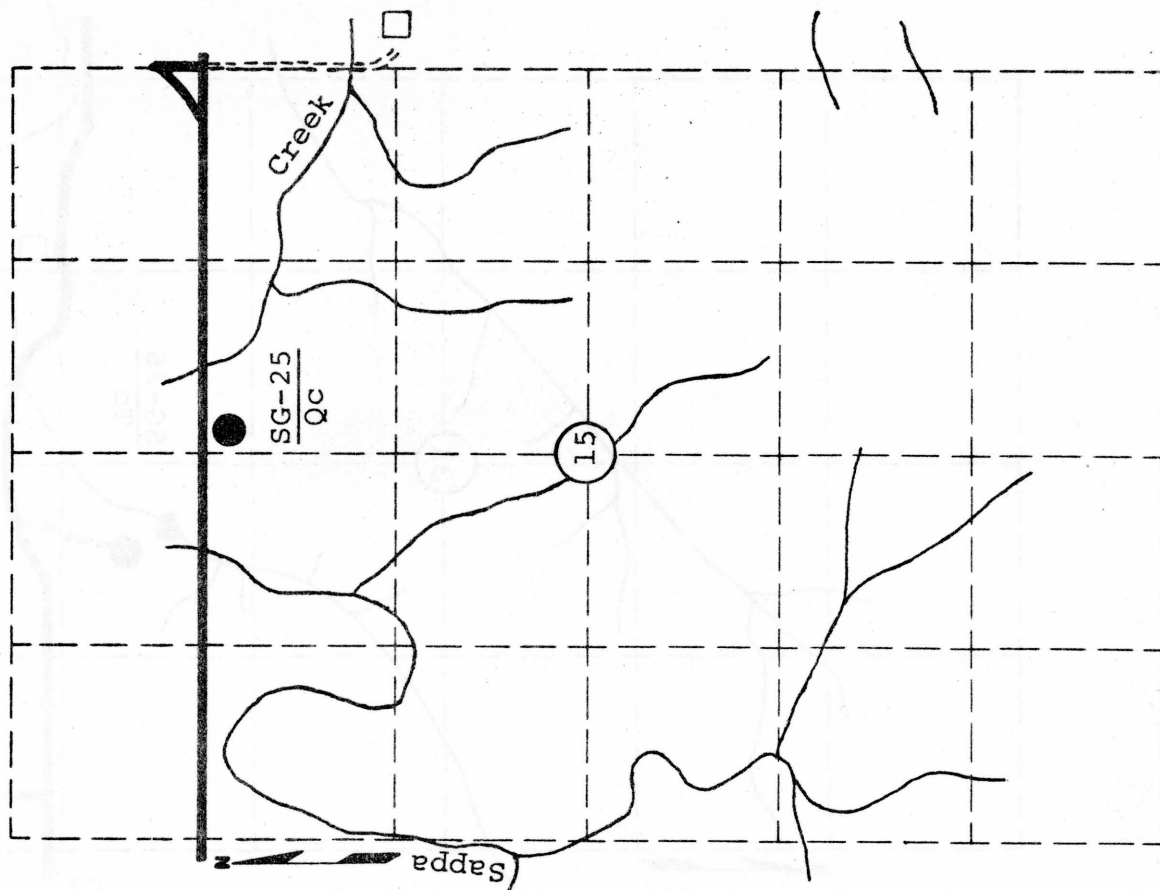
Specific Gravity (sat.) _____ (dry) _____

Los Angeles Wear _____

Absorption _____ Soundness _____

Wt. Cu.ft. _____ Str. Ratio _____

Remarks _____



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

SG-26

Site No. To Date April, 1967

Material Sand & Gravel County Rawlins

Location SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 31 Twp. 4S Range 35W

Owner Gladys M. Latta address McDonald, Kansas

Nature of Deposit Dry Accessibility Good Site Located on Plate V

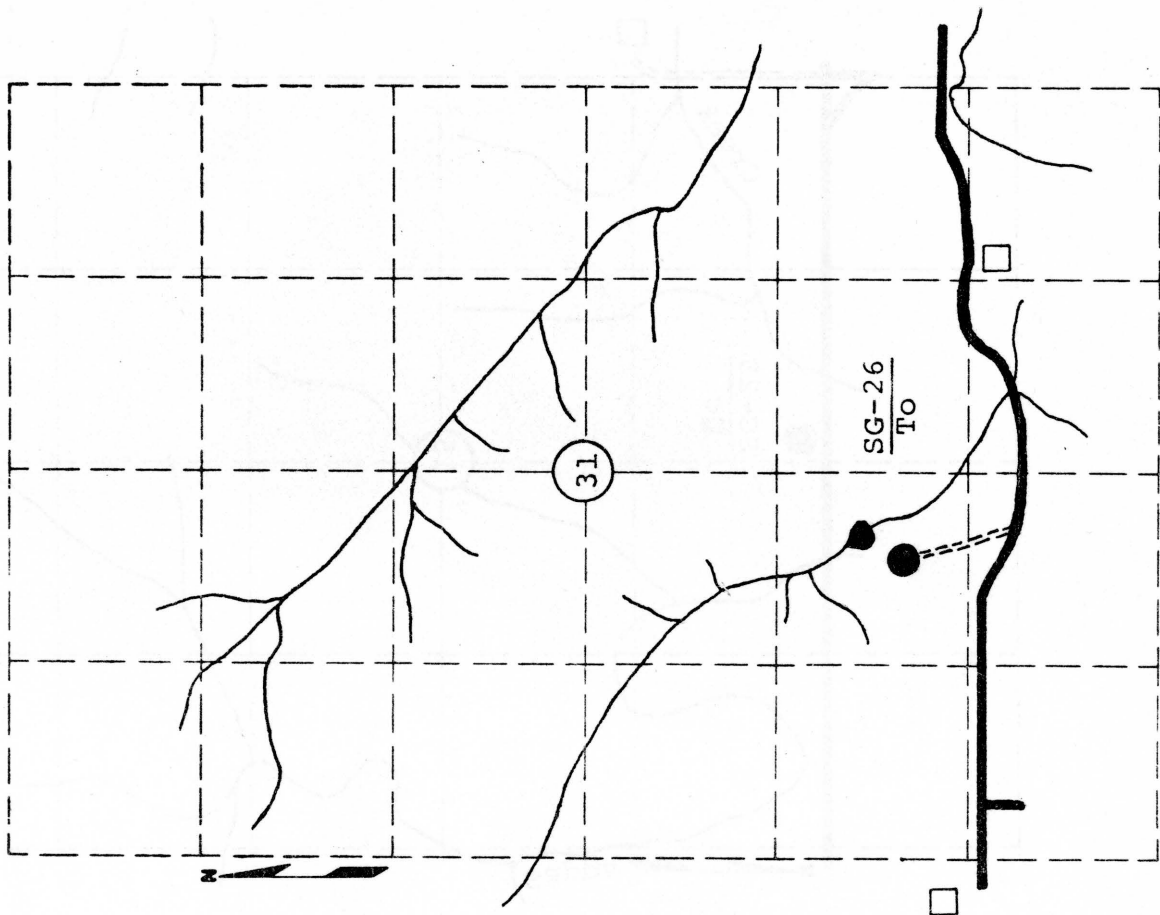
Status of Site Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age _____ Tertiary _____
Geological Source _____ Ogallala Formation _____
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

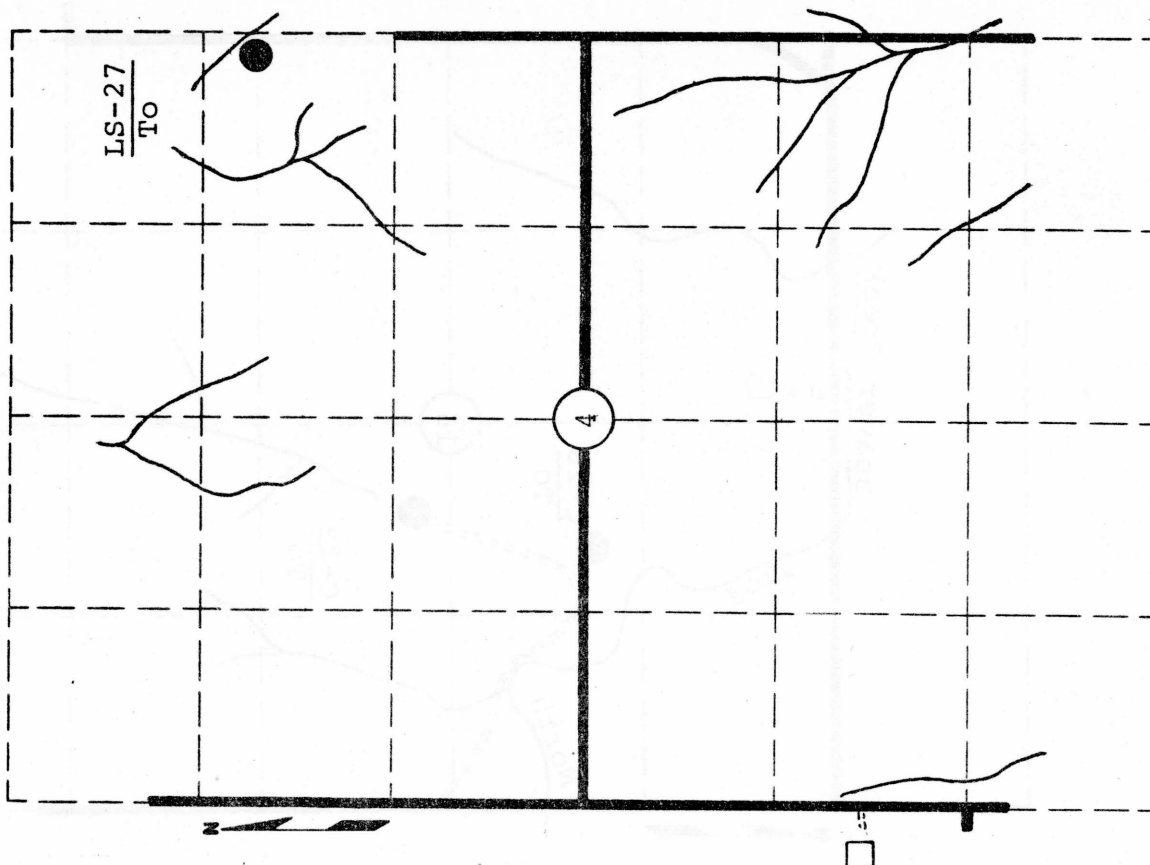
Site No. LS-27 To April, 1967
 Material Algal Limestone County Rawlins
 Location NE 1/4 NE 1/4 Sec. 4 Twp. 4S Range 36W
 Owner Rowena Williams McDonald, Kansas
 Nature of Deposit Dry Accessibility Poor Site Located on Plate III
 Status of Site Open site; not sampled

EXPLORATION DATA

| Test Hole | Material at bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|---|----|----|----|-----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 1/4 | 8 | 16 | 30 | 50 | 100 | | | | |
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CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To _____
 Specific Gravity (Sat.) _____ (Dry)
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Co. Ft. _____ Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

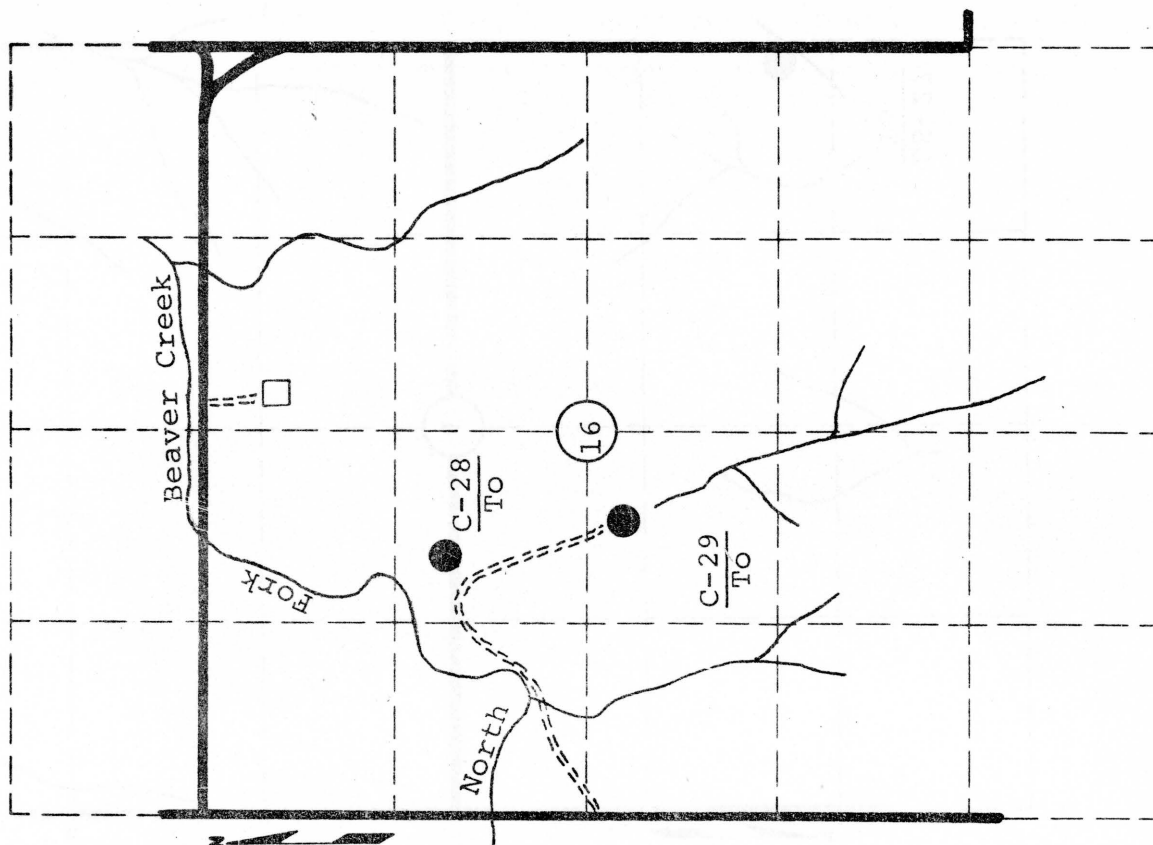
C-28
To April, 1967
Site No. _____ Date _____
Material Chert County Rawlins
Location SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 16 Twp. 4S Range 36W
Owner Robert L. & Helen L. Johnson McDonald, Kansas
Name _____ address _____
Nature of Deposit Dry accessibility Good Site Located on Plate V
Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

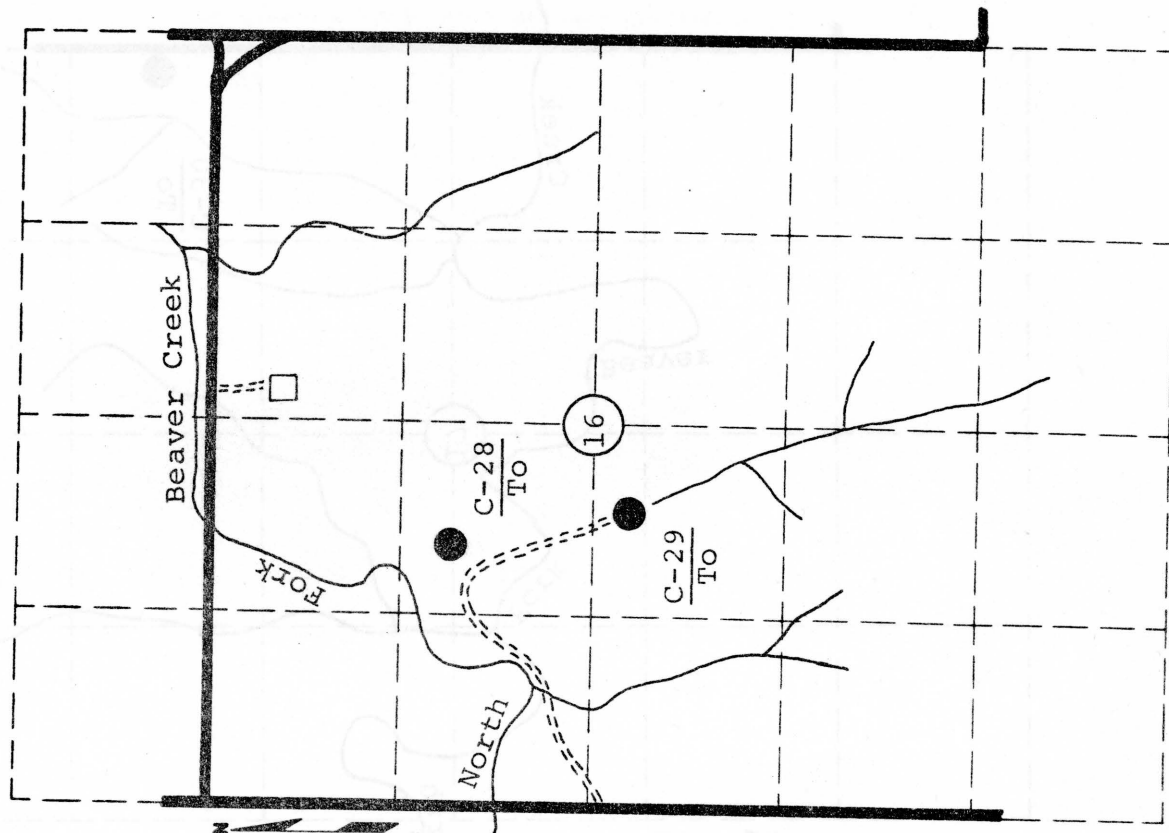
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age _____ Tertiary _____
Geological Source _____ Ogallala Formation _____
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu. Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

C-30
To _____ Date April, 1967

Material Chert _____ County Rawlins _____

Location SE $\frac{1}{4}$ SE $\frac{1}{4}$ _____ Sec. 17 _____ Twp. 4S _____ Range 36W _____

Owner Loren Claude Bell _____ McDonald, Kansas _____
name address

Nature of Deposit DRY _____ accessibility Good _____ Site Located on Plate V _____

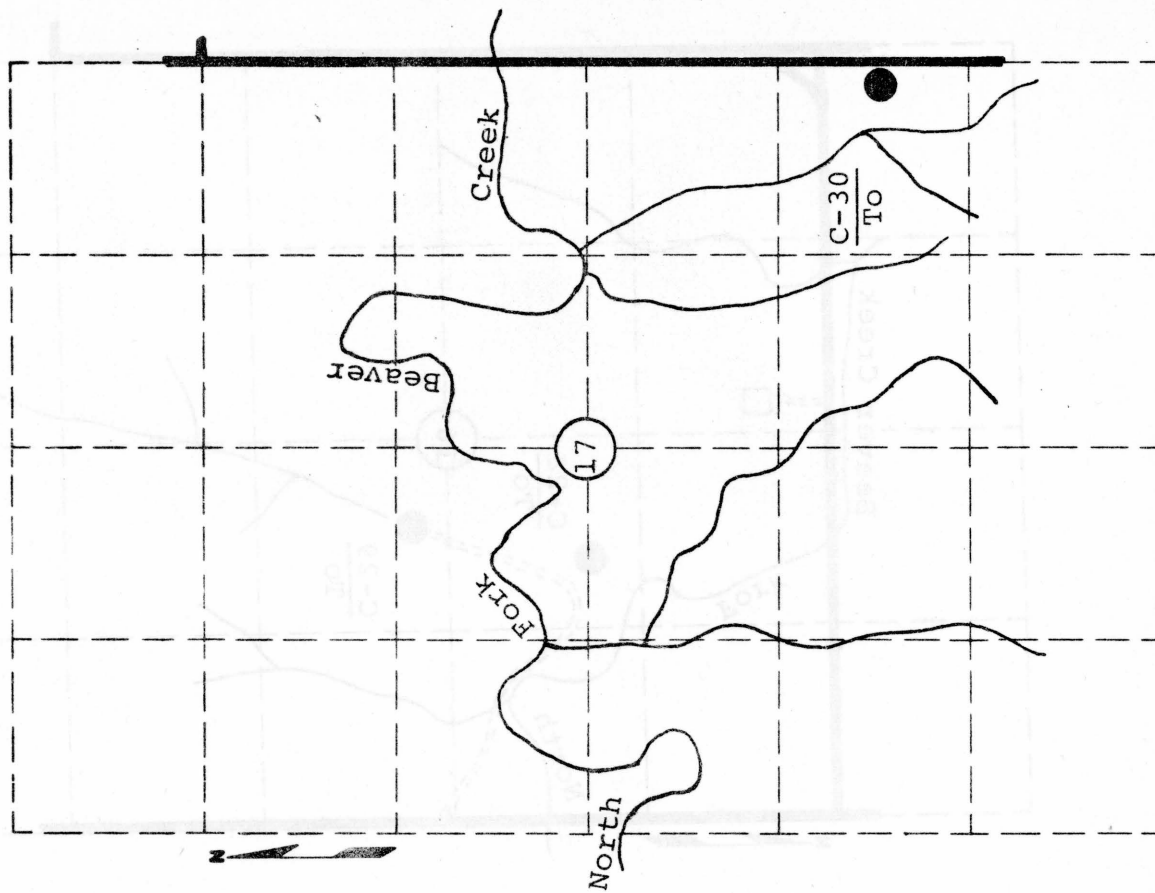
Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age _____ Tertiary _____
Geological Source _____ Ogallala Formation _____
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu. Ft. _____ Str. Ratio _____
Remarks _____



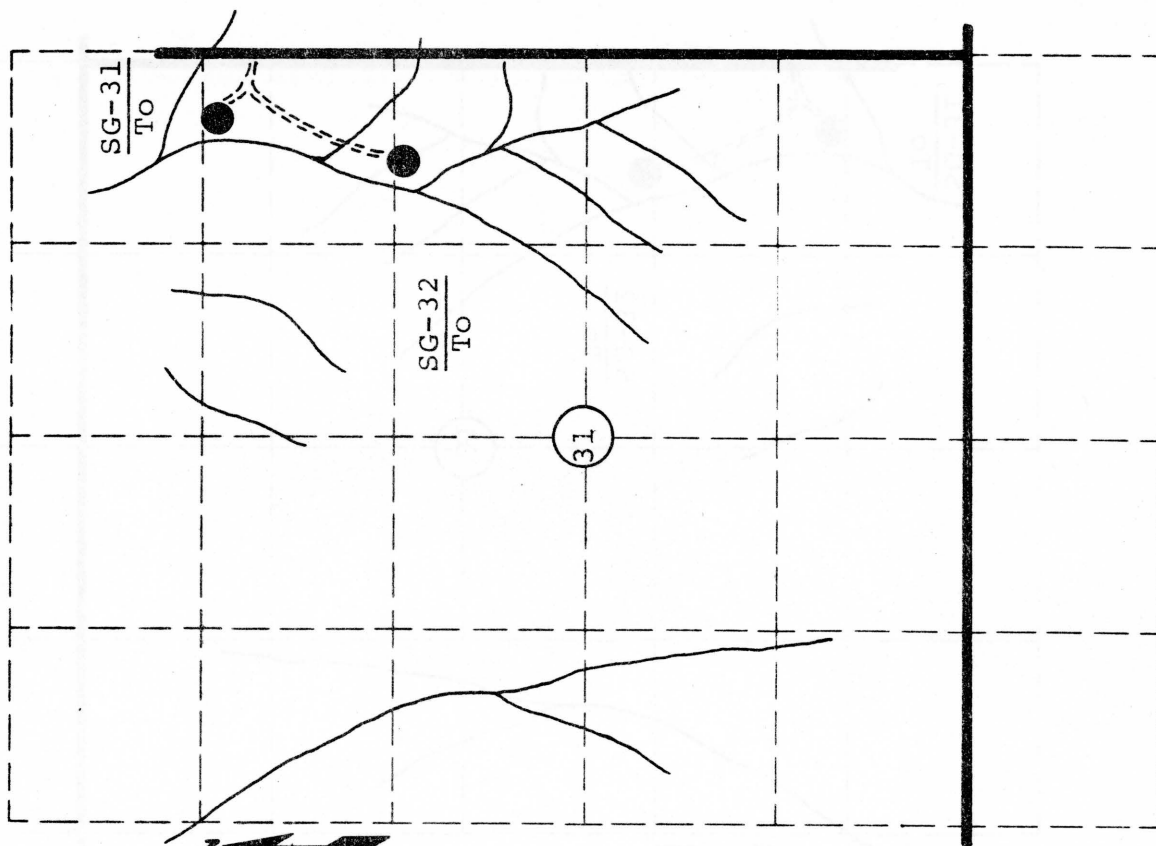
Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Scale: 1" = $\frac{1}{4}$ Mile



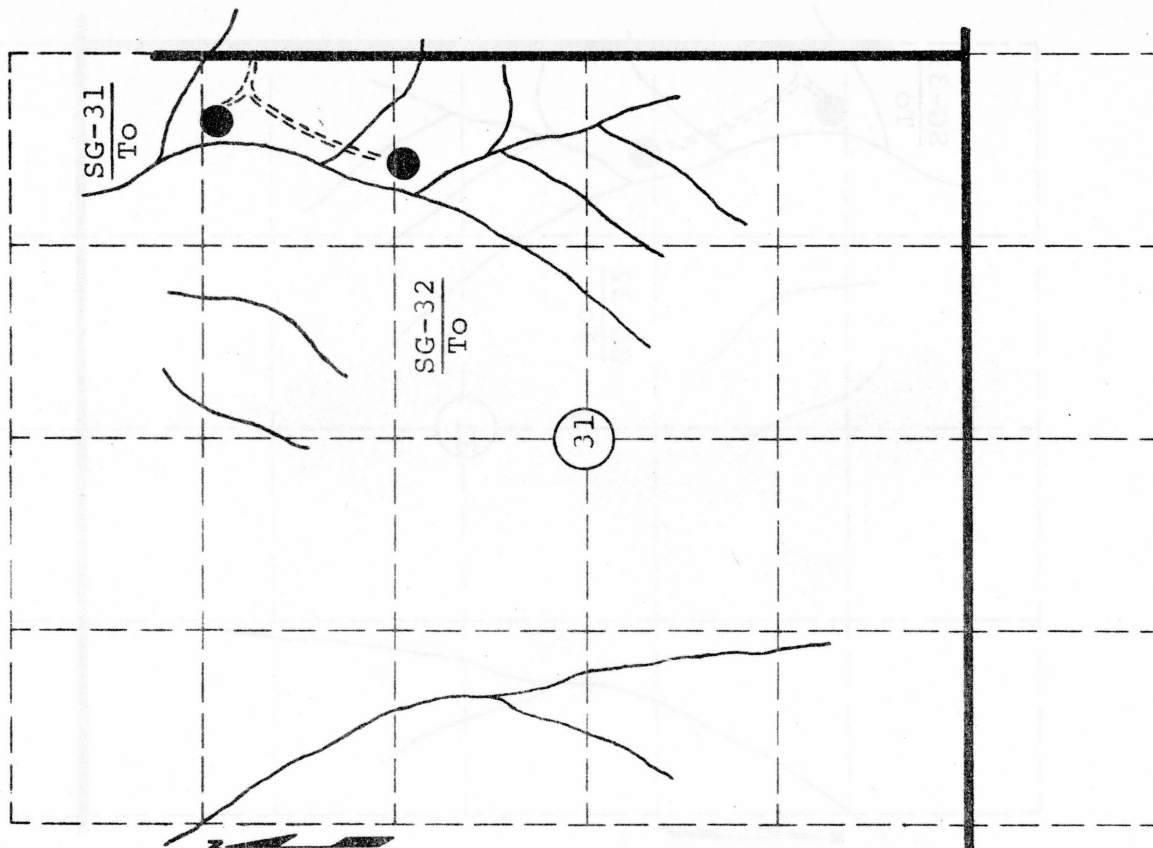
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age _____ Tertiary _____
Geological Source _____ Ogallala Formation _____
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu. Ft. _____ Str. Ratio _____
Remarks _____



