GROUNDWATER INDEX

County Muscatine Twp. 11N Rge. 22E

Sec.	Name of Appropriator	Type of Form	County File No.	Remarks
4	Lieblein, A.W. Jr.	GW4	169543	
36	Ellint, Robert A.	57106		

GW

Approved Stock Form—State Publishing Co., Helena, Montana—41921

File No.....

T. 11 N. R. 22 E.

DUPLICATE

County Musselshell

STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

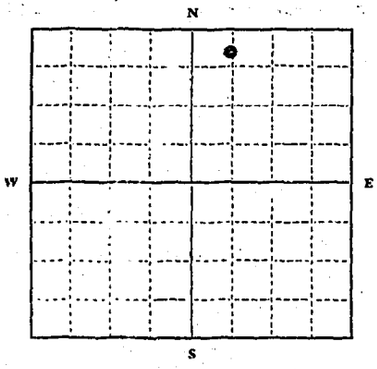
RECEIVED
JAN 2 1964
STATE ENGINEER

Declaration of Vested Groundwater Rights

(Under Chapter 237, Montana Session Laws, 1961)

1. A. W. Eiselein Jr., (Name of Appropriator), of Roundup, Montana (Address) (Town)

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



NE ¼ Sec. 4 T. 11 N. R. 22 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 and ##### small scale irrigation

3. Date or approximate date of earliest beneficial use; and how continuous the use has been December 30, 1961, since then use has been intermittent

4. The amount of groundwater claimed (in miner's inches or gallons per minute) Five (5) Gallons per minute with 80 feet of draw down.

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 Planning to use it on approximately 40 acres immediately south of well, owned by appropriator.

6. The means of withdrawing such water from the ground and the location of each well or other means of withdrawal Well has artesian natural flow at times; otherwise well will be pumped.

7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater Drilling commenced Nov. 23, 1961; completed Dec. 30, 1961

8. The depth of water table 20 feet from top of ground

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 6 3/4 inch hole, total dept 505 feet

10. The estimated amount of groundwater withdrawn each year Not determined to date.

Log: 0-8 top soil, 8-120 sandstone light brown, 120-175 black shale, 175-200 black shale lime shells, 200-225 gray lime, 225-250 grey lime, red shale, dark shale, 250-277 lihjy pink lime, 277-320 hard brown lime, 320-328 dark salt and pepper sand, 328-350 dark brown shale, 350-410 black shale, thin limestone shells, 410-420 red shale, 420-440 light gray sandstone, 440-495 black shale, 495-505 black shale with white pieces of shale, brown limestone

11. The estimated amount of groundwater withdrawn each year from each well or other means of withdrawal is 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 A. W. Eiselein Jr.

Date December 27, 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 Montana Bureau of Mines and Geology, and Quadruplicate for the Appropriator.

17792

169543

STATE OF MONTANA,
MUSSELSHELL COUNTY. } ss.

FILED THIS 30 DAY OF
Dec A. D. 19 63
AT 1:44 O'CLOCK P M.

B. H. MATZKE
COUNTY RECORDER

Frances L. Dawson
DEPUTY

2.00

36

RECEIVED
OCT 7 1957
STATE ENGINEER

T. 11 N R. 22 E
County Musselshell

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

WATER WELL LOG

Owner Robert C. Elliot Address Roundup Mont

Driller Burell Edland Address Melstone

Date Started 6-1-57 Date Completed 6-2-57

Location: Sec. 36 T. 11 N R. 22 E ¼ sec. SE ¼

Type of well DRILLED (Dug, driven, bored, or drilled) Equipment used ROTARY (Churn drill, rotary, other)

Water use: Domestic ☐ Municipal ☐ Stock ☒ Irrigation ☐

Industrial ☐ Drainage ☐ Other:

Casing: Surface ft. to Top ft. Type Galv. Size 20

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Perforated or Screened: Ft. 20' to ft. Ft. to ft.

Type of screen or perforations Reduction

Static Water level, for non-flowing well: 60' feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level 50 feet at 10 gal. per min.

How tested: Bailer

Length of test 30 minutes

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

(over)

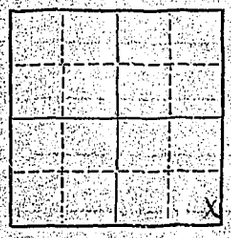
36

RECEIVED
OCT 7 1957
STATE ENGINEER

T. 11 N R. 22 E
County Musselshell

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

WATER WELL LOG



Owner Robert C. Elliot Address Roundup Mont.

Driller Buell Edwards Address Miles City

Date Started 6-1-57 Date Completed 6-2-57

Location: Sec. 36 T. 11 N R. 22 E ¼ sec. SE ¼

Type of well DRILLED (Dug, driven, bored, or drilled) Equipment used ROTARY (Churn drill, rotary, other)

Water use: Domestic [ ] Municipal [ ] Stock [X] Irrigation [ ]

Industrial [ ] Drainage [ ] Other:

Casing: Surface ft. to Top ft. Type Galv. Size 20

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Perforated or Screened: Ft. 20' to ft. Ft. to ft.

Type of screen or perforations Perforations

Static Water level, for non-flowing well: 60' feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level 50 feet at 10 gal. per min.

How tested: Bailer

Length of test 30 minutes

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

(over)

Log of Well

Depth, feet From	Depth, feet To	Description of Material Drilled
0	20'	Gravel
20	55	Brown clay
55	70	Blue shale
70	85	sand
85	115	Blue shale

GROUNDWATER INDEX

County Musselshell Twp. 11N Rge. 23E

Sec.	Name of Appropriator	Type of Form	County File No.	Remarks
1	Graves Ranch Company	57L06		
1	" " "	GW4	169386	
7	Peerless Oil & Gas Co.	57L06		
9	" " " "	57L06		
14	Kombol, Mary	57L06		
14	" "	GW4	169101	
15	Peerless Oil & Gas Co.	57L06		
17	" " " "	57L06		
20	" " " "	57L06		
20	" " " "	57L06		
23	Kombol, Mary	57L06		
23	" "	57L06		
23	" "	GW4	169102	
23	" "	GW4	169100	
26	Kombol, Joe	GW2	174679	
26	Kombol Ranch	GW4	169099	
26	Kombol Brothers	57L06		
29	Peerless Oil & Gas Co.	57L06		
29	" " " "	57L06		
29	" " " "	57L06		
29	" " " "	57L06		
32	" " " "	57L06		
33	Nebraska Feeding Co.	57L06		

Form No. 18
8-60

T. 11 R. 23

County Musselshell

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

RECEIVED
DEC 15 1981
STATE ENGINEER

Water Well Log

	x		

Owner Graves Ranch Company Address Roundup, Mont.

Driller Matt Jasbeck Address Roundup, Mont.

Date Started Sept. 1954 Date Completed Sept. 1954

Location: Sec. 1 T. 11 R. 23 ¼ sec. NW¼

Type of well Drilled (Dug, driven, bored, or drilled) Equipment used Churn (Churn, drill, rotary, other)

Water use: Domestic [ ] Municipal [ ] Stock [x] Irrigation [ ]
Industrial [ ] Drainage [ ] Other

Casing: 0 ft. to 64 ft. Type 20Ga. Galv. Size 6"

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Perforated or screened: Ft. 38 to ft. 64 . Ft. to ft.

Type of screen or perforations perforated 20 Ga.

Static water level, for non-flowing well: 35 feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level 50 feet at 12 gal. per min.

How tested: Pump

Length of test

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

(over)

Log of Well

Depth, feet From	Depth, feet To	Description of Material Drilled
0	37	gravel
37	57	yellow shale
57	64	grey sandstone

G --Helena Independent Record

File No.....

