

Considered: . . .

WATER PERMIT NO. 2108-2

HAP No. same 343-6904

Name of Applicant Richard and Morry Clarkson

Post Office Address 8315 West 55th Ave., S, Rapid City SD 57702

Amount of Water Claimed 0.09 cfs Total Acres NA

Source of Water Supply ground water - 1 well

Water to be used for RWS County Pennington

About 3 miles S of Rapid City.

PROOF OF PUBLICATION: Received _____ Not Received _____

APPLICATION: Approved _____ Subject to _____

F.F. & C.L. Adopted _____ Not Approved _____ Deferred _____

PRIORITY Date Received Oct 2, 1989 Fee \$50⁰⁰ Remarks _____

Corrected Application Received Nov 1, 1989 Period of Annual Use Jan 1 - Dec 31

WATER QUALITY APPROVAL RECEIVED NA APPROVED/CONDITIONAL (Circle one)

WI-1 Description same as Application YES _____ NO _____ REMARKS _____

Diversion Point well: NE 1/4 NW 1/4 section 32-

T1N-R7E

Land to be Irrigated NA

	well ⊗				
		32			

Well Log: Driller Hamm Drilling Licensed YES ? NO _____

Depth of Well ~700 feet REMARKS no well log available from applicant

Type of Map plat PREPARED BY Curtis J. Betcher Reviewed and the Number

assigned on December 13, 1989 By Don Durrell

Mail to: Water Rights Div.

523 E. Capitol
Pierre, SD 57501
(605) 773-3352

No. 2108-2 Hydrologic Unit 10120110
 Map No. same Basin Upper Cheyenne
 Newspaper Rapid City Journal, PO Box 450
57709

Application For Permit To Appropriate Water Within The State Of South Dakota

Check use of water: Industrial ☐ Commercial ☐ Municipal ☐ Other Common Distribution System ☐
 Rural Water System ☒ Suburban Housing ☐ Geothermal Heat ☐ Institutional ☐ Recreational ☐
 Domestic ☐ (above 18gpm) Other ☐

Type of Application: Check one or more of the following

New ☒ Vested Right ☐ Future Use ☐ Change Use ☐☐ Amend Permit No. _____ with old priority date retainedChange diversion point(s) ☐ Add diversion point(s) ☐ Other ☐☐ Application to: Change diversion point(s) ☐ Add diversion point(s) ☐ on Permit No. _____☐ Construction to use water reserved by Future Use Permit No. _____1. Name of Applicant Richard and Morry Clarkson Phone No. (605) 343-6904Post Office Address 8315 West 55th Ave. S. Rapid City State SD Zip Code 57702
(Street, RR or Box) (City)2. Amount of water claimed (c.f.s.) 40 gpm 0.09 cfs3. Source of water supply Deadwood Formation Well4. Location of point of diversion 19056' ± S 72°44'59" E of the NW corner of Section 32, T1N.R7E, RHM NE 1/4 NW 1/4County Pennington5. Counties where water will be used Pennington6. Annual period during which water is to be used yearlong. Jan 1 - Dec 31

7. Give a brief description of proposed project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

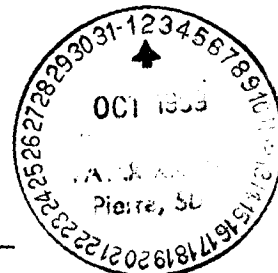
The well presently serves lots in the Clarkson Subdivision.

