

RECEIVED

GW 3 Revised 1969
STATE PUBLISHING CO.-LTD.

MONTANA DEPARTMENT OF NATURAL
RESOURCES AND CONSERVATION

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

County Big Horn

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION WITHOUT WELL

Developed After January 1, 1962

(Under Chapter 237, Montana Session Laws, 1961, as amended)

This form to be prepared by contractor (if any), otherwise by the owner.

Three copies of this notice are to be filed with the County Clerk and Recorder of the county in which the works are located.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

For Administrator's Use

File 240539
June 28, 1973
GW 1 4:05 p.m.

Owner Westmoreland Resources

Address Box 449, Hardin, Montana 59034

Contractor (if any) _____

Address of Contractor _____

Date Started _____ Date Completed _____

1. Describe means of obtaining groundwater (as by sub-irrigation, developed spring, drains, etc.) spring flows directly into Sarpy Creek

2. Means of withdrawing water (gravity, pump, canal, etc.) gravity flow

3. Depth of water table at surface

4. Use of the water stockwater, sub-irrigation

5. Amount of groundwater claimed (in miner's inches or gallons per minute) 60 gallons per minute

6. If used for irrigation, give number of acres and description of land sub-irrigation affects 100 acres in NW 1/4 Sec. 10-1N-37E

7. Estimate amount of water used each year 50,000,000

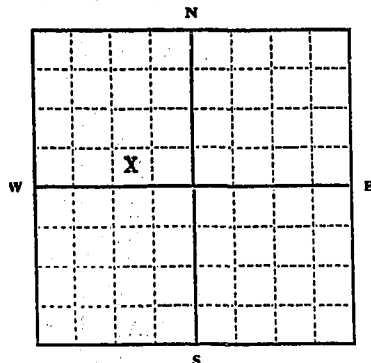
8. Months of year spring flows 12

Signature of Owner

Mathew L. Tudor
Date June 28, 1973

INDICATE POINT OF APPROPRIATION
AND PLACE OF USE, IF POSSIBLE.
Elevation of spring, if known or estimated

3230



SE 1/4 NW 1/4 Sec. 10
T. 1 N R. 37 E
X S X W

54536

1. Name of person to whom title is given

2. Date of title

3. Name of person to whom title is given

4. Name of person to whom title is given

5. Name of person to whom title is given

6. Name of person to whom title is given

7. Name of person to whom title is given

8. Name of person to whom title is given

9. Name of person to whom title is given

10. Name of person to whom title is given

11. Name of person to whom title is given

12. Name of person to whom title is given

13. Name of person to whom title is given

14. Name of person to whom title is given

15. Name of person to whom title is given

240539

STATE OF MONTANA } ss.
County of Big Horn
The within instrument was file
in my office at Hardin, Montana, thi
JUN 28 1973 day

A. D. 19...
at 4:05 o'clock P. M.

Joseph J. Jones
County Recorder
Dorothy Jones Dep.

10

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

JUL 2 1973

DRILLER'S LOG

Indicate the character, color, thickness of strata such as soil, clay, sand, gravel, shale, sandstone, etc. Show depth at which water is found and height to which water rises in well.

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION BY MEANS OF WELL

Developed after January 1, 1962

(Under Chapter 237 Montana Session Laws, 1961, as amended)

This form to be prepared by driller, and three copies to be filed by the **owner** with the County Clerk and Recorder in the county in which the well is located, last copy to be retained by driller.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

Owner **Westmoreland Resources**

Address **Box 449**

Hardin, Montana 59034

Date well started

completed **1967**

Type of welldrilled

(Dug, driven, bored or drilled)

Equipment used Corn drill

(Churn drill, rotary or other)

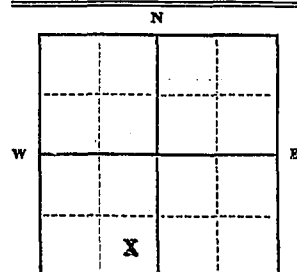
Water Use: Domestic ☐ Municipal ☐ Stock ☒ Irrigation ☐

Industrial ☐ Drainage ☐ Other ☐* Garden/Lawn ☐

- ***Describe**

USE: If used for irrigation, industrial, drainage or other. Explain, state number of acres and location or other data (i.e. Lot, Block and Addition).

ESTIMATED ANNUAL WITHDRAWAL 100,000 gallons

[illegible]

Static water level8.....ft.*
Pumping water levelft.*
at30.....gallons per minute,
measuredminutes after pumping
began.

*Measured from ground level.

Well developed by

forhours.

Power **electric** Pump..... HP

Remarks: (Gravel packing, cementing,
packers, type of shutoff)

SW 1/4 NW 1/4 Sec. 10
T. 1 N. R. 37 E. 10
EX 10

INDICATE LOCATION OF WELL AND PLACE OF USE, IF POSSIBLE.
EACH SMALL SQUARE REPRESENTS 40 ACRES.

Driller's Signature Clyde Reed

Driller's Address Sheridan, Wyoming

LICENSE NO. 90

Top of Ground

(Elev. above sea level)

3235

[illegible]

47' Show exact depth of bottom

54,555

240558

STATE OF MONTANA } ss.
County of Big Horn }

The within instrument was file
in my office at Hardin, Montana, thi

JUN 28 1973 day o

A. D. 19

at 4:24 o'clock P.M.

Joey Lippert
County Recorder

By *M. J. Jones* Deputy

County... ~~San Diego~~

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION BY MEANS OF WELL

Developed after January 1, 1962

(Under Chapter 237 Montana Session Laws, 1961, as amended)

This form to be prepared by driller, and three copies to be filed by the owner with the County Clerk and Recorder in the county in which the well is located, last copy to be retained by driller.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

Owner Westmoreland Resources

Address **Box 449**

Hardin, Montana 59034

Date we! started

completed1953

Type of welldrilled

(Dug, driven, bored or drilled)

Equipment used, **Core drill**

(Churn drill, rotary or other)

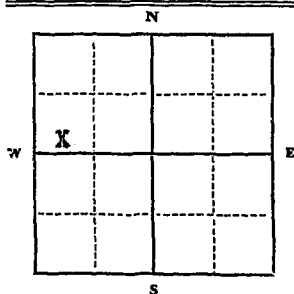
Water Use: Domestic ☒ Municipal ☐ Stock ☐ Irrigation ☐

Industrial ☐ Drainage ☐ Other ☐* Garden/Lawn ☒

***Describe**

USE: If used for irrigation, industrial, drainage or other. Explain, state number of acres and location or other data (i.e. Lot, Block and Addition).

ESTIMATED ANNUAL WITHDRAWAL 200,000 gallons

[illegible]

Static water level12.....ft.*
Pumping water levelft.*
at30.....gallons per minute,
measuredminutes after pumping
began.

*Measured from ground level.

Well developed by
for hours.

Power **electric** Pump..... HP

Remarks: (Gravel packing, cementing, packers, type of shutoff)

SW 1/4 NW 1/4 Sec. 10
T. 1 N. R. 37 E. 15

INDICATE LOCATION OF WELL AND PLACE OF USE, IF POSSIBLE.
EACH SMALL SQUARE REPRESENTS 40 ACRES.

Driller's Signature Driller not known

Driller's Address

LICENSE NO.

DRILLER'S LOG

Indicate the character, color, thickness of strata such as soil, clay, sand, gravel, shale, sandstone, etc. Show depth at which water is found and height to which water rises in well.

Top of Ground

(Elev. above sea level) **3235**

[illegible]

400

Show exact depth of bottom

54559

240562

STATE OF MONTANA } ss.
County of Big Horn }

The within instrument was filed
in my office at Hardin, Montana, the
JUN 28 1973 day

A. D. 19

at 4:28 o'clock P.M.

James L. Lippert
County Recorder

By

County. **Big Horn**

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

**NOTICE OF COMPLETION OF GROUNDWATER
APPROPRIATION BY MEANS OF WELL**

Developed after January 1, 1962

(Under Chapter 237 Montana Session Laws, 1961, as amended)

This form to be prepared by driller, and three copies to be filed by the owner with the County Clerk and Recorder in the county in which the well is located, last copy to be retained by driller.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

Owner **Westmoreland Resources**

Address **Box 449**

Hardin, Montana 59034

Date well started

completed **1960**

Type of well drilled

(Dug, driven, bored or drilled)

Equipment used Chain drill

(Churn drill, rotary or other)

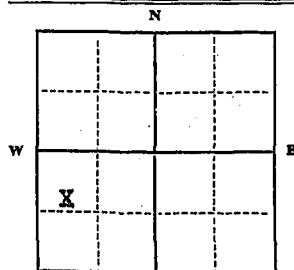
Water Use: Domestic ☐ Municipal ☐ Stock ☒ Irrigation ☐

Industrial ☐ Drainage ☐ Other ☐* Garden/Lawn ☐

***Describe**

USE: If used for irrigation, industrial, drainage or other. Explain, state number of acres and location or other data (i.e. Lot, Block and Addition). _____

ESTIMATED ANNUAL WITHDRAWAL 100,000 gallons

[illegible]

NW 1/4 SW 1/4 Sec. 11
 T. 1 N. R. 37 E.

INDICATE LOCATION OF WELL AND PLACE OF USE, IF POSSIBLE.
EACH SMALL SQUARE REPRESENTS 40 ACRES.

Driller's Signature Henry Kray

Driller's Address Not known

..... LICENSE NO.

DRILLER'S LOG

Indicate the character, color, thickness of strata such as soil, clay, sand, gravel, shale, sandstone, etc. Show depth at which water is found and height to which water rises in well.

Top of Ground

(Elev. above sea level)

3340

[illegible]

165

Show exact depth of bottom

54561

240564

STATE OF MONTANA } ss.
County of Big Horn }

The within instrument was filed
in my office at Hardin, Montana, this
JUN 28 1913 day

A. D. 19

at 4:30 o'clock P. M.