T. 11N R. 23E

DUPLICATE

County MUSSELSHELL

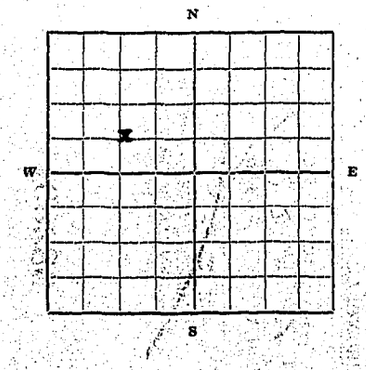
STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

RECEIVED DEC 3 STATE ENGINEER

Declaration of Vested Groundwater Rights

(Under Chapter 237, Montana Session Laws, 1961)

1. GRAVES RANCH COMPANY, of ROUNDUP
(Name of Appropriator) (Address) (Town)
County of MUSSELSHELL State of MONTANA
have appropriated groundwater according to the Montana laws in effect prior to January 1, 1962, as follows:



NW ¼ Sec 1 T. 11 R. 23

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
SEPT 1954

4. The amount of groundwater claimed (in miner's inches or gallons per minute) 12 gal per min pump test

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

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

7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater SEPT 1954

8. The depth of water table ~~64 ft~~ 35 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 ~~xxxxxxxx~~ pump ~~drill~~ Depth 64 ft.

10. The estimated amount of groundwater withdrawn each year as needed for stock 3,110,400 gals.

11. The log of formations encountered in the drilling of each well if available
0 to 37' gravel; 37 to 37' Yellow shale; 57 to 64' Gray sands' ne

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 Clem B. Graves

Date 9/23/63

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 Montana Bureau of Mines and Geology and Quadruplicate for the Appropriator.

13598

169386

STATE OF MONTANA,
MUSSELSHELL COUNTY. } ss.

FILED THIS 22 DAY OF

Dec A. D. 1963

AT 1:22 O'CLOCK P M.

B. H. MATZKE

COUNTY RECORDER

Elaine J. Goseman

DEPUTY

$2.00

7

T. 11N R. 23E

County Musselshell

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

WATER WELL LOG

Owner: Peerless Oil & Gas Company, Wytana Ranch Division — Address: Peerless Incorporated, 1670 Denver Club Bldg., Denver 2, Colorado

Driller ..... Address .....

Date Started ..... Date Completed .....

Location: Sec. 7 T. 11N R. 23E ¼ sec. NE SE

Type of well: Drilled (Dug, driven, bored, or drilled) — Equipment used: Churn Drill (Churn drill, rotary, other)

Water use: Domestic [ ] Municipal [ ] Stock [X] Irrigation [X]

Industrial [ ] Drainage [ ] Other: .....

Casing: ..... ft. to ..... ft. Type ..... Size .....

Casing: ..... ft. to ..... ft. Type ..... Size .....

Casing: ..... ft. to ..... ft. Type ..... Size .....

Perforated or Screened: Ft. ..... to ft. ..... Ft. ..... to ft. .....

Type of screen or perforations .....

Static Water level, for non-flowing well: ..... feet.

Shut-in pressure, for flowing well: ..... lb./sq. in. on: ..... (date)

Pumping water level ..... feet at ..... gal. per min. .....

How tested: .....

Length of test .....

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

.....

.....

.....

.....

.....

(over)

LITHOLOGIC LOG

All depths relative to rotary bushing which is 6.2 feet above ground elevation.

Kootenai

0 - 105	Drilled with cable tool and no samples taken. Top of 3rd Cat Creek Sand at 80 feet is not accurately established as compared with rotary sampling.
105 - 198	Typical 3rd Cat Creek Sand. Medium to coarse grained, angular to subedral, clear, quartz grains, cherty, mostly salt and pepper grey color. Drills up as sand with large fragments in it. Some pyrite and occasionally iron staining.

Morrison

198 - 210	Siltstone, grey, with pyrite and carbonaceous material. Has black shale break at about 200-205 and grades to fine grained quartzose and sandstone downward.
210 - 280	Sandstone, quartzose, light grey to grey, with an occasional quartzitic layer but mostly zones of silty and soft character. Some pyrite and coal locally. Mostly fine grained to almost medium but most always tightly cemented.
280 - 300	Claystone, grey and iron red or mottled, with some siltstone and quartzitic layers, both of grey or brownish-grey color.
300 - 310	Sandstone, fine grained, quartzose, grey color, with quartzitic layers.
310 - 327	Claystone, calcareous, grey, dark red, or brown, and siltstone, grey, calcareous, with sandy zones.
327 - 348	Limestone, brown to grey and brownish-yellow, mottled, dense to sugary or fine crystalline. Break down into soft clayey material under acid, never very hard. Grades downward into grey, non-calcareous, claystone.
348 - 350	Sandstone, yellowish-orange, calcareous.
350 - 360	Siltstone, mottled grey, brown, and reddish-brown, calcareous.
360 - 370	Siltstone, grey, brown, red, non-calcareous, some zones are sandy and calcareous.

370 - 375	Sandstone, fine grained, grey, non-calcareous, quartzose.
375 - 415	Siltstone and claystone, calcareous, grey, mottled greenish-grey and dark red, with some quartzite layers and sandy zones.
415 - 425	Limestone, dense, dark buff, grading downward into grey limestone and then into grey calcareous, silty claystone.
425 - 435	Claystone, grey, sandy, calcareous; and siltstone, grey to dark buff, calcareous, grading down into almost a fine grained sandstone or sandy limestone.

Ellis

435 - 525	Sandstone, fine to coarse grained, quartzose, subrounded to euhedral quartz grains, cherty glauconitic, poor to fairly well sorted, mostly tight, non-calcareous. Some zones which are silty and darker grey in color and often quartzitic in hardness. Occasional coal and pyrite fragment at 520 to 525.
525 - 530	Sandstone, very fine grained, dark grey, quartzose, calcareous, highly fossiliferous, some fossils replaced by pyrite.
530 - 555	Claystone and shale, grey, slightly mottled with pale brown or red-brown, non-calcareous, scattered quartz grains, micaceous, some gypsum layers.
555- 577	Sandstone, fine grained quartzose, calcareous, glauconitic, dirty dark grey color.
577 - 630	Limestone, soft, white, buff to dirty grey, dense, irregularly dark spotted, some grains of glauconite scattered thru out, some pyrite, zones of silty non-glauconitic character as well as sandy zones.
630 - 638	Siltstone and sandstone, dark red, hard, reddish quartz grains, calcareous, medium grained.

Amsden

638 - 642	Claystone, marly, highly fossiliferous, red to dark grey.
642 - 660	Limestone, white to buff and yellowish-orange, dense but with zones of fine porous nature, minute stylolitic fractures lined with black material, zones of calcite crystallization and fossil fragments.
660 - 667	Claystone, limy, pink-grey to lavender, purple and iron red, non-clacareous, and some silty.