Attachments: Attach Form 2A if diversion from a well or dugout, or if storage of water, is proposed. Attach map (see instruction)

STATE OF SOUTH DAKOTA)
County of Pennington ssI, M. W. CLARKSON the applicant, certify that I have read this application, have examined the attached map and that the matters stated are true and that I intend, and am able to complete the necessary construction.Signed M. W. ClarksonSubscribed and sworn to before me this 29th day of September 1989Louise Schaefer
Notary Public

Supplemental Information

(type or print in ink)



1. Well Information - Proposed construction

- a) Drill Hole Diameter 5" Depth 700' approx.
- b) Casing Type steel Diameter approx. 4" Thickness N/A
- c) Screen Type unknown Diameter Thickness
- d) Gravel Pack Thickness unknown Length of Gravel Pack unknown
- e) Depth to Top of Water Bearing Material unknown
- f) Depth to Water (ground surface to water level) 540'
- g) Distance to nearest existing domestic well:
- On applicants property None On property owned by others 1000' approx.

2. Dugout Information Estimates

- a) Surface Dimensions Depth
- b) Depth to water (ground surface to water level)

3. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below. The locations of each dam should be shown on the map submitted with the application.

- a) If a private engineering firm or government agency was involved in the design of this dam please give their name and address

b) Freeboard

c) Crest Width

Crest Length

d) Height

e) Primary Outlet Capacity
If Pipe, diameter

f) Secondary Spillway Capacity
Spillway width

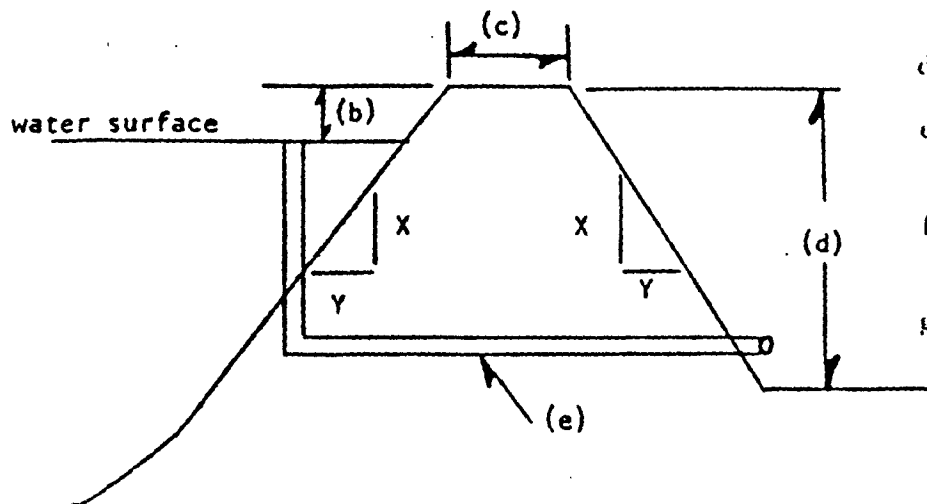
g) X & Y Slope
Upstream

Downstream

Surface Area of Impoundment

Storage acre feet

Drainage area above dam



Signature of Applicant

SOUTH DAKOTA
WATER PERMIT No. 2108-2

Date of first receipt of application October 2, 1989.

Date of return to applicant for corrections, amendments or changes October 5, 1989.

Date of receipt of corrected application November 1, 1989.

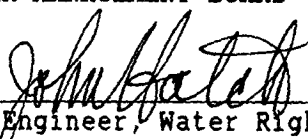
The Water Management Board approved Water Permit Application No. 2108-2 on March 7, 1990 for Richard and Morry Clarkson, 8315 West 55th Avenue S, Rapid City SD 57702 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 2108-2 appropriates 0.09 cubic feet of water per second from one existing well (Madison Formation) approximately 700 feet deep located in the NE1/4 NW1/4 section 32-T1N-R7E.
2. The water appropriated shall be used for the purpose of supplying the Clarkson Subdivision and may not exceed the amount of water needed for beneficial use for rural water system purposes.
3. The water is to be used during the following described annual period: January 1 - December 31.
4. The date from which applicant may claim right is October 2, 1989.
5. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.

WATER MANAGEMENT BOARD

By: 
Chief Engineer, Water Rights Division
Department of Water and Natural Resources

APR 25 1990
(date)



Davis-Atkins and Associates, Inc.