Joseph L. Lippert
County Recorder

By _____ Deput

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JUL 2 1973

Montana GW 3 Revised 1969
STATE PUBLISHING CO. LITHO

DEPARTMENT OF NATURAL

RESOURCES AND CONSERVATION, STATE OF MONTANA

ADMINISTRATOR OF GROUNDWATER CODE

MONTANA WATER RESOURCES BOARD

County Big Horn

54537

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION WITHOUT WELL

Developed After January 1, 1962

(Under Chapter 237, Montana Session Laws, 1961, as amended)

This form to be prepared by contractor (if any), otherwise by the owner.

Three copies of this notice are to be filed with the County Clerk and Recorder of the county in which the works are located.

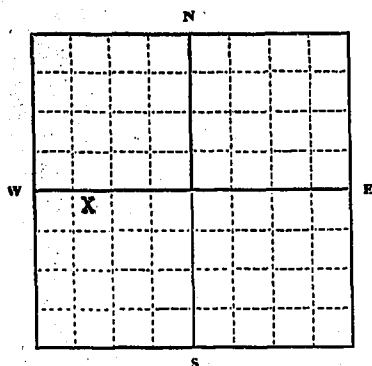
Please answer all questions. If not applicable, so state, otherwise the form may be returned.

For Administrator's Use

File 246540

June 28, 1973

GW 1 4.06 p.m.



NW 1/4 SW 1/4 Sec. 12

T. 1 N. R. 37

Section 12, Township 1 North, Range 37 East

INDICATE POINT OF APPROPRIATION
AND PLACE OF USE, IF POSSIBLE.
Elevation of spring, if known or esti-
mated 3365

Owner Westmoreland Resources

Address Box 449, Hardin, Montana 59034

Contractor (if any) _____

Address of Contractor _____

Date Started _____ Date Completed _____

1. Describe means of obtaining groundwater (as by sub-irrigation,
developed spring, drains, etc.) natural spring

2. Means of withdrawing water (gravity, pump, canal, etc.) gravity

3. Depth of water table at surface

4. Use of the water stockwater

5. Amount of groundwater claimed (in miner's inches or gallons
per minute) one gallon per minute

6. If used for irrigation, give number of acres and description
of land _____

7. Estimate amount of water used each year 100,000 gallons

8. Months of year spring flows 12

Signature of Owner

Matthew L. Indor

Date

June 28, 1973

54537

240540

STATE OF MONTANA }
County of Big Horn } ss.

The within instrument was filed
in my office at Hardin, Montana, this

JUN 28 1973 day of

A. D. 19

at 2:06 o'clock P. M.

Joyce L. Jones
County Recorder
Dorothy Jones Deputy

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12

STATE PUBLISHING CO. - 1969

STATE OF MONTANA
DEPARTMENT OF NATURAL
RESOURCES AND CONSERVATION
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

County Big Horn

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION WITHOUT WELL

Developed After January 1, 1962

(Under Chapter 237, Montana Session Laws, 1961, as amended)

This form to be prepared by contractor (if any), otherwise by the owner.

Three copies of this notice are to be filed with the County Clerk and Recorder of the county in which the works are located.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

For Administrator's Use

File 240542

June 28, 1973

GW 1 408 p.m.

Owner Westmoreland Resources

Address Box 449, Hardin, Montana 59034

Contractor (if any) _____

Address of Contractor _____

Date Started _____ Date Completed _____

1. Describe means of obtaining groundwater (as by sub-irrigation, developed spring, drains, etc.) natural spring

2. Means of withdrawing water (gravity, pump, canal, etc.) gravity

3. Depth of water table at surface

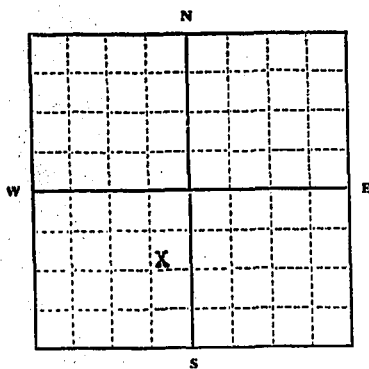
4. Use of water stockwater

5. Amount of groundwater claimed (in miner's inches or gallons per minute) one gallon per minute

6. If used for irrigation, give number of acres and description of land _____

7. Estimate amount of water used each year 100,000 gallons

8. Months of year spring flows 12



NE 1/4 SW 1/4 Sec. 12

T. 1 N R. 37 E

INDICATE POINT OF APPROPRIATION AND PLACE OF USE, IF POSSIBLE.
Elevation of spring, if known or estimated 3430

Signature of Owner

Mathew L. Fisher

Date

June 28, 1973

54539

240542

STATE OF MONTANA
County of Big Horn } ss.

The within instrument was filed
in my office at Hardin, Montana, this

JUN 28 1973 day of

A. D. 19

at 4:08 o'clock P.M.

Joyce Tippert
County Recorder

Dr. J. J. Jones Deputy

File No.

DUPLICATE

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

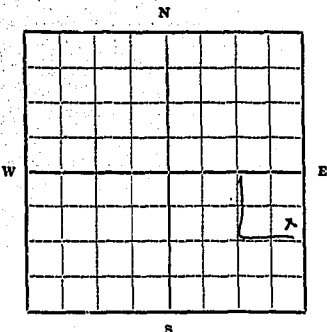
T. 12 N. R. 37 E.

County Big Horn

JAN 8 1964

Declaration of Vested Groundwater Rights STATE ENGINEER
(Under Chapter 237, Montana Session Laws, 1961)

1. Jim Haynie, of Hysham, (Name of Appropriator) (Address) (Town)
County of Montana State of Montana
have appropriated groundwater according to the Montana laws in effect prior to January 1, 1962, as follows:



NE 1/4 SE 1/4 Sec. 12 T. 12 N. R. 37 E

Indicate point of appropriation and place of use, if possible. Each small square represents 10 acres.

2. The beneficial use on which the claim is based Ranch and stock water
3. Date or approximate date of earliest beneficial use; and how continuous the use has been used continuously for 16 yrs
4. The amount of groundwater claimed (in miner's inches or gallons per minute) 50 barrels per day for 3 months & 2 barrels per day for nine months
5. If used for irrigation, give the acreage and description of the lands to which water has been applied and name of the owner thereof none
6. The means of withdrawing such water from the ground and the location of each well or other means of withdrawal gas pump
7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater 1945
8. The depth of water table 16 feet
9. So far as it may be available, the type, size and depth of each well or the general specifications of any other works for the withdrawal of groundwater 15 sucker type pump
10. The estimated amount of groundwater withdrawn each year 8,100 barrels per yr
11. The log of formations encountered in the drilling of each well if available not available
12. Such other information of a similar nature as may be useful in carrying out the policy of this act, including reference to book and page of any county record Log may be recorded in courthouse

Signature of Owner

Date

Three copies to be filed by the owner with the County Clerk and Recorder of the county in which the well is located.

Please answer all questions. If not applicable, so state, otherwise the form will be returned.

Original to the County Clerk and Recorder; duplicate to the State Engineer; Triplicate to the School of Mines and Quadruplicate for the Appropriator.

26802

206511

STATE OF MONTANA } ss.
County of Big Horn }

The within instrument was filed
in my office at Hardin, Montana, this

DEC 31 1963 day of

A. D. 19

at 9:28 o'clock A.M.

George E. Cook
County Recorder
By *Rubajewsky* Deput

File No.

T. 1 N. R. 37 E

DUPLICATE

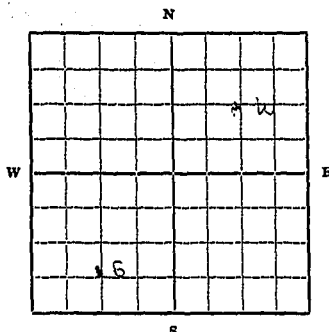
County Big Horn

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

Declaration of Vested Groundwater Rights JAN 6 1964
(Under Chapter 237, Montana Session Laws, 1961)

STATE ENGINEER

1. J. T. and Vella B. Redding, of Leaky Pt. Hyslam
(Name of Appropriator) (Address) (Town)
County of Big Horn State of Montana
have appropriated groundwater according to the Montana laws in effect prior to January 1, 1962, as follows:



SW 1/4
NE 1/4 Sec. 13 T. 1 N. R. 37 E
Indicate point of appropriation
and place of use, if possible.
Each small square represents 10
acres.

2. The beneficial use on which the claim is based live stock water
3. Date or approximate date of earliest beneficial use; and how continuous the use has been 1953 (for well)
in use every summer since then
(for spring) continuous use
4. The amount of groundwater claimed (in miner's inches or gallons per minute) ten gallons (for well)
one half gallon (for spring)
5. If used for irrigation, give the acreage and description of the lands to which water has been applied and name of the owner thereof not used for irrigation
6. The means of withdrawing such water from the ground and the location of each well or other means of withdrawal
pump for the well
gravity for the spring
7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater 1953
8. The depth of water table 30 ft.
9. So far as it may be available, the type, size and depth of each well or the general specifications of any other works for the withdrawal of groundwater 8.7 feet drilled well 6" casing
10. The estimated amount of groundwater withdrawn each year 100,000 gallons
11. The log of formations encountered in the drilling of each well if available not available
12. Such other information of a similar nature as may be useful in carrying out the policy of this act, including reference to book and page of any county record.

Signature of Owner J. T. Redding
Vella B. Redding

Date Dec. 26, 1963

Three copies to be filed by the owner with the County Clerk and Recorder of the county in which the well is located.

Please answer all questions. If not applicable, so state, otherwise the form will be returned.

Original to the County Clerk and Recorder; duplicate to the State Engineer; Triplicate to the School of Mines and Quadruplicate for the Appropriator.

21657

206291

STATE OF MONTANA }
County of Big Horn } ss.

The within instrument was filed
in my office at Hardin, Montana, this

DEC 26 1963 day of

 A. D. 19

at 10:15 o'clock A.M.