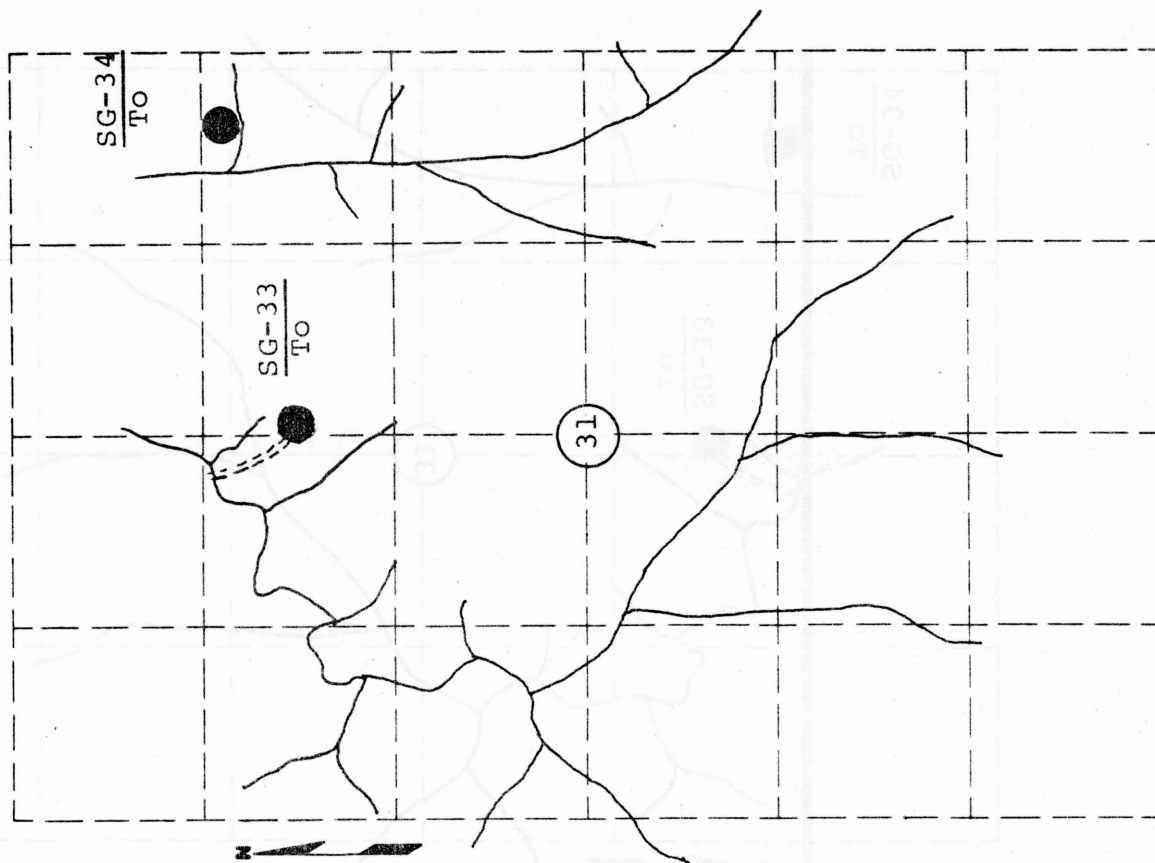
Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

scale: 1" = $\frac{1}{4}$ Mile



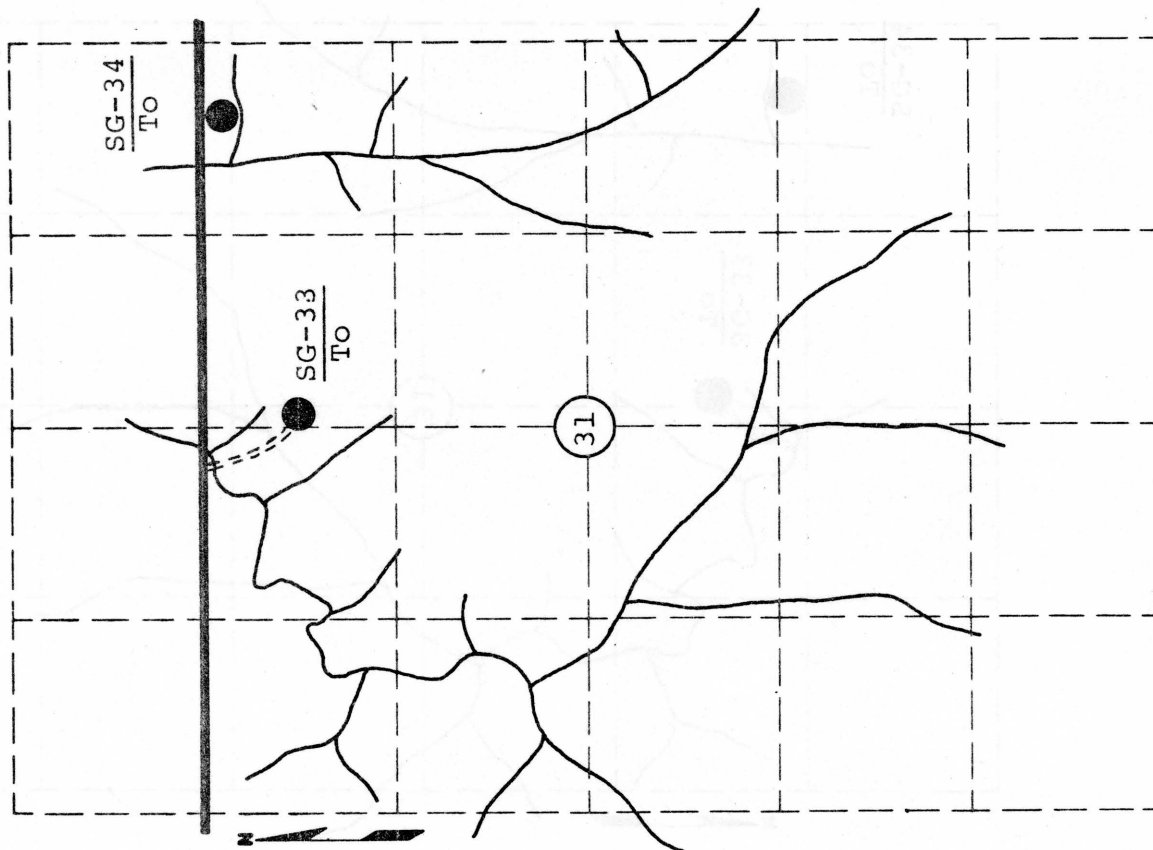
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age _____ Tertiary _____
Geological Source _____ Ogallala Formation _____
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

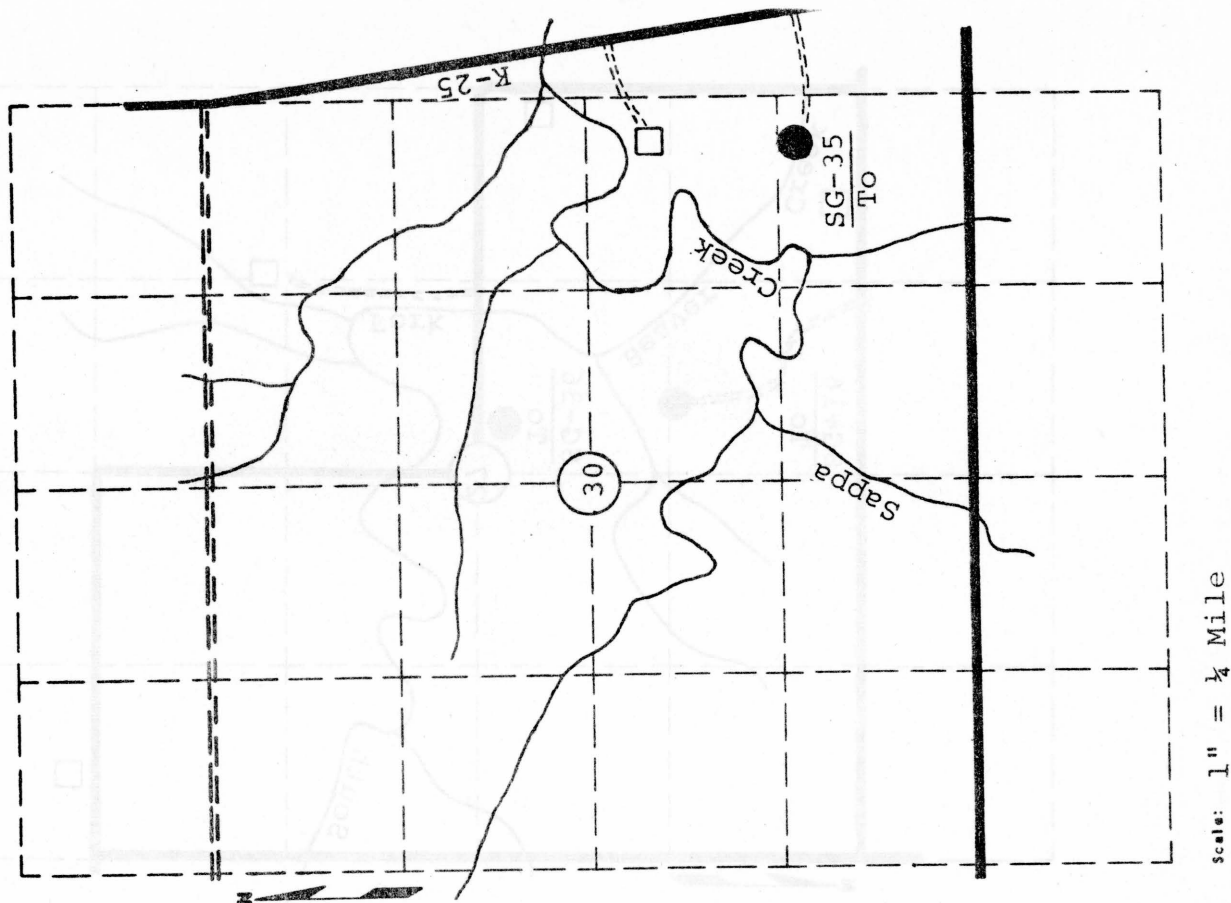
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.ft. _____ Str. Ratio _____
Remarks _____



STATE HIGHWAY COMMISSION OF KANSAS

MATERIAL SURVEY REPORT

SG-36
To _____
Site No. _____ Date April, 1967
Material Sand & Gravel County Rawlins
Location Center Sec. 27 Twp. 3S Range 34W
Owner Ray McFee name _____
Nature of Deposit Dry Accessibility Good address _____
Status of Site Open site; not sampled Site Located on Plate III

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To Site No. 16

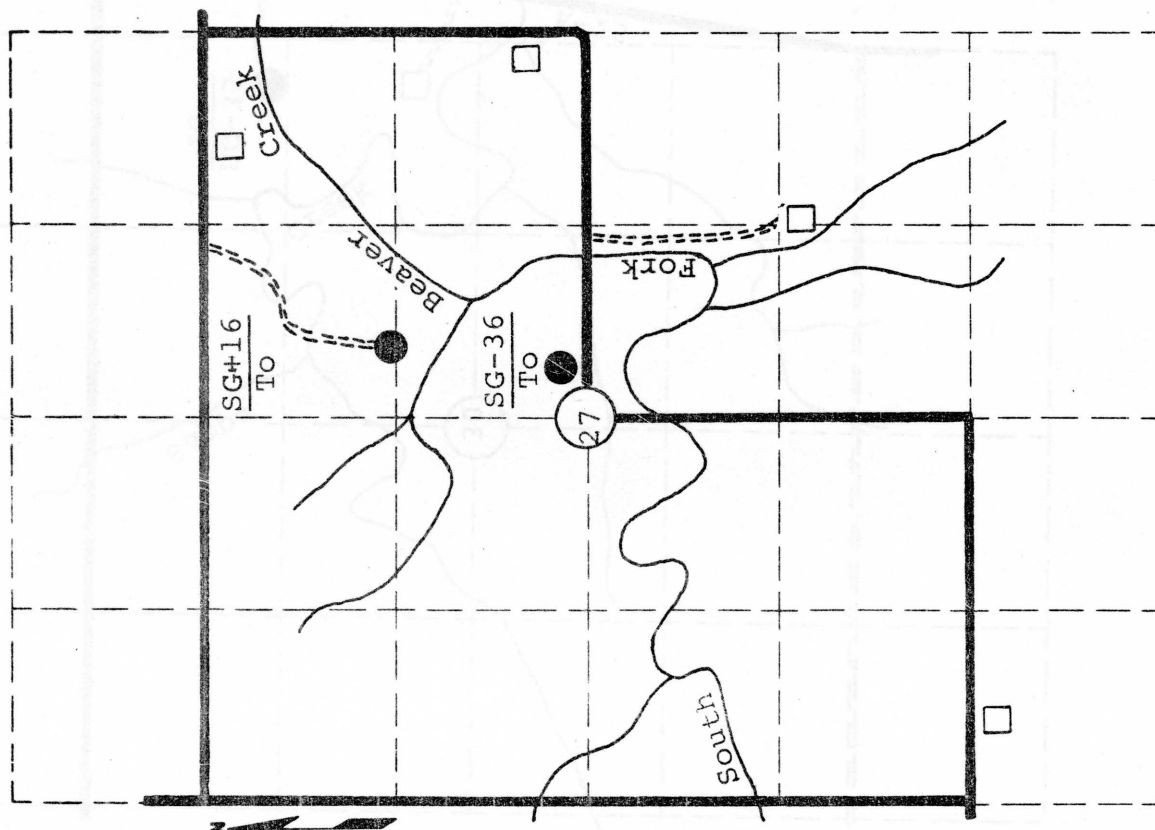
Specific Gravity (Sat.) _____ (Dry) _____

Los Angeles Wear _____

Absorption _____ Soundness _____

Wt. Cu.Ft. _____ Str. Ratio _____

Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

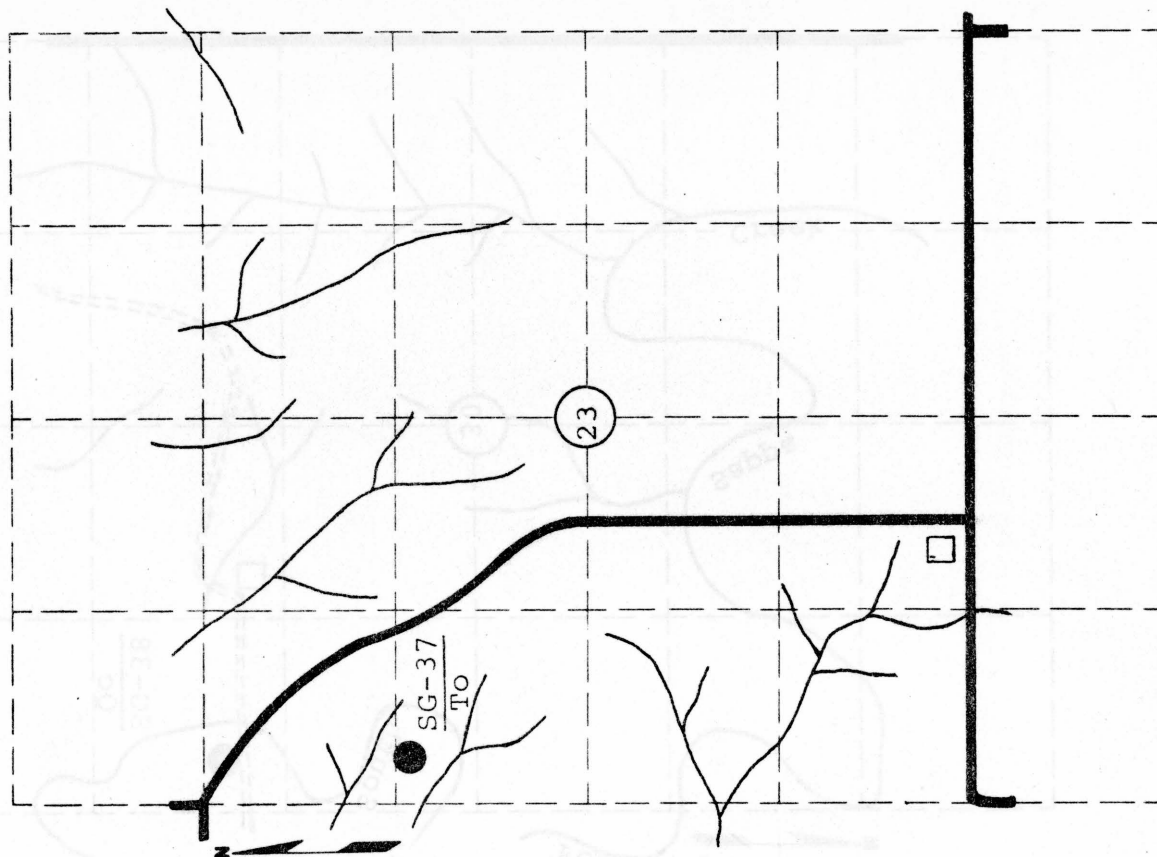
SG-37
To _____
Site No. _____ Date April, 1967
Material Sand & Gravel County Rawlins
Location SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 23 Twp. 5S Range 33W
Owner Victor Ruda name _____
Nature of Deposit Dry Accessibility Poor Site Located on Plate VI
Status of Site Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

SG-38

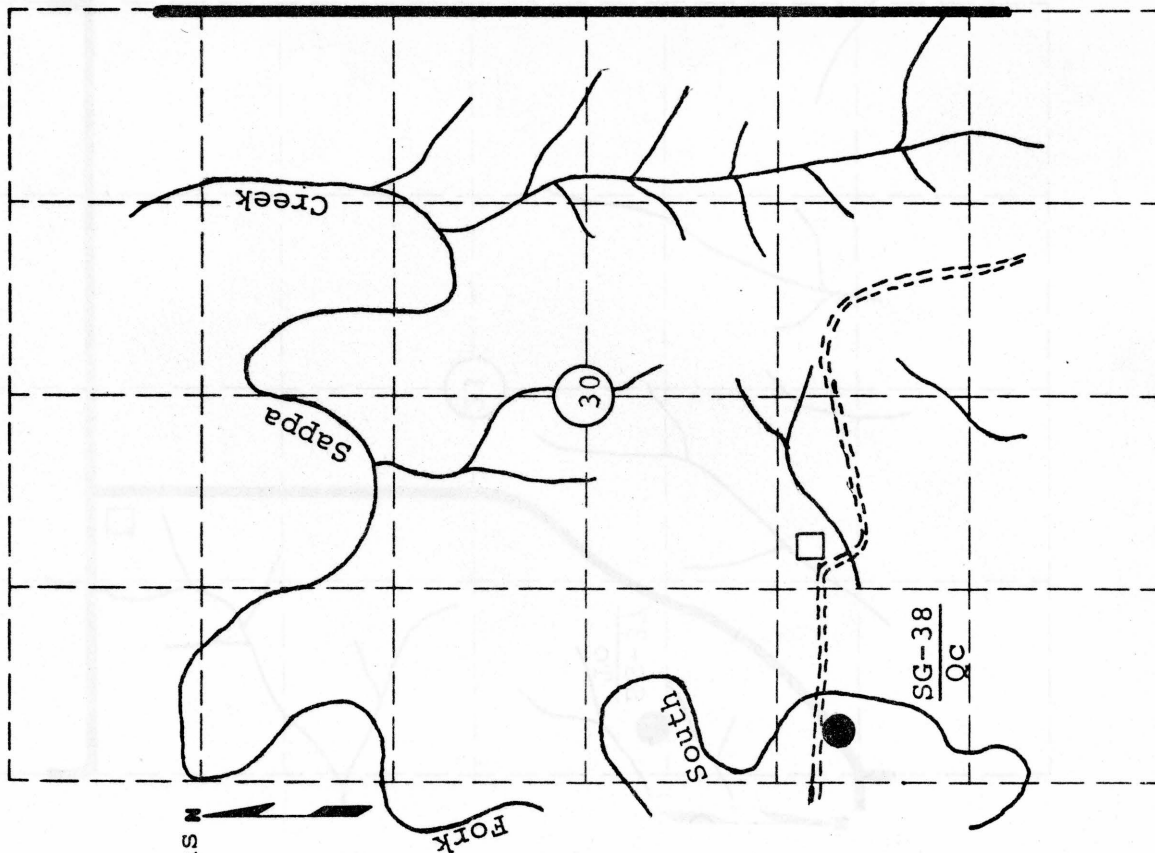
Site No. QC Date April, 1967
 Material Sand & Gravel County Rawlins
 Location SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 30 Twp. 5S Range 31W
 Owner Mark J. Ryan 115 Villa Vista, Colby, Kansas
 Name address
 Nature of Deposit Dry Accessibility Good Site Located on Plate VI
 Status of Site Open site; not sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | G.F. | L.L. | P.L. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|---|---|----|----|----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | | | | |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar To _____
 Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

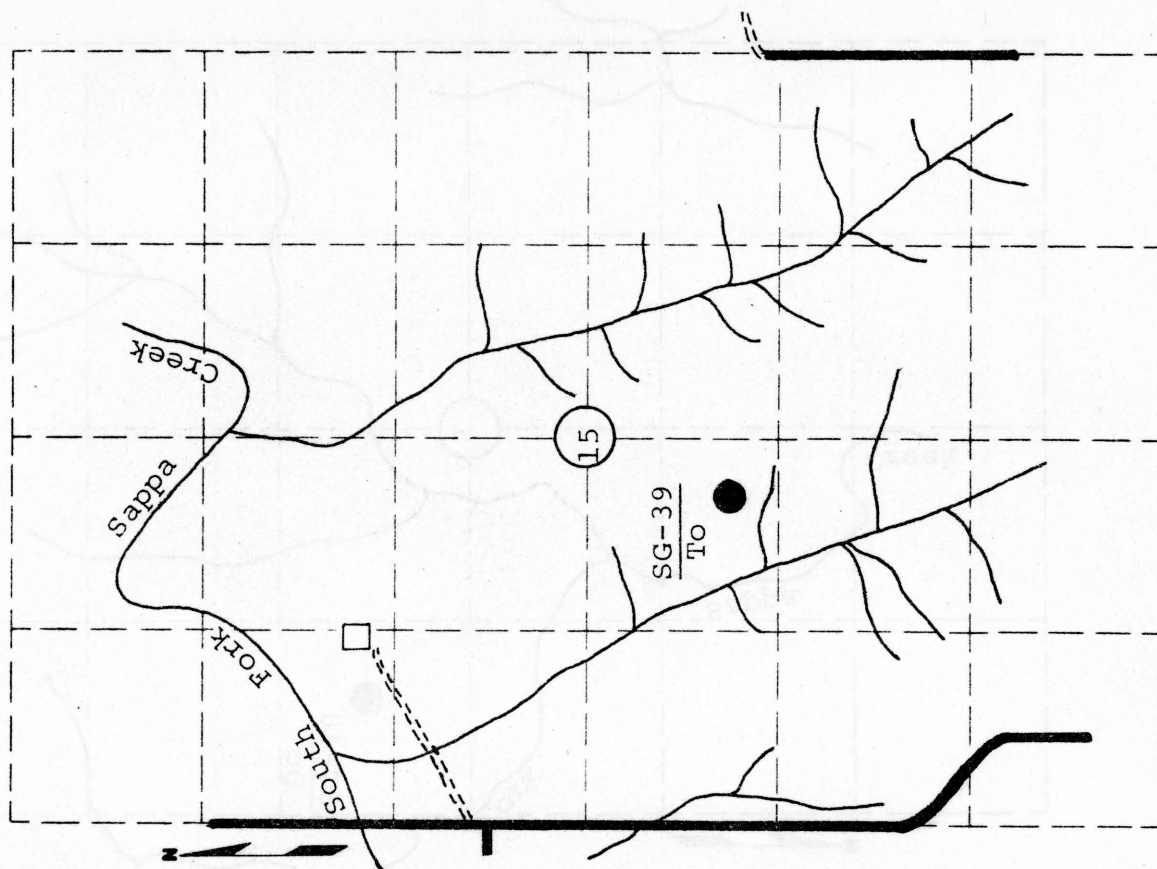
SG-39
To April, 1967
Site No. Date
Material Sand & Gravel County Rawlins
Location NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 15 Twp. 5S Range 31W
Owner Robert Bivans Selden, Kansas
Name address
Mature of Deposit Dry Accessibility Poor Site Located on Plate VI
Status of Site Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

SG-40
QC

Site No. _____ Date April, 1967

Material Sand & Gravel County Rawlins

Location NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 1 Twp. 5S Range 31W

Owner Scott & Elna Brown name _____ address _____

Nature of Deposit Dry Accessibility Poor Site Located on Plate VI

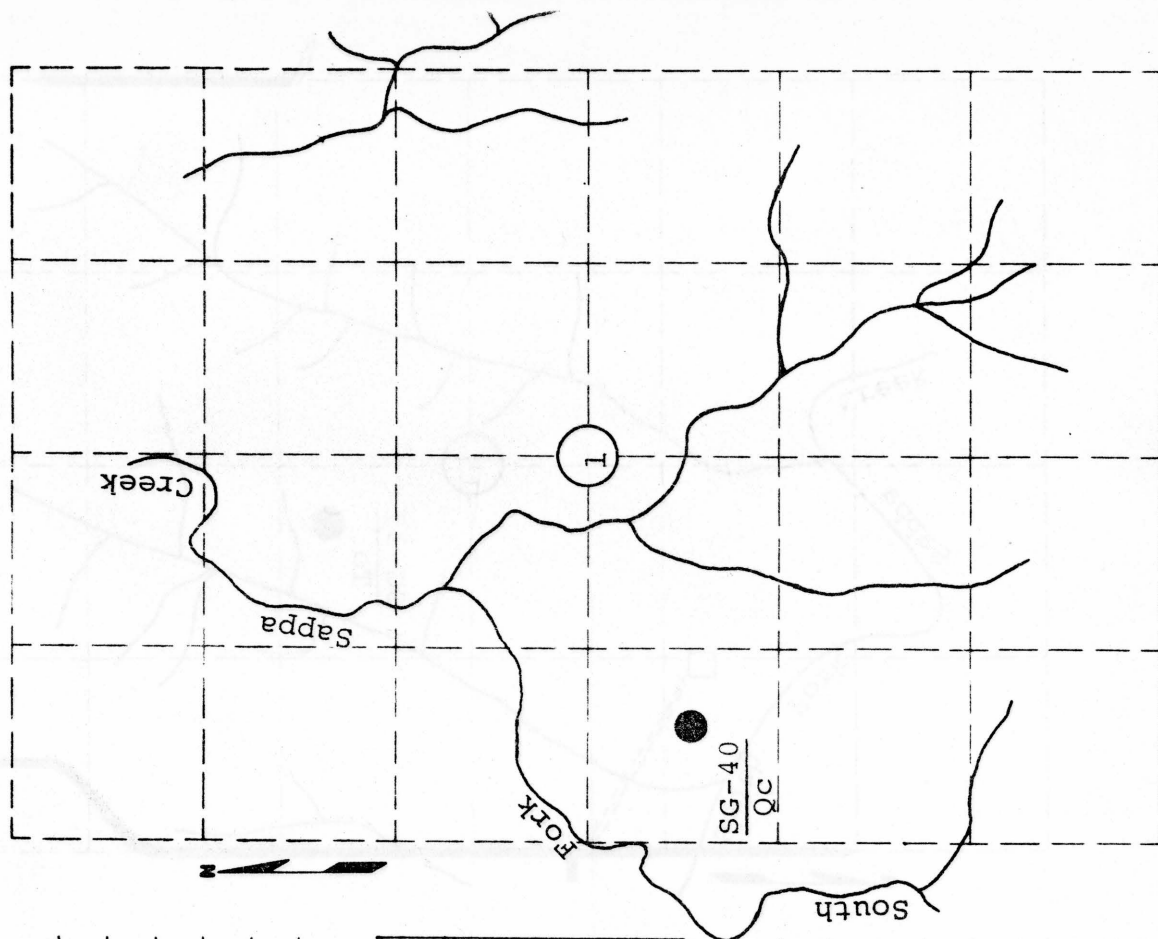
Status of Site Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Quaternary
Geological Source Crete Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

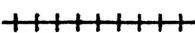
APPENDIX II

The following site data forms are designated as "open sites; sampled." The sites described herein are depicted on the county materials maps as a .