1141 A RAND ROAD, RAPID CITY, SOUTH DAKOTA 57702 PHONE (605) 341-3095

September 28, 1989

State of South Dakota
Water Rights Division
523 E. Capital
Pierre, SD 57501



RE: Well Permit Application for
Clarkson Subdivision

Dear Sirs:

Enclosed is a completed Well Permit application for an existing well in the Clarkson Subdivision located in the NW 1/4 of Section 32, T1N, R7E, BHM, Pennington County. This is an existing well drilled fifteen to twenty years ago but no permit can be found on file. I am enclosing all the information I have been able to obtain on this well and include data obtained from USGS Water Resources Department also.

If you have any questions, contact me.

Cordially yours,

Curtis J. Betcher
Davis-Atkins and Associates, Inc.

Enclosure

cc: File #89.059

CJB/ds

DATE: 09/20/89



C001 Site ID (station number)
C002 Type of site
C003 Record classification
C004 Source agency code
C006 District code
C007 State code
C008 County code
C009 Latitude
C010 Longitude
C011 Lat-long accuracy code
C012 Local well number
C013 Land-net location
C014 Name of location map
C015 Scale of location map
C016 Altitude of land surface
C017 Method altitude determined
C018 Altitude accuracy
C019 Topographic setting
C020 Hydrologic unit code
C023 Primary use of site
C024 Primary use of water
C027 Hole depth
C028 Depth of well
C030 Water level
C031 Date water level measured
C033 Source of water-level data
C034 Method water level measured
C040 Date site record last updated
C303 Date site record created
C712 Data availability in other Ground Water files
C714 Aquifer code
C802 Station-type codes
C815 Locator sequence number
C900 Station name
C063 Name of contractor
C723 Record number for construction subrecord
C754 Record type for CONS subrecord of CONS file
C755 Last update for CONS subrecord of CONS file
C161 Owner
C718 Sequence number for OWNR subrecord of MISC file
C768 Record type for OWNR subrecord of MISC file
C769 Last update for OWNR subrecord of MISC file
C187 Date of visit
C188 Person who made visit
C737 Sequence number for VIST subrecord of MISC file
C774 Record type for VIST subrecord of MISC file
C775 Last update for VIST subrecord of MISC file
C093 Aquifer code
C304 Contributing unit
C721 Sequence number for GEOH subrecord of GEOH file
C748 Record type for GEOH subrecord of GEOH file
C749 Last update for GEOH subrecord of GEOH file
C095 Aquifer date -geo
C126 Aquifer-static-level
C132 Aquifer contribution
C256 Parent sequence number for AQFR subrecord
C742 Sequence number for AQFR subrecord of GEOH file
C750 Record type for AQFR subrecord of GEOH file

440019103181
W
C
USGS
46
46
103
440019
1031818
F
1N 7E32BDBB
NWSNWS32T1NR7E
RAPID CITY WEST
24000
3990
M
10
S
10120110
W
P
700
700
540 ←
19830804
D
S
19890828
19830819
Y
371DDWD
Y
01
1N 7E32BDBB
HAMM DRLG
1
CONS
19860224
CLARKSON RICHARD
1
OWNR
19860225
19830804
HERN D
1
VIST
19860225
371DDWD - Deadwood
P
1
GEOH
19860225
19830804
540
100
1
1
AQFR

Depth of well
Depth to water

1DATE: 09/20/89

C751 Last update for AQFR subrecord of GEOH file

19860225

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
MULTIPLE STATION ANALYSES

PROCESS DATE 10 1989

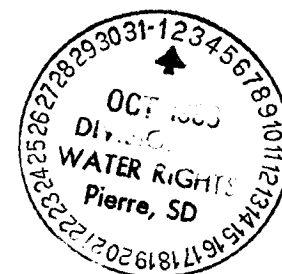
DATE	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	DEPTH OF WELL, TOTAL (FEET) (72008)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	RADIUM 228 DIS- SOLVED (PCI/L AS RA-228) (81366)	RADON 222 TOTAL (PC/L) (82303)	SPE- CIFIC CON- DUCT- ANCE LAB (US/CM) (90095)	ALKA- LITY LAB (MG/L AS CA003) (90410)
12-01-88	1.8000	192.00	3990.	700.	1.6000	2.5000	<1.0000	220.00	372.00	109.00



UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
MULTIPLE STATION ANALYSES

PROCESS DATE 9-20-89

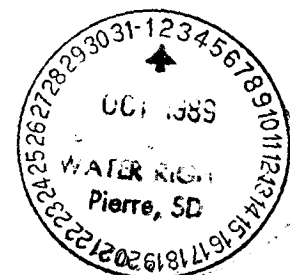
	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM -238 WATER DISSOLV (PCI/L) (22603)	URANIUM -234 WATER DISSOLV (PCI/L) (22610)
01-88	9.2000	0.300	11.000	100.00	9.0000	<1.0000	3.4000	0.150	0.600	0.900



UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
MULTIPLE STATION ANALYSES

PROCESS DATE 9-20-89

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	PH LAR (STAND- ARD UNITS) (00403)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
12-01-88	1030	80020.	7.8000	0.400	40.000	22.000	3.8000	2.5000	1.6000





Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

October 5, 1989

Curtis J. Betcher
Davis-Atkins and Associates, Inc.
1141 A Rand Road
Rapid City SD 57702

RE: Water Permit Application for Clarkson Subdivision

Dear Mr. Betcher:

This letter is in response to the water permit application for the Clarkson subdivision received on October 2, 1989. The following information and fee is needed before the permit application can be processed.

1. The map must be signed by a registered land surveyor, registered professional engineer or by a government employee who normally prepared maps. I am returning the map for this signature.
2. A well log of the well and the name of the well driller. If a well log is not available please state so when returning the information.
3. An application fee of \$50.00.

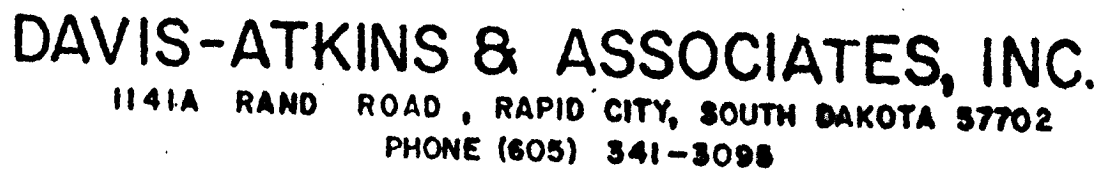
Please contact me if you have any questions.

Sincerely,

DELVIN D. BROSZ, P.E.
Natural Resources Engineer
605 773-3352

enclosure





SIGNED

Cust Batchy dr



Davis-Atkins and Associates, Inc.

1141 A RAND ROAD, RAPID CITY, SOUTH DAKOTA 57702 PHONE (605) 341-3095

October 18, 1989

South Dakota Department of
Water & Natural Resources
Joe Foss Building
523 E. Capital
Pierre, SD 57501



ATTN: Delvin D. Brosz

RE: Water Permit for Clarkson Subdivision

Dear Delvin;

I am enclosing the \$50.00 check and the drawing with my seal on it as you requested. The well was drilled by Hamm Drilling in the early 1970's but no log has been uncovered in our research.

If you have any questions contact me.