Harry E. Cook
County Recorder
By Ruby Wemple Deput

File No. 9W2

DUPLICATE

RECEIVED

MAY 3 1971

T. 1 N. R. 37 E. ✓

Big Horn

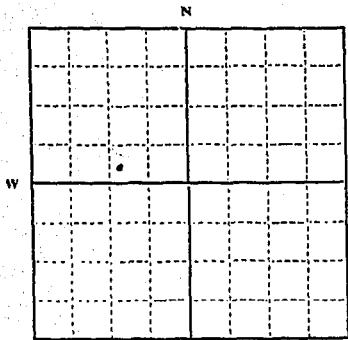
County

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

**Notice of Completion of Groundwater Appropriation
Without Well**

(Under Chapter 237 Montana Session Laws, 1961)

Doc. No. 232421
Filed for record
this 30 day of April
A. D. 19 71 at 3:45
o'clock P M.



SE NW 16 1 N 37E
1/4 Sec. T. R.

Indicate point of appropriation
and place of use, if possible.

Date of Appropriation of Groundwater 1944
Owner James Romine Address Box 425, Hardin, Mont.

Contractor (if any) Not applicable

Address of Contractor

Date Started Date Completed

Describe means of obtaining groundwater without a well "as by
sub-irrigation and other natural processes". Include depth to
water when applicable. Natural flowing spring.

Quantity of water developed and used with explanation of method
used to measure or estimate such amount. If use is intermittent

estimate approximate lengths of periods of use.

Quantity of water is 300 gallons per minute by
estimated flow through a 2 1/2 inch pipe. Spring
runs all year.

Signature of Owner James Romine

Date April 30, 1971

This form to be prepared by contractor (if any), otherwise by the owner.

Three copies of this notice are to be filed with the County Clerk and Recorder of the county in which the
works are located.

Please answer all questions. If not applicable, so state, otherwise the form will be returned.

Original to the County Clerk and Recorder; duplicate to the State Engineer; Triplicate to the Montana
Bureau of Mines and Geology and Quadruplicate for the Appropriator.

48414

232421

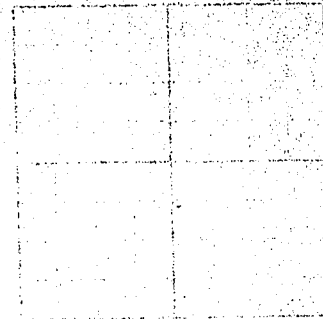
STATE OF MONTANA } ss
County of Big Horn }

The within instrument was filed
in my office at Hardin, Montana, this

APR 30 1971 day of
A. D. 19

at 3:45 o'clock P.M.

Joseph L. Smith
County Recorder
by *Betty Blomquist* Deputy



File No. _____

STATE WATER CONSERVATION BOARD

T. 1N R. 37E

DUPLICATE

MAR 29 1967

County Big Horn

LOG Billie _____ McDermott _____
 Bulzerin _____ McNulty _____
 Coyle _____ Morton _____
 Garlinton _____ Sullivan _____
 Eickert _____

STATE OF MONTANA

ADMINISTRATOR OF GROUNDWATER CODE

OFFICE OF STATE ENGINEER

Top of Ground

(Elev. above sea level _____)

Notice of Completion of Groundwater Appropriation by Means of Well

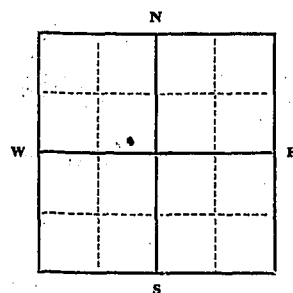
DEVELOPED AFTER JANUARY 1, 1962

(Under Chapter 237, Montana Session Laws, 1961)

Owner James Romine Address Box 425, Hardin, Mont.Driller C. S. Jones Address Hardin, MontanaDate of Notice of appropriation of groundwater Nov. 3, 1966Date well started Oct. 28, 1966 Date completed Nov. 3, 1966Type of well Drilled Equipment used Churn drill
 (Dug, driven, bored or drilled) (Churn drill, rotary or other)Water use: Domestic ☐ Municipal ☐ Stock ☐ Irrigation ☐
 Industrial ☐ Drainage ☐ Other ☐

Indicate on the diagram the character and thickness of the different strata met with in drilling, such as soil, clay, shale, gravel, rock or sand, etc. Show depth at which water is encountered, thickness and character of water-bearing strata and height to which the water rises in the well.

Size of Drilled Hole	Size and Weight of Casing	From (Feet)	To (Feet)	PERFORATIONS		
				Kind Size	From (Feet)	To (Feet)
6"	19	0	51	None		
4"	1.44.7 SDR-160			Perforated bottom with $\frac{1}{8}$ " holes	30'	

Static Water Level for non-flowing well 46 feet.

Shut-in Pressure for Flowing Well _____

Pumping Water Level 50 feetat 20 gal. per minute.

Discharge in gal. per min. of flowing well _____

How Tested Packer

Length of Test _____

Remarks: (Gravel packing, cementing, pack-

ers, type of shutoff) _____

SE $\frac{1}{4}$ Sec. 16 T. 1N R. 37E

Indicate location of well and place of use, if possible. Each small square represents 40 acres.

(Continue on reverse side)

USE—If used for irrigation, industrial, drainage or other. Explain, state number of acres and location or other data (i.e.: Lot, Block and Addition).

Show exact depth of bottom.

This form to be prepared by driller, and three copies to be filed by the owner with the County Clerk and Recorder in the county in which the well is located, tissue copy to be retained by driller.

Please answer all questions. If not applicable, so state, otherwise the form will be returned.

81
 Driller's License Number

Driller's Signature

41818

[illegible]

RECEIVED

JUL 2 1973

County BIG HORN 18

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

DRILLER'S LOG

Indicate the character, color, thickness of strata such as soil, clay, sand, gravel, shale, sandstone, etc. Show depth at which water is found and height to which water rises in well.

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION BY MEANS OF WELL

Developed after January 1, 1962

(Under Chapter 237 Montana Session Laws, 1961, as amended)

This form to be prepared by driller, and three copies to be filed by the owner with the County Clerk and Recorder in the county in which the well is located, last copy to be retained by driller. Please answer all questions. If not applicable, so state, otherwise the form may be returned.

Owner EARL A. BERNICE STARK

Address H. Y. SHAM, MONT.

Date well started 1958
completed 1958

For Administrator's Use	
File	<u>240527</u>
Date	<u>June 20, 1973</u>
GW 1	<u>10:40.2. Am.</u>

Type of well drilled
(Aug. driven, bored or drilled)

Equipment used drill
(Churn drill, rotary or other)

Water Use: Domestic ☒ Municipal ☐ Stock ☒ Irrigation ☐

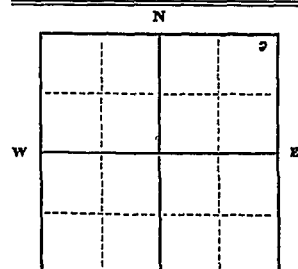
Industrial ☐ Drainage ☐ Other ☐ Garden/Lawn ☒

*Describe

USE: If used for irrigation, industrial, drainage or other. Explain, state number of acres and location or other data (i.e. Lot, Block and Addition).

ESTIMATED ANNUAL WITHDRAWAL

Size of Drilled Hole	Size and Weight of Casing	From (Feet)	To (Feet)	PERFORATIONS		
<u>6"</u>	<u>5" steel</u>	<u>0</u>	<u>110</u>	Kind Size	From (Feet)	To (Feet)
				<u>5" slits</u>	<u>70</u>	<u>110</u>



NE 1/4 NE 1/4 Sec. 18
T. 1 N R. 37 E

Static water level 50 ft.*
Pumping water level 60 ft.*
at 5 gallons per minute,
measured 60 minutes after pumping began.
*Measured from ground level.
Well developed by owner
for 2 1/2 hours.
Power Motor Pump 1 HP
Remarks: (Gravel packing, cementing, packers, type of shutoff)

INDICATE LOCATION OF WELL AND PLACE OF USE, IF POSSIBLE. EACH SMALL SQUARE REPRESENTS 40 ACRES.

Driller's Signature Carol Jones

Driller's Address Hardin, Montana

LICENSE NO.

Top of Ground (Elev. above sea level)	
From (Feet)	To (Feet)
<u>0</u>	<u>30</u> <u>sandy soil</u>
<u>30</u>	<u>46</u> <u>soil</u>
<u>46</u>	<u>50</u> <u>fine shale</u>
<u>50</u>	<u>70</u> <u>sandstone</u>
<u>70</u>	<u>75</u> <u>blue shale</u>
<u>75</u>	<u>107</u> <u>very hard water bearing</u>
<u>107</u>	<u>110</u> <u>blue shale end</u>

110 Show exact depth of bottom

54527

240527

STATE OF MONTANA
County of Big Horn

The within instrument was recorded
in my office at Hardin, Montana, this

day of

JUN 28 1973

A.D. 19

at 10 40 o'clock A.M.

Joyce Lippert
County Recorder

By *Dorothy Jones* Deputy

Wanda

1000 0 110 200 300 400 500 600 700 800 900 1000

RECEIVED

JUL 2 1973

18

State Publishing Co.-Litho

MONTANA DEPARTMENT OF NATURAL
RESOURCES AND CONSERVATION
STATE OF MONTANA

County BIG Horn

ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION WITHOUT WELL

Developed After January 1, 1962

(Under Chapter 237, Montana Session Laws, 1961, as amended)

This form to be prepared by contractor (if any), otherwise by the owner.