LEGEND

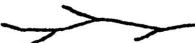
 Trail or lane

 Road

 Railroad

 Hedge or trees

 Major streams

 Intermittent streams

 Pond or lake

 Open materials site: sampled

 Center of section

 Farm site

 Cemetery

 School

 Church

 Town or city

MATERIAL SURVEY REPORT

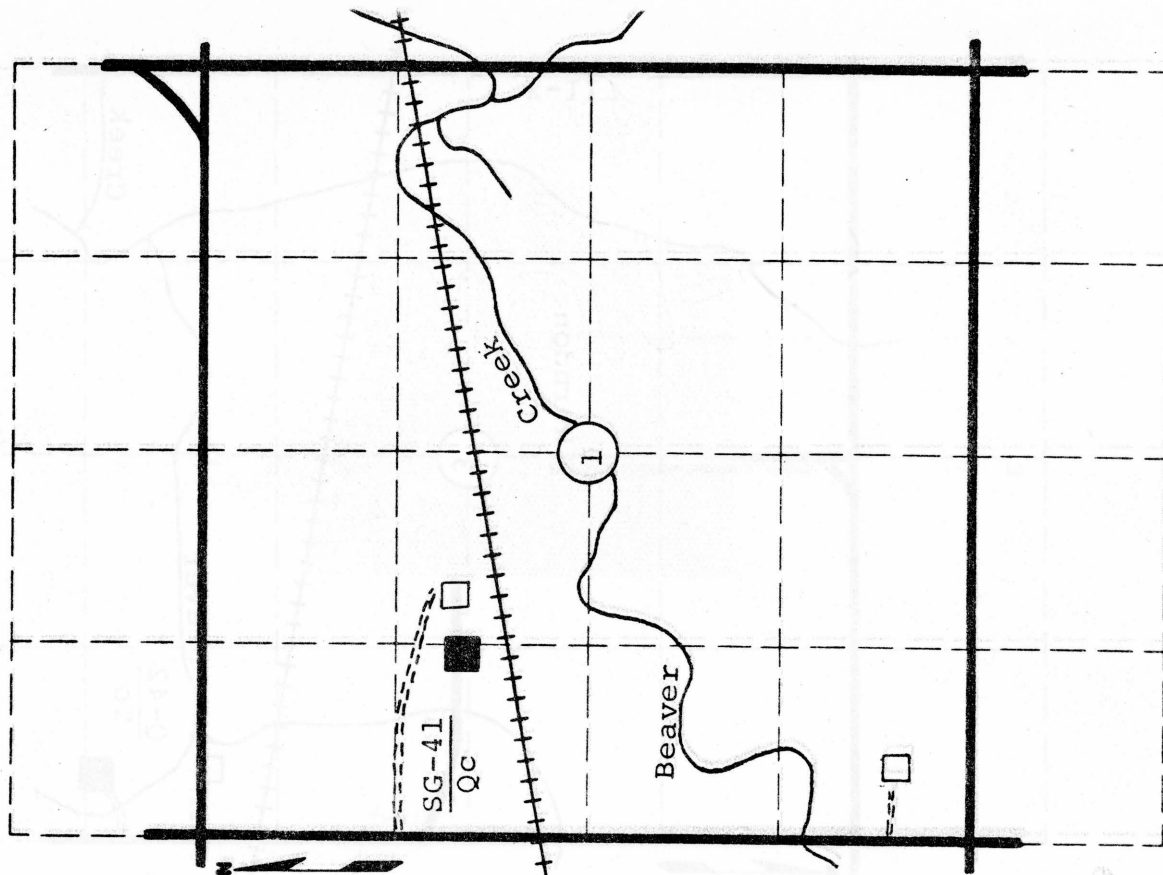
Site No. SG-41
QC
 Material Sand & Gravel County Rawlins
 Location SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 1 Twp. 2S Range 31W
 Owner Emma B. Goltz 1639 Pearl, Denver 3, Colorado
 Nature of Deposit Dry Accessibility Fair Site Located on Plate II
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|----|----|----|----|----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | 100 | | | |
| AV. | | 4 | 6 | | 1 | 3 | 9 | 23 | 44 | 63 | 87 | 93 | 3 | 3.23 | |
| * | | 9 | 10 | | 3 | 5 | 11 | 35 | 63 | 72 | 96 | 98 | 6 | 3.86 | |
| ** | | 1 | 2 | | 0 | 0 | 0 | 8 | 1 | 1 | 46 | 71 | 1 | 1.19 | |
| | | | | | | | | | | | | | | | |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar To Av. SHC Form 619 No. 77-18
 Specific Gravity (Set.) 2.56 (Dry)
 Los Angeles Wear 33.0
 Absorption 0.90
 Wt. Cu.Ft. 115.8 Str. Ratio 1 day-1.41, 3 day-1.39
 Remarks * High extreme of 7 holes
** Low extreme of 7 holes



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

Site No. Q-42 To April, 1967
 Material Quartzite County Rawlins
 Location S $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 3 Twp. 2S Range 31W
 Owner Julius Kleidosty Atwood, Kansas
 Name II
 Nature of Deposit Dry Accessibility Good Site Located on Plate II
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | Wash 200 | G.F. | L.L. | P.L. | |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|---|---|----|----|----------|------|------|------|----|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | | | | | 50 |
| AV. | | 8 | 6 | | | | | | | | | | | | |
| * | | 16 | 9 | | | | | | | | | | | | |
| ** | | 3 | 4 | | | | | | | | | | | | |
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CORRELATION DATA

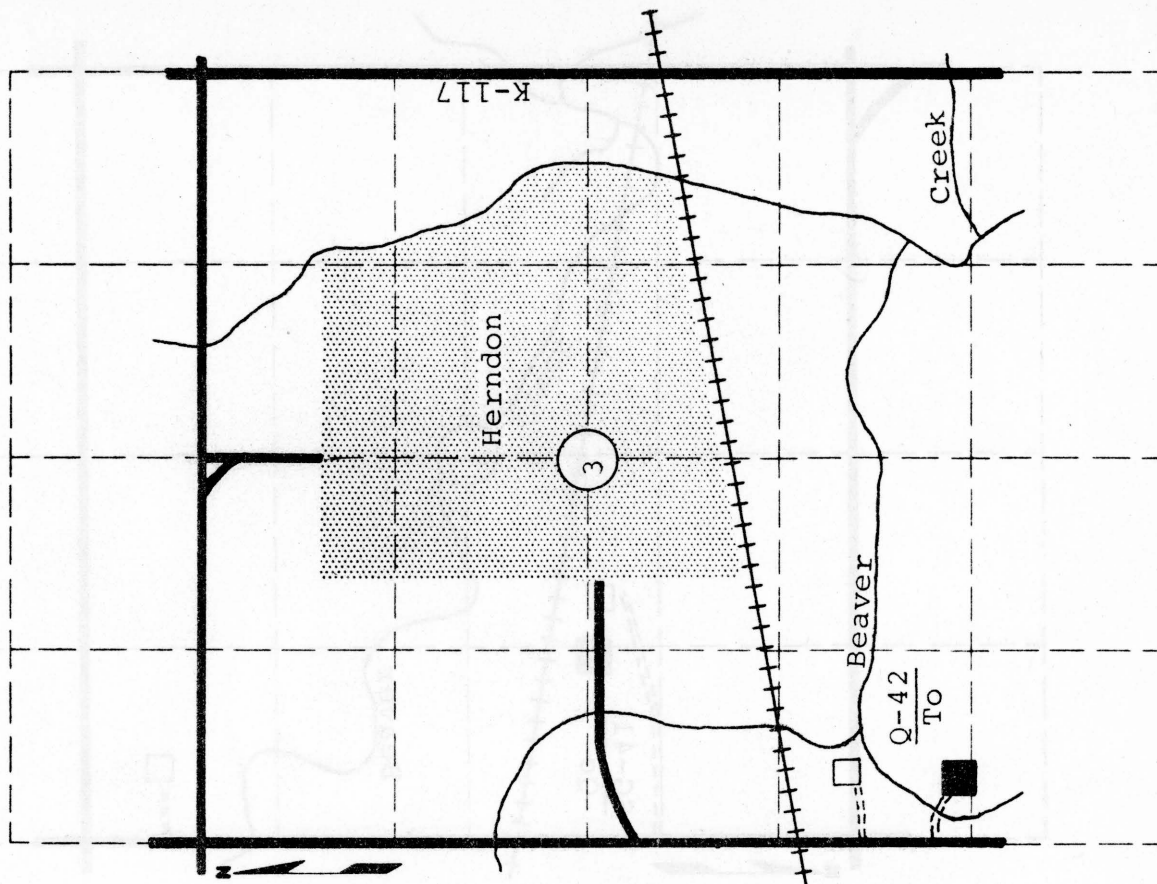
Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To Av. SHC Form 619 No. 77-8

Specific Gravity (Sat.) 2.36 (Dry)
 Los Angeles Wear 48.8
 Absorption _____ Soundness 0.93
 wt. Cu.Ft. _____ Str. Ratio _____

Remarks Expansion possible

* High extreme of 4 holes

** Low extreme of 4 holes



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

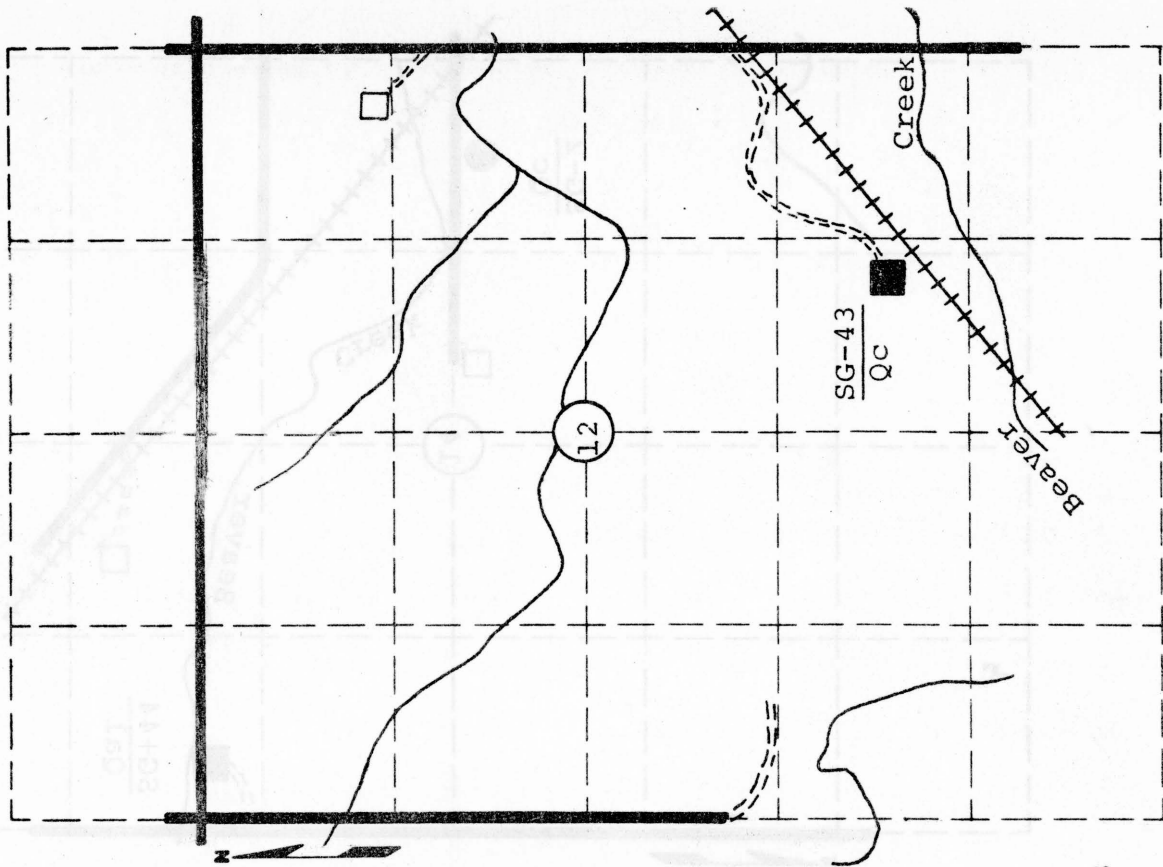
Site No. SG-43
QC
 Date April, 1967
 Material Sand & Gravel County Rawlins
 Location SW 1/4 SE 1/4 Sec. 12 Twp. 2S Range 32W
 Owner Charles Weishapl Herndon, Kansas
 address
 Nature of Deposit Dry Accessibility Good Site Located on Plate II
 Status of Site Open site; sampled

EXPLORATION DATA

| Test
Hole | Material
at
Bottom
of
Hole | Depth
of
over-
burden | Depth
of
Material | Percent Retained | | | | | | | | Wash
200 | S.F. | L.L. | P.I. | |
|--------------|--|--------------------------------|-------------------------|------------------|-----|-----|---|---|----|----|----|-------------|------|------|------|-----|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | | | | | 100 |
| | | | | | | | | | | | | | | | | |
| | | 3 | 6 | | | 2 | 7 | | 44 | | 98 | 2 | 3.40 | | | |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar To Ma-2 of USGS Circular 132
 Lab. No. 44481
 Specific Gravity (sat.) _____ (dry) 2.60
 Los Angeles Wear 30.0
 Absorption _____ Soundness 0.94
 Wt. Cu.ft. 111.0 Str. Ratio 1 day-1.25, 3 day-1.33
 Remarks _____



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

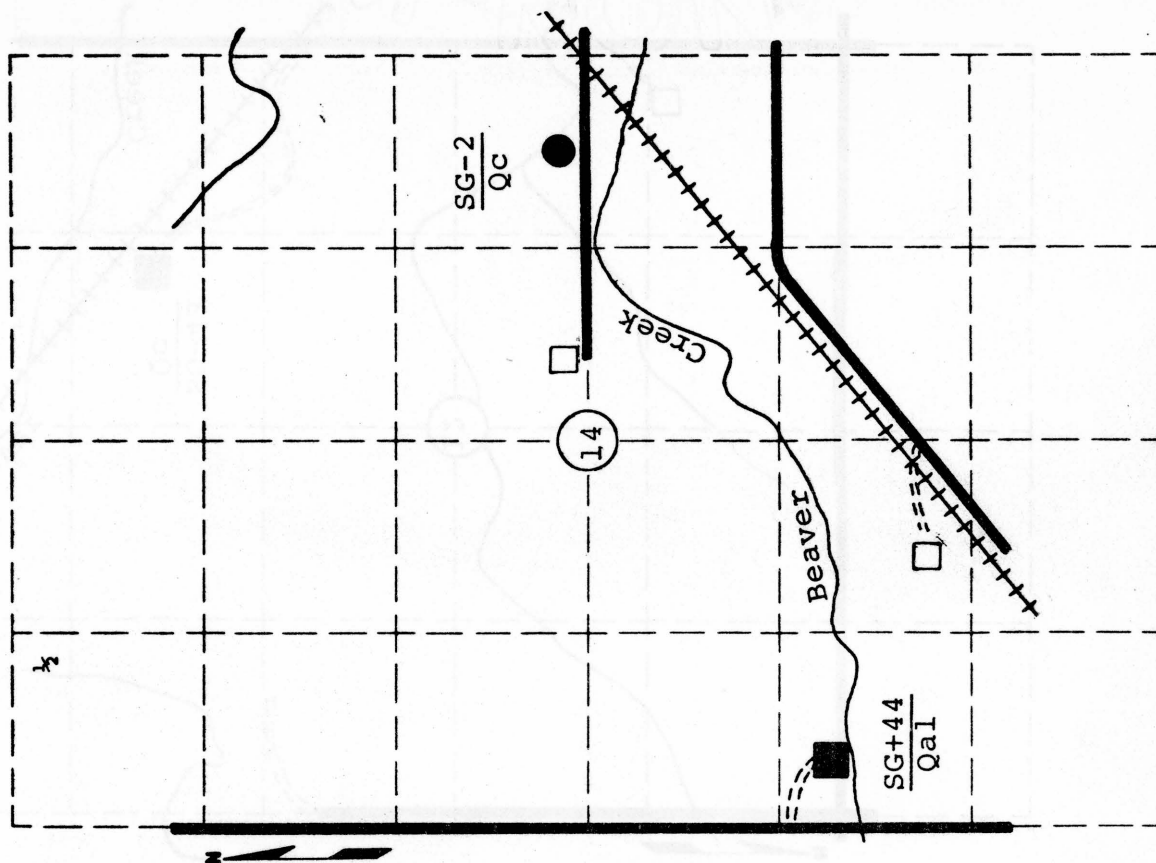
Site No. SG+44 Date April, 1967
Qal
 Material Sand & Gravel County Rawlins
 Location SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 14 Twp. 2S Range 32W
 Owner August & Anna M. Martin Herndon, Kansas
 Name address
 Nature of Deposit Wet Accessibility Good Site Located on Plate II
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|----|----|----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 1/4 | 16 | 30 | 50 | 100 | | | |
| AV. | | 4 | 21 | | | 3 | 9 | 23 | 45 | 68 | 88 | 93 | 6 | 3.29 |
| * | | 7 | 25 | | 1 | 6 | 15 | 35 | 59 | 77 | 96 | 98 | 9 | 3.74 |
| ** | | 1 | 6 | | 0 | 1 | 4 | 10 | 31 | 51 | 82 | 90 | 2 | 2.86 |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Alluvium
 Material Similar To AV. SHC Form 619 No. 77-17
 Specific Gravity (Sat.) 2.54 (Dry)
 Los Angeles Wear 31.8
 Absorption 0.90
 Mt. Cu.Ft. 114.9 Str. Ratio 1.51
 Remarks * High extreme of 11 holes
** Low' extreme of 11 holes

Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

SG-45
TO _____

Site No. _____ Date April, 1967

Material Sand & Gravel County Rawlins

Location SE 1/4 NE 1/4 Sec. 20 Twp. 2S Range 32W

Owner Adrian Samson address Ludell, Kansas

Nature of Deposit Dry Accessibility Good Site Located on Plate II

Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-Burden | Depth of Material | Percent Retained | | | | | | | Wash 200 | G.F. | L.L. | P.I. | | |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|----|---|----|----|----------|------|------|------|----|-----|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | | | | | 50 | 100 |
| | | | | 1 | 5 | 21 | 70 | | | | 100 | 1 | | | | |
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CORRELATION DATA

Geological Age Tertiary

Geological Source Ogallala Formation

Material Similar To Ma-3 of USGS Circular 132

Lab. No. 36837

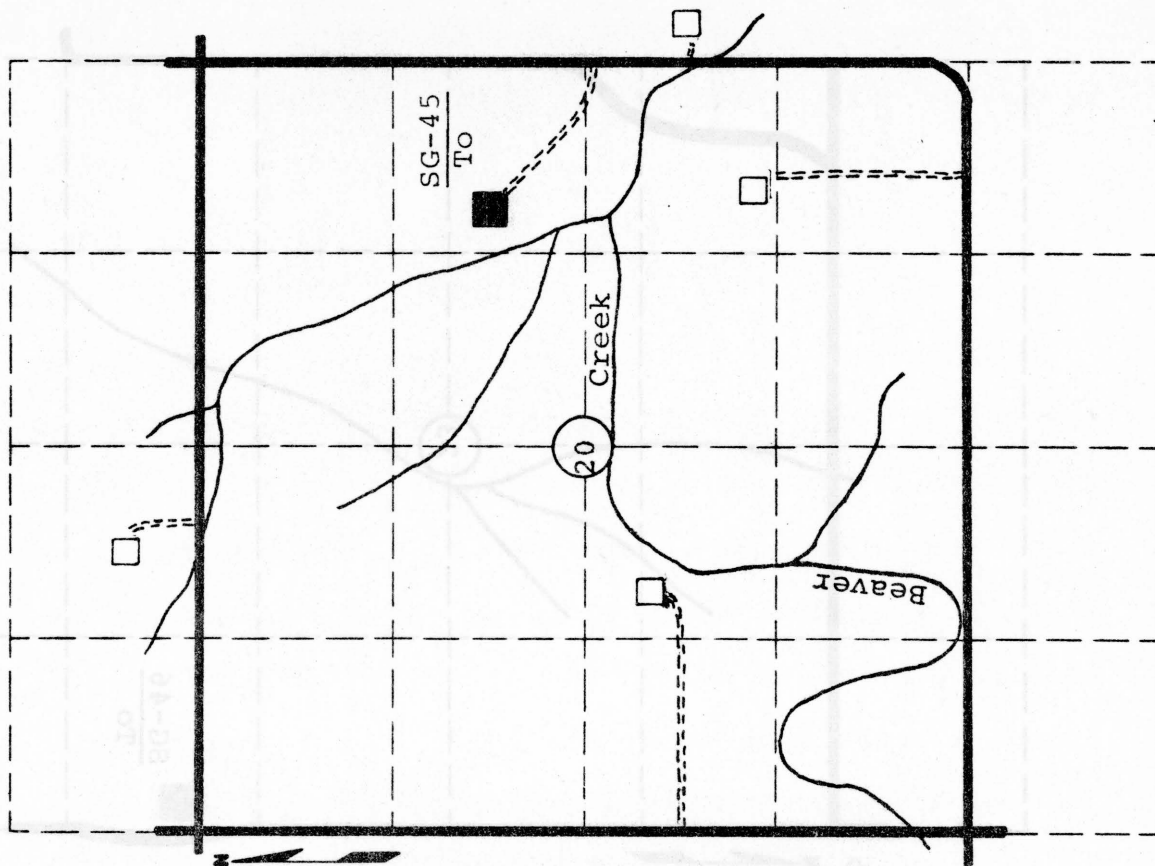
Specific Gravity (Sat.) _____ (Dry) 2.62

Los Angeles Wear _____

Absorption _____ Soundness _____

Wt. Cu.ft. 112.0 str. ratio 1 day-1.22, 3 day-1.116

Remarks _____



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

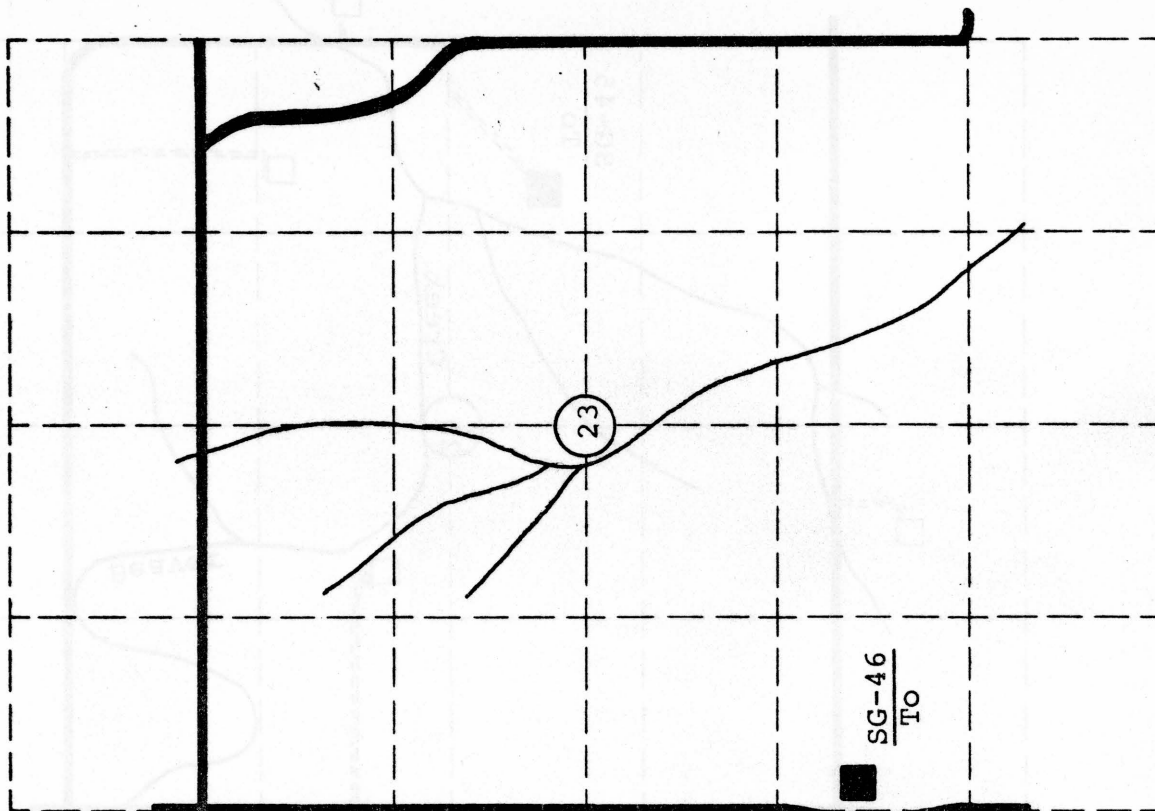
SG-46
 Site No. TO Date April, 1967
 Material Sand & Gravel County Rawlins
 Location SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 23 Twp. 2S Range 33W
 Owner Eulalia M. Foster Goddard Box 296, Arvada, Colorado
 Name address
 Nature of Deposit Dry Accessibility Good Site Located on Plate II
 Status of Site Open site; sampled

EXPLORATION DATA

| Test
Hole | Material
at
bottom
of hole | Depth
of
over-
burden | Depth
of
Material | Percent Retained | | | | | | Wash
200 | G.F. | L.L. | P.L. |
|--------------|-------------------------------------|--------------------------------|-------------------------|------------------|-----|-----|-----|----|----|-------------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 1/4 | 16 | 30 | 50 | 100 | | |
| | | 4 | 9 | 1 | 3 | 14 | 54 | | | 92 | 6 | 3.54 | |
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CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To Ma-5 of USGS Circular 132
 Lab. No. 64746
 Specific Gravity (Sat.) 2.54 (Dry)
 Los Angeles Near 28.2
 Absorption 0.90 Soundness
 Wt. Cu.ft. 111.1 Str. Ratio 1 day-1.37, 3 day-1.42
 Remarks



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

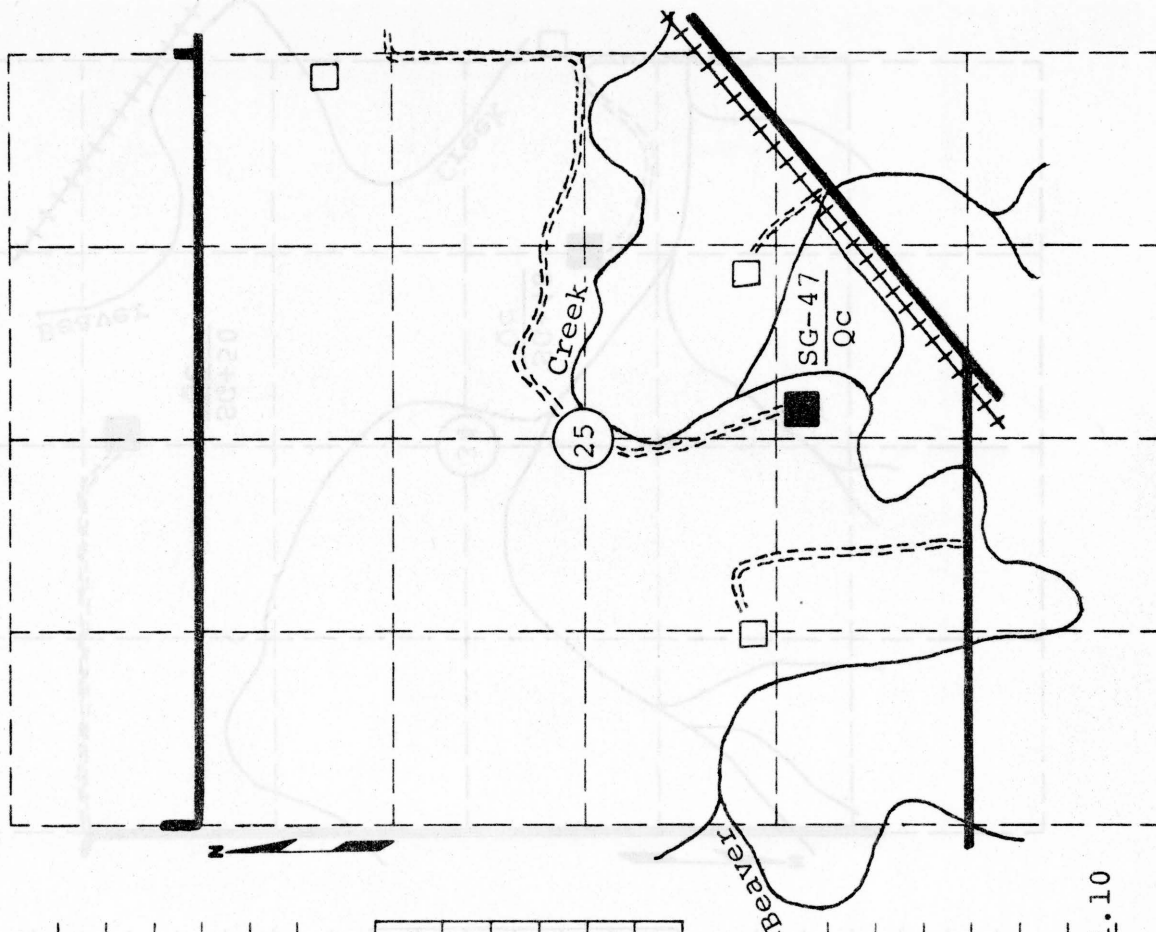
Site No. SG-47 Date April, 1967
QC
 Material Sand & Gravel County Rawlins
 Location SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 25 Twp. 2S Range 33W
 Owner Ernst Holste address Ludell, Kansas
 Name IV
 Nature of Deposit Dry Accessibility Fair Site Located on Plate IV
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of Material | Percent Retained | | | | | | Wash 200 | G.F. | L.L. | P.L. |
|-----------|----------------------------|-------------------|------------------|-----|-----|----|----|----|----------|------|------|------|
| | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | 100 | |
| AV. | | 8 | 1 | 3 | 7 | 18 | 35 | 50 | 80 | 90 | 6 | 2.84 |
| * | | 12 | 3 | 6 | 16 | 38 | 58 | 73 | 85 | 95 | 9 | 3.67 |
| ** | | 2 | 0 | 0 | 1 | 3 | 7 | 17 | 65 | 83 | 3 | 2.02 |
| | | | | | | | | | | | | |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar to Av. SHC Form 619 No. 77-13
 Specific Gravity (Sat.) 2.58 (Dry)
 Los Angeles Wear 31.5
 Absorption 0.91
 Shrinkage 108.4
 Str. Ratio 1 day-1.09, 3 day-1.10
 Remarks * High extreme of 12 holes
** Low extreme of 12 holes

Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

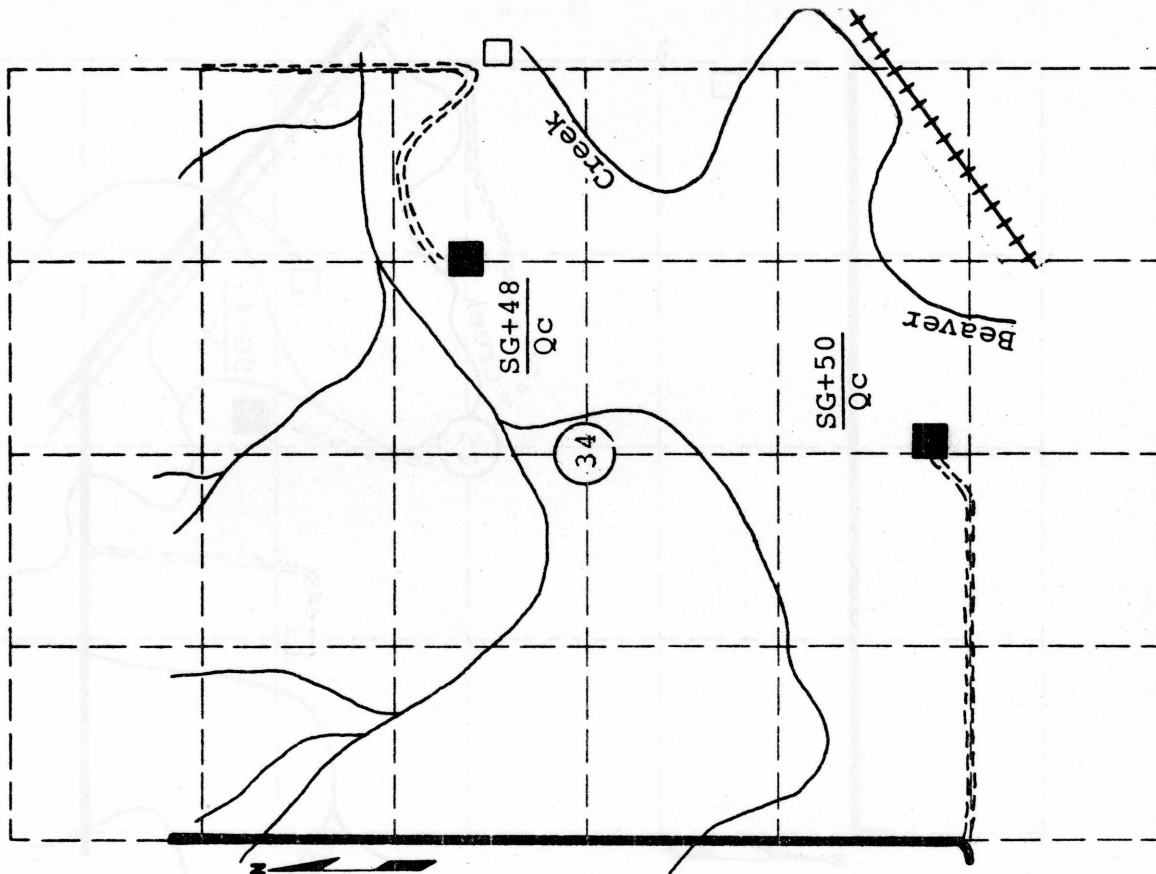
Site No. SG+48
QC
 Date April, 1967
 Material Sand & Gravel County Rawlins
 Location NE $\frac{1}{4}$ Sec. 34 Twp. 2S Range 33W
 Owner Charles M. Schmid Atwood, Kansas
 Nature of Deposit Dry Accessibility Good Site Located on Plate IV
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|----|----|----|----------|------|------|------|
| | | | | 1/2 | 3/4 | 3/8 | 1/4 | 16 | 30 | 50 | 100 | | | |
| AV. | | 9 | 12 | | 3 | 7 | 18 | 34 | 57 | 81 | 90 | 8 | 20 | |
| * | | 26 | 25 | | 10 | 24 | 40 | 45 | 90 | 90 | 95 | 13 | | |
| ** | | 1 | 2 | | 1 | 1 | 3 | 11 | 32 | 66 | 85 | 4 | | |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar to Av. SHC Form 619 No. 77-22
 Specific Gravity (sat.) 2.54 (dry)
 Los Angeles Wear 31.6
 Absorption 2.04 Soundness 0.95
 Wt. Cu.ft. Str. Ratio
 Remarks * High extreme of 49 holes
** Low extreme of 49 holes

Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

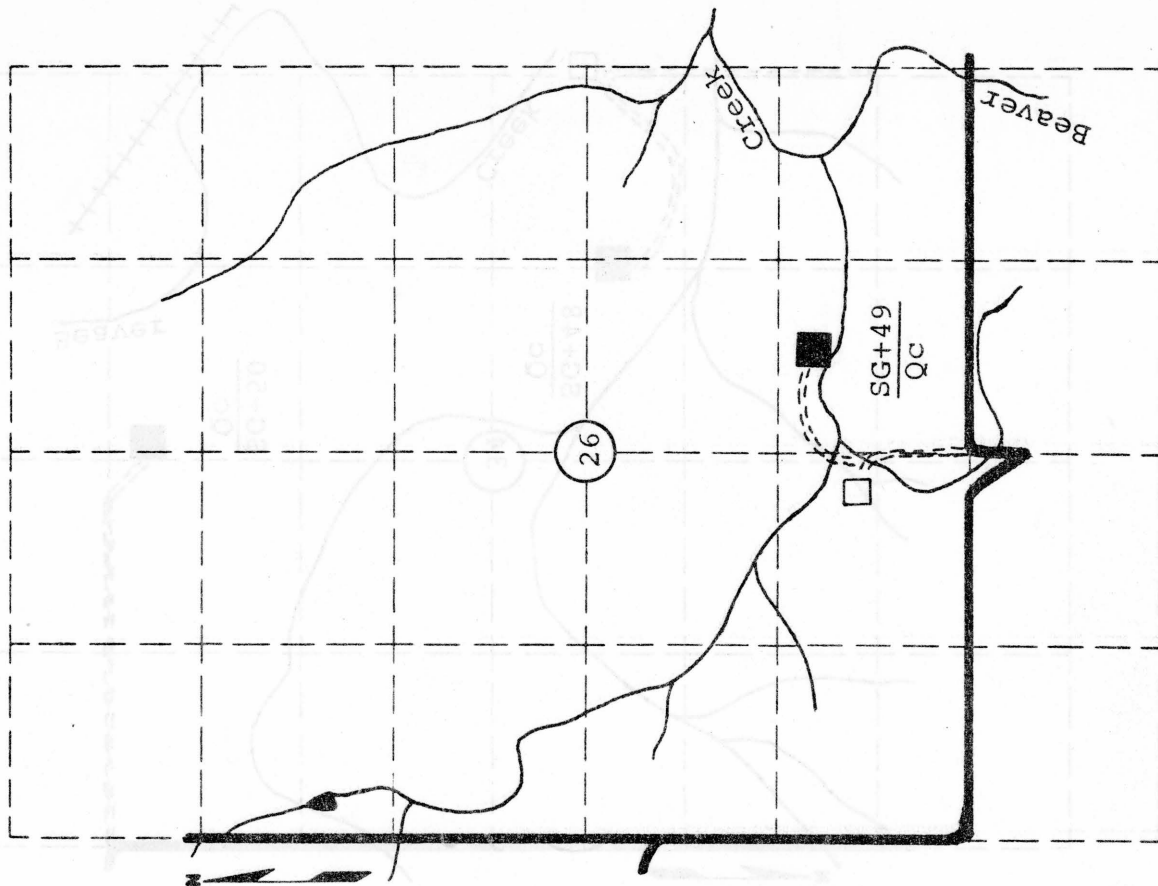
Site No. SG+49 Date April, 1967
QC
 Material Sand & Gravel County Rawlins
 Location SE 1/4 Sec. 26 Twp. 2S Range 33W
 Owner Earl Niermeier address Ludell, Kansas
 Nature of Deposit Dry Accessibility Good Site Located on Plate IV
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-Burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | G.F. | L.L. | P.L. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|----|----|----|----|----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | 100 | | | |
| AV. | | 14 | 10 | 2 | 3 | 9 | 21 | 40 | 65 | 82 | 88 | 10 | | 19 | |
| * | | 31 | 19 | 2 | 9 | 15 | 33 | 57 | 81 | 95 | 97 | 28 | | | |
| ** | | 5 | 2 | 0 | 1 | 2 | 4 | 13 | 29 | 59 | 78 | 3 | | | |

CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar to AV. SHC Form 619 No. 77-20
 Specific Gravity (Sat.) 2.61 (Dry)
 Los Angeles Wear 28.9
 Absorption 1.01 Soundness 0.97
 Wt. Cu.Ft. Str. Ratio
 Remarks * High extreme of 38 holes
** Low extreme of 38 holes



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

Site No. SG+50
Qc
 Date April, 1967
 Material Sand & Gravel County Rawlins
 Location SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 34 Twp. 2S Range 33W
 Owner See Remarks
 Nature of Deposit Dry Accessibility Good Site Located on Plate IV
 Status of Site Open site; sampled

EXPLORATION DATA

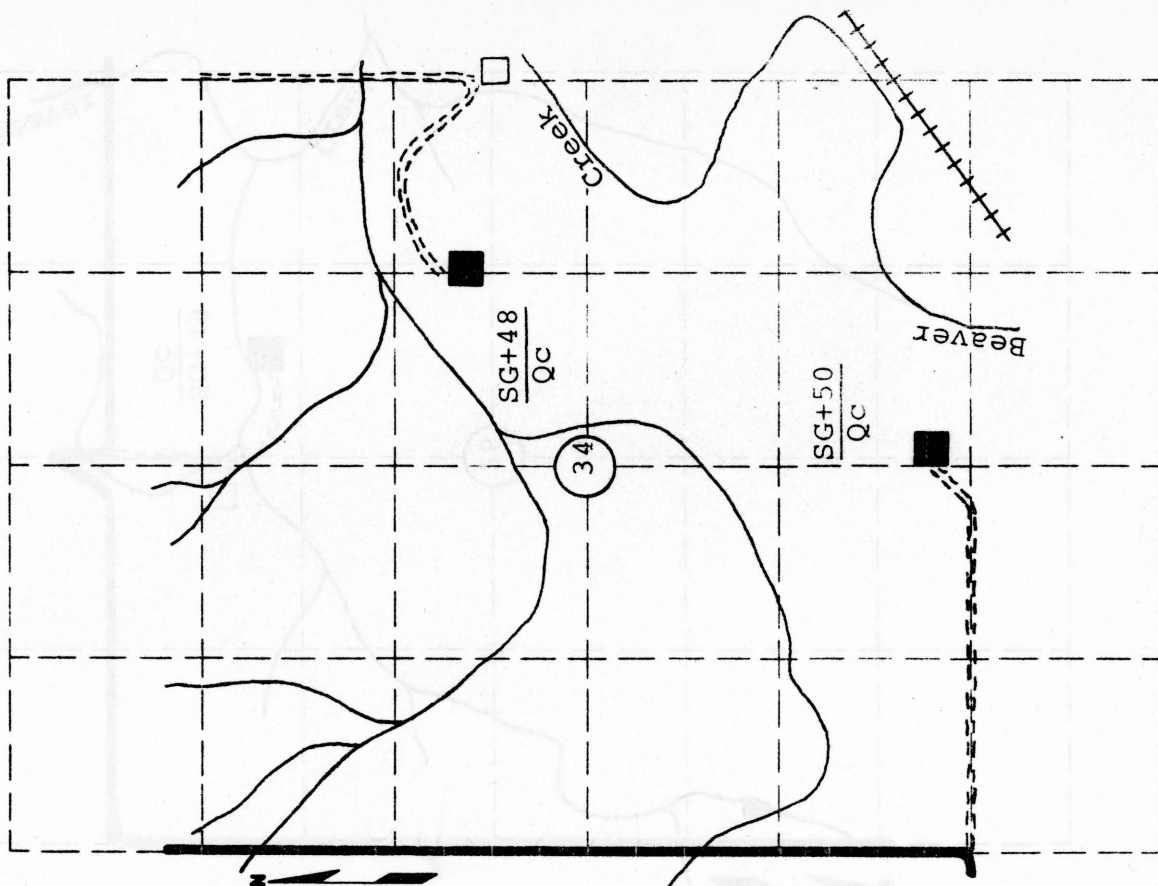
| Test Hole | Material at bottom of hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | G.F. | L.L. | P.L. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|----|----|----|----|----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | 100 | | | |
| Av. | | 6 | 10 | | 3 | 7 | 14 | 26 | 47 | 76 | 83 | 13 | | 19 | |
| * | | 15 | 19 | | 7 | 16 | 31 | 50 | 69 | 83 | 90 | 18 | | | |
| ** | | 1 | 1 | | 0 | 2 | 5 | 11 | 24 | 61 | 68 | 7 | | | |

CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar To Av. SHC Form 619 No. 77-21
 Specific Gravity (Sat.) 2.62 (Dry)
 Los Angeles Wear 34.1
 Absorption 1.11 Soundness 0.94
 Wt. Cu.Ft. Str. Ratio
 Remarks SE $\frac{1}{4}$ SW $\frac{1}{4}$ Charles M. Schmid Atwood, Kansas
SW $\frac{1}{4}$ SE $\frac{1}{4}$ Walter S. Conant Atwood, Kansas

* High extreme of 14 holes

** Low extreme of 14 holes

Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

SG+51
To

Site No. _____ Date April, 1967

Material Sand & Gravel County Rawlins

Location SE 1/4 NW 1/4 Sec. 6 Twp. 3S Range 32W

Owner R. H. Holle, & Marvin Holle Ludell, Kansas
name address

Nature of Deposit Dry Accessibility Good Site Located on Plate IV

Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at bottom of hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|---|----|----|----|----|----------|------|------|------|
| | | | | 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | 100 | | | |
| AV. | | 8 | 15 | | | | 3 | 11 | 27 | 45 | 70 | 86 | 10 | | 19.4 |
| * | | 21 | 36 | | | 1 | 7 | 21 | 49 | 66 | 88 | 94 | 29 | | |
| ** | | 3 | 4 | | | 0 | 0 | 2 | 7 | 12 | 33 | 61 | 2 | | |
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CORRELATION DATA

Geological Age Tertiary

Geological Source Ogallala Formation

Material Similar To Av. SHC Form 619 No. 77-24

Specific Gravity (Sat.) 2.51 (Dry)

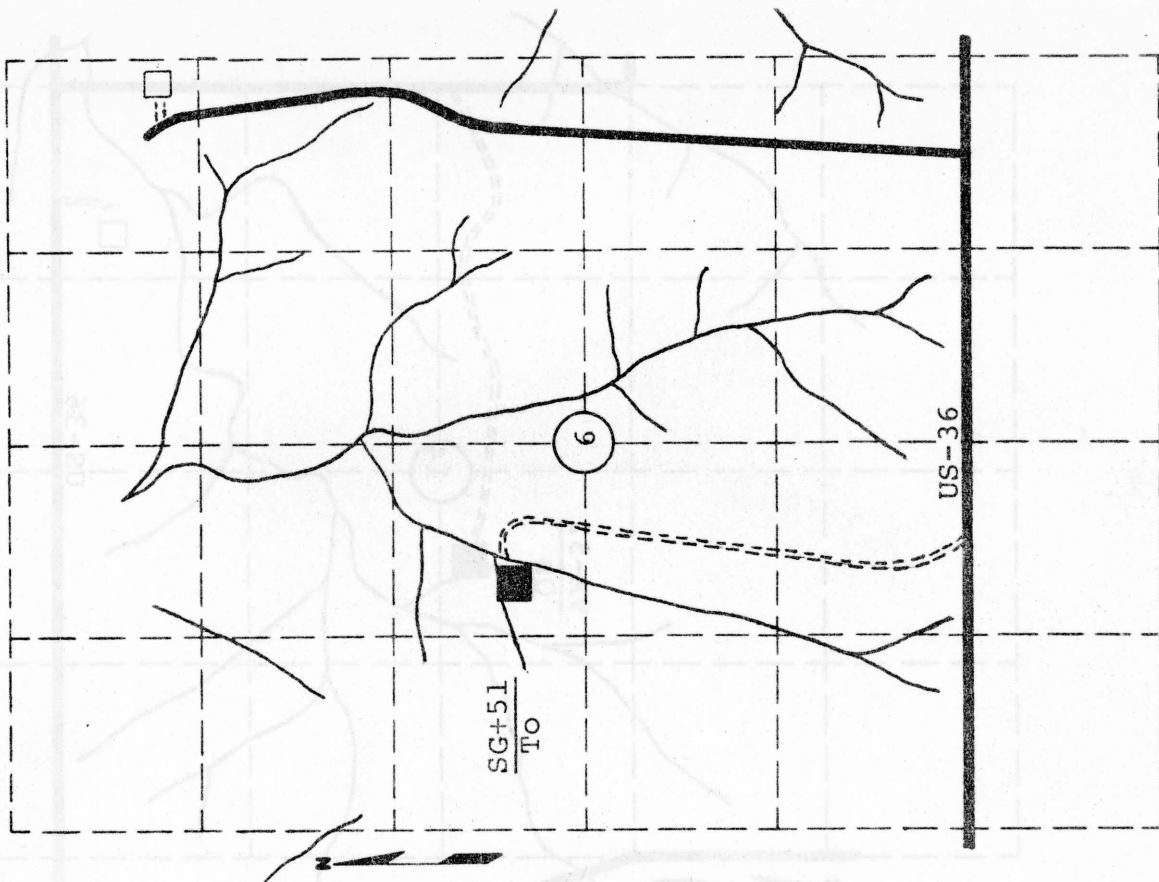
Los Angeles Wear 32.8

Absorption 2.56 Soundness 0.97

Wt. Cu.ft. _____ Str. Ratio _____

Remarks * High extreme of 25 holes

** Low extreme of 25 holes



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

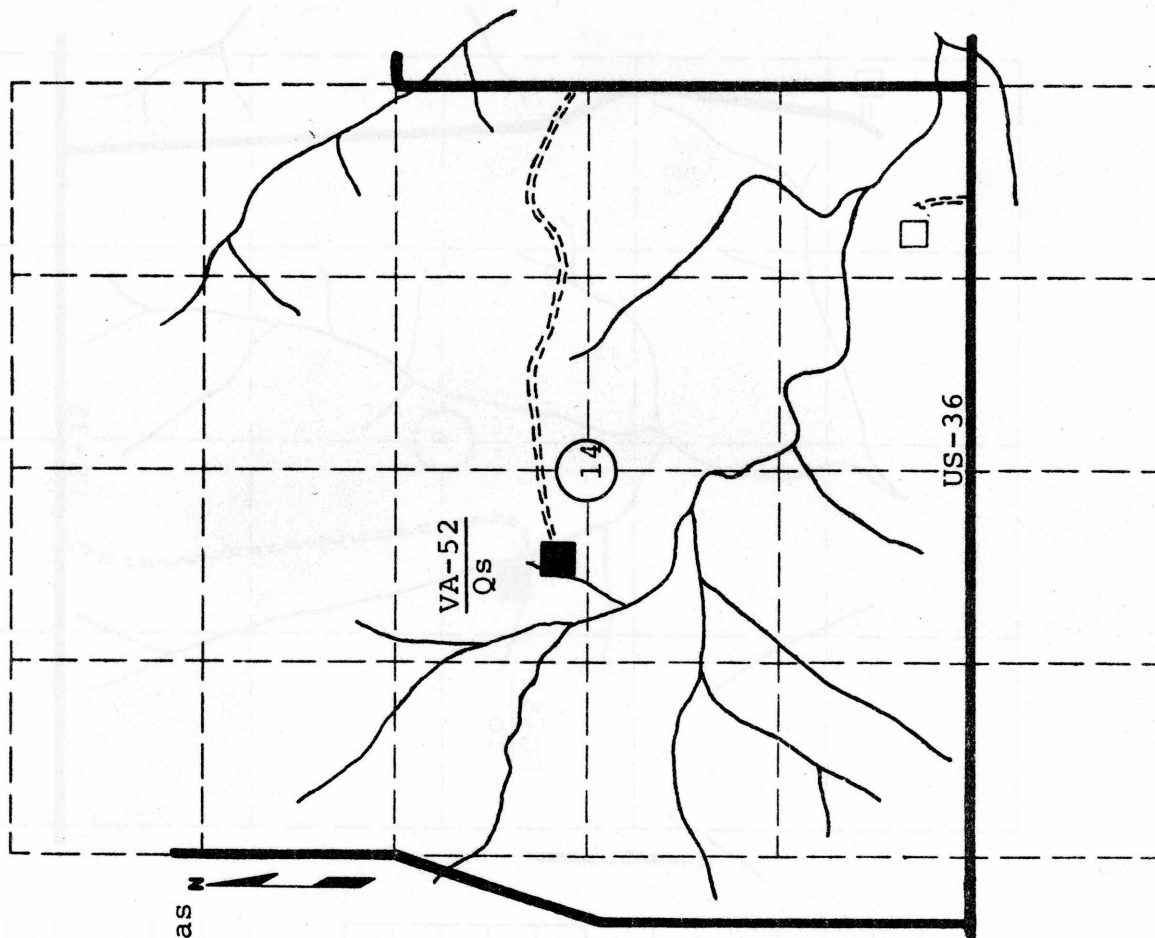
Site No. VA-52 Date April, 1967
QS
 Material Volcanic Ash County Rawlins
 Location SE 1/4 NW 1/4 Sec. 14 Twp. 3S Range 35W
 Owner E.F. Bishop estate, & Ruth LaDuke, McDonald, Kansas
 Nature of Deposit Dry Accessibility Fair Site located on Plate III
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Mole | Material at Bottom of Mole | Depth of over-Burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | S.F. | L.L. | P.I. | |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|---|----|----|----|----------|------|------|------|-----|
| | | | | 1 1/2 | 3/4 | 3/8 | 1/4 | 8 | 16 | 30 | 50 | | | | | 100 |
| | | 4 | 21 | | | | | | 1 | 2 | 3 | 6 | 81 | | | |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Sappa Formation
 Material Similar To AV, SHC Form 619 No. 77-12
 Specific Gravity (sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Mt. Cu.Ft. _____ Str. Ratio _____
 Remarks Cementation; Top-32, Bottom 1

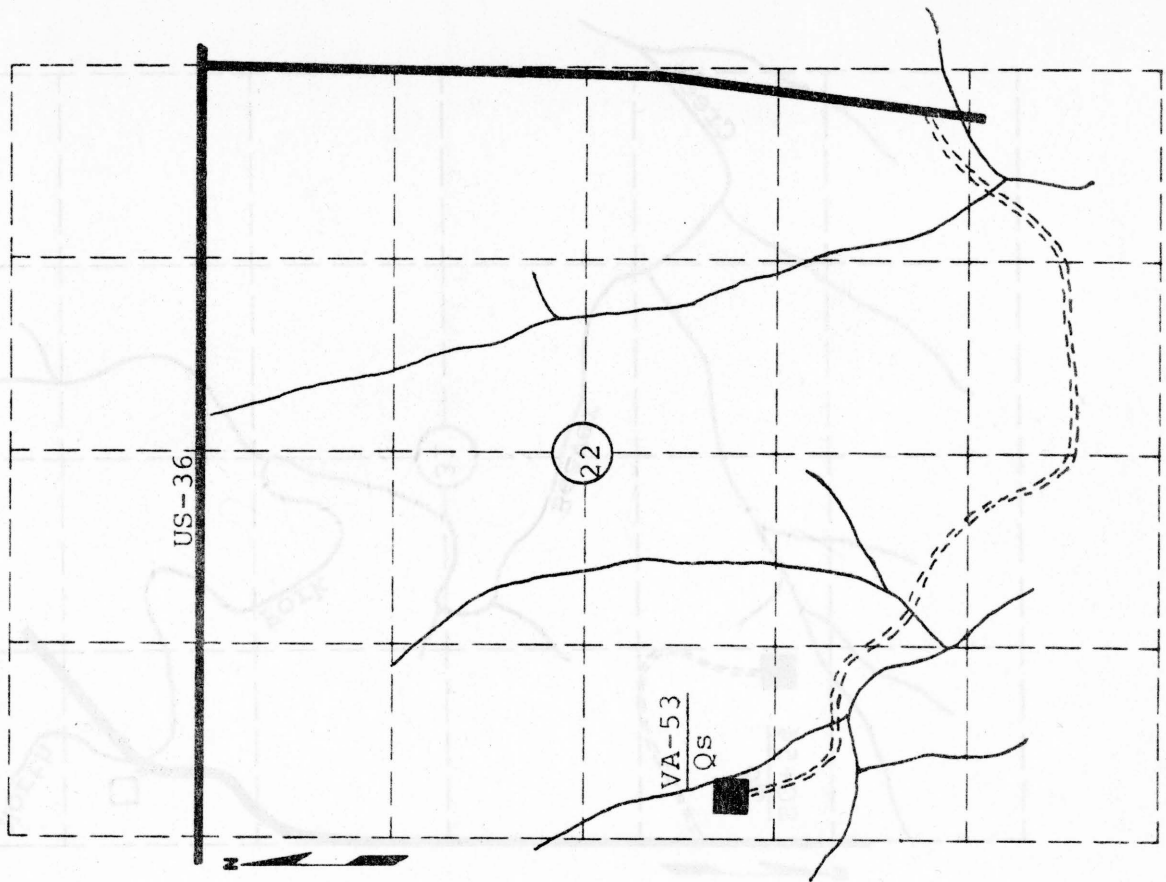


Scale: 1" = 1/4 Mile

EXPLORATION DATA

CORRELATION DATA

scale: 1" = $\frac{1}{4}$ Mile



MATERIAL SURVEY REPORT

SG+54
To _____

Site No. _____ Date April, 1967

Material Sand & Gravel County Rawlins

Location NW 1/4 NW 1/4 Sec. 31 Twp. 3S Range 35W

Owner Pearl Brown name Wilson, Kansas address _____

Nature of Deposit Dry Accessibility Good Site Located on Plate III

Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-Burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | S.F. | L.L. | P.I. | |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|----|----|----|----|----|----------|------|------|------|-----|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | | | | | 100 |
| | | | | | | | | | | | | | | | | |
| Av. | | 5 | 9 | | | 3 | 7 | 18 | 34 | 63 | 82 | 90 | 7 | 2.97 | | |
| * | | 17 | 20 | | 1 | 5 | 17 | 35 | 54 | 80 | 85 | 94 | 12 | 3.40 | | |
| ** | | 0 | 4 | | 0 | 1 | 2 | 6 | 18 | 34 | 68 | 85 | 3 | 2.21 | | |
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CORRELATION DATA

Geological Age Tertiary

Geological Source Ogallala Formation

Material Similar To Av. SHC Form 619 No. 77-11

Specific Gravity (Sat.) 2.62 (Dry) _____

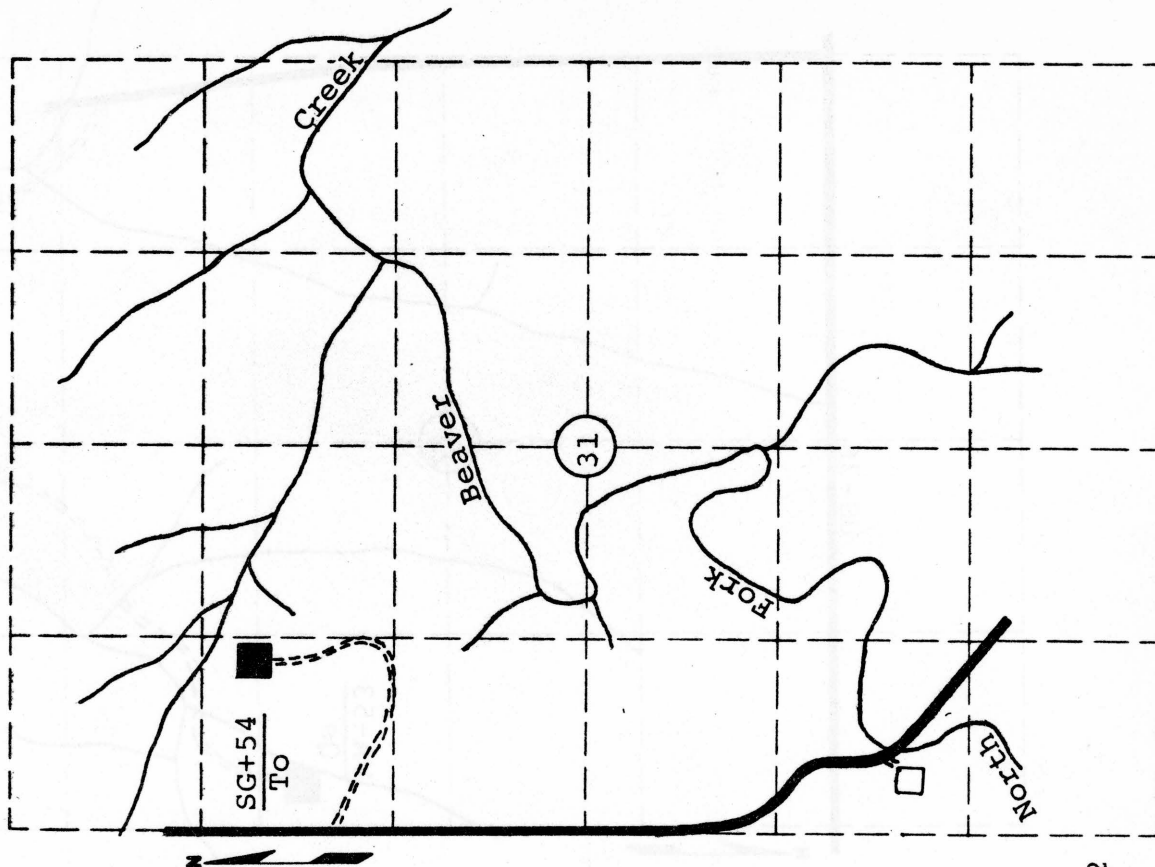
Los Angeles Wear 29.1

Absorption _____ Soundness 1.00

Wt. Cu.Ft. 112.0 Str. Ratio 1 day-1.26, 3 day-1.02

Cementation: 15 * High extreme of 19 holes

** Low extreme of 19 holes



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

Site No. SG-55 Date April, 1967
Qc
 Material Sand & Gravel County Rawlins
 Location SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 3 Twp. 3S Range 34W
 Owner Bertha Cloe Atwood, Kansas
 name address
 Nature of Deposit Dry Accessibility Good Site Located on Plate III
 Status of Site Open site; sampled