667 - 712	Limestone, white, shades of pink, and buff, dolomitic, fragmental, dense to sugary, occasional clear calcite crystals.
712 - 715	Claystone, non-calcareous, bluish to greenish-grey with minute brown specks. Grades into a silty variety.
715 - 730	Shale, black hard, calcareous.
730 - 845	Limestone, dark grey to black, brownish-black, and some brownish-buff, fossiliferous (ostracods), irregular splintery fracturing. Has zones of grey pyritic calcareous claystone. Also some large veins of calcite and some pyrite. Dense to sugary and finely crystalline.
845 - 860	Shale, black, calcareous, pyritic. Also a few pieces of red siltstone which may be cavings.
860 - 865	Sandstone, quartzose, medium grained, well sorted, pure white to grey and with much pyrite, tight. Also black carbonaceous material in the sandstone.
865 - 885	Siltstone and claystone, dark grey, pyritic, carbonaceous, and non-calcareous.
885 - 900	Sandstone, white to dirty grey, quartzose, friable, well sorted, medium grained, dark impurities and some pyrite. With interbedded layers of claystone, iron red and greenish-grey, non-calcareous.
900 - 915	Limestone, buff to dirty grey-buff, dense, some streaked and colored by dark purplish-red iron staining. Sandy zones and base is overall pink color.
915 - 935	Claystone, red, soft, slightly calcareous, some grey and silty.
935 - 990	Sandstone, fine to medium grained, well sorted, quartzose grey, reddish-grey, and greenish-grey, some with red hematite spots, occasional yellow limonite staining. Calcareous and has gypsum and selenite fragments showing near the base.
990 - 1000	Siltstone, dark grey and grey, with black carbonaceous specks, quartzose, non-calcareous. Also has layers of red claystone and soft limy clay.
1000 - 1005	Sandstone, white, to pale green quartz, well sorted, calcareous, medium grained, poorly porous.
1005 - 1018	Siltstone, grey and grey pyritic, non-calcareous; also varicolored claystone. Fossiliferous (crinoids).

HERBERT D. HADLEY
CONSULTING GEOLOGIST
BILLINGS MONTANA

Heath

1018 - 1030	Limestone, dark grey to black, medium coarse surgary, highly fossiliferous with crinoid stems.
1030 - 1035	Claystone, black, dark grey, and dark greenish-grey, pyritic, non-calcareous.
1035 - 1060	Limestone, brownish-black, sugary, calcite and pyrite veinlets, thin continuous bands of black carbonaceous material. Also gypsum fragments and inclusions in limestone.
1060 - 1065	Shale, black, calcareous, sulphur odor.
1065 - 1080	Limestone, brownish-black, sugary, calcite beinlets. Selenite fragments and zones of grey, non-calcareous siltstone.

Respectfully submitted,

Herbert D. Hadley

Herbert D. Hadley

September 27, 1949

Chemical Laboratories, Inc.
521 S. CENTER ST.
CASPER WYOMING

WATER ANALYSIS REPORT

Field Pronghorn Ranch Well No. Hanlon #1

Operator Herb Hadley Location 7-11N-23E

Sampled by Date 9-30-49

Sand Depths 638-670 How sampled Drill Stem Test

Other pertinent data

Analyzed by KA Date 9-30-49 Lab. No. 3399

PARTS PER MILLION

NA & K	CA	MG	FE	SO_4	CL	CO_3	HCO_3	OH	H_2S
367	61	27		740	23	27	261		

MILLIGRAM EQUIVALENTS

15.97	3.05	2.22		15.41	.65	.90	4.28		

MILLIGRAM EQUIVALENTS IN PERCENT

37.59	7.18	5.23		36.28	1.53	2.12	10.07		

Total Solids in Parts per Million

By evaporation 1388

After ignition 1308

Calculated 1373

Observed pH 8.1

Properties of Reaction in Percent

Primary salinity 75.18

Secondary salinity .44

Primary alkalinity 0.00

Secondary alkalinity 24.38

Chloride salinity 1.05

Sulfate salinity 95.95

Remarks and conclusions Appears to be formation water. Correlates with Lab. No. 3400

Chemical Laboratories, Inc.
801 SO. CENTER ST.
CASPER WYOMING

WATER ANALYSIS REPORT

Field Pronghorn Ranch Well No. Hanlon #1
Operator Herb Hadley Location 7-11N-23E
Sampled by Date 9-30-49
Sand Depths 800 How sampled Open flow test
Other pertinent data

Analyzed by KA Date 10-3-49 Lab. No. 3400

PARTS PER MILLION

Na & K	Ca	Mg	Fe	SO_4	Cl	CO_3	HCO_3	OH	H_2S
118	193	76		741	11		325		

MILLIGRAM EQUIVALENTS

5.11	9.63	6.33		15.43	0.31		5.33		

MILLIGRAM EQUIVALENTS IN PERCENT

12.13	22.85	15.02		36.62	0.74		12.64		

Total Solids in Parts per Million

By evaporation 1379
After ignition 1279
Calculated 1299

Observed pH 7.5

Properties of Reaction in Percent

Primary salinity 24.26
Secondary salinity 50.46
Primary alkalinity 0.00
Secondary alkalinity 25.28
Chloride salinity 1.98
Sulfate salinity 98.02

Remarks and conclusions Appears to be formation water. Correlates with Lab. No. 3399

9

T. 11 R. 23

County

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

WATER WELL LOG

Owner: Pearless Oil & Gas Company, Wytana Ranch Division — c/o Pearless Incorporated, 1670 Denver Club Bldg., Address: Denver 2, Colorado

Driller: Gordon Scammon — Address: Roundup, Montana

Date Started — Date Completed

Location: Sec. 9 T. 11 R. 23 ¼ sec. NW¼ NE¼

Type of well: Drilled (Dug, driven, bored, or drilled) — Equipment used: Churn Drill (Churn drill, rotary, other)

Water use: Domestic [ ] Municipal [ ] Stock [X] Irrigation [X]

Industrial [ ] Drainage [ ] Other:

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Perforated or Screened: Ft. to ft. Ft. to ft.

Type of screen or perforations

Static Water level, for non-flowing well: feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level 106 feet at 10 gal. per min.

How tested: Bailer

Length of test

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

(over)

WYTANA CATTLE COMPANY -- PRONGHORN WATER WELL NO. 26

NW¼NE¼ Sec. 9-11-23 MAY 11 1956

0 - 9 ft.	Shale brown
9 - 49	Shale black
49 - 51	Sandstone grey hard (small amount water)
51 - 75	Shale, black hard
75 - 84	Sandstone, dark grey hard (water bearing)
84 - 99	Shale, black hard
99 - 103	Sandstone, dark grey (water bearing)
103 - 106	Shale, black - total depth.

Casing perforated opposite water sands
Casing set on bottom - 5⅝ inch
Tested with bailer 10 gallons per minute.

COPY

MAY 1 1953

YAPUNCICH-SANDERSON LABORATORIES

5 NORTH 28TH ST.
BILLINGS, MONTANA

WATER ANALYSIS REPORT

Lab. No. 1341

To: Mr. Gordon Scammon Date 5-1-53

Address P.O. Box 431, Roundup, Montana

Sample from Wytana Cattle Co. Water Well No. 26 Pronghorn, Moury Sand 106'

Intended use Stock

Constituents	Parts per Million
Sodium	499
Calcium	10
Magnesium	16
Sulfate	561
Chloride	29
Carbonate	32
Bicarbonate	608
Total Silica	
Soluble Silica	
Iron	

Total Solids in Parts per Million	
By evaporation	1398
After ignition	1338
Calculated	1446

pH 8.3

Specific gravity 1.002 @ 60° F

Resistivity @ 68° F ohms per meter cubed 5.50

Total hardness as calcium carbonate 5.3 grains/U. S. gallon

Remarks:

Soft water. Suitable for stock and domestic use.

SPECIALIZING IN CORE, WATER, GAS AND CRUDE OIL ANALYSES

WESTERN LITHO-PRINT, INC., BILLINGS, MONT.