Three copies of this notice are to be filed with the County Clerk and Recorder of the county in which the works are located.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

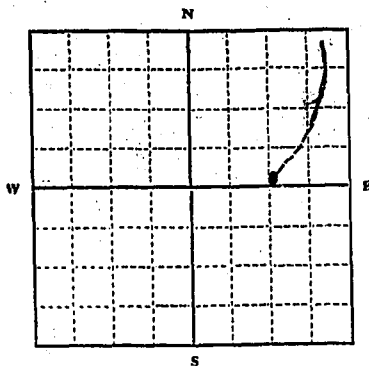
540252

For Administrator's Use

File 240529

June 28, 1973

GW 1 10:48



SE 1/4 NE 1/4 Sec. 18

T. 1 N. R. 37 E. 1 W.

INDICATE POINT OF APPROPRIATION
AND PLACE OF USE, IF POSSIBLE.
Elevation of spring, if known or esti-

mated _____

Owner EARL A. STARK SERVICE COMPANY

Address 454 N. MONT

Contractor (if any) none

Address of Contractor none

Date Started July 1972 Date Completed Jan. 1973

1. Describe means of obtaining groundwater (as by sub-irrigation, developed spring, drains, etc.) developed spring, cased it with cement blocks, 1/2 mile plastic pipe to house & other uses.

2. Means of withdrawing water (gravity, pump, canal, etc.) gravity

3. Depth of water table 10 ft

4. Use of the water domestic, stock

5. Amount of groundwater claimed (in miner's inches or gallons per minute) 8 gals per min

6. If used for irrigation, give number of acres and description of land Lavens garden plot

7. Estimate amount of water used each year 182,000 gals

(500 gals per day)

8. Months of year spring flows 12 months

Signature of Owner

Earl Stark

Date

June 27, 1973

54530

STATE OF MONTANA } ss.
County of Big Horn

day of

JUN 28 1973 A.D. 19

1048 o'clock AM

By Jasper L. Lippert County Recorder
Barbara J. Jones Deputy

By Robert M. Jones Deputy

[illegible]

SECRET

THE UNIVERSITY OF CHICAGO

7

100

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The concentration of the *Agrobacterium* suspension was 10⁶ cells/ml (○), 10⁷ cells/ml (□), 10⁸ cells/ml (△), and 10⁹ cells/ml (◇). The error bars represent the standard deviation of three independent experiments.

Figure 1

1. *Chlorophyll a* (Chl *a*)

100

Figure 1

(a) **Flowchart illustrating the study design.**

(b) **Baseline characteristics of the study population.**

(c) **Comparison of baseline characteristics between the two groups.**

(d) **Comparison of baseline characteristics between the two groups.**

(e) **Comparison of baseline characteristics between the two groups.**

(f) **Comparison of baseline characteristics between the two groups.**

(g) **Comparison of baseline characteristics between the two groups.**

(h) **Comparison of baseline characteristics between the two groups.**

(i) **Comparison of baseline characteristics between the two groups.**

(j) **Comparison of baseline characteristics between the two groups.**

(k) **Comparison of baseline characteristics between the two groups.**

(l) **Comparison of baseline characteristics between the two groups.**

(m) **Comparison of baseline characteristics between the two groups.**

(n) **Comparison of baseline characteristics between the two groups.**

(o) **Comparison of baseline characteristics between the two groups.**

(p) **Comparison of baseline characteristics between the two groups.**

(q) **Comparison of baseline characteristics between the two groups.**

(r) **Comparison of baseline characteristics between the two groups.**

(s) **Comparison of baseline characteristics between the two groups.**

(t) **Comparison of baseline characteristics between the two groups.**

(u) **Comparison of baseline characteristics between the two groups.**

(v) **Comparison of baseline characteristics between the two groups.**

(w) **Comparison of baseline characteristics between the two groups.**

(x) **Comparison of baseline characteristics between the two groups.**

(y) **Comparison of baseline characteristics between the two groups.**

(z) **Comparison of baseline characteristics between the two groups.**

10

10

4

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific information required.

100

1

10

100

100

RECEIVED
SEP 14 1971
STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION WITHOUT WELL

Developed After January 1, 1962

(Under Chapter 237, Montana Session Laws, 1961, as amended)

This form to be prepared by contractor (if any), otherwise by the owner.

Three copies of this notice are to be filed with the County Clerk and Recorder of the county in which the works are located.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

For Administrator's Use

File 233627
September 10, 1971
4:08 PM

GW 1 _____

Owner Davidson Cattle Co.

Address Big Horn, Montana

Contractor (if any) - Self -

Address of Contractor _____

Date Started Aug 3, 1967 Date Completed Aug 4, 1967

1. Describe means of obtaining groundwater (as by sub-irrigation, developed spring, drains, etc.) _____

Collected & ditched

2. Means of withdrawing water (gravity, pump, canal, etc.) _____

Gravity

3. Depth of water table 3 @ 6 ft.

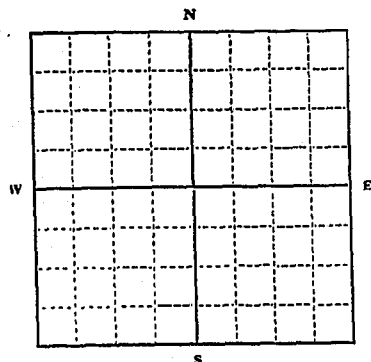
4. Use of the water Stock water

5. Amount of groundwater claimed (in miner's inches or gallons per minute) 3 gallons per minute

6. If used for irrigation, give number of acres and description of land _____

7. Estimate amount of water used each year 3 gallons per minute

8. Months of year spring flows 12 months



SE 1/4 SW 1/4 Sec. 19

T. 1 N R. 37 E

INDICATE POINT OF APPROPRIATION AND PLACE OF USE, IF POSSIBLE.
Elevation of spring, if known or estimated

SW 1/4 & SE 1/4
& NE 1/4

Signature of Owner Davidson Cattle Co.
by D. M. Davidson

Date _____

49079

STATE OF MONTANA } ss.
County of Big Horn }

The within instrument was filed in my office at Hardin, Montana, this

The within instrument was filed in my office at Hardin, Montana, this

SEP 10 1979

day of

A. D. 19

at 4:08 o'clock P.M.

Joce Lippert
County Recorder

By Robert Temple Deputy

CONFIDENTIAL

1. *Chlorophyll a*
 2. *Chlorophyll b*
 3. *Chlorophyll c*
 4. *Chlorophyll d*
 5. *Chlorophyll e*
 6. *Chlorophyll f*
 7. *Chlorophyll g*
 8. *Chlorophyll h*
 9. *Chlorophyll i*
 10. *Chlorophyll j*
 11. *Chlorophyll k*
 12. *Chlorophyll l*
 13. *Chlorophyll m*
 14. *Chlorophyll n*
 15. *Chlorophyll o*
 16. *Chlorophyll p*
 17. *Chlorophyll q*
 18. *Chlorophyll r*
 19. *Chlorophyll s*
 20. *Chlorophyll t*
 21. *Chlorophyll u*
 22. *Chlorophyll v*
 23. *Chlorophyll w*
 24. *Chlorophyll x*
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 26. *Chlorophyll z*
 27. *Chlorophyll aa*
 28. *Chlorophyll ab*
 29. *Chlorophyll ac*
 30. *Chlorophyll ad*
 31. *Chlorophyll ae*
 32. *Chlorophyll af*
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 34. *Chlorophyll ah*
 35. *Chlorophyll ai*
 36. *Chlorophyll aj*
 37. *Chlorophyll ak*
 38. *Chlorophyll al*
 39. *Chlorophyll am*
 40. *Chlorophyll an*
 41. *Chlorophyll ao*
 42. *Chlorophyll ap*
 43. *Chlorophyll aq*
 44. *Chlorophyll ar*
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 121. *Chlorophyll dq*
 122. *Chlorophyll dr*
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 140. *Chlorophyll ej*
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 196. *Chlorophyll gn*
 197. *Chlorophyll go*
 198. *Chlorophyll gp*
 199. *Chlorophyll gq*
 200. *Chlorophyll gr*
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 204. *Chlorophyll gv*
 205. *Chlorophyll gw*
 206. *Chlorophyll gx*
 207. *Chlorophyll gy*
 208. *Chlorophyll gz*
 209. *Chlorophyll ha*
 210. *Chlorophyll hb*

(See back cover) and other books in series
 41.04.1.1
 1.7.4.2.8
 1.7.4.2.8
 1.7.4.2.8

File No.

DUPLICATE

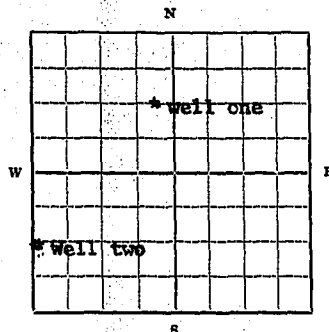
T. 1 N. R. 37 East
County Bighorn

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

Declaration of Vested Groundwater Rights
(Under Chapter 237, Montana Session Laws, 1961)

RECEIVED
JAN 6 1964
STATE ENGINEER

1. J. S. Romine Estate, of (Address) Barlow
County of F. B. Bown State of Montana
have appropriated groundwater according to the Montana laws in effect prior to January 1, 1962, as follows:



Well (1) N. E. 1/4 Sec. 20 T. 1 N. R. 37 E.
Well (2) N. W. 1/4 Sec. 20 T. 1 N. R. 37 E.
Indicate point of appropriation
and place of use, if possible.
Each small square represents 10
acres.

2. The beneficial use on which the claim is based stock water
3. Date or approximate date of earliest beneficial use; and how continuous the use has been
Well one (1942) Daily
Well two (1954) Six months of the year.
4. The amount of groundwater claimed (in miner's inches or gallons per minute)
Well one (10 gallons per minute)
Well two (7 gallons per minute)
5. If used for irrigation, give the acreage and description of the lands to which water has been applied and name of the owner thereof
none
6. The means of withdrawing such water from the ground and the location of each well or other means of withdrawal
Well one (submerge electric pump)
Well two (gas engine and pump jack)
7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater
Well one (October 10--17th, 1942)
Well two (June 5--8th, 1954)
8. The depth of water table
Well One (150 ft.) Well two (55 ft.)
9. So far as it may be available, the type, size and depth of each well or the general specifications of any other works for the withdrawal of groundwater
Well one (4 inch black pipe 197 ft. deep)
Well two (4 inch black pipe 80 ft. deep)
10. The estimated amount of groundwater withdrawn each year
Well one (252,800 gal)
Well two (153,720 Gal)
11. The log of formations encountered in the drilling of each well if available
Well one (none available)
Well two (none available)
12. Such other information of a similar nature as may be useful in carrying out the policy of this act, including reference to book and page of any county record
Well one (no other records)
Well two (no other records)

Signature of Owner

J. S. Romine Estate
Eva Romine Miller
Operator
Date Dec 23, 1963

Three copies to be filed by the owner with the County Clerk and Recorder of the county in which the well is located.