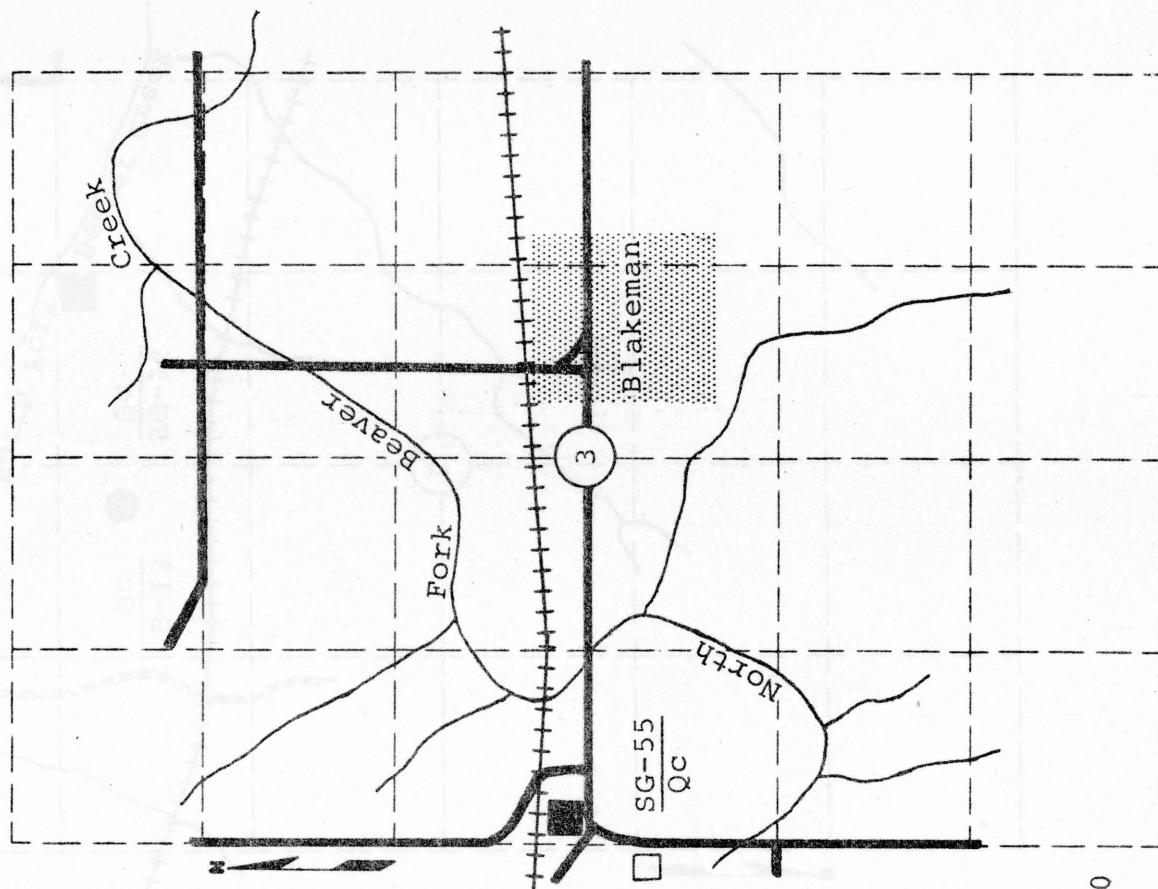
EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-Burden | Depth of Material | Percent Retained | | | | | | | Wash 200 | G.F. | L.L. | P.I. | | |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|----|---|----|----|----------|------|------|------|----|-----|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | | | | | 50 | 100 |
| | | 2 | 6 | 2 | 8 | 15 | 38 | | | 97 | 3 | 3.37 | | | | |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar To Ma-6 of USGS Circular 132
 Lab. No. 64778

Specific Gravity (Sat.) 2.56 (Dry)
 Los Angeles Wear 26.6
 Absorption 0.93 Soundness
 Wt. Cu.Ft. 107.0 Str. Ratio 1 day-1.31, 3 day-1.30
 Remarks

Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

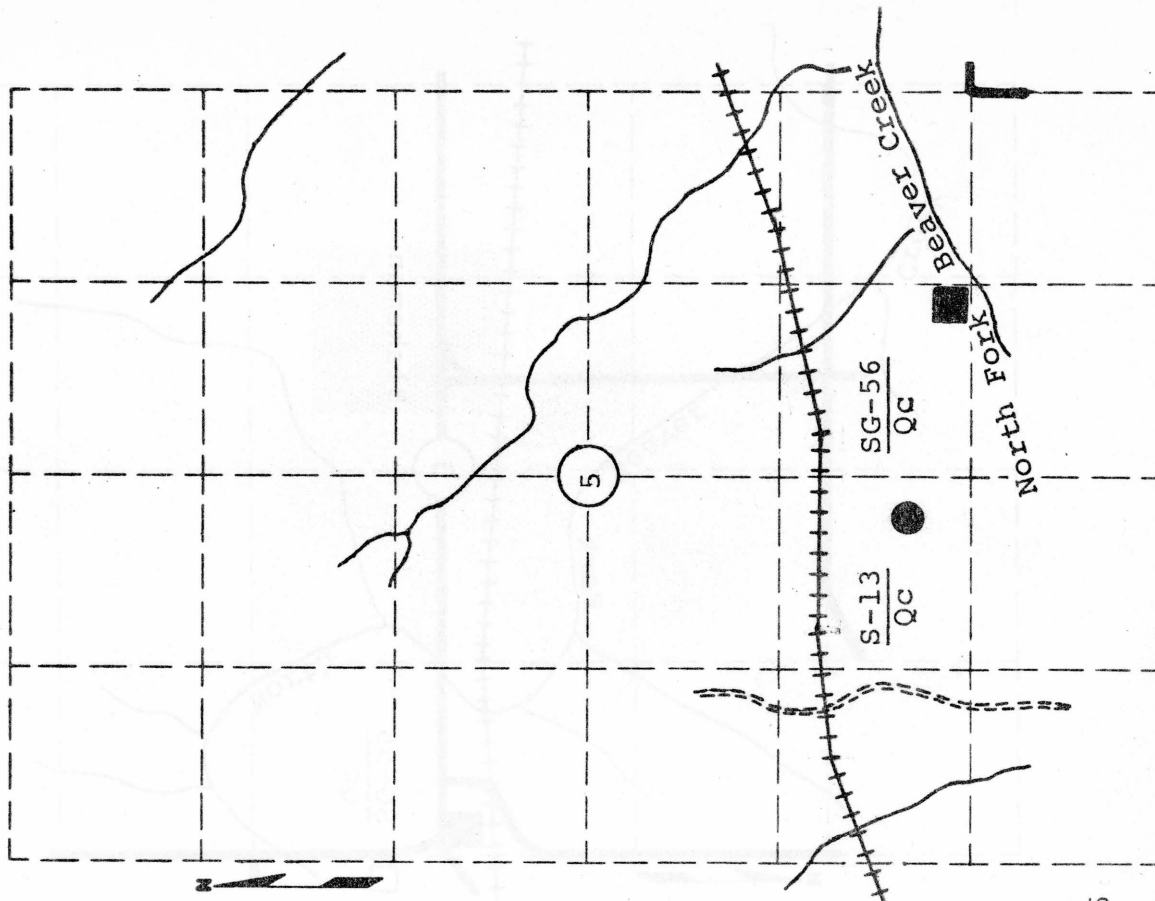
SG-56
 Site No. QC Date April, 1967
 Material Sand & Gravel County Rawlins
 Location SW 1/4 SE 1/4 Sec. 5 Twp. 3S Range 34W
 Owner Arthur J. Samson Address Atwood, Kansas
 Nature of Deposit Dry Accessibility Fair Site Located on Plate III
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-Burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|---|----|----|----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 1/4 | 8 | 16 | 30 | 50 | | | | |
| | | 4 | 9 | | 4 | 7 | 12 | | 45 | | 98 | 3.60 | | | |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar to Ma-7 of USGS Circular 132
 Lab. No. 44486
 Specific Gravity (Sat.) (Dry) 2.60
 Los Angeles Near 29.8
 Absorption Soundness 0.99
 Wt. Co.Ft. 111.0 Dry Str. Ratio 1 day-1.69, 3 day-1.26
 Remarks _____



MATERIAL SURVEY REPORT

SG-57
To _____

Site No. _____ Date April, 1967

Material Sand & Gravel County Rawlins

Location E½ SW¼ Sec. 25 Twp. 3S Range 34W

Owner Harold Weishapl Atwood, Kansas
name address

Nature of Deposit Dry Accessibility Poor Site Located on Plate III

Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at bottom of hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|----|----|----|----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 1/4 | 8 | 16 | 30 | 50 | 100 | | | |
| Av. | | 3 | 14 | 1 | 3 | 9 | 19 | 33 | 58 | 81 | 89 | 8 | 2.93 | | |
| * | | 7 | 21 | 1 | 5 | 12 | 22 | 39 | 65 | 84 | 91 | 13 | 3.12 | | |
| ** | | 1 | 8 | 0 | 2 | 6 | 14 | 28 | 46 | 76 | 84 | 6 | 2.62 | | |
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CORRELATION DATA

Geological Age Tertiary

Geological Source Ogallala Formation

Material similar to Av. SHC Form 619 No. 77-4

Specific Gravity (Sat.) 2.60 (Dry) _____

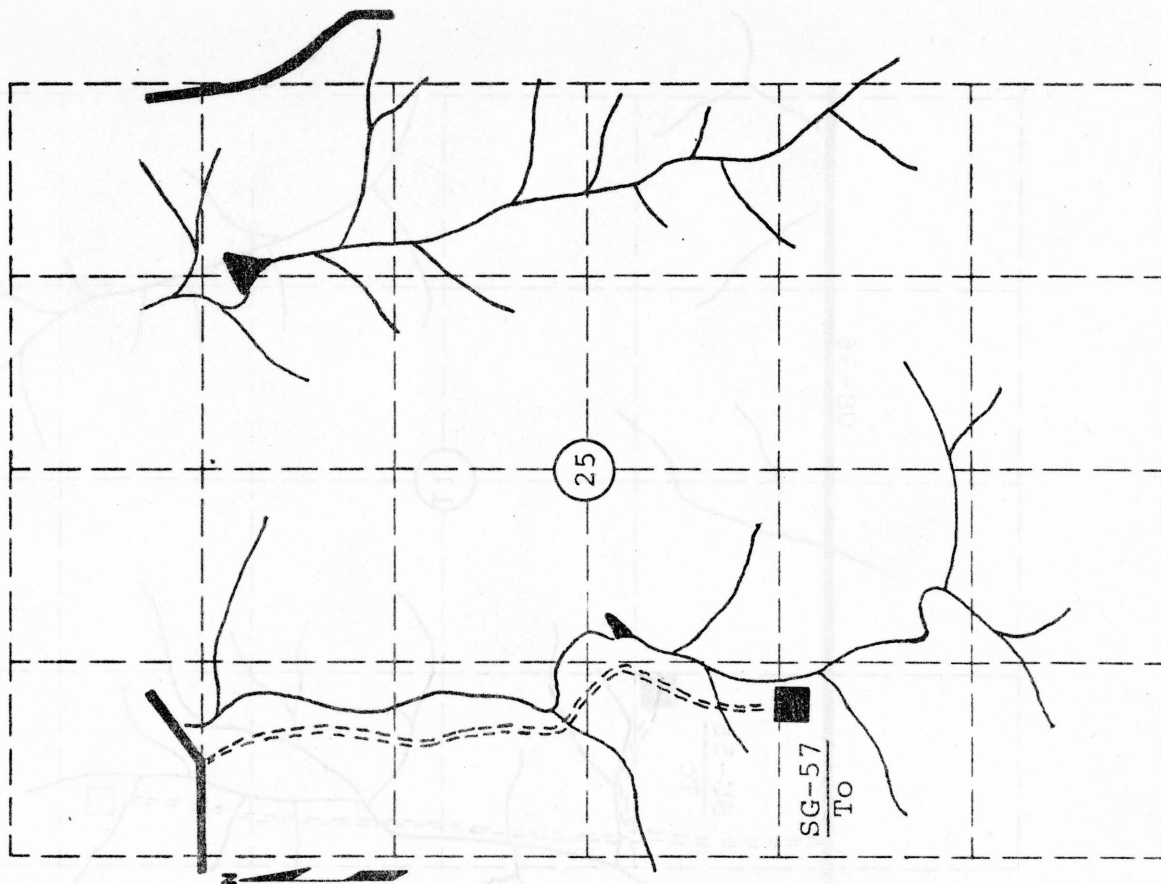
Los Angeles Wear 29.6

Absorption _____ Soundness 0.88

Wt. Cu.Ft. 106.0 Str. Ratio 1 day-0.91, 3 day-0.83

Remarks * High extreme of 13 holes

** Low extreme of 13 holes



Scale: 1" = ¼ Mile

MATERIAL SURVEY REPORT

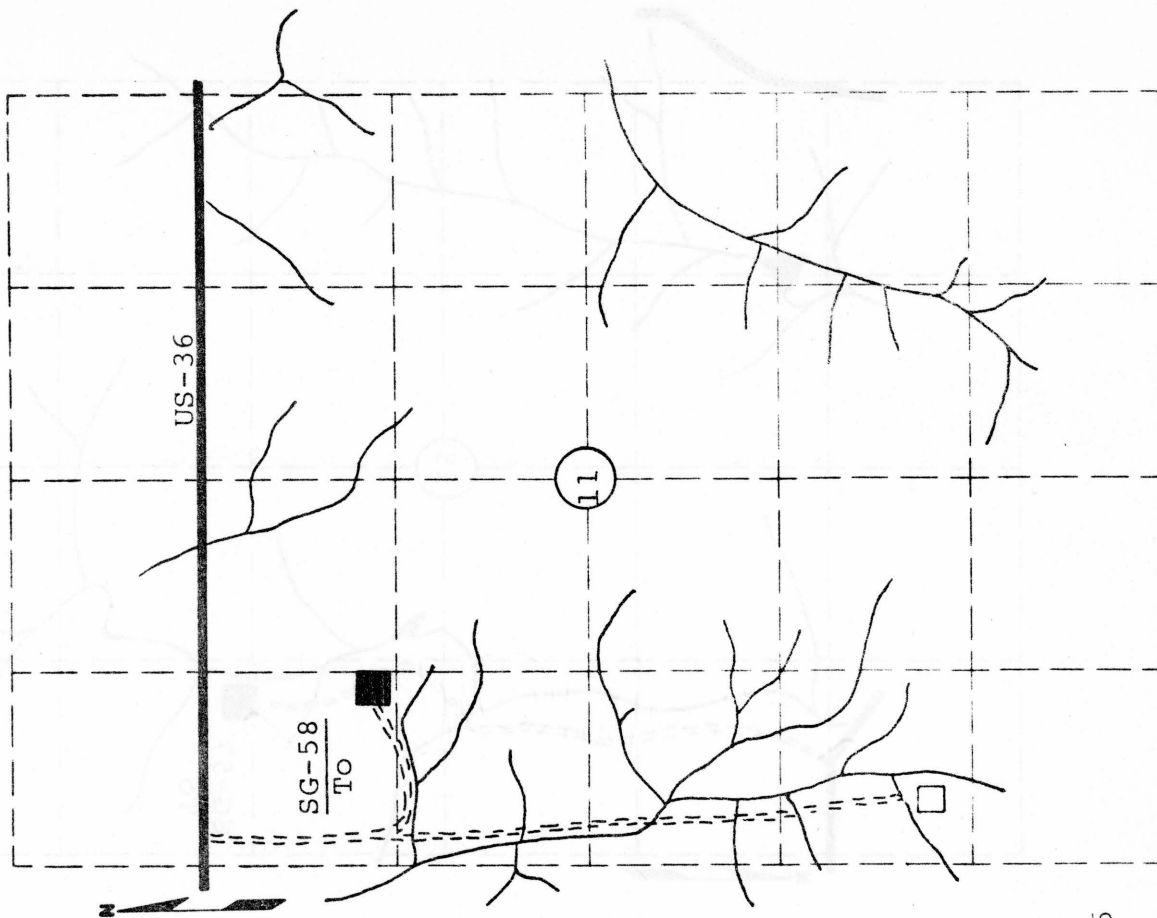
Site No. SG-58 Date April, 1967
To
 Material Sand & Gravel County Rawlins
 Location NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 11 Twp. 3S Range 33W
 Owner Will Fikan Atwood, Kansas address
 Nature of Deposit Dry Accessibility Fair Site Located on Plate IV
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at bottom of hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | Wash 200 | G.F. | L.L. | P.L. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|---|----|----|----------|------|------|------|
| | | | | 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | 100 | |
| | | 2 | 12 | | | 2 | | 39 | | | 94 | 2 | 2.79 |
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CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To Fa-2 of USGS Circular 132
 Lab. No. 64745
 Specific Gravity (sat.) (dry) 2.60
 Los Angeles Wear 30.0
 Absorption 0.94
 Soundness 1 day-1.37, 3 day-1.36
 Wt. Cu.ft. 114.4
 Remarks

Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

SG-59
Qc

Site No. _____ Date April, 1967

Material Sand & Gravel County Rawlins

Location NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 11 Twp. 4S Range 31W

Owner Albert Sauvage Name Oberlin, Kansas address

Nature of Deposit Dry Accessibility Good Site Located on Plate IV

Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of Material | Percent Retained | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|-------------------|------------------|-----|-----|-----|----|----|----------|------|------|---------|
| | | | 1/2 | 3/4 | 3/8 | 1/4 | 16 | 30 | 50 | 100 | | |
| AV. | | 2 10 | | | 2 | 5 | 15 | 36 | 63 | 87 | 93 | 6 3.01 |
| * | | 4 13 | | | 4 | 11 | 27 | 49 | 75 | 92 | 96 | 10 3.37 |
| ** | | 0 5 | | | 1 | 2 | 7 | 18 | 41 | 75 | 86 | 3 2.30 |
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CORRELATION DATA

Geological Age Quaternary

Geological Source Crete Formation

Material Similar To Av. SHC Form 619 No. 77-5

Specific Gravity (Set.) 2.62 (Dry)

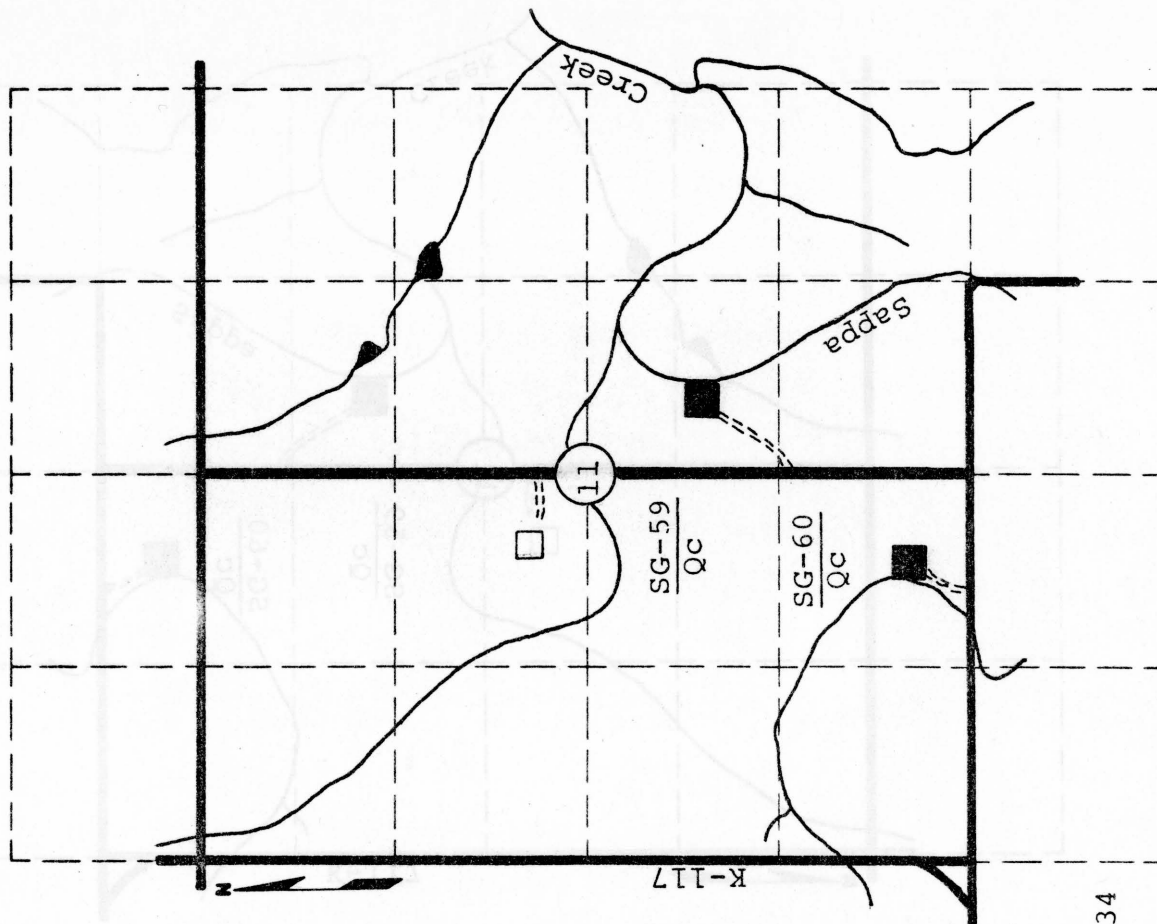
Los Angeles Wear 27.6

Absorption _____ Soundness 0.94

wt. Cu.Ft. 115 Str. Ratio 1 day-1.42, 3 day-1.34

Remarks * High extreme of 10 holes

** Low extreme of 10 holes



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

SG-60
Qc

Site No. _____ Date April, 1967

Material Sand & Gravel County Rawlins

Location SE 1/4 SW 1/4 Sec. 11 Twp. 4S Range 31W

Owner Ivy M. Yoos Atwood, Kansas
name address

Nature of Deposit Dry Accessibility Good Site Located on Plate IV

Status of Site Open site; sampled

EXPLORATION DATA

| Test Mole | Material at Bottom of Mole | Depth of over-Burden | Depth of Material | Percent Retained | | | | | | | Wash 200 | S.F. | L.L. | P.L. | | |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|---|---|----|----|----------|------|------|------|----|-----|
| | | | | 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | | | | | 50 | 100 |
| | | 5 | 9 | | | 2 | 6 | | 26 | | | 96 | 3 | 2.78 | | |
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CORRELATION DATA

Geological Age Quaternary

Geological Source Crete Formation

Material Similar to Ma-11 of USGS Circular 132

Lab. No. 64779

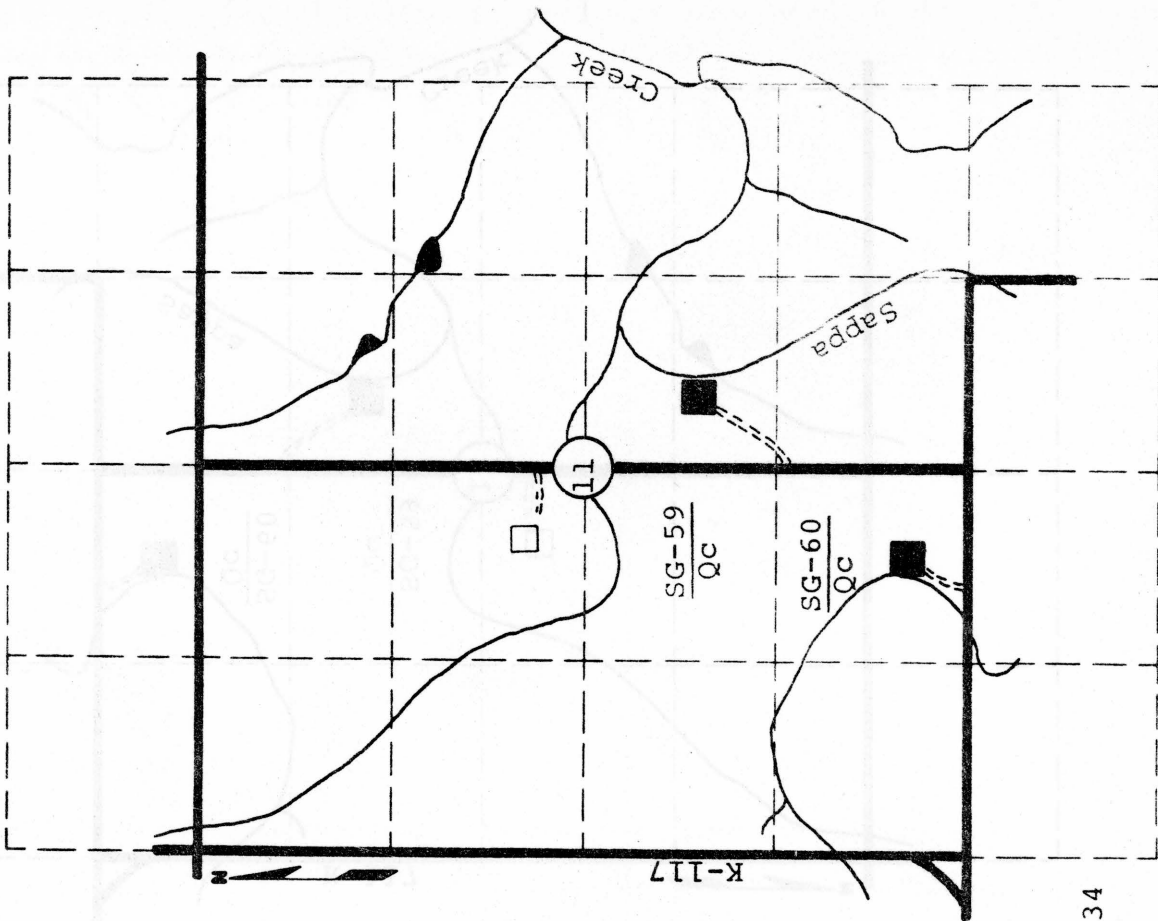
Specific Gravity (Sat.) _____ (Dry) 2.60