T. 11 R. 23 14

County Musselshell

RECEIVED
NOV 26 1958
STATE ENGINEER

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

WATER WELL LOG

Owner Mary Kombol Address Roundup, Montana

Driller Wm. & Joe Kombol Address Roundup, Montana

Date Started April, 1958 Date Completed April, 1958

Location: Sec. 14 T. 11 R. 23 ¼ sec. SW of NE ¼

Type of well Drilled (Dug, driven, bored, or drilled) Equipment used Churn (Churn drill, rotary, other)

Water use: Domestic [ ] Municipal [ ] Stock [X] Irrigation [ ]

Industrial [ ] Drainage [ ] Other:

Casing: 0 ft. to 21 ft. Type Iron Size 6 inch

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Perforated or ~~Screened~~: Ft. 9 ft. to ft. 21 ft. Ft. to ft.

Type of screen or perforations

Static Water level, for non-flowing well: 15 ft. feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level 15 feet at over 15 gal. per min.

How tested: Baler

Length of test 1 hour

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

(over)

Log of Well

Depth, feet From	Depth, feet To	Description of Material Drilled
1	16	Surface soil
16	21	Gravel

G -Helena Independent Record

N F 14

File No.....

T. 11 R. 23

DUPLICATE

County Musselshell

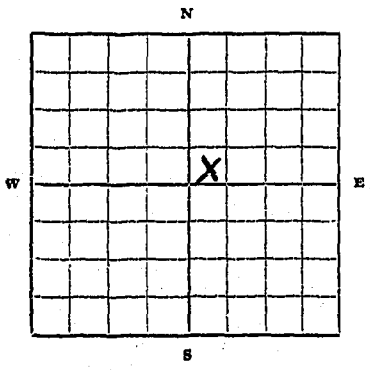
STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

RECEIVED
DEC 11 1963
STATE ENGINEER

Declaration of Vested Groundwater Rights

(Under Chapter 237, Montana Session Laws, 1961)

1. ~~Joe~~ Mary KOMBOL (Name of Appropriator), of BOX 898 (Address) ROUNDUP (Town)
County of Musselshell State of Montana
have appropriated groundwater according to the Montana laws in effect prior to January 1, 1962, as follows:



S.W.¼ NE Sec. 14 T. 11 R. 23

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 June 1956
3 Months off of each year

4. The amount of groundwater claimed (in miner's inches or gallons per minute) 8 GAL. P.M.

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 Cylinder & pump Jack

7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater June 1956 com June 1956

8. The depth of water table 6' static water level

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 7" hole 24 ft deep

10. The estimated amount of groundwater withdrawn each year 200,000 Gals

11. The log of formations encountered in the drilling of each well if available 0 to 5 top soil
5 to 22 Gravel 22 to 24 shale

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 Mary Kombol

Date 12-9-63

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 Montana Bureau of Mines and Geology and Quadruplicate for the Appropriator.

8561

169101

STATE OF MONTANA,
MUSSELSHELL COUNTY. } ss.

FILED THIS 10 DAY OF
Dec. A. D. 19 63
AT 2:23 O'CLOCK P M.

R. H. MATZKE
COUNTY RECORDER

Frances L Dawson
DEPUTY

R. 2. no

15

T. 11 R. 23

County

MONTANA BUREAU OF MINES AND GEOLOGY

Butte, Montana

WATER WELL LOG

Owner: Pearlesa Oil & Gas Company, Wytsca Ranch Division — Address: c/o Pearlesa Incorporated, 1670 Denver Club Bldg., Denver 2, Colorado

Driller: Gordon Scammon — Address: Roundup, Montana

Date Started — Date Completed

Location: Sec. 15 T. 11 R. 23 ¼ sec. [illegible]

Type of well: Drilled (Dug, driven, bored, or drilled) — Equipment used: Churn Drill (Churn drill, rotary, other)

Water use: Domestic [ ] Municipal [ ] Stock [XX] Irrigation [XX]

Industrial [ ] Drainage [ ] Other:

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Perforated or Screened: Ft. to ft. Ft. to ft.

Type of screen or perforations

Static Water level, for non-flowing well: feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level 140 feet at gal. per min.

How tested:

Length of test

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

(over)

APR 28 1953

WELL LOG

WYTANA CATTLE COMPANY

PRONGHORN RANCH WATER WELL NO. 25 -- NW¼NW¼SW¼ Sec. 15 - 11 - 23

0 - 18 ft.	Gravel
18 - 40	Shale tan
40 - 49	Sand fine grained, no water
49 - 61	Shale yellow
61 - 70	Shale dark grey
70 - 78	Shale yellow
78 - 130	Sandstone grey, water 6 gallons per minute
130 - 140	Shale dark grey total depth 140 feet.

4½ O.D. casing perforated 80 ' to 130'
Baker cave catcher set on pipe at 78'

COPY

YAPUNCICH-SANDERSON LABORATORIES

APR 28

APR 28 1953

3 NORTH 25TH ST.
BILLINGS, MONTANA

WATER ANALYSIS REPORT

Lab. No. 1338

To Gordon Scammon Date 4-21-53

Address Box 431, Roundup, Montana

Sample from Wytana Cattle Co. Water Well No. 25 Pronghorn, Eagle Sand @ 140'.

Intended use Stock

Constituents	Parts per Million
Sodium	51
Calcium	54
Magnesium	46
Sulfate	102
Chloride	21
Carbonate	0
Bicarbonate	364
Total Silica	
Soluble Silica	
Iron	

Total Solids in Parts per Million	
By evaporation	464
After ignition	354
Calculated	453

pH 7.3

Specific gravity 1.001 @ 60° F

Resistivity @ 68° F ohms per meter cubed 14.7

Total hardness as calcium carbonate 18.9 grains/U. S. gallon

Remarks:

Hard water. Suitable for domestic and stock use.

SPECIALIZING IN CORE, WATER, GAS AND CRUDE OIL ANALYSES

WESTERN LITHO-PRINT, INC., BILLINGS, MONT.

17

T. 11N R. 23E

County Musselshell

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

WATER WELL LOG

Owner: Pearless Oil & Gas Company, Bytana Ranch Division — Address: Pearless Incorporated, 1670 Denver Club Bldg., Denver 2, Colorado

Driller ..... Address .....

Date Started ..... Date Completed .....

Location: Sec. 17 T. 11N R. 23E ¼ sec. NW¼ SW¼ SW¼

Type of well: Drilled (Dug, driven, bored, or drilled) — Equipment used: Churn Drill (Churn drill, rotary, other)

Water use: Domestic [ ] Municipal [ ] Stock [XX] Irrigation [XX]

Industrial [ ] Drainage [ ] Other: .....

Casing: ..... ft. to ..... ft. Type ..... Size .....

Casing: ..... ft. to ..... ft. Type ..... Size .....

Casing: ..... ft. to ..... ft. Type ..... Size .....

Perforated or Screened: Ft. ..... to ft. ..... Ft. ..... to ft. .....

Type of screen or perforations .....

Static Water level, for non-flowing well: ..... feet.

Shut-in pressure, for flowing well: ..... lb./sq. in. on: ..... (date)

Pumping water level ..... feet at ..... gal. per min. .....

How tested: .....

Length of test .....

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

Cemented

(over)

[redacted]

[redacted]

[redacted]

Well #7

LITHOLOGIC LOG

All depths relative to rotary bushing which was five (5) feet above ground.

Colorado Shale

0 - 120 No samples taken, but drillers report dark grey shale.

120 - 215 Shale, dark grey to black, with silty zones.

First Cat Creek

215 - 310 Sandstone, fine grained, white to silty grey, quartzose, well sorted, sub-rounded, slightly micaceous and some carbonaceous, some zones of variable porosity, water bearing.

270-80 Patches of coaly carbonaceous material
280-90 Tight silty and carbonaceous
300-10 White matrix

Kootenai fm.

310 - 350 Siltstone, greenish-grey to grey, hard quartzose; with some zones of black claystone, some silty.