Please answer all questions. If not applicable, so state, otherwise the form will be returned.

Original to the County Clerk and Recorder; duplicate to the State Engineer; Triplicate to the School of Mines and Quadruplicate for the Appropriator.

21676

206313

RECORDED

STATE OF MONTANA }
County of Big Horn } ss.

The within instrument was filed
in my office at Hardin, Montana, this

DEC 26 1963

day of

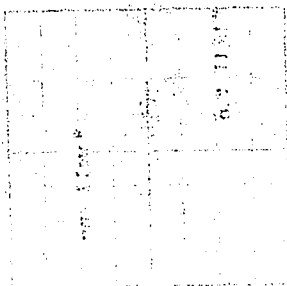
A. D. 19

at 3:34

o'clock P. M.

Harry E. Cant
County Recorder

By Gerald L. Smith Deputy



...the County of Big Horn, Montana, do hereby certify that the within instrument was filed in my office at Hardin, Montana, this 26th day of December, 1963, at 3:34 o'clock P. M. and that the same is a true and correct copy of the original as the same appears in the records of my office.

...the County of Big Horn, Montana, do hereby certify that the within instrument was filed in my office at Hardin, Montana, this 26th day of December, 1963, at 3:34 o'clock P. M. and that the same is a true and correct copy of the original as the same appears in the records of my office.

...the County of Big Horn, Montana, do hereby certify that the within instrument was filed in my office at Hardin, Montana, this 26th day of December, 1963, at 3:34 o'clock P. M. and that the same is a true and correct copy of the original as the same appears in the records of my office.

2.

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

Indicate the character, color, thickness of strata such as soil, clay, sand, gravel, shale, sandstone, etc. Show depth at which water is found and height to which water rises in well.

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION BY MEANS OF WELL

Developed after January 1, 1962

(Under Chapter 237 Montana Session Laws, 1961, as amended)

This form to be prepared by driller, and three copies to be filed by the **owner** with the County Clerk and Recorder in the county in which the well is located, last copy to be retained by driller.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

Owner **Westmoreland Resources**

Address **Box 449**

Hardin, Montana 59034

Date well started

completed **1937**

Type of well

.....
(Dug, driven, bored or drilled)

Equipment used

(Churn drill, rotary or other)

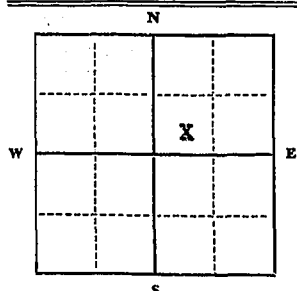
Water Use: Domestic ☐ Municipal ☐ Stock ☒ Irrigation ☐

Industrial ☐ Drainage ☐ Other ☐* Garden/Lawn ☐

***Describe**

USE: If used for irrigation, industrial, drainage or other. Explain, state number of acres and location or other data (i.e. Lot, Block and Addition). _____

ESTIMATED ANNUAL WITHDRAWAL 20,000 gallons

[illegible]

Static water level6.....ft.*
Pumping water levelft.*
at 25-30gallons per minute,
measuredminutes after pumping
began.

*Measured from ground level.

Well developed by

forhours.

Power **electric** Pump..... HP

Remarks: (Gravel packing, cementing,
packers, type of shutoff)

SW 1/4 NE 1/4 Sec. 21
T. 1 N. R. 37 E.

INDICATE LOCATION OF WELL AND PLACE OF USE, IF POSSIBLE.
EACH SMALL SQUARE REPRESENTS 40 ACRES.

Driller's Signature Kenny Barkoff

Driller's Address Not known

..... LICENSE NO.

Top of Ground

(Elev. above sea level)

3285

[illegible]30th

Show exact depth of bottom

5 4.565

240568

STATE OF MONTANA } ss.
County of Big Horn }
The within instrument was filed
in my office at Hardin, Montana, this
JUN 23 1973 day

A.D. 19

at 4:34 o'clock P.M.

James L. Smith
County Recorder

Dr.

21

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

JUL 2 1973

DRILLER'S LOG

Indicate the character, color, thickness of strata such as soil, clay, sand, gravel, shale, sandstone, etc. Show depth at which water is found and height to which water rises in well.

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION BY MEANS OF WELL

Developed after January 1, 1962

(Under Chapter 237 Montana Session Laws, 1961, as amended).

This form to be prepared by driller, and three copies to be filed by the owner with the County Clerk and Recorder in the county in which the well is located, last copy to be retained by driller.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

Owner **Westmoreland Resources**

Address **Box 449**

Hardin, Montana 59034

Date well started

completed **1956**

Type of well drilled

(Dug, driven, bored or drilled)

Equipment used

churn drill

(Churn drill, rotary or other)

Water Use: Domestic ☐ Municipal ☐ Stock ☒ Irrigation ☐

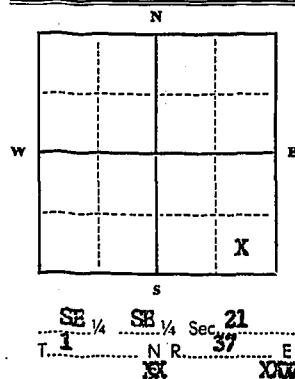
Industrial ☐ Drainage ☐ Other ☐* Garden/Lawn ☐

***Describe**

USE: If used for irrigation, industrial, drainage or other. Explain, state number of acres and location or other data (i.e. Lot, Block and Addition).

ESTIMATED ANNUAL WITHDRAWAL 100,000 gallons

Size of Drilled Hole	Size and Weight of Casing	From (Feet)	To (Feet)	PERFORATIONS		
				Kind Size	From (Feet)	To (Feet)



Static water levelft.*
Pumping water levelft.*
at 25gallons per minute,
measuredminutes after pumping
began.

*Measured from ground level.

Well developed by
for hours.

Power **electric** Pump..... HP

Remarks: (Gravel packing, cementing,
packers, type of shutoff)

INDICATE LOCATION OF WELL AND PLACE OF USE, IF POSSIBLE.
EACH SMALL SQUARE REPRESENTS 40 ACRES.

Driller's Signature

Henry Kray

Driller's Address

Not Known

LICENSE NO.....

Top of Ground

(Elev. above sea level) **3357**[illegible]45⁹

Show exact depth of bottom

54558

240561

STATE OF MONTANA } ss.
County of Big Horn }

The within instrument was file.
in my office at Hardin, Montana, this
JUN 28 1973 day of

A. D. 19

at 4:27 o'clock P. M.

Jasper Lippert
County Recorder

40

DP-100

2.

JUL 2 1973

DRILLER'S LOG

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD
MONTANA DEPARTMENT OF
REVENUES AND ORDER

**NOTICE OF COMPLETION OF GROUNDWATER
APPROPRIATION BY MEANS OF WELL**

Developed after January 1, 1962

(Under Chapter 237 Montana Session Laws, 1961, as amended)

This form to be prepared by driller, and three copies to be filed by the **owner** with the County Clerk and Recorder in the county in which the well is located, last copy to be retained by driller.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

Owner Hestmoreland Resources

Address **Box 449**

Hardin, Montana 59034

Date well started

completed ~~NOT KNOWN~~

Type of welldrilled

(Dug, driven, bored or drilled)

Equipment used ~~Not known~~

(Churn drill, rotary or other)

Water Use: Domestic ☒ Municipal ☐ Stock ☐ Irrigation ☐

Industrial ☐ Drainage ☐ Other ☐* Garden/Lawn ☒

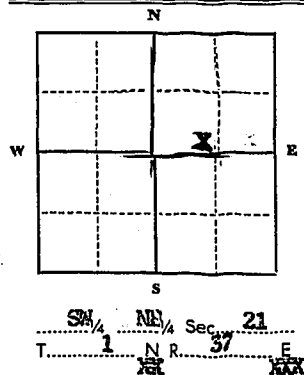
***Describe**

USE: If used for irrigation, industrial, drainage or other. Explain, state number of acres and location or other data (i.e. Lot, Block

and Addition). 200.000

ESTIMATED ANNUAL WITHDRAWAL 200,000

Size of Drilled Hole	Size and Weight of Casing	From (Feet)	To (Feet)	PERFORATIONS		
				Kind Size	From (Feet)	To (Feet)



Static water levelft.*
Pumping water levelft.*
at 25gallons per minute,
measuredminutes after pumping
began.

*Measured from ground level.

Well developed by

for hours.

Power. ~~Electric~~ Pump..... HP

Remarks: (Gravel packing, cementing,
packers, type of shutoff)

INDICATE LOCATION OF WELL AND PLACE OF USE, IF POSSIBLE.
EACH SMALL SQUARE REPRESENTS 10 ACRES.

Driller's Signature **Not known**

Driller's Address

LICENSE NO.....

Top of Ground

(Elev. above sea level)

3290

From
(Feet)

To
(East)

Log Not Available

Indicate the character, color, thickness of strata such as soil, clay, sand, gravel, shale, sandstone, etc. Show depth at which water is found and height to which water rises in well:

40

Show exact depth of bottom

4557

240560

STATE OF MONTANA } ss.
County of Big Horn }

The within instrument was filed
in my office at Hardin, Montana, this

JUN 28 1973 day of

A. D. 19

at 4:26 o'clock P.M.

James L. Pappas
County Recorder

By _____ Deputy

RECEIVED

22

GW-3, Revised 1969
STATE PUBLISHING CO. LITHO

DEPARTMENT OF NATURAL
RESOURCES AND CONSERVATION

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

County Big Horn

590221

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION WITHOUT WELL
Developed After January 1, 1962

(Under Chapter 237, Montana Session Laws, 1961, as amended)

This form to be prepared by contractor (if any), otherwise by the owner.
Three copies of this notice are to be filed with the County Clerk and Recorder of the county in which the works are located.
Please answer all questions. If not applicable, so state, otherwise the form may be returned.