Los Angeles Wear _____

Absorption _____ Soundness _____

Wt. Cu.ft. 106.3 Str. Ratio 1 day-1.33, 3 day-1.34

Remarks _____

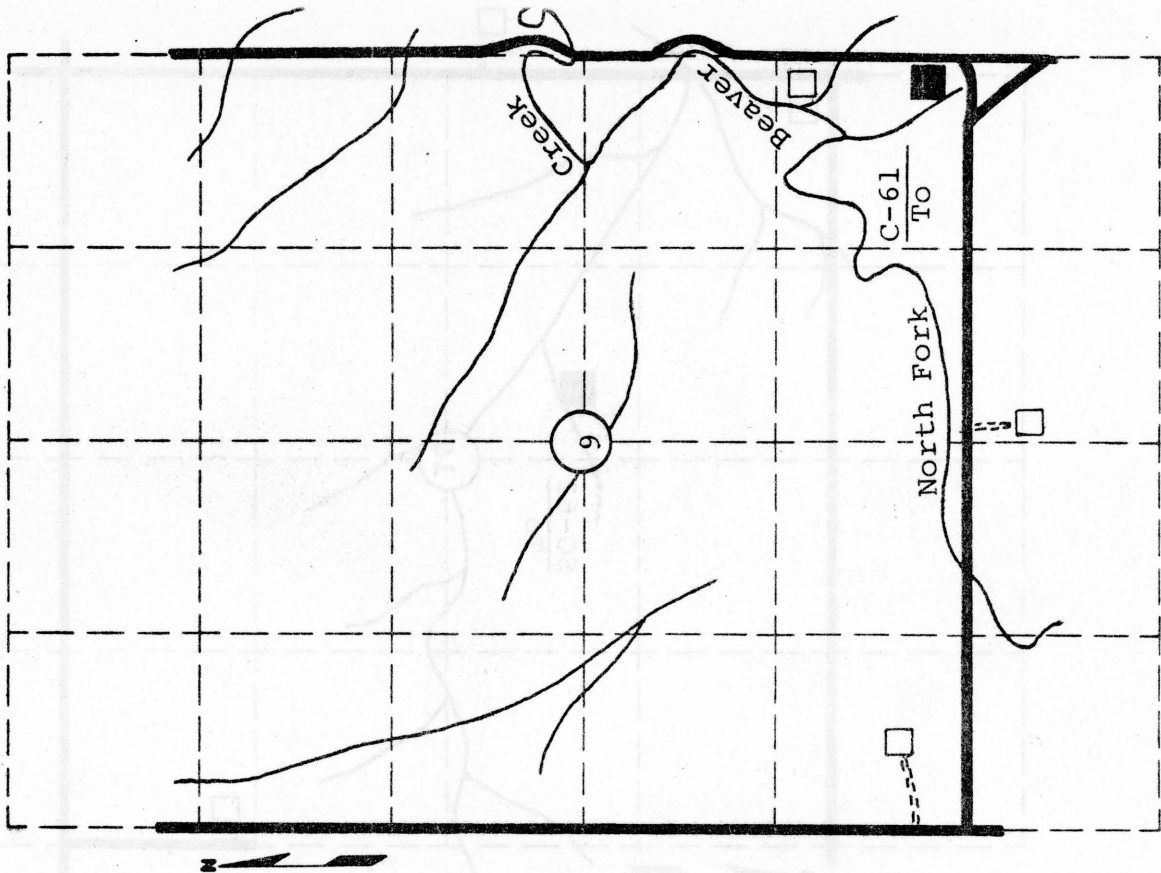


MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Scale: 1" = $\frac{1}{4}$ Mile



MATERIAL SURVEY REPORT

Site No. SG-62
 To To
 Material Sand & Gravel
 Location SW 1/4 NE 1/4 Sec. 16 Twp. 5S Range 33W
 Owner Frank R. Ruda Atwood, Kansas
 Nature of Deposit Dry Accessibility Poor Site Located on Plate VI
 Status of Site Open site; sampled

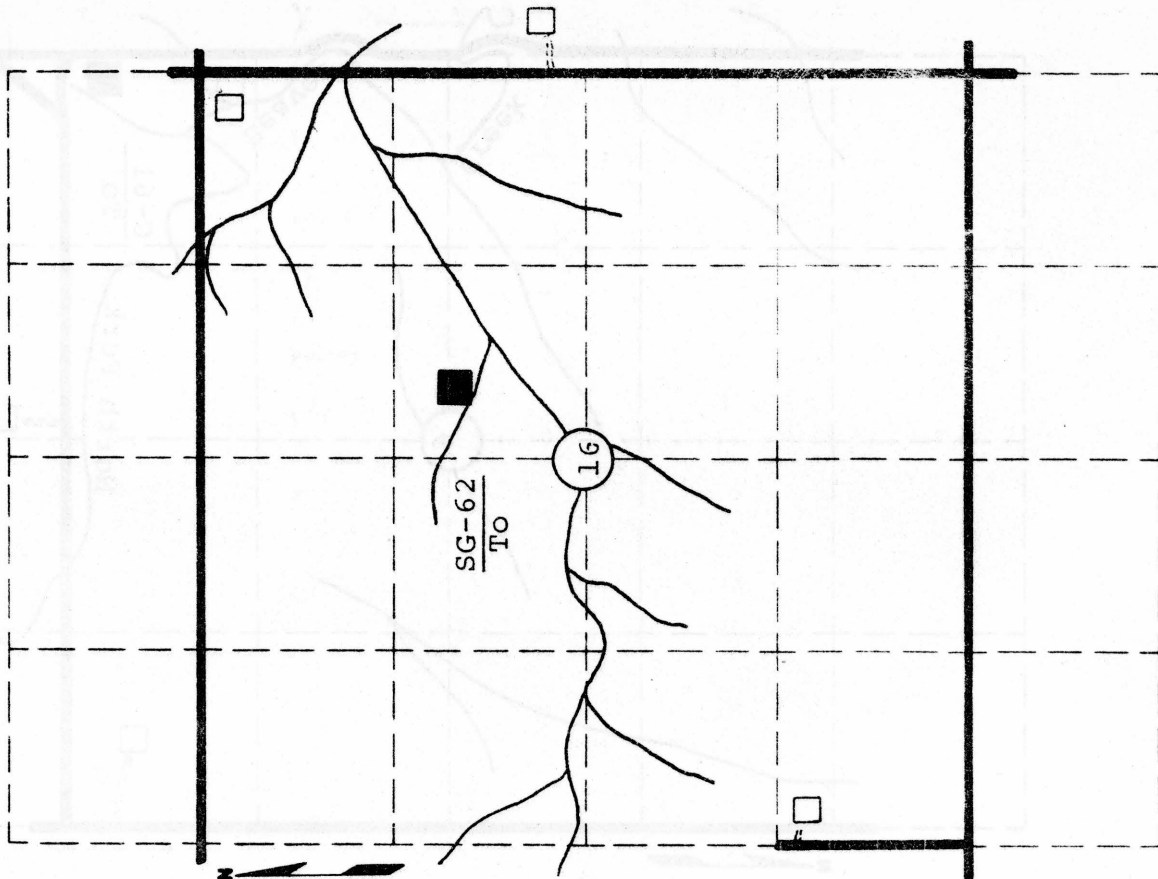
EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of Material | Percent Retained | | | | | | Mesh 200 | G. F. | L. L. | P. I. |
|-----------|----------------------------|-------------------|------------------|-----|------|-----|-----|----|----------|-------|-------|-------|
| | | | 1 1/2 | 3/4 | 3/8 | 1/4 | 1/8 | 16 | 30 | 50 | 100 | |
| | | 7 9 | | | 7 12 | 44 | | | | 85 14 | 3.15 | |
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CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To Ma-18 of USGS Circular 132

Specific Gravity (Sat.) 29.8 (Dry) 2.62
 Los Angeles Wear 0.97
 Absorption 112.0
 Soundness Str. Ratio
 Remarks



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

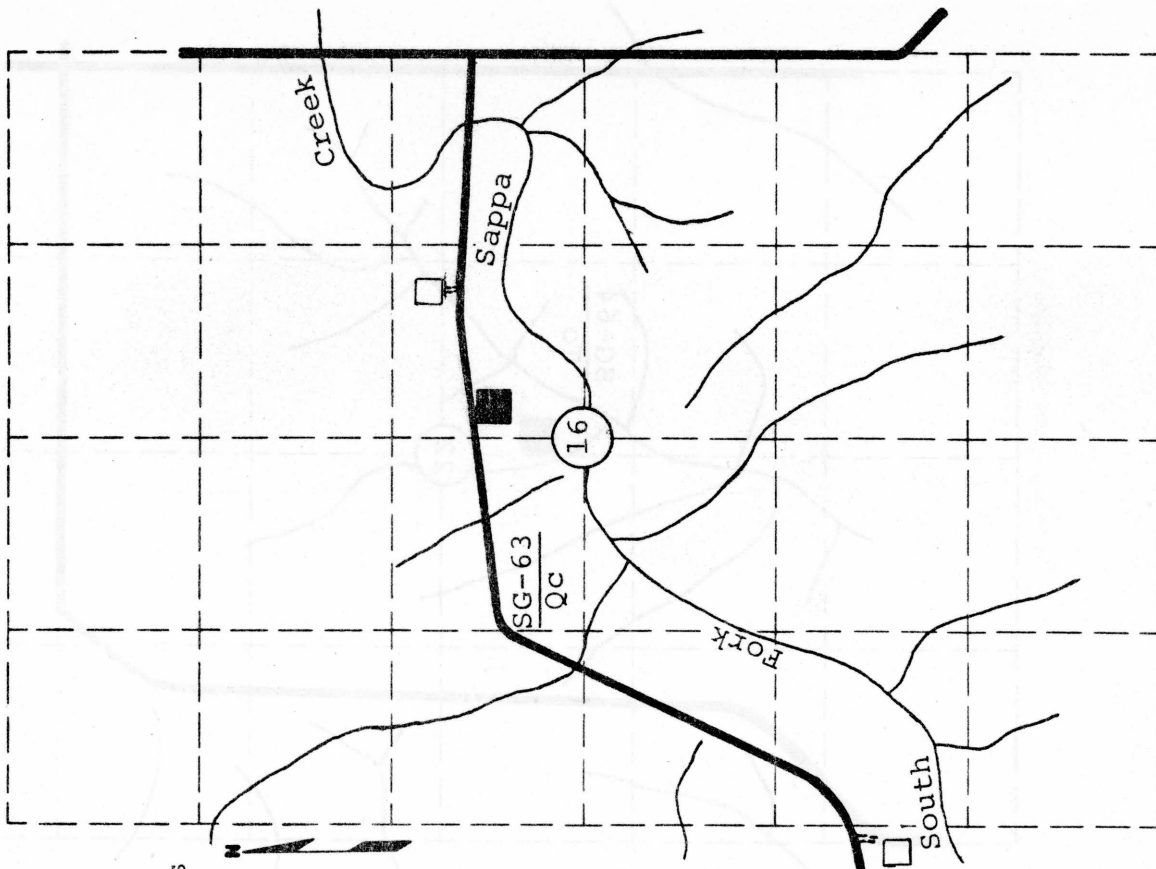
SG-63
 Site No. QC Date April, 1967
 Material Sand & Gravel County Rawlins
 Location SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 16 Twp. 5S Range 31W
 Owner George P. Schmahl 117 S. Griffith, Oberlin, Kansas
 Name VI
 Nature of Deposit Dry Accessibility Good Site Located on Plate VI
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-Burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | G.F. | L.L. | P.I. | |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|---|---|----|----|----|----------|------|------|------|-----|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | | | | | 100 |
| | | 3 | 6 | | | | | | | | | | | | | |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar To Ma-16 of USGS Circular 132
 Specific Gravity (Sat.) (Dry)
 Los Angeles Wear
 Absorption Soundness
 Wt. Co. Ft. Str. Ratio
 Remarks Small pit-No production



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

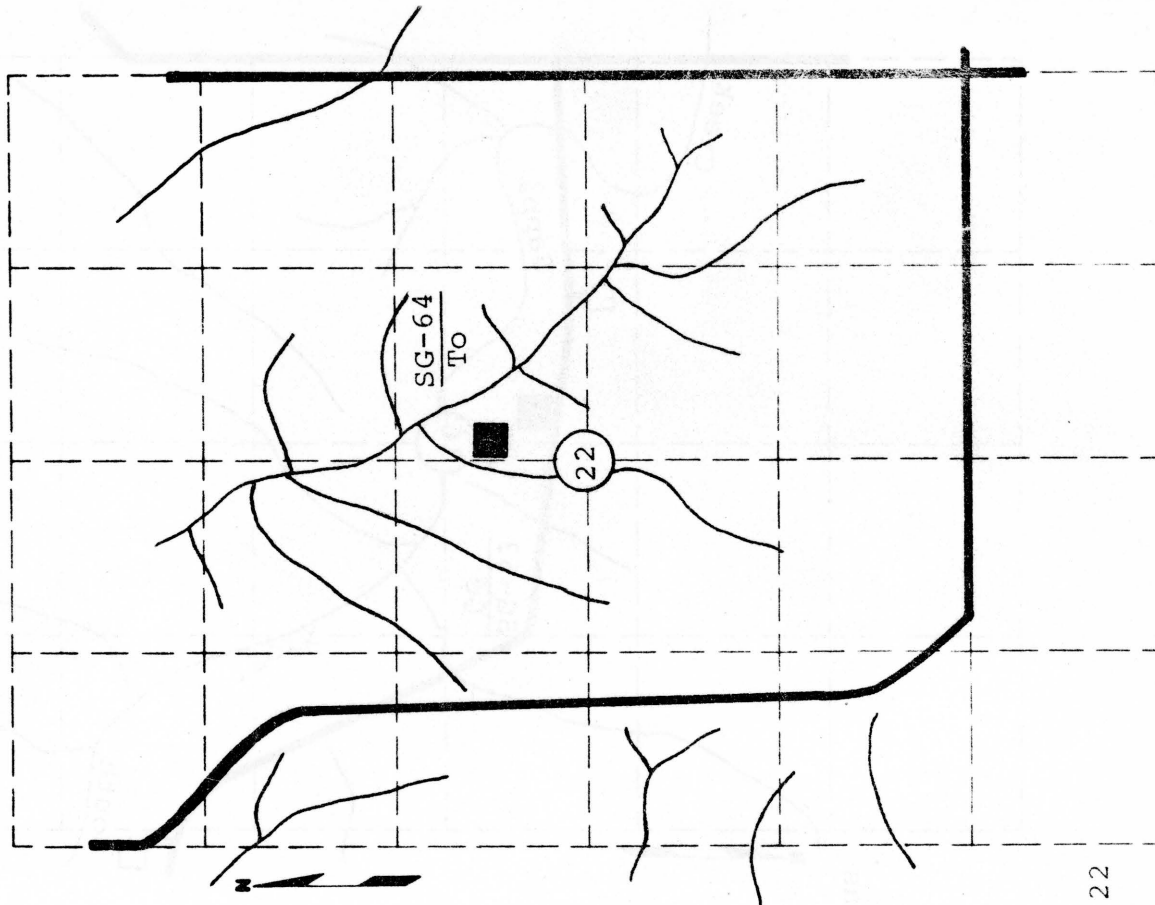
Site No. SG-64 Date April, 1967
To
 Material Sand & Gravel County Rawlins
 Location SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 22 Twp. 5S Range 31W
 Owner Robert F. Bivans Rexford, Kansas
 Name address
 Nature of Deposit Dry Accessibility Poor Site Located on Plate VI
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at bottom of hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|---|---|----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | 100 | |
| | | 4 | 5 | | | 1 | 4 | | 31 | | | 97 | 1 |
| | | | | | | | | | | | 2.88 | | |
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CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To Fa-6 of USGS Circular 132
 Lab. No. 64638
 Specific Gravity (Sat.) 2.61 (Dry)
 Los Angeles Wear
 Absorption Soundness
 Wt. Cu.ft. 110.5 Str. Ratio 1 day-1.30, 3 day-1.22
 Remarks

Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

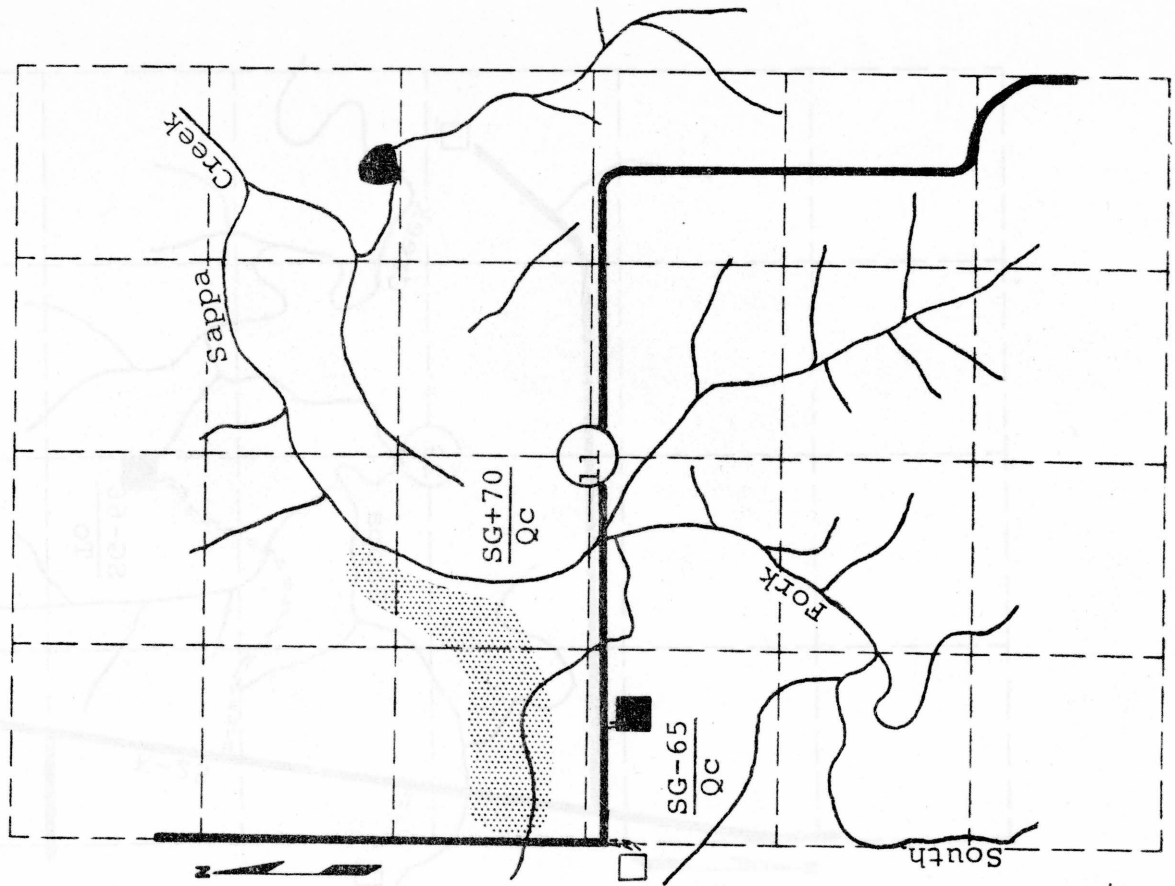
Site No. SG-65
Qc
 Material Sand & Gravel
 Location NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 11 Twp. 5S Range 31W
 Owner Elof C. Erickson Rexford, Kansas
 Nature of Deposit Dry Accessibility Good Site located on Plate VI
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at bottom of Hole | Depth of over-Burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | S.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|----|---|----|----|----|----------|------|------|------|
| | | | | 1/2 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | | | | |
| | | 3 | 9 | | | 5 | 18 | | 82 | | 94 | 5 | 4.29 | | |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar to Ma-15 of USGS Circular 132
 Lab. No. 64637
 Specific Gravity (sat.) 2.56 (dry)
 Los Angeles Near 30.4
 Absorption 0.92 Soundness 102.4
 Wt. Cu.ft. 102.4 Str. Ratio 1 day-1.61, 3 day-1.61
 Remarks



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

Site No. SG-66
To April, 1967
 Material Sand & Gravel County Rawlins
 Location SE 1/4 SW 1/4 Sec. 29 Twp. 5S Range 33W
 Owner Howard Grover Colby, Kansas
 Nature of Deposit Dry Accessibility Good Site located on Plate VI
 Status of Site Open site; sampled

EXPLORATION DATA

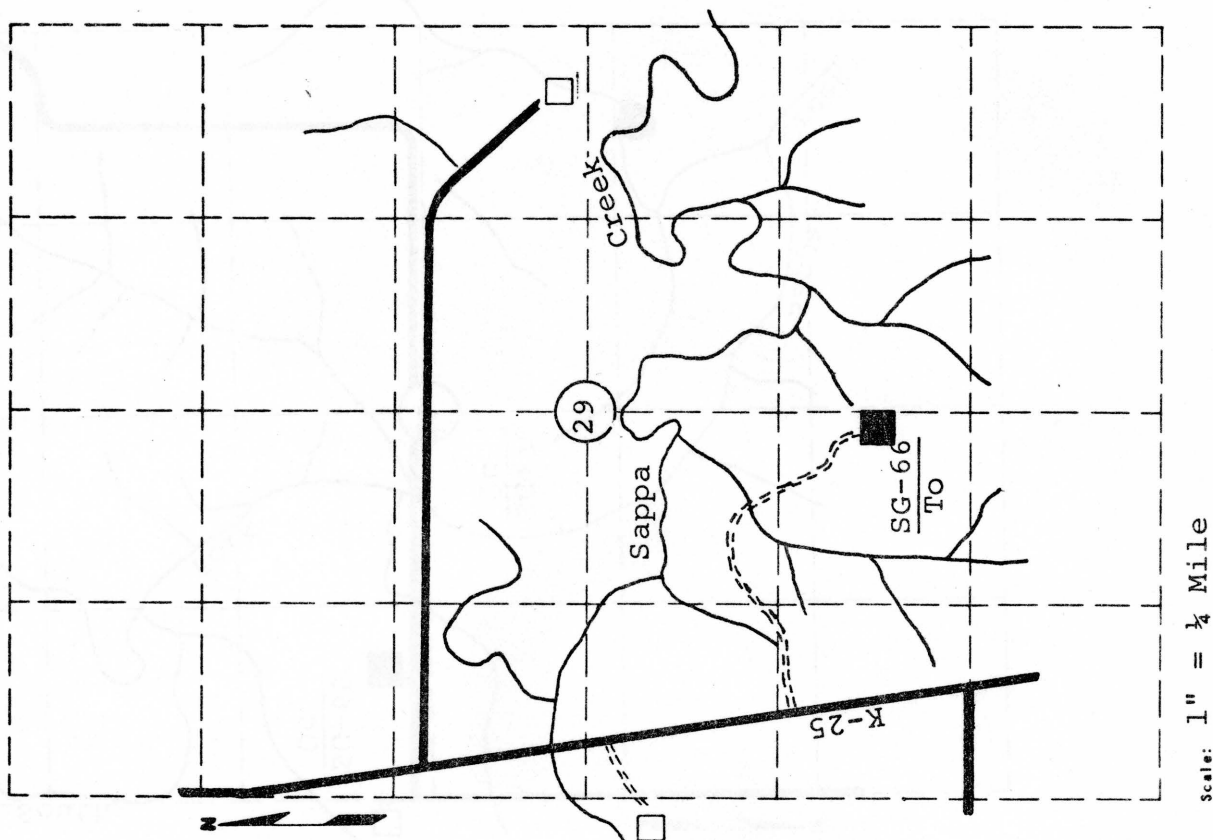
| Test Hole | Material at Bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | G.F. | L.L. | P.L. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|-----|----|----|----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 1/4 | 1/8 | 16 | 30 | 50 | 100 | | | |
| AV. | | 5 | 6 | | 1 | 4 | 9 | 19 | 36 | 57 | 74 | 87 | 8 | | |
| * | | 17 | 13 | | 3 | 7 | 19 | 34 | 57 | 74 | 87 | 95 | 15 | | |
| ** | | 1 | 2 | | 0 | 1 | 5 | 9 | 19 | 38 | 62 | 79 | 3 | | |

CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar to AV. SHC Form 619 No. 77-23

Specific Gravity (Sat.) 2.63 (Dry)
 Los Angeles Wear 30.8
 Absorption 1.73 Soundness 0.92

Wt. Cu. Ft. Str. Ratio
 Remarks * High extreme of 24 holes
** Low extreme of 24 holes



MATERIAL SURVEY REPORT

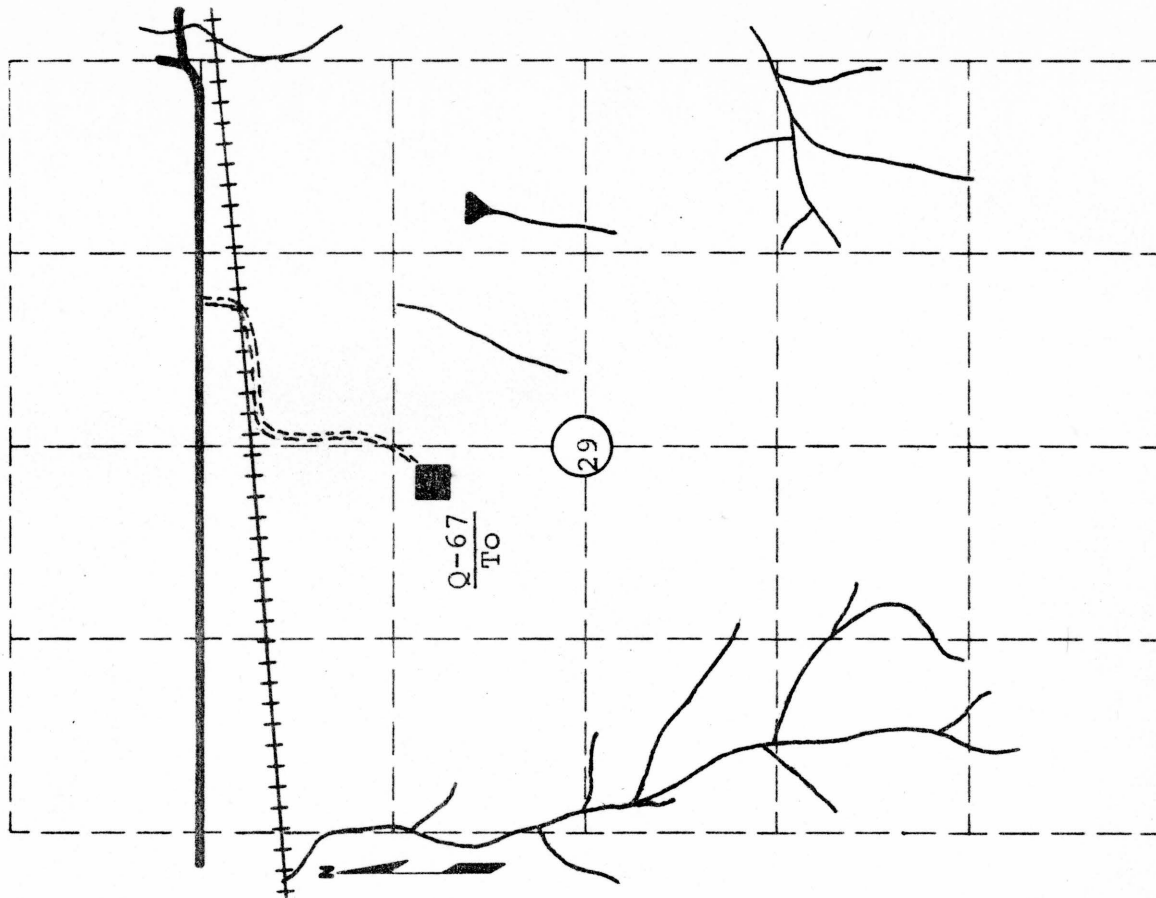
Site No. Q-67 To April, 1967
 Material Quartzite County Rawlins
 Location SE 1/4 NW 1/4 Sec. 29 Twp. 2S Range 32W
 Owner Ernst Holste address Ludell, Kansas
 Nature of Deposit Dry Accessibility Fair Site Located on Plate IV
 Status of Site Open site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-Burden | Depth of Material | Percent Retained | | | | | | Wash 200 | 100 | 50 | 30 | 16 | 8 | 4 | 3/8 | 3/4 | 1 1/2 | G.F. | L.L. | P.L. |
|-----------|----------------------------|----------------------|-------------------|------------------|---|-----|-----|---|---|----------|-----|----|-----|----|---|---|-----|-----|-------|------|------|------|
| | | | | 1 1/2 | 1 | 3/4 | 3/8 | 4 | 8 | 16 | 30 | 50 | 100 | | | | | | | | | |
| | | 2 | 5 | | | | | | | | | | | | | | | | | 2.37 | | |
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CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To Q-3 of USGS Circular 132
 Specific Gravity (Sat.) 39.9 (dry)
 Los Angeles Near 1.49
 Absorption 1.49 Soundness
 Wt. Co.Ft. Str. Ratio
 Remarks



Scale: 1" = 1/4 Mile

APPENDIX III

The following site data forms are designated as "prospective sites; not sampled." The sites described herein are depicted on the county materials maps as a "○".