350 - 380 Sandstone, soft, medium to coarse grained, soft green and black mineral grains, sub-angular to rounded, and poorly sorted with white clayey matrix, <u>not porous</u>.

380 - 520 Siltstone and claystone, iron red, grey, brownish to greenish-grey, to white and quartzose, often mottled, biotitic, glauconitic, and carbonaceous, also pyritic.

420-30 Sandy zone, poorly sorted, reddish grey with green glauconite grains, biotitic, and tight.
500-10 Siltstone, white, with greenish-black pyrite specks and also large pyrite inclusions.
510-20 Same becoming quartitic with coarse angular, clear, quartz grains scattered and in zones, tight.

Second Cat Creek Sand

520 - 570 Sandstone, fine to coarse grained, quartzose, cherty, pyritic, friable to tight, sub-rounded to euhedral, grey and grey-white, water bearing.

570 - 582 Claystone, greenish-grey, with scattered quartz grains and zones of quartz sandstone, pyritic.

Third Cat Creek Sand

582 - 640 Sandstone, very fine to medium grained, irregularly to well sorted, rounded to sub-angular, clean, white, quartz, with slight reddish stain at top and grey-brown, soft, silty at bottom. Tight from 580 to 600 ft. Primarily porous and coarse grained from 600 to 730 feet and water bearing.

HERBERT D. HADLEY
CONSULTING GEOLOGIST
BILLINGS MONTANA

640 - 730 Sandstone, medium to coarse grained, quartzose, sub-rounded to angular, much black chert, fairly well sorted, pyritic, some quartz grains euhedral, dirty "salt and pepper" color, and carbonaceous flakes at 720-30. Water bearing.

<u>Morrison fm.</u>

730 - 750 Shale, black, pyritic with fine quartz sandy zones and grading into claystone, grey, pyritic with silty zones.

750 - 765 Sandstone, medium to coarse grained, white to grey, quartz with black and brown accessory mineral in varying amounts, carbonaceous streaks and patches, maybe some coal fragments included; where matrix shows it is white; also pyritic zones, porous to tight, some quartz grains euhedral, others sub-angular to rounded, poor to fiarly well sorted.

765 - 780 Siltstone and claystone, grey and brownish-grey, micaceous, limy.

770-75 Also dark brownish-grey quartzitic, coarse, poorly sorted and quartzitic siltstone.

780 - Total Depth

CL1-12
PRAIRIE PUBLISHING CO.—30293

CHEMICAL & GEOLOGICAL LABORATORIES

521 South Center St. P. O. Box 279
Casper, Wyoming

WATER ANALYSIS REPORT

Field Pronghorn Ranch, Montana Well No. 2

Operator H. Hadley Location Section 17, T11N, R23E.

Sampled by Date

Formation Second Cat Creek Depths 580 How sampled Free flow

Other pertinent data Between hard and soft and only very slightly alkaline -- good for stock or irrigation -- probably somewhat contaminated by 1st Cat Creek water. Test indicated would flow 3000 bbls/day. G.D.N.

Analyzed by KA Date 10-28-49 Lab. No. 3485

PARTS PER MILLION

Na & K	Ca	Mg	Fe	SO_4	Cl	CO_3	HCO_3	OH	H_2S
357	36	46		689	36	59	230		

MILLIGRAM EQUIVALENTS

15.52	1.80	3.78		14.34	1.02	1.97	3.77		

MILLIGRAM EQUIVALENTS IN PERCENT

36.78	4.26	8.96		33.98	2.42	4.67	8.93		

Total Solids in Parts per Million

By evaporation 1366

After ignition 1314

Calculated 1336

Observed pH 7.8

Properties of Reaction in Percent

Primary salinity 72.80

Secondary salinity 0.00

Primary alkalinity 0.76

Secondary alkalinity 26.44

Chloride salinity 6.65

Sulfate salinity 93.35

Remarks and conclusions Satisfactory for stock and irrigation.

CL: 12

CHEMICAL & GEOLOGICAL LABORATORIES

521 South Center St. P. O. Box 279
Casper, Wyoming

WATER ANALYSIS REPORT

Field Pronghorn Ranch, Montana Well No. 2

Operator H. Hadley Location Section 17, T11N, R23E.

Sampled by Date

Formation First Cat Creek Depths 370 feet How sampled Open flow test

Other pertinent data Soft water - could be used for stock but not too good for prolonged irrigation as water is fairly alkaline. Test indicated flow of 750 bbls/day. N.A.

Analyzed by CED Date 10-15-49 Lab. No. 3437

PARTS PER MILLION

Na & K	Ca	Mg	Fe	SO_4	Cl	CO_3	HCO_3	OH	H_2S
391				384	34	96	295		

MILLIGRAM EQUIVALENTS

16.99				7.99	0.96	3.20	4.84		

MILLIGRAM EQUIVALENTS IN PERCENT

50.00				23.51	2.83	9.42	14.24		

Total Solids in Parts per Million

By evaporation 1238
After ignition 1052
Calculated 1050

Observed pH 8.2

Properties of Reaction in Percent

Primary salinity 72.68
Secondary salinity 0.00
Primary alkalinity 27.32
Secondary alkalinity 0.00
Chloride salinity 35.31
Sulfate salinity 64.69

Remarks and conclusions Okay for stock and irrigation.

Chemical Laboratories, Inc.
921 SO. CENTER ST.
CASPER, WYOMING

WATER ANALYSIS REPORT

Field Pronghorn Ranch, Montana Well No. 2
Operator H. Hadley Location Section 17, T11N, R23E.
Sampled by Date
Sand Third Cat Creek Depths 720 TD How sampled Open flow test
Other pertinent data Fairly hard but can be made soft by pre-heating
Good water for stock or irrigation.

Analyzed by KA Date 10-13-49 Lab. No. 3438

PARTS PER MILLION

Na & K	Ca	Mg	Fe	SO_4	Cl	CO_3	HCO_3	OH	H_2S
175	57	29		274	18	49	305		

MILLIGRAM EQUIVALENTS

7.61	2.85	2.38		5.70	0.51	1.63	5.00		

MILLIGRAM EQUIVALENTS IN PERCENT

29.63	11.10	9.27		22.20	1.98	6.35	19.47		

Total Solids in Parts per Million

By evaporation 779
After ignition 680
Calculated 752

Observed pH 7.5

Properties of Reaction in Percent

Primary salinity 43.36
Secondary salinity 0.00
Primary alkalinity 10.90
Secondary alkalinity 40.74
Chloride salinity 8.19
Sulfate salinity 91.81

Remarks and conclusions Okay for domestic use, irrigation, and stock; different water than 3437, and better.

CLI-12

CHEMICAL & GEOLOGICAL LABORATORIES

521 South Center St. P. O. Box 279
Casper, Wyoming

WATER ANALYSIS REPORT

Field: Pronghorn Ranch, Montana Well No. #2

Operator: H. Hadley Location: Section 17, T11N, R23E

Sampled by: Date:

Formation: Third Cat Creek Depths: 780 TD How sampled: Open flow test

Other pertinent data: Sample somewhat contaminated with drilling mud and water from 1st and 2nd Cat Creek sands.

Analyzed by: KA Date: 10-13-49 Lab. No. 3439

PARTS PER MILLION

Na & K	Ca	Mg	Fe	SO_4	Cl	CO_3	HCO_3	OH	H_2S
158	59	31		259	21	24	340		

MILLIGRAM EQUIVALENTS

6.85	2.95	2.55		5.39	0.59	0.80	5.57

MILLIGRAM EQUIVALENTS IN PERCENT

27.73	11.94	10.33	21.82	2.39	3.24	22.55

Total Solids in Parts per Million

By evaporation: 870
After ignition: 783
Calculated: 719

Observed pH: 7.2

Properties of Reaction in Percent

Primary salinity: 48.42
Secondary salinity: 0.00
Primary alkalinity: 7.04
Secondary alkalinity: 44.54
Chloride salinity: 9.87
Sulfate salinity: 90.13

Remarks and conclusions: Same water as # 3438; okay for stock, irrigation, and domestic use.