For Administrator's Use

File 240551

June 28, 1973

GW 1 4:12 p.m.

Owner Westmoreland Resources

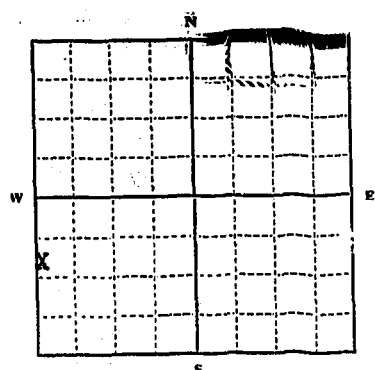
Address Box 449, Hardin, Montana 59034

Contractor (if any) _____

Address of Contractor _____

Date Started _____ Date Completed _____

1. Describe means of obtaining groundwater (as by sub-irrigation, developed spring, drains, ~~etc.~~ natural flowing spring empties into deep meander along Sarpy Creek.



2. Means of withdrawing water (gravity, pump, canal, etc.) gravity flow

3. Depth of water table surface

4. Use of the water stockwater, sub-surface irrigation

5. Amount of groundwater claimed (in miner's inches or gallons per minute) 150 gallons

6. If used for irrigation, give number of acres and description of land sub-surface irrigation affects 160 acres in E₁ of Sec. 21-1N-37E

7. Estimate amount of water used each year 50,000,000 gallons

8. Months of year spring flows 12

NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 22

T. 1 N R. 37 E

X X

INDICATE POINT OF APPROPRIATION AND PLACE OF USE, IF POSSIBLE.
Elevation of spring, if known or estimated 3290

Signature of Owner Matthew A. Indor

Date June 28, 1973

54548

240551

STATE OF MONTANA }
County of Big Horn } ss.

The within instrument was filed
in my office at Hardin, Montana, this

JUN 28 1973 day of

4:17 A. D. 1973
at 4:17 o'clock P.M.

Joeye Hippet
County Recorder

By Dorothy Jones Deputy

File No.

T.1N. R.37.E

DUPLICATE

County. Big Horn

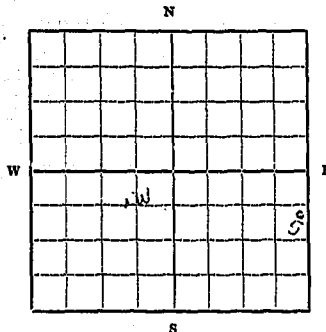
STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

RECEIVED
JAN 6 1964

Declaration of Vested Groundwater Rights
(Under Chapter 237, Montana Session Laws, 1961)

STATE ENGINEER

J. T. and Nella B. Redding, of Lumpy Pt. Hysham
(Name of Appropriator) (Address) (Town)
County of Big Horn State of Montana
have appropriated groundwater according to the Montana laws in effect prior to January 1, 1962, as follows:



S.W. 1/4
S.E. 1/4 Sec. 24. T.1N. R.37.E

Indicate point of appropriation
and place of use, if possible.
Each small square represents 10
acres.

2. The beneficial use on which the claim is based
livestock water

3. Date or approximate date of earliest beneficial use; and how continuous the use has been
1940 continuous use

4. The amount of groundwater claimed (in miner's inches or gallons per minute)
Well - one half gallons
Spring - one half gallons

5. If used for irrigation, give the acreage and description of the lands to which water has been applied and name of the owner thereof
not used for irrigation

6. The means of withdrawing such water from the ground and the location of each well or other means of withdrawal
gravity for well and spring

7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater
1940

8. The depth of water table
15 ft

9. So far as it may be available, the type, size and depth of each well or the general specifications of any other works for the withdrawal of groundwater
slug well, 15 ft deep, 4 ft casing
piped out of ground by gravity

10. The estimated amount of groundwater withdrawn each year
262,800 gallons for each

11. The log of formations encountered in the drilling of each well if available
not available

12. Such other information of a similar nature as may be useful in carrying out the policy of this act, including reference to book and page of any county record.

Signature of Owner. J. T. Redding
Nella B. Redding

Date. Dec. 26, 1963

Three copies to be filed by the owner with the County Clerk and Recorder of the county in which the well is located.

Please answer all questions. If not applicable, so state, otherwise the form will be returned.

Original to the County Clerk and Recorder; duplicate to the State Engineer; Triplicate to the School of Mines and Quadruplicate for the Appropriator.

21662

206296

STATE OF MONTANA } ss.
County of Big Horn

The within instrument was filed
in my office at Hardin, Montana, this
DEC 26 1953 day of

A. D. 19

at 10³⁰ o'clock A.M.

Harry E. Cap
County Recorder

By Selden L. Smith Deputy

RECEIVED

26

3 GW 3 Revised 1969
2037-1500-1/71

County Big Horn

JUL 3 1973
STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

532025

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION WITHOUT WELL
Developed After January 1, 1962

(Under Chapter 237, Montana Session Laws, 1961, as amended)

This form to be prepared by contractor (if any), otherwise by the owner.

Three copies of this notice are to be filed with the County Clerk and Recorder of the county in which the works are located.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

For Administrator's Use

File 240552

June 28, 1973

GW 1 4:18 p.m.

Owner Westmoreland Resources

Address Box 449, Hardin, Montana 59034

Contractor (if any) _____

Address of Contractor _____

Date Started _____ Date Completed _____

1. Describe means of obtaining groundwater (as by sub-irrigation, developed spring, drains, etc.) natural flowing spring

2. Means of withdrawing water (gravity, pump, canal, etc.) gravity

3. Depth of water table surface

4. Use of the water operation of surface mine

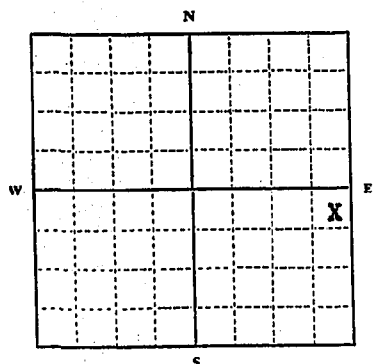
5. Amount of groundwater claimed (in miner's inches or gallons per minute) 3 gallons per minute

6. If used for irrigation, give number of acres and description of land _____

7. Estimate amount of water used each year _____

500,000 gallons

8. Months of year spring flows 4



NE 1/4 SE 1/4 Sec. 26

T. 1 N. R. 37 E. 8X

INDICATE POINT OF APPROPRIATION AND PLACE OF USE, IF POSSIBLE.
Elevation of spring, if known or estimated

3470

Signature of Owner Matthew L. Jindor

Date June 28, 1973

5-4549

STATE OF MONTANA }
County of Big Horn } ss.

The within instrument was filed in my office at Hardin, Montana, this

JUN 28 1973

day c

A. D. 19.....

2 o'clock M.

County Records

RECEIVED

26

STATE PUBLISHING CO.-LITHO

JUL 2 1973

County Big Horn

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
RESOURCES AND CONSERVATION
MONTANA WATER RESOURCES BOARD

022015

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION WITHOUT WELL

Developed After January 1, 1962

(Under Chapter 237, Montana Session Laws, 1961, as amended)

This form to be prepared by contractor (if any), otherwise by the owner.
Three copies of this notice are to be filed with the County Clerk and Recorder of the county in which the works are located.
Please answer all questions. If not applicable, so state, otherwise the form may be returned.

For Administrator's Use

File 240550

June 28, 1973

GW 1 4.16 p. 117

Owner Westmoreland Resources

Address Box 449, Hardin, Montana 59034

Contractor (if any) _____

Address of Contractor _____

Date Started _____ Date Completed _____

1. Describe means of obtaining groundwater (as by sub-irrigation, developed spring, drains, etc.) natural spring

2. Means of withdrawing water (gravity, pump, canal, etc.) gravity flow

3. Depth of water table surface

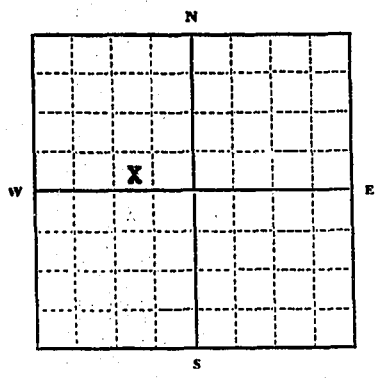
4. Use of the water operation of surface mine

5. Amount of groundwater claimed (in miner's inches or gallons per minute) 2 gallons per minute

6. If used for irrigation, give number of acres and description of land _____

7. Estimate amount of water used each year 300,000 gallons

8. Months of year spring flows 6



SE 1/4 NW 1/4 Sec. 26

T. 1 N. R. 37 E. 37

INDICATE POINT OF APPROPRIATION AND PLACE OF USE, IF POSSIBLE.
Elevation of spring, if known or estimated 3430

Signature of Owner Mathew S. Judo

Date June 28, 1973

54547

240550

STATE OF MONTANA }
County of Big Horn } ss.

The within instrument was filed
in my office at Hardin, Montana, this

JUN 28 1973 day of

A. D. 19.....

at 4:16 o'clock P.M.

Joseph Lippert
County Recorder
Marilyn Jones Deputy

RECEIVED

26

GW 3 Revised 1969
STATE PUBLISHING CO.-LITHO

MONTANA DEPARTMENT OF NATURAL
RESOURCES AND CONSERVATION

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

County Big Horn

26005

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION WITHOUT WELL

Developed After January 1, 1962

(Under Chapter 237, Montana Session Laws, 1961, as amended)

This form to be prepared by contractor (if any), otherwise by the owner.