LEGEND

----- Trail or lane

———— Road

+ + + + + Railroad

~~~~~ Hedge or trees

~~~~~  
Name Major streams

~~~~~ Intermittent streams

~~~~~ Pond or lake



Prospective materials site; not sampled



Center of section



Farm site



Cemetery



School



Church



Town or city

MATERIAL SURVEY REPORT

SG+68
To April, 1967
Date
Material Sand & Gravel County Rawlins
Location NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 33 Twp. 4S Range 35W
Owner Chauncey Dewey, Jr. et al Brewster, Kansas
name address
Mature of Deposit Dry Accessibility Fair Site Located on Plate V
Status of Site Prospective site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Site No. 26

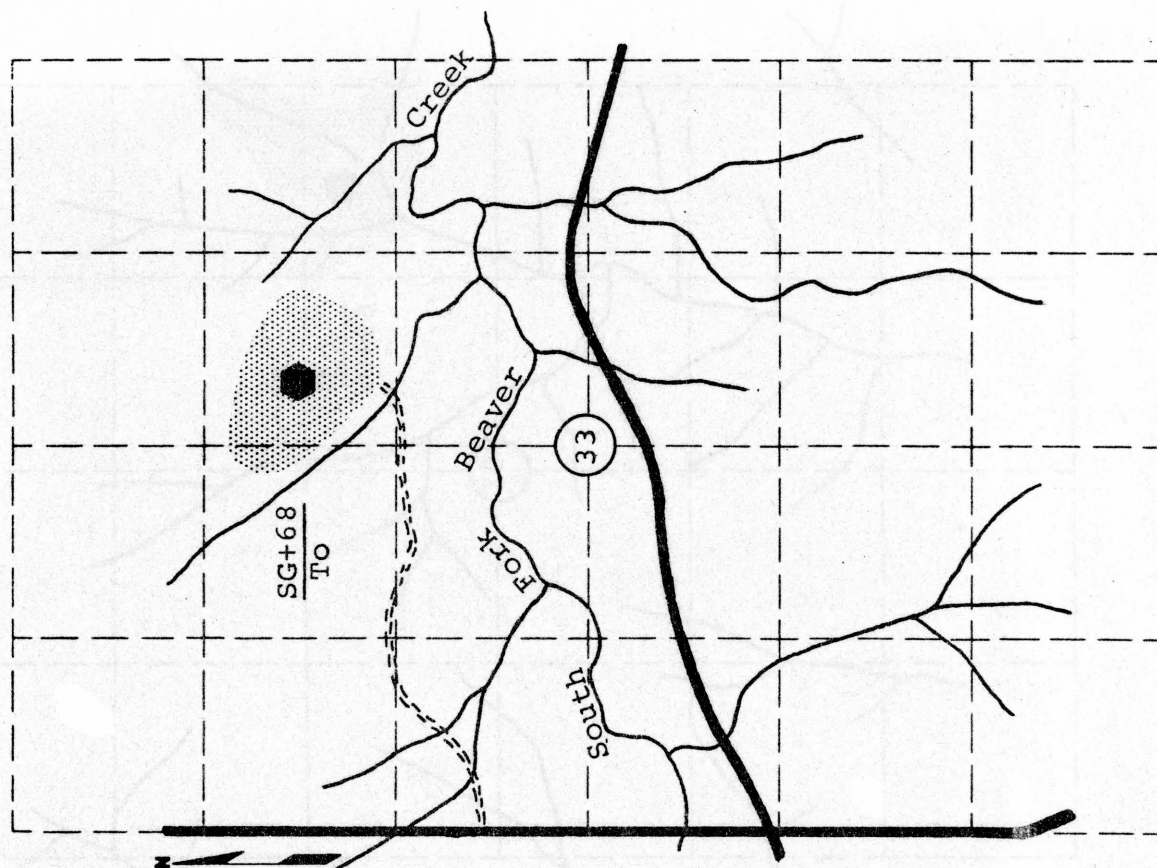
Specific Gravity (Sat.) _____ (Dry) _____

Los Angeles Near _____

Absorption _____ Soundness _____

Wt. Cu.Ft. _____ Str. Ratio _____

Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

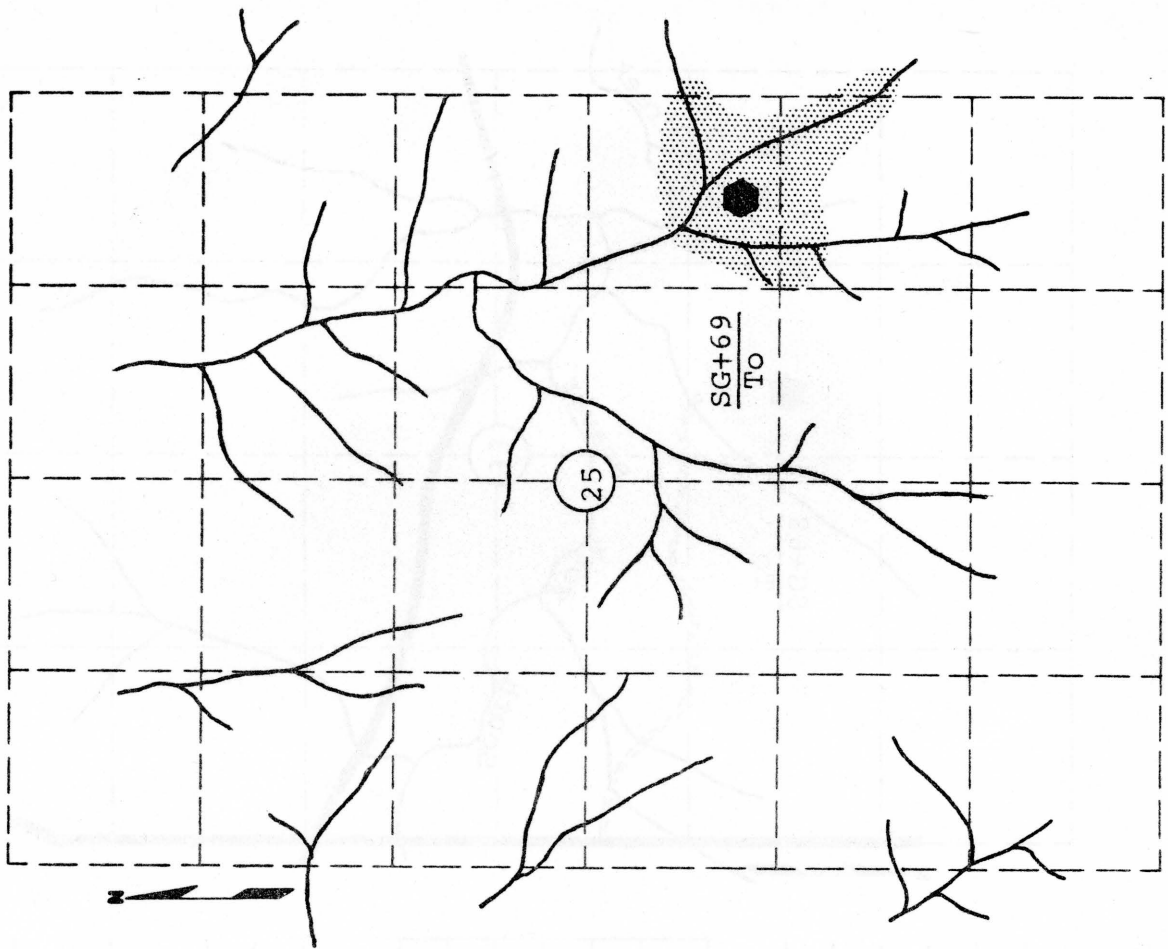
SG+69
TO _____
Site No. _____ Date April, 1967
Material Sand & Gravel County Rawlins
Location NE 1/4 SE 1/4 Sec. 25 Twp. 4S Range 35W
Owner Clara Dixon name Atwood, Kansas
Nature of Deposit Dry Accessibility Poor Site Located on Plate V
Status of Site Prospective site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

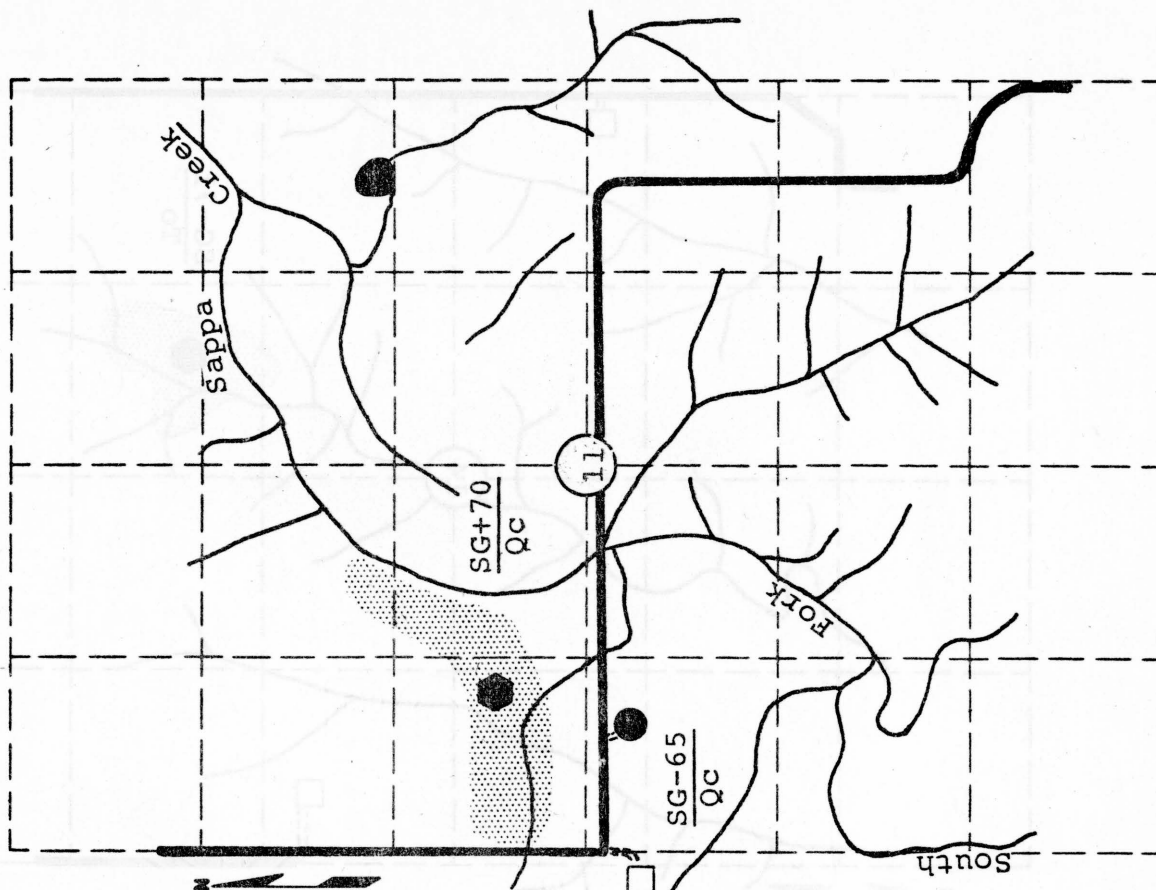
EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Quaternary
Geological Source Crete Formation
Material Similar To Site No. 65

Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Co. Ft. _____ Str. Ratio _____
Remarks _____



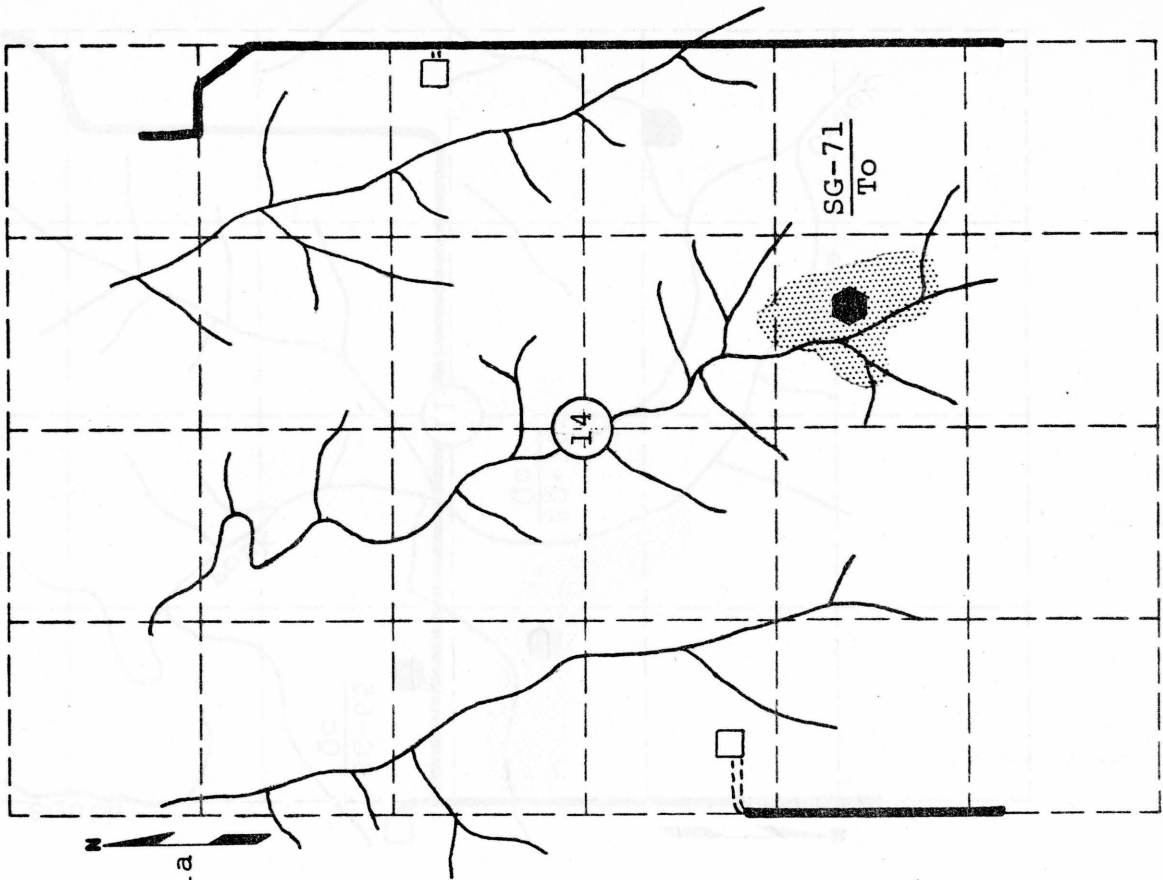
Scale: 1" = $\frac{1}{4}$ Mile

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age _____ Tertiary _____
Geological Source _____ Ogallala Formation _____
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____

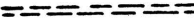
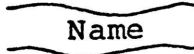
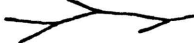


scale: 1" = $\frac{1}{4}$ Mile

APPENDIX IV

The following site data forms are designated as "prospective sites; sampled." The sites described herein are depicted on the county materials maps as a "▼".

LEGEND

| | | | |
|---|----------------------|--|---|
|  | Trail or lane |  | Prospective materials site; not sampled |
|  | Road |  | Center of section |
|  | Railroad |  | Farm site |
|  | Hedge or trees |  | Cemetery |
|  | Major streams |  | School |
|  | Intermittent streams |  | Church |
|  | Pond or lake |  | Town or city |

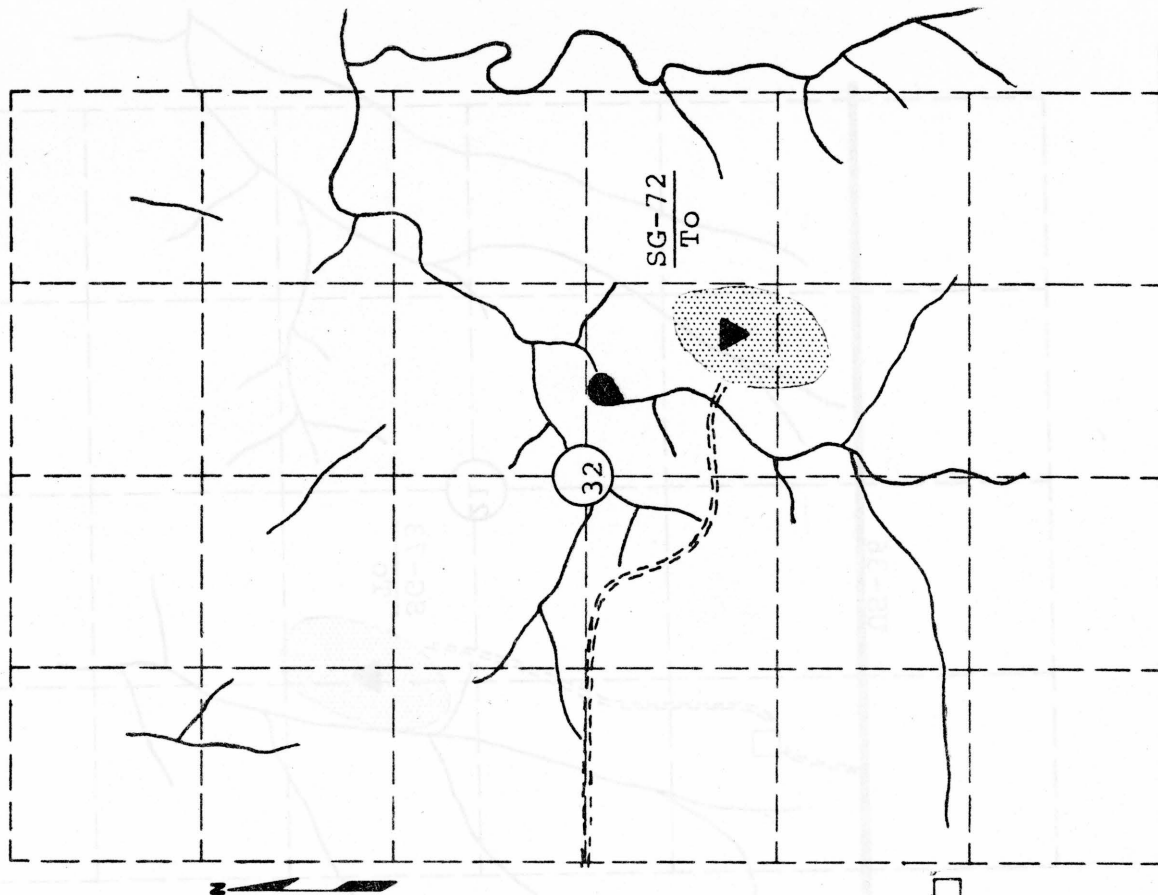
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To Ma-4 of USGS Circular 132
Lab. No. 50952
Specific Gravity (Sat.) 2.55 (Dry)
Los Angeles Wear 31.2
Absorption 0.88
Wt. Cu.Ft. 111.4 Str. Ratio 1 day-1.12, 3 day-1
Remarks _____



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

SG-73
TO

Site No. _____ Date April, 1967

Material Sand & Gravel County Rawlins

Location NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 21 Twp. 3S Range 35W

Owner H. A. Bearley McDonald, Kansas
name address

Nature of Deposit Dry Accessibility Fair Site Located on Plate III

Status of Site Prospective site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | | Wash 200 | G.F. | L.L. | P.L. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|------|-----|------|------|----------|------|------|------|
| | | | | 1/2 | 3/4 | 3/8 | 1/4 | 3/16 | 1/8 | 3/32 | 1/32 | | | | |
| AV. | | 2 | 9 | | | 1 | 3 | 10 | 24 | 45 | 73 | 89 | 6 | 2.45 | |
| * | | 15 | 18 | | 1 | 2 | 12 | 30 | 53 | 72 | 89 | 95 | 19 | | |
| ** | | 0 | 3 | | 0 | 1 | 1 | 4 | 8 | 16 | 38 | 61 | 1 | | |
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CORRELATION DATA

Geological Age Tertiary

Geological Source Ogallala Formation

Material Similar To AV. SHC Form 619 No. 77-15

Specific Gravity (Sat.) 2.56 (Dry)

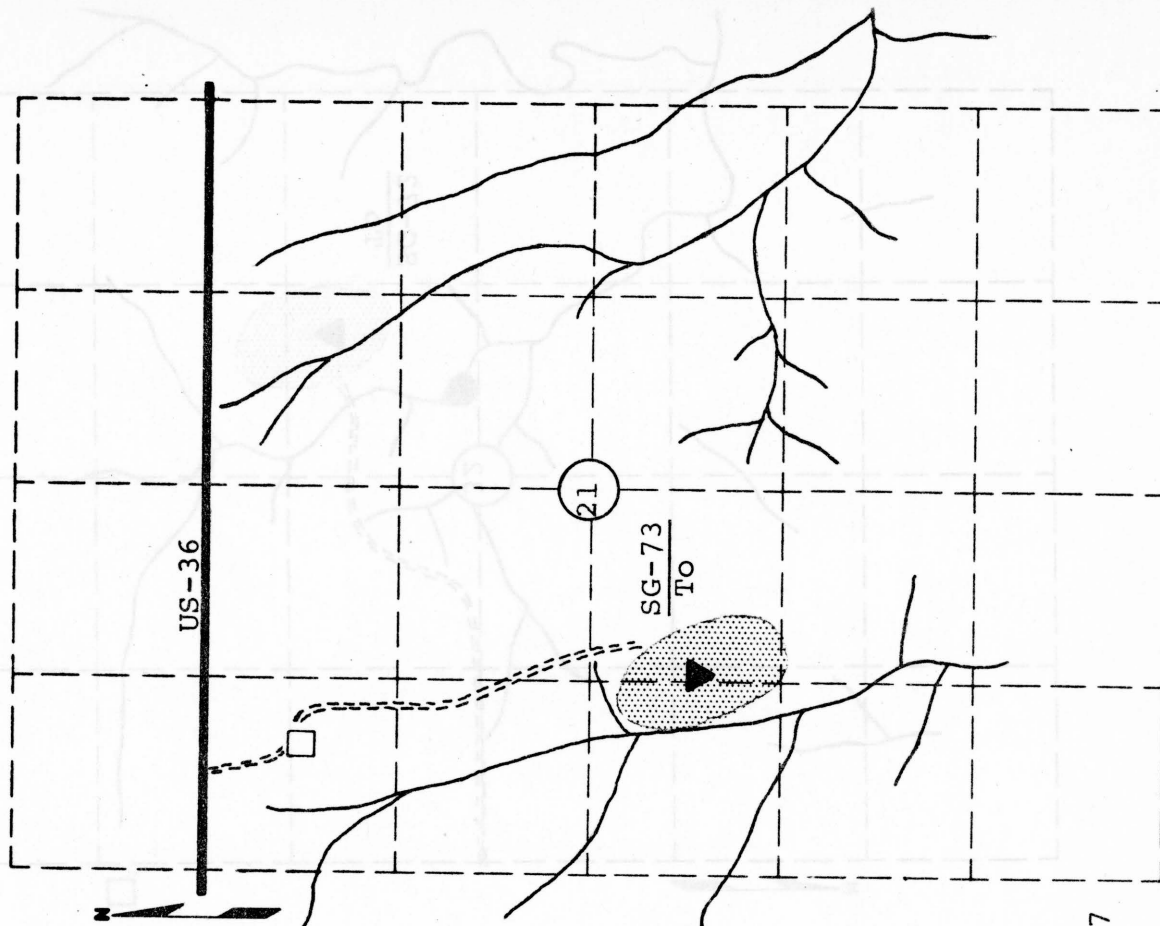
Los Angeles Wear 31.3

Absorption 0.97

Wt. Cu.Ft. 110.8 Str. Ratio 1 day-1.06, 3 day-0.97

Remarks * High extreme of 14 holes

** Low extreme of 14 holes



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

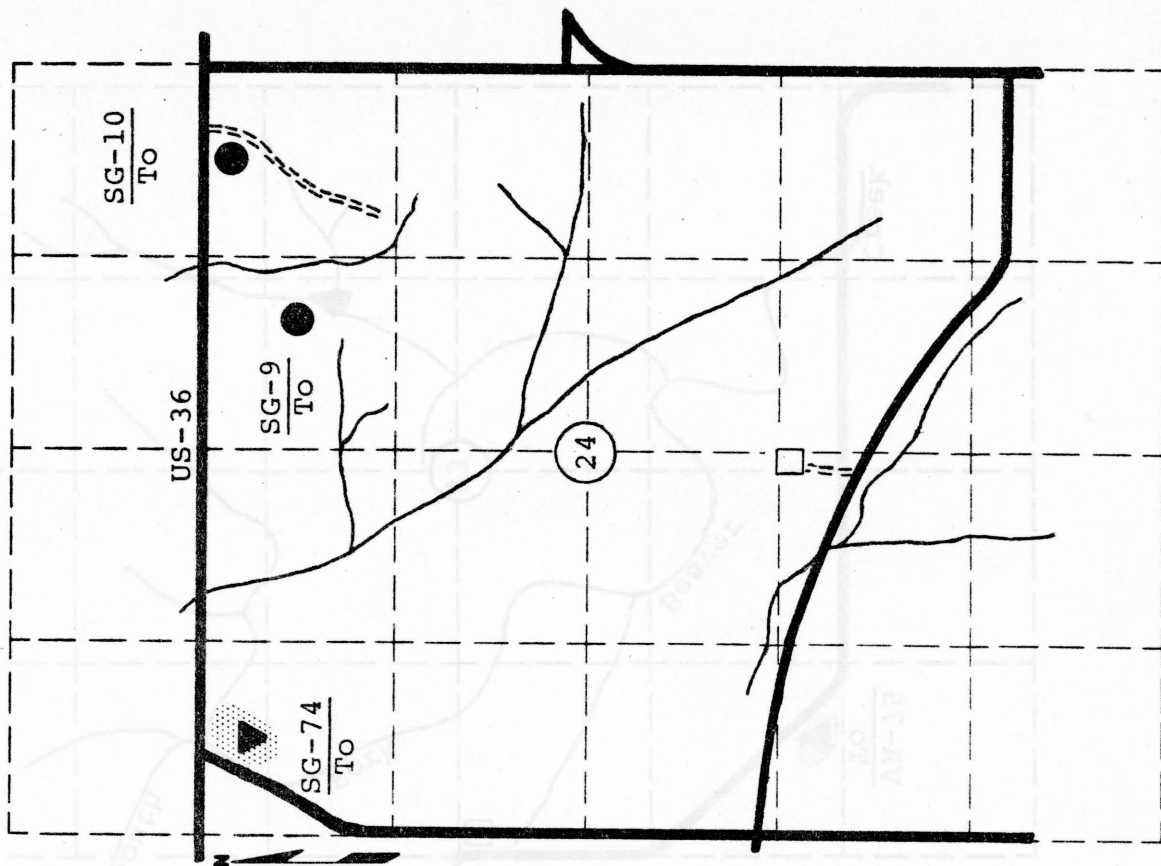
SG-74
 Site No. TO Date April, 1967
 Material Sand & Gravel County Rawlins
 Location NW Corner NW 1/4 Sec. 24 Twp. 3S Range 35W
 Owner Delbert V. Hawkins Atwood, Kansas
 Nature of Deposit Dry Accessibility Good Site Located on Plate III
 Status of Site Prospective site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | Wash | G.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|----|----|----|------|------|------|------|
| | | | | 1/2 | 3/4 | 3/8 | 1/4 | 16 | 30 | 50 | 100 | | | |
| | | 5 | 9 | | | | | | | | | 2 | | |
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CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To Ma-9 of USGS Circular 132
 Lab. No. 34768
 Specific Gravity (Sat.) (Dry) 2.55
 Los Angeles Wear
 Absorption Soundness
 Wt. Cu.Ft. 112.0 Str. Ratio 1 day-1.07, 3 day-1.01
 Remarks



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

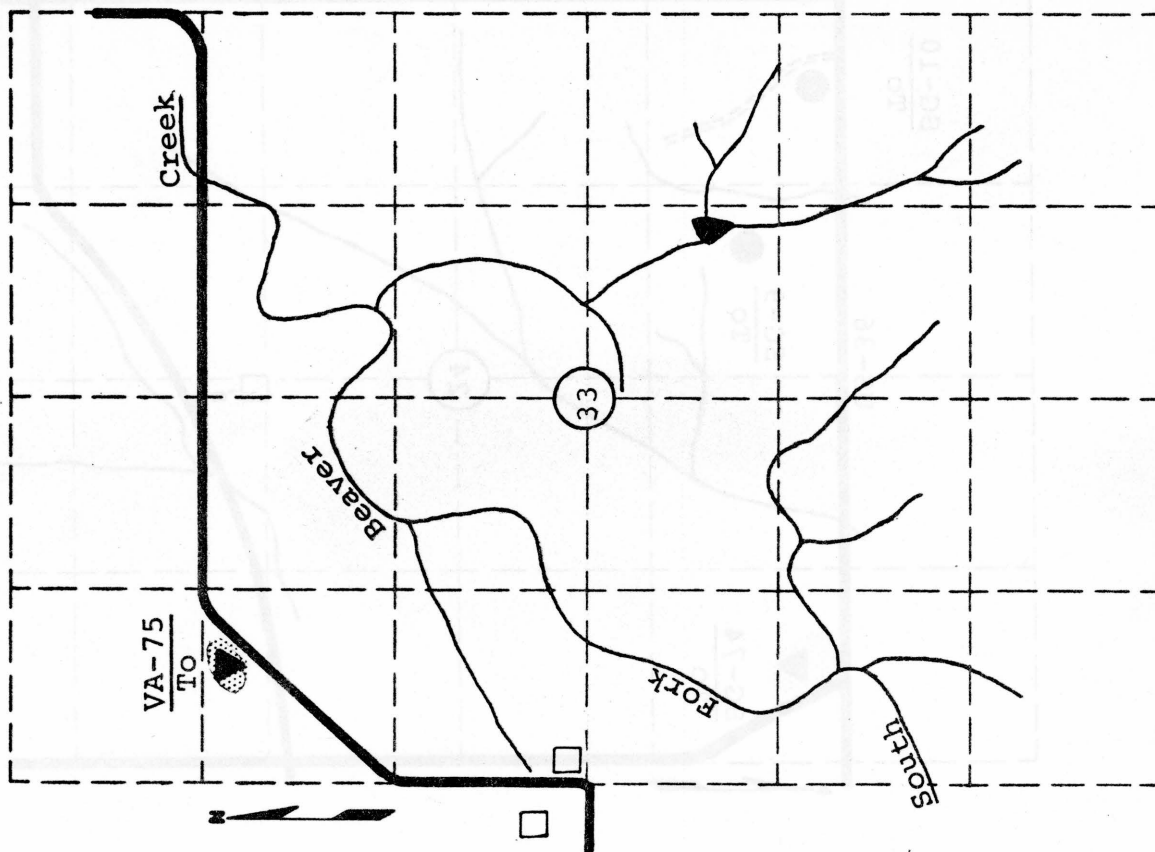
Site No. VA-75 Date April, 1967
 Material Volcanic Ash County Rawlins
 Location NW Corner NW 1/4 Sec. 33 Twp. 3S Range 34W
 Owner George Pianalto Atwood, Kansas
 Nature of Deposit Dry Accessibility Good Site Located on Plate III
 Status of Site Prospective site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|----|----|----------|------|------|------|
| | | | | 1/2 | 3/4 | 3/8 | 1/4 | 16 | 30 | 50 | 100 | | |
| | | 3 | 6 | | | | | 4 | | | 2952 | | |
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CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To Ja-1 of USGS Circular 132
 Specific Gravity (sat.) (dry) 2.46
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.ft. 60.5 Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 Mile