CHEMICAL & GEOLOGICAL LABORATORIES

521 South Center St. P. O. Box 279
Casper, Wyoming

WATER ANALYSIS REPORT

Field: Pronghorn Ranch, Montana Well No. 2
Operator: H. Hadley Location: Section 17, T11N, R23E.
Sampled by: Date:
Formation: Third Cat Creek Depths: 595-780 TD How sampled: Flowing
Other pertinent data: Clean sample after well cased and cleaned. Good water for stock or irrigation.

H.H.

Analyzed by: KA Date: 10-18-49 Lab. No. 3461

PARTS PER MILLION

Na & K	Ca	Mg	Fe	SO_4	Cl	CO_3	HCO_3	OH	H_2S
217	44			192	19	50	330		

MILLIGRAM EQUIVALENTS

9.42	2.20		4.00	0.54	1.67	5.41

MILLIGRAM EQUIVALENTS IN PERCENT

40.53	9.47		17.21	2.32	7.19	23.28

Total Solids in Parts per Million

By evaporation: 677
After ignition: 641
Calculated: 684

Observed pH: 7.8

Properties of Reaction in Percent

Primary salinity: 39.06
Secondary salinity: 0.00
Primary alkalinity: 42.00
Secondary alkalinity: 18.94
Chloride salinity: 11.88
Sulfate salinity: 88.12

Remarks and conclusions: Minerally suitable for all purposes including human consumption.

20

T. 11 R. 23

County

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

WATER WELL LOG

Owner: Fearless Oil & Gas Company, Wytana Ranch Division — Address: Fearless Incorporated, 1670 Denver Club Bldg., Denver 2, Colorado

Driller: W. L. Livingston — Address: Winnett, Montana

Date Started — Date Completed

Location: Sec. 20 T. 11 R. 23 ¼ sec. NE¼ NE¼

Type of well: Drilled (Dug, driven, bored, or drilled) — Equipment used: Churn Drill (Churn drill, rotary, other)

Water use: Domestic [ ] Municipal [ ] Stock [XX] Irrigation [X]

Industrial [ ] Drainage [ ] Other:

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Perforated or Screened: Ft. to ft. Ft. to ft.

Type of screen or perforations

Static Water level, for non-flowing well: feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level feet at gal. per min.

How tested:

Length of test

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

(over)

W. L. LIVINGSTON

Drilling Contractor
Winnett, Montana

Log of Pronghorn Water Well No. 12 NE¼ NE¼ Sec 20 T11R23

0- 10 Gravel
10- 97 Shale (set 80' of 8" surface pipe and Halliburton cemented with 32 sacks of cement)
97-160 Colorado shale and some bentonite
160-170 Shale with hard streaks of sand
170-190 hard sand and grey shale
190-200 Medium hard sand and bentonite
200-210 shale, bentonite, and hard sand streaks
210-235 Black shale with sand streaks
235-340 dark hard sand with shale
340-370 shale with hard sand streaks
370-380 hard white sand with some shale
380-410 med. to hard sand with streaks of shale
410-470 grey sand
470-480 grey sand and various colored shale
480-500 red shale
500-510 grey sand and var. shale
510-580 var. shale
580-590 hard sand with shale
590-600 sand with grey clay
600-618 var. shale and grey clay
618-622 hard grey sand
622-643 sand and shale
643-646 Hard lime sand (Run 634 feet 6" O.D. galv. pipe, Halliburton cemented with 38 sacks)
646-647 hard lime sand
647-650 grey salt & pepper sand
650-660 grey clay and soft sand
660-715 soft sand
715-738 reddish sand (Hole bottomed at 738') Well flowing, measures 5,860 bbls. per day.)

RECEIVED
OCT 5 1960
STATE ENGINEER

T. 8 R. 26
County Musselshell

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

WATER WELL LOG

Owner Bill Pensonman Address Roundup, Mont.
Driller P L Ferguson Address Roundup, Mont.
Date Started May 2, 1958 Date Completed May 9, 1958
Location: Sec. 31 T. 8 R. 26 ¼ sec. Center

Type of well: drilled (Dug, driven, bored, or drilled) Equipment used Churn drill (Churn drill, rotary, other)

Water use: Domestic ☐ Municipal ☐ Stock ☒ Irrigation ☐
Industrial ☐ Drainage ☐ Other:

Casing: 1 ft. to 195 ft. Type galvanized Size 6"
Casing: ft. to ft. Type Size
Casing: ft. to ft. Type Size

Perforated or Screened: Ft. 165 to ft. 175 Ft. 180 to ft. 190

Type of screen or perforations slot

Static Water level, for non-flowing well: feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level 55 feet at 5 gal. per min.

How tested: bailing

Length of test 1 hr.

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

(over)

Log of Well

Depth, feet From	Depth, feet To	Description of Material Drilled
0	3	surface soil.
3	35	Hard Sandstone
35	53	Light blue shale
53	85	Sandstone layers of shale
85	86	Coal
86	120	Sandy shale little H_2O
120	175	Porous sand. H_2O approx 1 gal. per. min
175	180	Sand & shale
180	190	Porous sand H_2O - 4 gal per. min
190	195	Shale

20

T. 11N R. 23E

County

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

WATER WELL LOG

Owner: Peerless Oil & Gas Company, Wytana Ranch Division — Address: Peerless Incorporated, 1670 Denver Club Bldg., Denver 2, Colorado

Driller: R. C. Miller — Address:

Date Started — Date Completed

Location: Sec. 20 T. 11N R. 23E ¼ sec. SW NW

Type of well: Drilled (Dug, driven, bored, or drilled) — Equipment used: Churn Drill (Churn drill, rotary, other)

Water use: Domestic [ ] Municipal [ ] Stock [X] Irrigation [X]

Industrial [ ] Drainage [ ] Other:

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Perforated or Screened: Ft. to ft. Ft. to ft.

Type of screen or perforations

Static Water level, for non-flowing well: feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level feet at gal. per min.

How tested:

Length of test

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

(over)

July 10, 1951

Wytana Cattle Co.
% Robinson & Orleman
215 Bank Electric Bldg.
Lewistown, Mont.

#10

Dear Sir:

The drillers log of the S. C Miller et al # 1 Anderson Sec. 20, T. 11 N, R. 23 E. is enclosed herewith for your information. All data from that log has been plotted exactly as originally recorded.

Formation tops interpreted from this log are as follows:

Formation	Interval Top
Frontier	158'
First Cat Creek	350'
Kootenai	475'
Second Cat Creek	649'
Total Depth	738'

Water horizons encountered in the # 1 Anderson were as follows:

Aquifer	Interval	Water Performance
Frontier	158'-173'	Water rose 160' in hole
First Cat Creek (upper portion)	350'-470'	Water which flowed over top of casing
Second Cat Creek	649'-733'	Sulphur water which flowed 4" over top of 8" casing, estimated at 24,000 barrels per day

The formation tops and water zones noted above have good correlation with the other water wells on the Pronghorn Ranch. At total depth the #1 Anderson was very close to the top of the Third Cat Creek sand. If drilling had continued, the top of the Third Cat Creek sand should have been penetrated within another five feet. Conceivably, water from the Third Cat Creek sand could have broken through the shale overlying it and contributed to the strong artesian flow observed by the drillers. However, the log shows no actual penetration of Third Cat Creek sand.