Three copies of this notice are to be filed with the County Clerk and Recorder of the county in which the works are located.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

For Administrator's Use

File 240549
June 28, 1973
GW 1 1-15 p. 111

Owner Westmoreland Resources

Address Box 449, Hardin, Montana 59034

Contractor (if any) _____

Address of Contractor _____

Date Started _____ Date Completed _____

1. Describe means of obtaining groundwater (as by sub-irrigation, developed spring, drains, etc.) natural flowing spring

2. Means of withdrawing water (gravity, pump, canal, etc.) gravity

3. Depth of water table surface

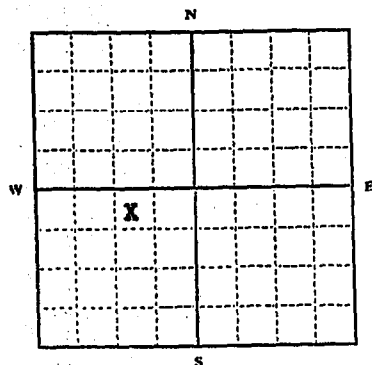
4. Use of the water operation of surface mine

5. Amount of groundwater claimed (in miner's inches or gallons per minute) 2 gallons per minute

6. If used for irrigation, give number of acres and description of land _____

7. Estimate amount of water used each year 500,000 gallons

8. Months of year spring flows 6



NE 1/4 SW 1/4 Sec. 26

T. 1 N. R. 37 E. 1

INDICATE POINT OF APPROPRIATION AND PLACE OF USE, IF POSSIBLE.

Elevation of spring, if known or estimated 3470

Signature of Owner Mathew S. Indor

Date June 28, 1973

54546

240549

STATE OF MONTANA
County of Big Horn
The within instrument was filed
in my office at Hardin, Montana, this
JUN 28 1973 day

A. D. 1973
at 4:15 o'clock P. M.

Joeye Lippert
County Recorder
By *Debbie Jones* Deputy

RECEIVED

JUL 2 1973

3 GW 3 Revised 1969 DEPARTMENT OF NATURAL
STATE PUBLISHING COMPTON RESOURCES AND CONSERVATION

County Big Horn

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION WITHOUT WELL

Developed After January 1, 1962

(Under Chapter 237, Montana Session Laws, 1961, as amended)

This form to be prepared by contractor (if any), otherwise by the owner.

Three copies of this notice are to be filed with the County Clerk and Recorder of the county in which the works are located.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

For Administrator's Use

File _____

GW 1 _____

Owner Westmoreland Resources

Address Box 449, Hardin, Montana

Contractor (if any) Steve Kerney

Address of Contractor _____

Date Started May 31, 1973 Date Completed June 18, 1973

1. Describe means of obtaining groundwater (as by sub-irrigation, developed spring, drains, etc.) Developed spring and interception of sub-surface flow in coulee gravel.

2. Means of withdrawing water (gravity, pump, canal, etc.) gravity

3. Depth of water table surface

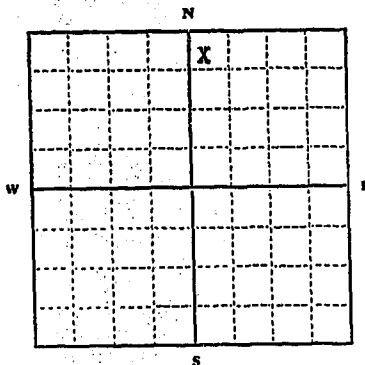
4. Use of the water Operation of surface mine

5. Amount of groundwater claimed (in miner's inches or gallons per minute) 70 gallons per minute

6. If used for irrigation, give number of acres and description of land _____

7. Estimate amount of water used each year 20,000,000 gallons

8. Months of year spring flows 12



NW 1/4 NE 1/4 Sec. 26
T. 1 N. R. 37 E.

INDICATE POINT OF APPROPRIATION
AND PLACE OF USE, IF POSSIBLE.

Elevation of spring, if known or estimated 3410

Signature of Owner

Matthew L. Jordan

Date

June 28, 1973

24517X
We are at

INSTRUMENT NO. 240535 FOR THE COUNTY OF BIG HORN
COUNTY OF BIG HORN
RECORDED
DATE COMPLETED 12 1973

THE COUNTY OF BIG HORN
COUNTY OF BIG HORN

IN WITNESS WHEREOF, I have hereunto set my hand and the seal of the County of Big Horn, Montana, this 28th day of June, 1973.

240535

STATE OF MONTANA } ss:
County of Big Horn }
The within instrument was filed
in my office at Hardin, Montana, this
JUN 28 1973 day of
A. D. 19____
at 4:01 o'clock P.M.
Jorge A. Sippert
County Recorder
Dorothy Jones

DRILLER'S LOG

54552

240555

STATE OF MONTANA }
County of Big Horn } ss.

The within instrument was filed
in my office at Hardin, Montana, this

JUN 28 1973 day of

A. D. 19

at 4:21 o'clock P. M.

James Lippert
County Recorder

Clayton Jones Notary

240556

STATE OF MONTANA ss.
County of Big Horn

The within instrument was filed
in my office at Hardin, Montana, this

JUN 28, 1973 day of

A. D. 19

at 4 22 o'clock P.M.

Joseph L. Lippert
County Recorder
Dorothy Jones Deputy

RECEIVED

JUL 2 1973

28

STATE PUBLISHING CO.-LITHO MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

County Big Horn

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
MONTANA WATER RESOURCES BOARD

NOTICE OF COMPLETION OF GROUNDWATER APPROPRIATION WITHOUT WELL
Developed After January 1, 1962

(Under Chapter 237, Montana Session Laws, 1961, as amended)

This form to be prepared by contractor (if any), otherwise by the owner.

Three copies of this notice are to be filed with the County Clerk and Recorder of the county in which the works are located.

Please answer all questions. If not applicable, so state, otherwise the form may be returned.

For Administrator's Use

File 24056

June 28, 1973

GW 1 4.69 p.m.

Owner Westmoreland Resources

Address Box 449, Hardin, Montana 59034

Contractor (if any) _____

Address of Contractor _____

Date Started _____ Date Completed _____

1. Describe means of obtaining groundwater (as by sub-irrigation, developed spring, drains, etc.) developed spring

2. Means of withdrawing water (gravity, pump, canal, etc.) gravity flow

3. Depth of water table at surface

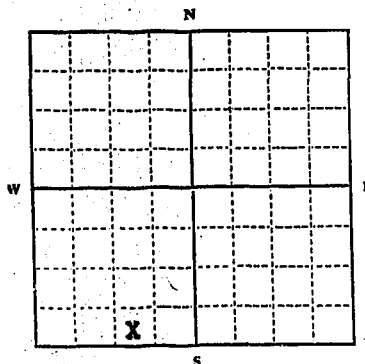
4. Use of the water stockwater

5. Amount of groundwater claimed (in miner's inches or gallons per minute) 5 gallons per minute

6. If used for irrigation, give number of acres and description of land _____

7. Estimate amount of water used each year 500,000 gallons

8. Months of year spring flows 12



SE 1/4 SW 1/4 Sec. 28
T. 1 N. R. 37 E. 10W

INDICATE POINT OF APPROPRIATION AND PLACE OF USE, IF POSSIBLE.
Elevation of spring, if known or estimated 3440

510293

Signature of Owner

Mathews L. Tudor

Date

June 28, 1973

5-4546

240543

STATE OF MONTANA } ss.
County of Big Horn

The within instrument was file
in my office at Hardin, Montana, thi

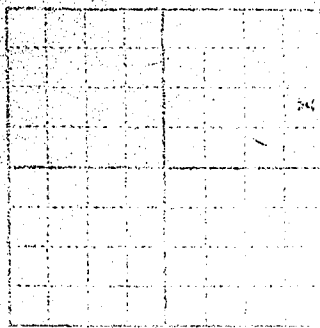
JUN 28 1973 day

A. D. 19

at 4:09 o'clock P. M.

Joepa Lippert
County Recorder

Dorothy Jones Dan



Date of recording

Date of completion

1. Description of property (including/without (as per map information)

2. Name of person(s) owning/controlling

3. Name of person(s) recording

4. Name of person(s) recording/controlling

5. Name of person(s) recording/controlling

6. Name of person(s) recording/controlling

7. Name of person(s) recording/controlling

8. Name of person(s) recording/controlling

9. Name of person(s) recording/controlling

10. Name of person(s) recording/controlling

File No.

T1 N. R 37 E.

DUPLICATE

County Big Horn

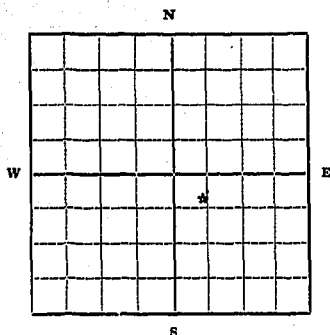
STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

RECEIVED
JAN 6 1964

Declaration of Vested Groundwater Rights
(Under Chapter 237, Montana Session Laws, 1961)

STATE ENGINEER

1. J. S. Romine (Estate) of H. ardin
(Name of Appropriator) (Address) (Town)
County of Big Horn State of Montana
have appropriated groundwater according to the Montana laws in effect prior to January 1, 1962, as follows:



N.W. 1/4 S.E. Sec 29 T.1 N.R.37 E.

Indicate point of appropriation and place of use, if possible. Each small square represents 10 acres.

2. The beneficial use on which the claim is based
Stock Water
3. Date or approximate date of earliest beneficial use; and how continuous the use has been
1943 Daily (365 days)
4. The amount of groundwater claimed (in miner's inches or gallons per minute)
5 gallons per minute.
5. If used for irrigation, give the acreage and description of the lands to which water has been applied and name of the owner thereof
None
6. The means of withdrawing such water from the ground and the location of each well or other means of withdrawal
Gas engine and pump jack.
7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater
September 20 -- 24th, 1943
8. The depth of water table
80 ft. deep
9. So far as it may be available, the type, size and depth of each well or the general specifications of any other works for the withdrawal of groundwater
4 inch black pipe 175 feet deep
10. The estimated amount of groundwater withdrawn each year
219,000 gal
11. The log of formations encountered in the drilling of each well if available
None available
12. Such other information of a similar nature as may be useful in carrying out the policy of this act, including reference to book and page of any county record.
No other records.