STATE HIGHWAY COMMISSION OF KANSAS

MATERIAL SURVEY REPORT

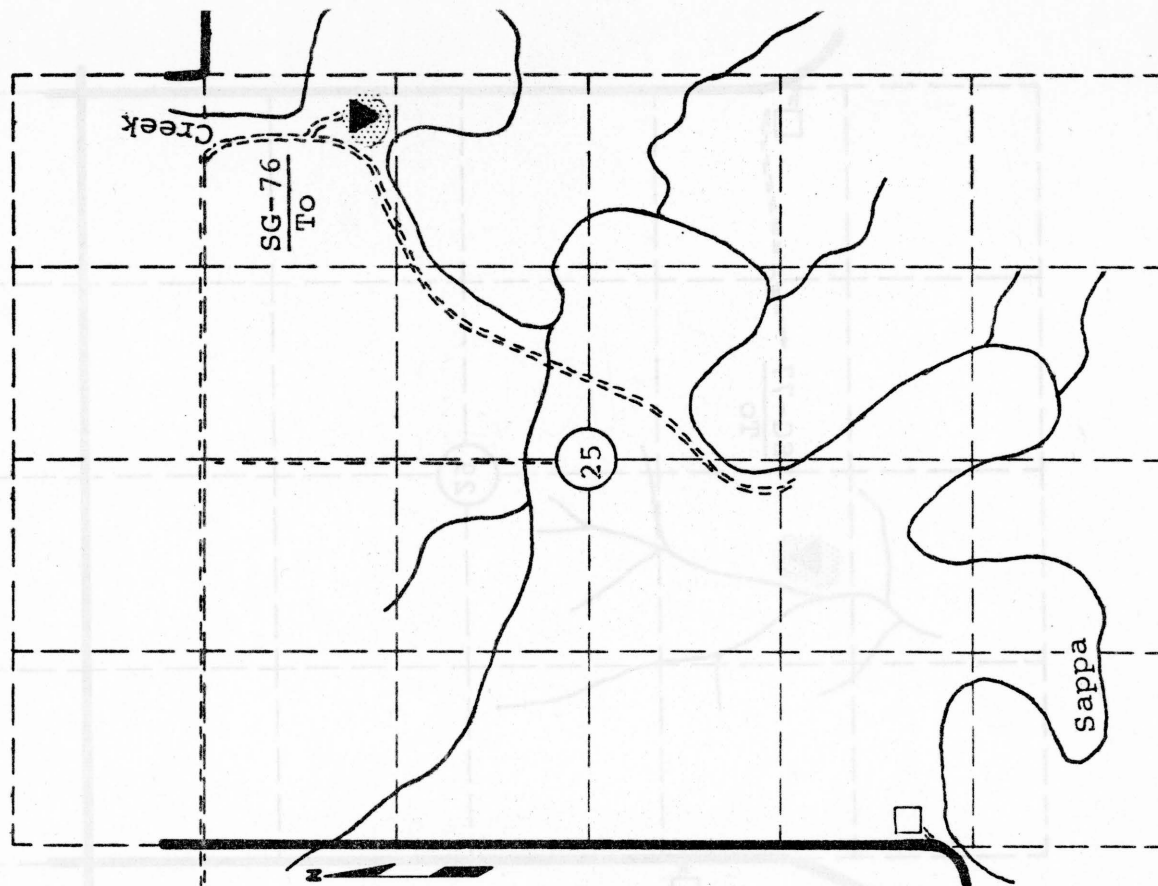
Site No. SG-76 To April, 1967
 Material Sand & Gravel County Rawlins
 Location NE 1/4 NE 1/4 Sec. 25 Twp. 4S Range 32W
 Owner The Mumm Brothers Gem, Kansas
 Name VI
 Nature of Deposit Dry Accessibility Fair Site Located on Plate VI
 Status of Site Prospective site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of overburden | Depth of Material | Percent Retained | | | | | | Wash 200 | S.F. | L.L. | P.L. |
|-----------|----------------------------|---------------------|-------------------|------------------|-----|-----|-----|-----|------|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 1/2 | 1/4 | 1/10 | | | | |
| | | 1 | 6 | | | 2 | 8 | 48 | | 98 | 1 | 3.50 | |
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CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To Ma-12 of USGS Circular 132
 Lab. No. 64640
 Specific Gravity (Sat.) 2.59
 Los Angeles Wear 31.8
 Absorption 0.97
 Mt. Cu. Ft. 108.0 Str. Ret. 1 day-1.27, 3 day-1.38
 Remarks _____



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

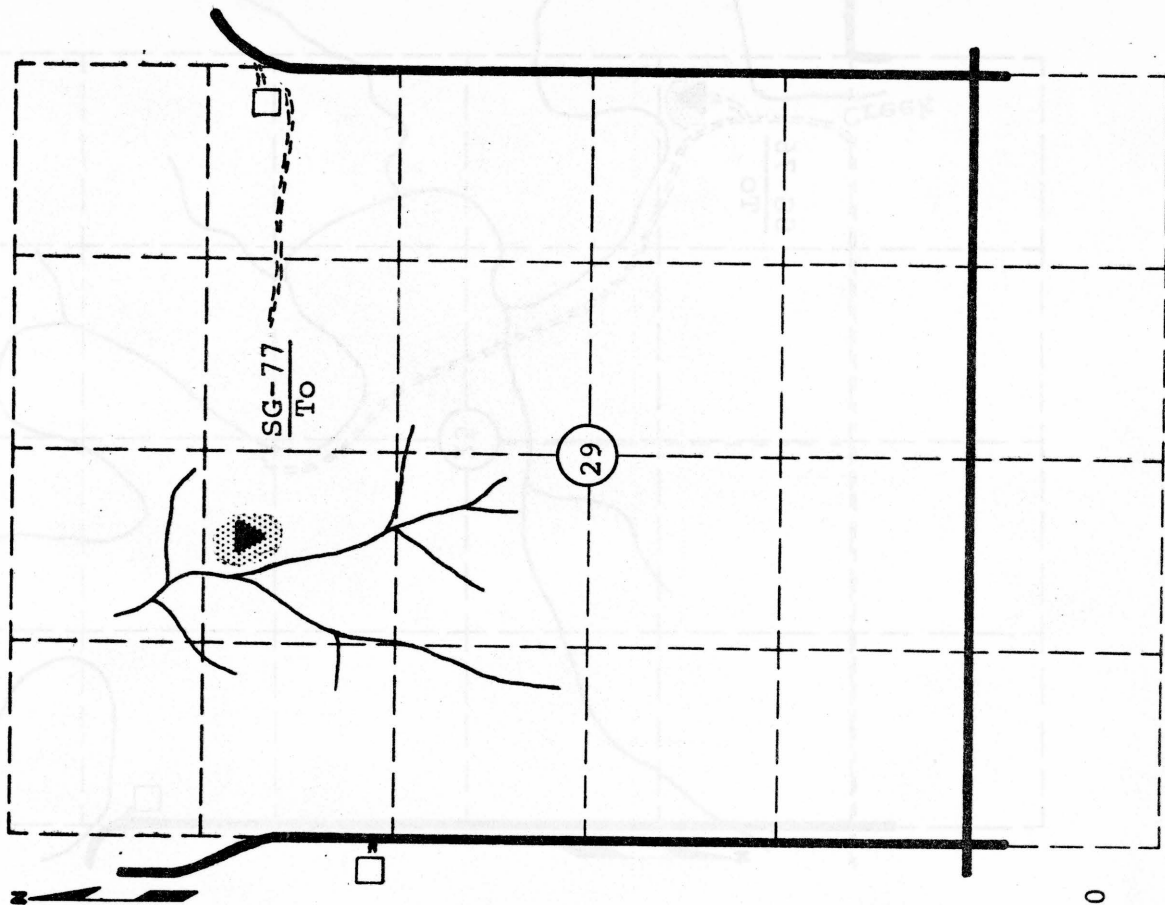
SG-77
 Site No. TO Date April, 1967
 Material Sand & Gravel County Rawlins
 Location NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 29 Twp. 4S Range 34W
 Owner Fern L. Price Atwood, Kansas
 Name Dry Accessibility Fair address V
 Nature of Deposit Dry Site located on Plate V
 Status of Site Prospective site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | Wash 200 | G.F. | L.L. | P.L. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|----|----|---|---|----|----------|------|------|------|
| | | | | 1/2 | 3/4 | 1 | 2 | 4 | 8 | 16 | 30 | 50 | 100 | |
| | | 3 | 6 | | 4 | 12 | 51 | | | | | 98 | 1 | 3.54 |
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CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To Ma-13 of USGS Circular 132
 Lab. No. 64727
 Specific Gravity (Sat.) 28.4 (Dry) 2.60
 Los Angeles Wear 28.4
 Absorption 0.95
 Wt. Cu.Ft. 112.0 Str. Ratio 1 day-1.50, 3 day-1.40
 Remarks _____

Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

SG-78
To _____

Site No. _____ Date April, 1967

Material Sand & Gravel County Rawlins

Location NW 1/4 SW 1/4 Sec. 17 Twp. 4S Range 34W

Owner Clara D. Dixon Atwood, Kansas
Address _____

Nature of Deposit Dry Accessibility Poor Site located on Plate V

Status of Site Prospective site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | | | | Wash 200 | G.F. | L.L. | P.L. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|-----|-----|----|----|----|----|----------|------|------|------|
| | | | | 1/2 | 3/4 | 3/8 | 1/2 | 3/8 | 1/4 | 8 | 16 | 30 | 50 | | | | |
| AV. | | 1 | 10 | | 1 | 6 | 14 | 29 | 46 | 67 | 88 | 94 | 5 | 3.45 | | | |
| * | | 4 | 15 | | 1 | 8 | 18 | 34 | 50 | 71 | 92 | 96 | 6 | 3.57 | | | |
| ** | | 0 | 4 | | 0 | 3 | 1 | 7 | 27 | 60 | 85 | 93 | 3 | 2.90 | | | |
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CORRELATION DATA

Geological Age Tertiary

Geological Source Ogallala Formation

Material Similar To Av. SHC Form 619 No. 77-6

Specific Gravity (sat.) 2.60 (Dry) _____

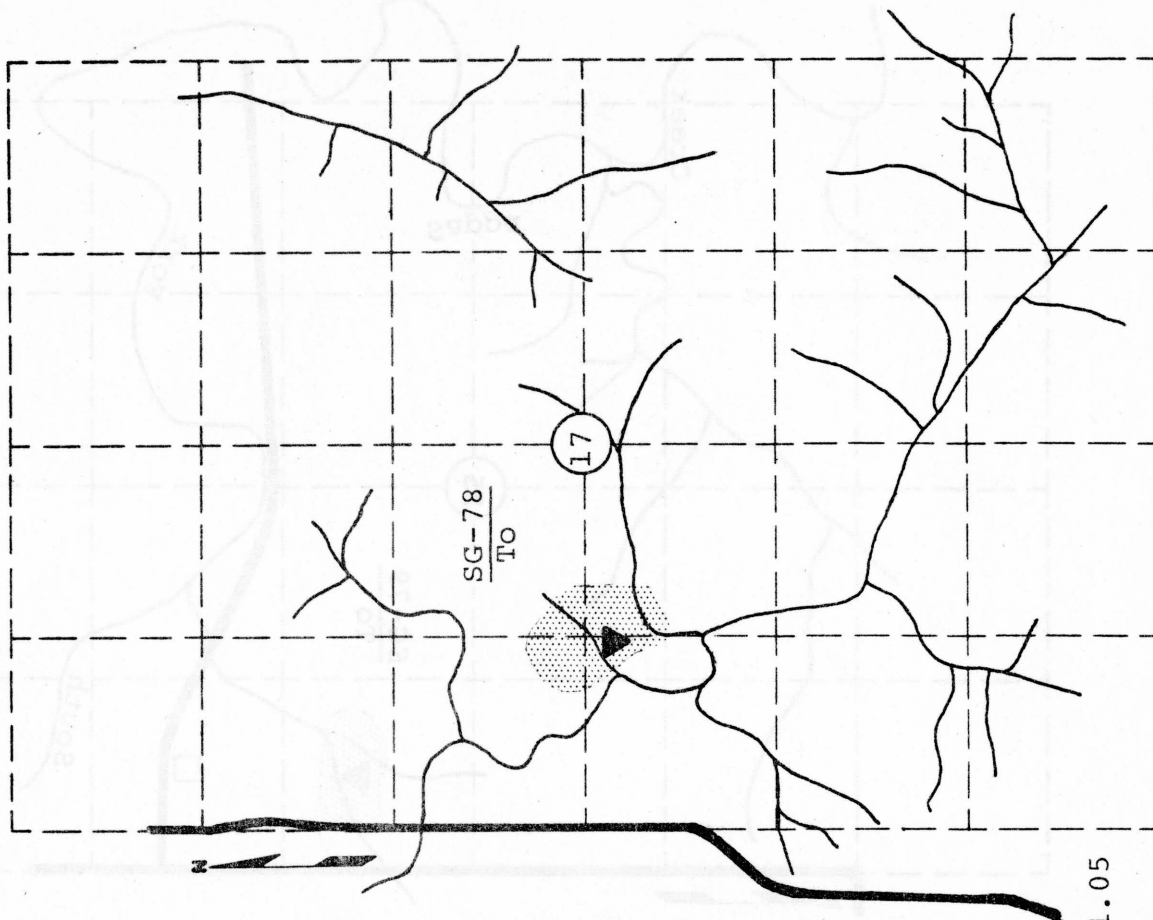
Los Angeles Wear 28.1

Absorption _____ Soundness 0.90

Wt. Cu.ft. 108 Str. Ratio 1 day-1.19, 3 day-1.05

Remarks * High extreme of 7 holes

** Low extreme of 7 holes



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

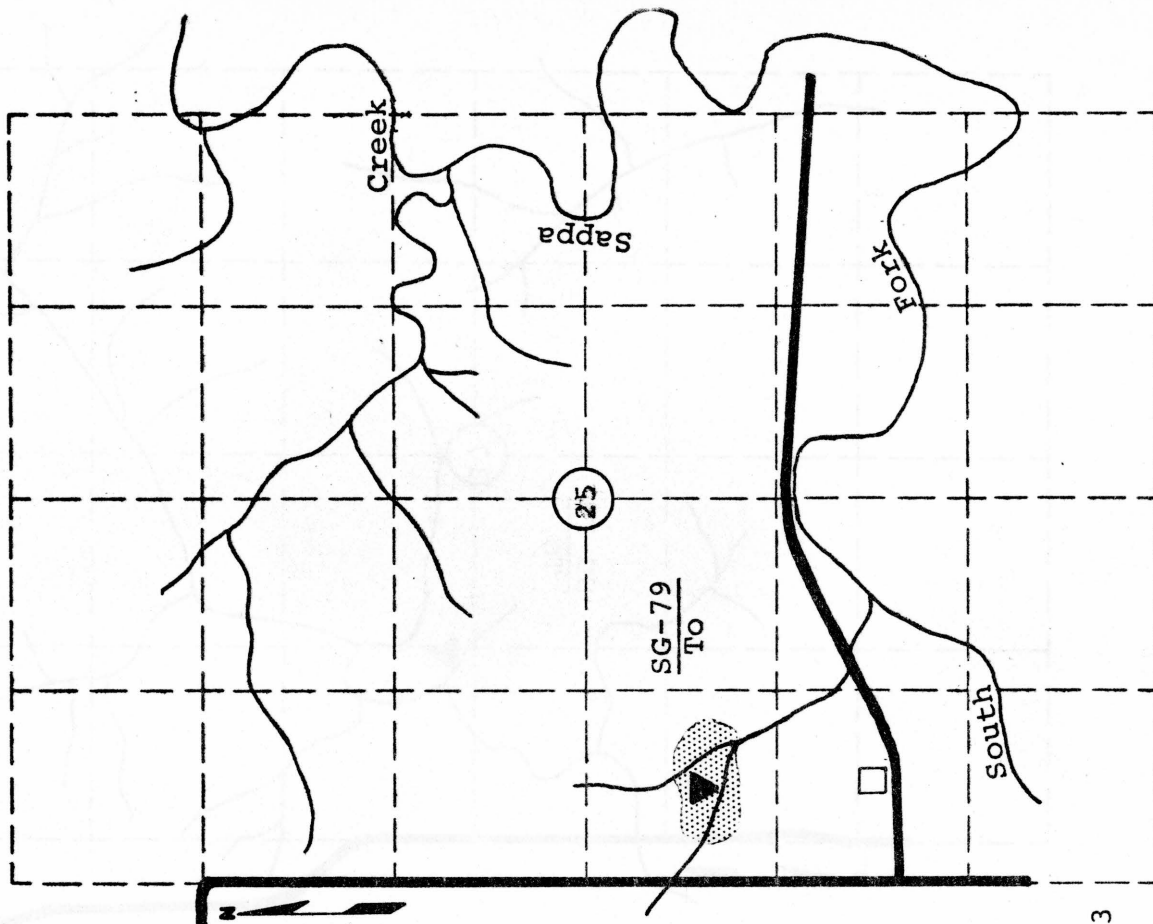
SG-79
 Site No. TO Date April, 1967
 Material Sand & Gravel County Rawlins
 Location NW 1/4 SW 1/4 Sec. 25 Twp. 5S Range 32W
 Owner Curtis Knudson Gem, Kansas address
 Nature of Deposit Dry accessibility Fair Site located on Plate VI
 Status of Site Prospective site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of over-burden | Depth of Material | Percent Retained | | | | | | | Wash 200 | G.F. | L.L. | P.L. |
|-----------|----------------------------|----------------------|-------------------|------------------|-----|-----|-----|----|----|----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/8 | 1/4 | 16 | 30 | 50 | 100 | | | |
| | | 1 | 9 | 1 | 5 | 14 | 63 | | | | 97 | 3 | 3.96 | |
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CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar to Ma-17 of USGS Circular 132
 Lab. No. 64639
 Specific Gravity (sat.) (dry) 2.56
 Los Angeles Wear 30.6
 Absorption Soundness 0.98
 wt. Cu.ft. 106.2 Str. Ratio 1 day-1.70, 3 day-1.63
 Remarks _____



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

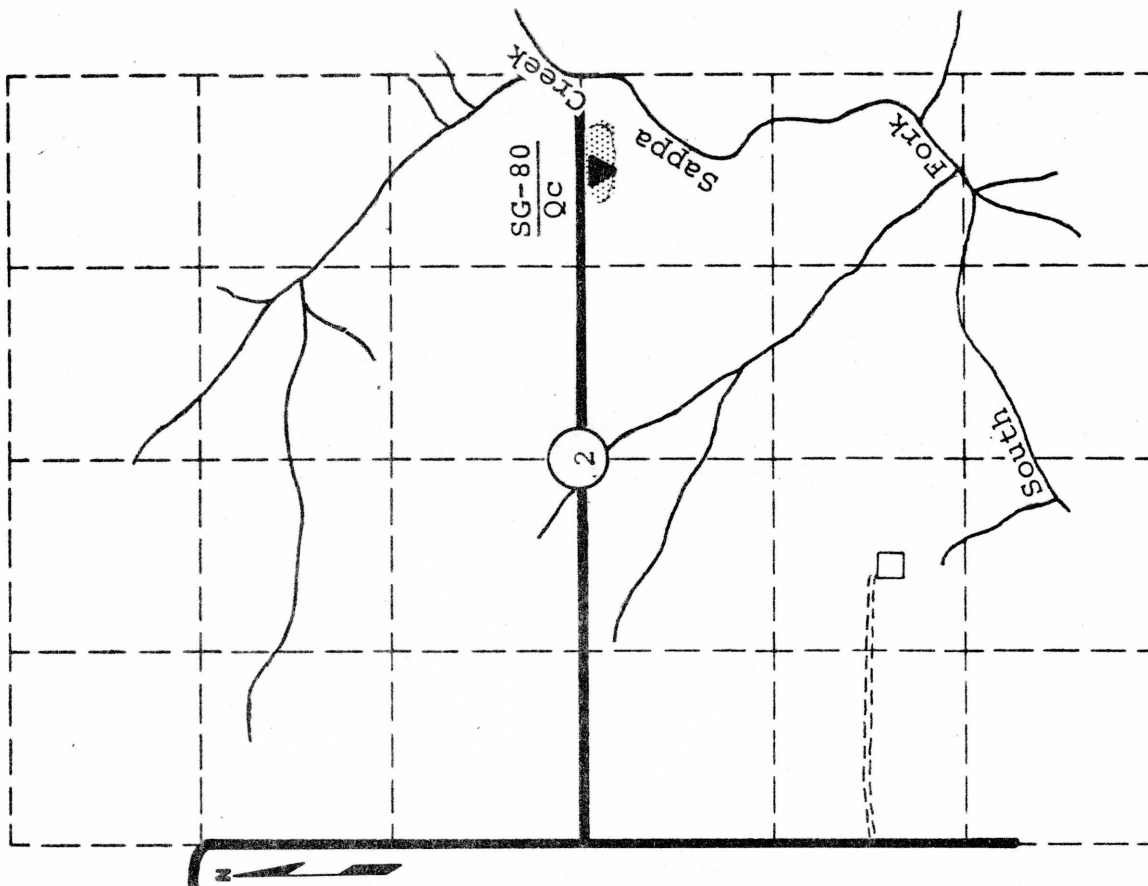
SG-80
 Site No. QC Date April, 1967
 Material Sand & Gravel County Rawlins
 Location NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 2 Twp. 5S Range 31W
 Owner Scott W. Brown Rexford, Kansas
 Nature of Deposit Dry Accessibility Good Site Located on Plate VI
 Status of Site Prospective site; sampled

EXPLORATION DATA

| Test Hole | Material at Bottom of Hole | Depth of overburden | Depth of Material | Percent Retained | | | | | | Wash 200 | G.F. | L.L. | P.I. |
|-----------|----------------------------|---------------------|-------------------|------------------|-----|-----|-----|-----|-----|----------|------|------|------|
| | | | | 1 1/2 | 3/4 | 3/5 | 1/2 | 3/8 | 1/4 | | | | |
| | | 2 | 9 | | 5 | 9 | 16 | 49 | | 95 | 4 | 3.62 | |
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CORRELATION DATA

Geological Age Quaternary
 Geological Source Crete Formation
 Material Similar to Ma-14 of USGS Circular 132
 Lab. No. 64726
 Specific Gravity (sat.) 2.58
 Los Angeles Wear 28.0
 Absorption 0.95
 Wt. Cu.Ft. 110.5 Str. Ratio 1 day-1.00, 3 day-1.09
 Remarks _____



Scale: 1" = 1/4 Mile

GLOSSARY OF SIGNIFICANT TERMS

Absorption: Determined by tests performed in accordance with A.A.S.H.O. designation T 84 and T 85.

Alluvium: A general term used to refer to deposits laid down by water. In this report it is used to refer to material laid down by running water in the floodplain of the stream during relatively recent time.

Bentonite: A clay-like material with a montmorillonite content derived from weathered volcanic ash.

Chert: A hard, dense siliceous rock composed of chalcedony, opal, and quartz.

Colluvial deposits: Heterogeneous aggregates of rock debris resulting from the transporting action of gravity.

Coarse sand: An aggregation of unconsolidated mineral or rock particles the dimensions of which are usually considered to be less than two millimeters and more than five-tenths of a millimeter. The term refers to size of grain and not composition; however, since most sands are composed of quartz and feldspar, and the term is used without qualification, a siliceous composition is implied.

Conglomerate: An aggregate of rounded minerals or rock particles the dimensions of which are usually more than two millimeters. The rock can be consolidated or unconsolidated.

Eolian deposits: Materials produced and laid down by wind action.

Fine sand: An aggregation of unconsolidated minerals or rock particles the dimensions of which are usually considered to be less than five-tenths of a millimeter and greater than five hundredths of a millimeter. The term refers to size of grain and not composition; however, since most sands are composed of quartz and feldspar, and the term is used without qualifications, a siliceous composition is implied.

Geologic Era: Largest unit of geologic time. Paleozoic, Mesozoic, and Cenozoic are examples.

Geologic Period: A unit of geologic time, smaller than an era and larger than an epoch. Cambrian, Cretaceous, and Tertiary are examples.

Geologic System: A term that refers to rocks or deposits that were laid down during a particular geologic period. Cambrian, Cretaceous, and Tertiary are examples.

Gradation factor: Sometimes referred to as the fineness modulus, the value obtained by adding the percentages of material retained on the $1\frac{1}{2}$ ", $3/4$ ", $3/8$ ", 4, 8, 16, 30, 50, and 100 sieves respectively and dividing the sum by 100.

Grading A, B, C, and D: Determined by the abrasive charge for the Los Angeles wear test as specified in A.A.S.H.O. designation T 96 and section Y1-14 of the State Highway Commission of Kansas Standard Specifications, 1966 edition.

Ground-water: Water in the zone of saturation, that is, below the water table. In a more general and popular sense, any water that is standing in or passing through the ground may be called "ground-water."

Light type surfacing material: Siliceous gravel or crushed limestone placed on roads to provide an all weather surface or more commonly "a gravel road."

Liquid limit: Determined by tests performed in accordance with section Y1-18 of the State Highway Commission of Kansas Standard Specifications, 1966 edition.

Lithology: Physical properties of rocks such as grain size, mineral content and color.

Loess: Silt size material laid down by wind.

Los Angeles wear: Determined by tests performed in accordance with A.A.S.H.O. designation T 96 as modified by section Y1-14 of the State Highway Commission of Kansas Standard Specifications, 1966 edition.

Material source bed: A particular geologic unit, consolidated or unconsolidated, that provides material for construction purposes.

Open materials site: A pit or quarry which has produced or is producing material suitable for construction purposes.

Plastic index: Determined by tests performed in accordance with section Y1-18 of the State Highway Commission of Kansas Specifications, 1966 edition.

Pleistocene Series: Deposits laid down during the Pleistocene Epoch.

Sedimentary quartzite: A dense sandstone or conglomeratic rock which has been thoroughly cemented by silica.

Soundness: Determined by tests performed in accordance with section Y1-15 of the State Highway Commission of Kansas Standard Specifications, 1966 edition.

Specific gravity: Determined by tests performed in accordance with A.A.S.H.O. designation T 84 for fine aggregate and T 85 for coarse aggregate.

Stratigraphic position: The vertical position of a geologic unit in relation to other geologic units.

Strength ratio: Determined by tests performed in accordance with A.A.S.H.O. designation T 71.

Unconsolidated deposits: Deposits of clay, silt, sand, or gravel without a cementing matrix.

Wash: Material passing the no. 200 sieve. Determined by tests performed in accordance with A.A.S.H.O. designation T 11.

Weight per cubic foot: Determined by tests performed in accordance with A.A.S.H.O. designation T 19.

SELECTED REFERENCES

1. American Association of State Highway Officials (1961) Standard specifications for highway materials and methods of sampling and testing, pt. I, 8th ed., 401 p.
2. American Association of State Highway Officials (1961) Standard specifications for highway materials and methods of sampling and testing, pt. II, 8th ed., 617 p.
3. Beck, Henry V. and McCormack, Robert K. (1951) Geologic construction materials resources in Rawlins County, Kansas: United States Geological Survey Circular 132, 12 p.
4. Carey, J. Sheldon and others (1952) Kansas volcanic ash resources: State Geological Survey of Kansas, Bull. 96, pt. I, 68 p.
5. Frye, J. C. and Leonard, A. B. (1952) Pleistocene geology of Kansas: State Geological Survey of Kansas, Bull. 99, pp. 1-230.
6. Frye, J. C. and Swineford, Ada (1946) Silicified rock in the Ogallala Formation: State Geological Survey of Kansas, Bull. 64, pt. 2, 76 p.
7. ----- (1946) Petrographic comparison of Pliocene and Pleistocene volcanic ash from western Kansas: State Geological Survey of Kansas, Bull. 64, pt. I, 32 p.
8. State Highway Commission of Kansas (1966) Standard specifications for road and bridge construction pp. 553-868.
9. Walters, Kenneth L. (1956) Geology and ground-water resources of Rawlins County, Kansas: State Geological Survey of Kansas, Bull. 117, 100 p.