GEORGE DARROW
CONSULTING GEOLOGIST
BILLINGS MONTANA

In view of the reported artesian flow of the #1 Anderson and the known artesian flow of the #10 Pronghorn, the area in the immediate vicinity of those well must be considered especially favorable for development of artesian flows from the Second Cat Creek sand.

Cable tools are recommended for any future wells drilled to the Second Cat Creek in the above area.

Sincerely,

George Darrow

George Darrow

GD/er

GEORGE DARROW
CONSULTING GEOLOGIST
BILLINGS MONTANA

23

RECEIVED
NOV 26 1958
STATE ENGINEER

T. 11 R. 23

County Musselshell

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

WATER WELL LOG

Owner Mary Kombol Address Roundup, Montana

Driller Kombol Bros. Address Roundup, Montana

Date Started October, 1954 Date Completed October, 1954

Location: Sec. 23 T. 11 R. 23 ¼ sec. SE¼ of SE¼

Type of well Drilled (Dug, driven, bored, or drilled) Equipment used Churn (Churn drill, rotary, other)

Water use: Domestic [ ] Municipal [ ] Stock [X] Irrigation [ ]

Industrial [ ] Drainage [ ] Other:

Casing: 0 ft. to 40 ft. Type Galvanized Size 6 inch

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Perforated or Screened: Ft. 20 to ft. 40 Ft. to ft.

Type of screen or perforations drilled ½ inch holes

Static Water level, for non-flowing well: 20 ft. of water feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level 6 ft. feet at 3 gal. per min.

How tested: baler

Length of test 2 hours

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

(over)

Log of Well

Depth, feet From	Depth, feet To	Description of Material Drilled
0	10	Shale (dark)
10	12	Gravel
13	40	Shale (dark)

23

T. 11 R. 23

County Musselshell

RECEIVED
NOV 26 1958
STATE ENGINEER

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

WATER WELL LOG

Owner Mary Kombol Address Roundup, Montana

Driller Kombol Bros. Address Roundup, Montana

Date Started October, 1954 Date Completed October, 1954

Location: Sec. 23 T. 11 R. 23 ¼ sec. N½ of NE

Type of well Drilled (Dug, driven, bored, or drilled) Equipment used Churn (Churn drill, rotary, other)

Water use: Domestic ☐ Municipal ☐ Stock ☒ Irrigation ☐

Industrial ☐ Drainage ☐ Other:

Casing: 0 ft. to 39 ft. Type Galvanized Size 6 inch

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Perforated or ~~Screened~~ Ft. 20 to ft. 39 Ft. to ft.

Type of screen or perforations drilled holes

Static Water level, for non-flowing well: 11 ft. from top 28 ft. of water feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level 28 ft. deep feet at 20 gal. gal. per min.

How tested: Baler

Length of test 1 hour

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

Sand rock

(over)

Log of Well

Depth, feet From	Depth, feet To	Description of Material Drilled
0	9	Sandy loam
9	38	Sandrock
38	39	Shale (dark)

G —Helena Independent Record

File No.....

DUPLICATE

T. 11 N R. 23 E

County MOSSELSHELL

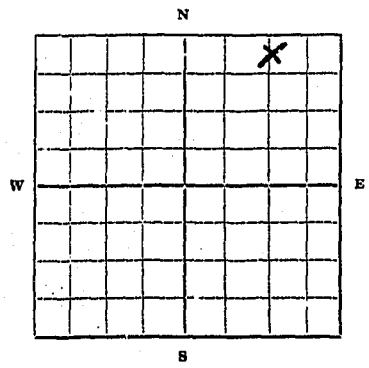
STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

RECEIVED
DEC 11 1963
STATE ENGINEER

Declaration of Vested Groundwater Rights

(Under Chapter 237, Montana Session Laws, 1961)

1. ~~Fred~~ Mary KOMBOL (Name of Appropriator), of BOX 898 (Address) ROUNDUP (Town)
County of MOSSESHELL State of MONTANA
have appropriated groundwater according to the Montana laws in effect prior to January 1, 1962, as follows:



NE¼ Sec. 33 T. 11 R. 23

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 7-- -52 Yearly

4. The amount of groundwater claimed (in miner's inches or gallons per minute) 25 Gals P. M.

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 by A. GARDEN Mary Kombol

6. The means of withdrawing such water from the ground and the location of each well or other means of withdrawal 3" Cylinder + GAS DRIVEN PUMP JACK

7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater JULY 1952 COMPLETED JULY 1952

8. The depth of water table 12' STATIC WATER LEVEL

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 7" HOLE 39' deep

10. The estimated amount of groundwater withdrawn each year 300,000 Gals

11. The log of formations encountered in the drilling of each well if available 0 to 39 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 Mary Kombol ~~Joe Kombol~~

Date 12-9-63

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 Montana Bureau of Mines and Geology and Quadruplicate for the Appropriator

8562

169102

STATE OF MONTANA,
MUSSELSHELL COUNTY. } ss.

FILED THIS 10 DAY OF
Dec A. D. 1963
AT 2:25 O'CLOCK P M.

B. H. MATZKE
COUNTY RECORDER.

Frances L Dawson
DEPUTY

2.00

G —Helena Independent Record

File No.....

T. 11 N R. 23 E

DUPLICATE

County MOSSELSHELL

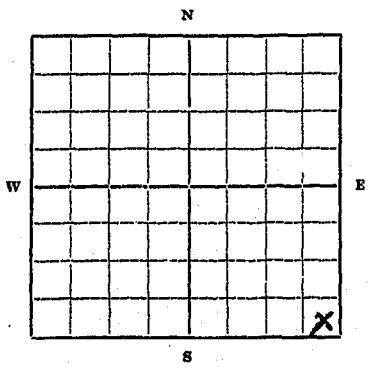
STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

RECEIVED
DEC 11 1963
STATE ENGINEER

Declaration of Vested Groundwater Rights

(Under Chapter 237, Montana Session Laws, 1961)

1. ~~Joe~~ Mary KOMBOL, of BOX 898 ROUNDUP
(Name of Appropriator) (Address) (Town)
County of MOSSELSHELL State of MONTANA
have appropriated groundwater according to the Montana laws in effect prior to January 1, 1962, as follows:



SE ¼ Sec. 23 T. 11 R. 23

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 July 1952
Year around

4. The amount of groundwater claimed (in miner's inches or gallons per minute) 25 Gals. P. M.

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~~ NONE

6. The means of withdrawing such water from the ground and the location of each well or other means of withdrawal 2" Cylinder, Electric pump jacked

7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater July 1952 Com. July 1952

8. The depth of water table 10' static water level

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 7" hole 39 ft Deep

10. The estimated amount of groundwater withdrawn each year 250,000 Gals

11. The log of formations encountered in the drilling of each well if available 0 to 10 sandy-loam 10-14 Gravel 14-39 shale

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 Mary Kombol

Date 12-9-63

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 Montana Bureau of Mines and Geology and Quadruplicate for the Appropriator.

8560

169100

STATE OF MONTANA,
MUSSELSHELL COUNTY. } ss.

FILED THIS 10 DAY OF
Dec A. D. 19 65
AT 2:21 O'CLOCK P M.

B. H. MATZKE
COUNTY RECORDER

Frances L. Dawson
DEPUTY

$2.5

GW 2

Approved Stock Form—State Publishing Co., Helena, Montana—42329

File No.....