Signature of Owner

J. S. Romine Estate
Eva Romine Miller
E. Venturi

Date Dec 23, 1963

Three copies to be filed by the owner with the County Clerk and Recorder of the county in which the well is located.

Please answer all questions. If not applicable, so state, otherwise the form will be returned.

Original to the County Clerk and Recorder; duplicate to the State Engineer; Triplicate to the School of Mines and Quadruplicate for the Appropriator.

21675

206312
FILE NO.

STATE OF MONTANA } ss:
County of Big Horn
The within instrument was filed
in my office at Hardin, Montana, this
DEC-26-1969 day of

at 3:32 A.D. 1969
o'clock P.M.
Hans E. Cap
County Recorder
By G. L. Smith Deput

File No.

T. 1N R. 37E 29

DUPLICATE

MAR 29 1967

County. Big Horn

LOG

Billie _____ McDermott
 Butzheim _____ McNulty
 Coyne _____ Morton
 Dargatzis _____ Sullivan
 Dukert _____

STATE OF MONTANA

ADMINISTRATOR OF GROUNDWATER CODE

OFFICE OF STATE ENGINEER

Top of Ground

(Elev. above sea level _____)

Notice of Completion of Groundwater Appropriation by Means of Well

DEVELOPED AFTER JANUARY 1, 1962

(Under Chapter 297, Montana Session Laws, 1961)

Owner. James Romine Address. Box 425 Hardin, Mont.

Driller. C. S. Jones Address. Hardin, Montana

Date of Notice of appropriation of groundwater. Oct. 27, 1966

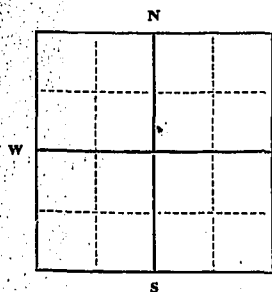
Date well started. Oct. 24, 1966 Date completed. Oct. 27, 1966

Type of well. Drilled Equipment used. Churn drill
(Dug, driven, bored or drilled) (Churn drill, rotary or other)Water use: Domestic ☐ Municipal ☐ Stock ☒ Irrigation ☐
Industrial ☐ Drainage ☐ Other ☐

Indicate on the diagram the character and thickness of the different strata met with in drilling, such as soil, clay, shale, gravel, rock or sand, etc. Show depth at which water is encountered, thickness and character of water-bearing strata and height to which the water rises in the well.

Size of Drilled Hole	Size and Weight of Casing	From (Feet)	To (Feet)	PERFORATIONS		
				Kind Size	From (Feet)	To (Feet)
	19	0	22	None		
	1.44.7			Perforated bottom 60' with 1/2" holes		
	Class 160					
	SDR-26					

Soil
 Sand Rock
 Yellow Shale
 Yellow sand-Dry
 Gray Shale
 Coal Streaks
 Gray Shale
 Light Gray Shale
 Light Gray Sandy Shale
 Small amount of Water
 Light Gray Sandy Shale
 Hard Shell
 Sand-Water
 Gray Shale



Static Water Level for non-flowing well. 125 feet.

Shut-in Pressure for Flowing Well.

Pumping Water Level. 145 feet

at 15 gal. per minute.

Discharge in gal. per min. of flowing well.

How Tested. Baler

Length of Test.

Remarks: (Gravel packing, cementing, packers, type of shutoff)

SW 1/4 NE 3 Sec. 29 T. 1 N. R. 37 E.
 Indicate location of well and place of use, if possible. Each small square represents 40 acres.

(Continue on reverse side)

USE—If used for irrigation, industrial, drainage or other. Explain, state number of acres and location or other data (i.e.: Lot, Block and Addition).

Show exact depth of bottom.

This form to be prepared by driller, and three copies to be filed by the owner with the County Clerk and Recorder in the county in which the well is located, tissue copy to be retained by driller.

Please answer all questions. If not applicable, so state, otherwise the form will be returned.

Driller's License Number

Driller's Signature.

41817

2. 2/19/97

2216 24

DISCOUNT

Typical spread rate
measured to date

1706

STATE OF MONTANA } ss:
County of Big Horn }

The within instrument was filed
in my office at Hardin, Montana, this

MAR 28 1967..... day of

A. D. 19...

at 2:10 o'clock P.M.

County Recorder

Deputy

OFFICE OF SENATE INVESTIGATIONS
COMMITTEE ON GOVERNMENT OPERATIONS
UNITED STATES SENATE
WASHINGTON, D. C. 20540

[illegible]

۵۰

Discharge in full for right of passage with
 of \$¹⁰⁰ for the same
 Economic History of the
 Spirit of Liberty for the same
 of \$¹⁰⁰ for the same
 of \$¹⁰⁰ for the same

File No.

DUPLICATE

T. 1 North R. 37 East

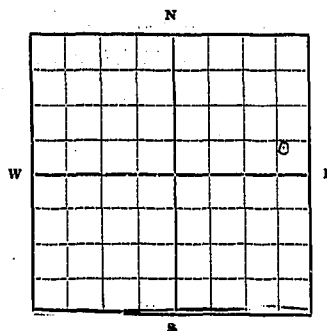
County Big Horn

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

RECEIVED
JAN 8 1964

Declaration of Vested Groundwater Rights STATE ENGINEER
(Under Chapter 237, Montana Session Laws, 1961)

1. George C. Miller, of Hardin
(Name of Appropriator) (Address) (Town)
County of Big Horn State of Montana
have appropriated groundwater according to the Montana laws in effect prior to January 1, 1962, as follows:



SE 1/4 NE 31, T. 1N, R. 37E

Indicate point of appropriation and place of use, if possible. Each small square represents 10 acres.

2. The beneficial use on which the claim is based Stockwater
3. Date or approximate date of earliest beneficial use; and how continuous the use has been Dec. 1943 continuously
4. The amount of groundwater claimed (in miner's inches or gallons per minute) 10 gallons per minute
5. If used for irrigation, give the acreage and description of the lands to which water has been applied and name of the owner thereof Not applicable
6. The means of withdrawing such water from the ground and the location of each well or other means of withdrawal Water pumped by beam type pump jack powered by gasoline motor
7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater December 1943
8. The depth of water table 300 Ft.
9. So far as it may be available, the type, size and depth of each well or the general specifications of any other works for the withdrawal of groundwater 293' of 4" casing; 273' of 2" drop pipe with 2" x 36" cylinder at bottom
10. The estimated amount of groundwater withdrawn each year 150,000 gallons per year
11. The log of formations encountered in the drilling of each well if available Not available
12. Such other information of a similar nature as may be useful in carrying out the policy of this act, including reference to book and page of any county record None

Signature of Owner George C. Miller

Date 12-30-63

Three copies to be filed by the owner with the County Clerk and Recorder of the county in which the well is located.

Please answer all questions. If not applicable, so state, otherwise the form will be returned.

Original to the County Clerk and Recorder; duplicate to the State Engineer; Triplicate to the School of Mines and Quadruplicate for the Appropriator.

26742

RECEIVED
DEC 20 1963

206449

STATE OF MONTANA } ss.
County of Big Horn }
The within instrument was filed
in my office at Hardin, Montana, this
DEC 20 1963 day of
A.D. 19

at 3:06 o'clock P.M.
Harvey E. Cox
County Recorder
Ruby W. Wampler Deputy

RECORDED
DEC 20 1963

File No.

DUPLICATE

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

County

RECEIVED
JAN 8 1964

Declaration of Vested Groundwater Rights
(Under Chapter 237, Montana Session Laws, 1961)

STATE ENGINEER

1. GEORGE E. LUTHER
(Name of Appropriator)

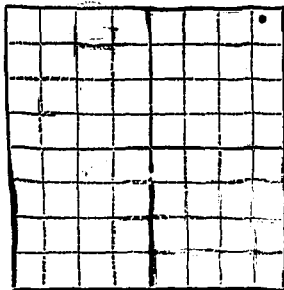
R. E. HORN
(Address)

HARDIN
(Town)

County of R. E. HORN

State of MONTANA

have appropriated groundwater according to the Montana laws in effect prior to January 1, 1962, as follows:



MAP OF Sec. 33 T14N R12E

Indicate point of appropriation and place of use, if possible. Each small square represents 10 acres.

2. The beneficial use on which the claim is based

LIVESTOCK WATERING

3. For approximate date of earliest beneficial use; and how continuous the use has been

JUNE 1939 AND CONTINUOUS USE EVERY YEAR.

4. The amount of groundwater claimed (in miner's inches or gallons per minute)

TWENTY GALLONS PER MINUTE

5. If used for irrigation, give the acreage and description of the lands to which water has been applied and name of the owner thereof

NONE

6. The means of withdrawing such water from the ground and the location of each well or other means of withdrawal

PUMP AND ROD

7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater

1939, JUNE

8. The depth of water table

9. So far as it may be available, the type, size and depth of each well or the general specifications of any other works for the withdrawal of groundwater

DRILLED 4" CASING 120 FT

10. The estimated amount of groundwater withdrawn each year

300,000 GALLONS

11. The log of formations encountered in the drilling of each well if available

NOT AVAILABLE TO 100 FT BUT 20 FT WATER BEARING SAND

12. Such other information of a similar nature as may be useful in carrying out the policy of this act, including reference to book and page of any county record

NONE

Signature of Owner

George E. Luther

Date 31 Dec 63

Three copies to be filed by the owner with the County Clerk and Recorder of the county in which the well is located.

Please answer all questions. If not applicable, so state, otherwise the form will be returned.

Original to the County Clerk and Recorder; duplicate to the State Engineer; Triplicate to the School of Mines and Quadruplicate for the Appropriator.

26794

206503

STATE OF MONTANA } ss:
County of Big Horn

The within instrument was filed
in my office at Hardin, Montana, this
DEC 31 1963 day of

at 9⁰⁰ o'clock P.M. A. D. 19

Harry E. Cox
County Recorder

By Archie L. Smith Deputy