STATE WATER CONSERVATION BOARD

T. 11 R. 23 26

DUPLICATE

NOV 7 1966

County MUSS

LOG

Billie McDermott
Bertsch
Cole
Dennison
Dickert
Morton
Sullivan

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)

52 SANDY SHALE
72 YELLOW CAP SAND
75 HARD ROCK
101 YELLOW SAND
102 BLUE CLAY
105 GREY SAND

WATER ~~[illegible]~~ 72 - 105

Owner Joe Kombol Address Roundup, Mont

Driller Joe Kombol Address Roundup Mont

Date of Notice of appropriation of groundwater None

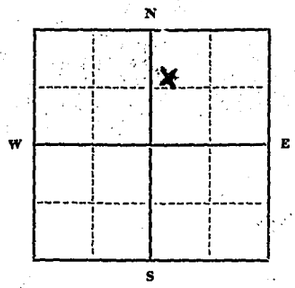
Date well started 8-18-66 Date completed 8-24-66

Type of well Drilled (Dug, Driven, bored or drilled) Equipment used chrum (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)
9" OTB 45	8" 22#	0	45	NONE		
7"	1/4 WALL					



NW 1/4 NE Sec. 26 T. 11 R. 23

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

Static Water Level for non-flowing well 41 ~~47~~ feet.

Shut-in Pressure for Flowing Well.....

Pumping Water Level 80 feet at 8 gal. per minute.

Discharge in gal. per min. of flowing well .....

How Tested BAILER

Length of Test 1HR

Remarks: (Gravel packing, cementing, packers, type of shutoff) Cemented AT 10 ft.

(Continue on reverse side)

USE—If used for irrigation, industrial, drainage or other. Explain, state number of acres and location or other data (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.

95
Driller's License Number

Joe Kombol
Driller's Signature

41,587

174679

STATE OF MONTANA,
MUSSELSHELL COUNTY. } ss.

FILED THIS 3rd DAY OF
November A. D. 1966
AT 10:30 O'CLOCK a M.

CLAUDE F. FLETCHER
COUNTY RECORDER

Elaine J. Bossman
DEPUTY

$ 2.00

GW

File No.....

DUPLICATE

T. 11 N R. 23 E 26

County MUSSELSHELL

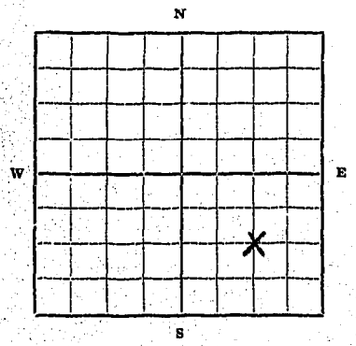
STATE OF MONTANA
ADMINISTRATOR OF GROUNDWATER CODE
OFFICE OF STATE ENGINEER

RECEIVED
DEC 11 1963
STATE ENGINEER

Declaration of Vested Groundwater Rights

(Under Chapter 237, Montana Session Laws, 1961)

1. ~~JOE~~ Mary KOMBOL RANCH (Name of Appropriator), of BOX 898 (Address) ROUNDUP (Town)
County of MUSSELSHELL State of MONTANA
have appropriated groundwater according to the Montana laws in effect prior to January 1, 1962, as follows:



SE¼ Sec. 26 T. 11 R. 23

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 11-24-60
6 months of year since then

4. The amount of groundwater claimed (in miner's inches or gallons per minute) 15 G.P.M.

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 3 in Cylinder Pump Jack with Electric Motor

7. The date of commencement and completion of the construction of the well, wells, or other works for withdrawal of groundwater Begun 11-18-60 — finished 11-24-60

8. The depth of water table 50' STATIC WATER LEVEL

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 7 IN HOLE 132 ft DEEP

10. The estimated amount of groundwater withdrawn each year 250,000 Gals

11. The log of formations encountered in the drilling of each well if available 0 to 70' sand 70-115 SHALE 115-120 COAL 120-132 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 the well is recorded.

Mary Kombol
~~Joe Kombol~~
Signature of Owner

Date 12-9-63

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.

8559

169099

STATE OF MONTANA, } ss.
MUSSELSHELL COUNTY.

FILED THIS 10 DAY OF,
Dec A.D. 1963
AT 2:20 O'CLOCK P M.

B. H. MATZKE,
COUNTY RECORDER

Elaine J. Goodman
DEPUTY

8-2:00

26

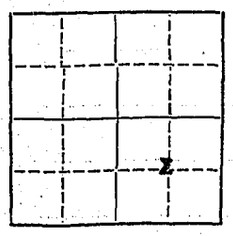
T. 11 R. 23

County Musselshell

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

RECEIVED
FEB 21 1961
STATE ENGINEER

WATER WELL LOG



Owner Kombol Bros. Address Roundup, Montana

Driller Joe Kombol Address Roundup, Montana

Date Started November 18, 1960 Date Completed 11-24-60

Location: Sec. 26 T. 11 R. 23 ¼ sec. Center of SE¼

Type of well Drilled (Dug, driven, bored, or drilled) Equipment used Churn (Churn drill, rotary, other)

Water use: Domestic [ ] Municipal [ ] Stock [X] Irrigation [ ]

Industrial [ ] Drainage [ ] Other:

Casing: 0 ft. to 132 ft. Type Galvanized Size 6"

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Perforated or Screened: Ft. 55 to ft. 70 Ft. 105 to ft. 130

Type of screen or perforations ½ inch holes - 6 holes per foot.

Static Water level, for non-flowing well: feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level 35 feet at 15 gal. per min.

How tested: Bailer

Length of test 1 hour

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

None

(over)

Log of Well

Depth, feet From	Depth, feet To	Description of Material Drilled
0	70	Sandstone
70	111	Light Shale
111	115	Coal
115	132	Sandrock - Water

29

T. 11N R. 23E

County Musselshell

MONTANA BUREAU OF MINES AND GEOLOGY
Butte, Montana

WATER WELL LOG

Owner: Peerless Oil & Gas Company, Wytana Ranch Division — Address: Peerless Incorporated, 1670 Denver Club Bldg., Denver 2, Colorado

Driller: Montana Pioneer Oil Company — Address:

Date Started: Dec. 26, 1922 — Date Completed: Dec. 1924

Location: Sec. 29 T. 11N R. 23E ¼ sec. NE NE

Type of well: Drilled (Dug, driven, bored, or drilled) — Equipment used: Churn Drill (Churn drill, rotary, other)

Water use: Domestic [ ] Municipal [ ] Stock [XX] Irrigation [XX]
Industrial [ ] Drainage [ ] Other:

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Casing: ft. to ft. Type Size

Perforated or Screened: Ft. to ft. Ft. to ft.

Type of screen or perforations

Static Water level, for non-flowing well: feet.

Shut-in pressure, for flowing well: lb./sq. in. on: (date)

Pumping water level feet at gal. per min.

How tested:

Length of test

Remarks: (Gravel packing, cementing, packers, type of shut-off, depth of shut-off)

(over)

South Willow Creek

Montana Pioneer Oil Company #1 Miller Ranch
NE NE Sec. 29 T. 11 N, R. 25 E
150' S & 250' W of the NE cor. of Sec. 29
Musselshell Company, Montana

Commenced: Dec. 26, 1922
Completed: Dec. 1924
Total Depth: 2210

Drillers Log

From	To		Description
0	50		Terrace gravel
	945		Shale, black
	960		Sand - water
	1150		Shale, black
		First Cat Creek	
	1227		Sand - water - oil showing in part
	1240		Shale. black
		Kootenai	
	1390		Shale, red
	1485		Sand with occasional lime shells, good oil showing about 1410', water above and below
	1510		Sand
	1515		Shale, black
	1525		Shale - caving
	1615		Sand - water, heavy artesian flow 1530' to 1540'
	1620		Shale, black
1620	1629		Sand
	1635		Shale, dark
	1653		Shale, gray
	1655		Shale, brown
	1855		Shale, gray
		Ellis	
	1948		Sand, shale with water