Cordially yours,

Curtis J. Betcher
Davis-Atkins and Associates, Inc.

cc: File #89.059

CJB/ds

RECEIPT

Division of Water Rights

South Dakota Department of Water and Natural Resources

411948

Pierre, October 27, 19 89

RECEIVED OF M. W. Clarkson, P.O. Box 308, Spearfish, SD 57783-0308

the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>2108-2</u> to Appropriate Water, to construct works and to put water to beneficial use _____	50	00
Fee for Application for Permit No. _____ to Appropriate Water for Future Use _____		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. _____		
Fee for Filing Transfer Form _____		
Fee for Filing Extension Request _____		
Fee for Certified Copy of _____		
Fee for Print Copy of Map _____		
Fee for Certifying _____		
Fee for _____		
(Any Other Work Provided by Law)	Total	50 00

By John Hatch (Mra)
Chief Engineer John Hatch (Mra)

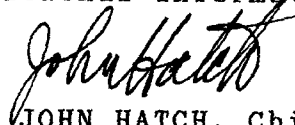
RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 2108-2, Richard and Mary Clarkson

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Division, Department of Water and Natural Resources concerning Water Permit Application No. 2108-2, Richard and Mary Clarkson, 8315 West 55th Avenue South, Rapid City SD.

The Chief Engineer is recommending APPROVAL of Application No. 2108-2 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) in the public interest with the following qualification:

The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.

See the attached report for additional information.



JOHN HATCH, Chief Engineer
December 26, 1989

REPORT ON APPLICATION NO. 2108-2 FOR
RICHARD and MARRY CLARKSON
December 21, 1989

This application proposes to appropriate 0.09 cfs from an existing well, approximately 700 feet deep located in the NE 1/4 NW 1/4 of section 32, T1N R7E, BHM in Pennington County. The water is used by the Clarkson Subdivision for water supply purposes (suburban housing).

AQUIFER - MADISON FORMATION (MDSN)

The Madison Formation (locally called Pahasapa Limestone) is a Mississippian Age limestone typically cavernous in the upper part and is approximately 400 feet thick in this area. The aquifer is well known both as an excellent source of good quality and quantity of ground water especially near the outcrop (recharge) area surrounding the Black Hills (Rahn, 1979). The SDGS has estimated the amount of recoverable water from the Madison to be 29.8 million acre-feet in Pennington County (Allen, 1984). The aquifer is under artesian conditions in the immediate area; however, the data submitted with the application would indicate the aquifer is water table at this site. The application also indicates the aquifer is the Deadwood Formation however stratigraphically the Madison is a better call (Water Rights, 1990).

The Division of Water Rights does monitor two observation wells (PE-86A and PE-84A) in this area. PE-86A is a Madison well and is located about 2 miles southeast of this application. PE-84A is a Deadwood well and is located about 1/2 mile north of this application. Water levels for these wells do not indicate pumping is adversely affecting area water levels. Also there is insufficient data to determine if the Deadwood and the Madison formations are hydraulically connected. For this report the aquifers are considered separate units.

REVIEW OF EXISTING WATER PERMITS/RIGHTS

There are two existing permit Nos. 1726-2 for Colonial Village Water Co. and 1965-2 for Highland Hills Water Association which obtain water from the Madison Formation in this immediate area. Colonial Village is permitted for two Madison wells one of which is approximately 1/2 mile to the northeast and the other about 3/4 mile to the southeast of this diversion point. The Highland Hills well is also a Madison well and is located about 3/4 mile southeast of this permit application. Interference is likely; however, these wells have been in existence for many years with no apparent problems. Data is not available to determine potential effects of drawdown.

In general the pumping rates are relatively small and the distance between diversion points is adequate to prevent adverse interference.

CONCLUSIONS

1. Water is available from the Madison Formation.
2. Interference is likely; however, data is not available to make predictions. These are existing wells and have been in use for many years without any apparent problems.
3. Permits 1726-2 and 1965-2 should be licensed to reflect what has actually been constructed.
4. Well construction data is not available to determine if this existing well complies with SD well construction standards.



James A Goodman
Natural Resources Engineer IV

BIBLIOGRAPHY

- Allen, J.C., D.L. Iles, A.K. Petres, 1984, Analysis of Groundwater and Streamflow Data Western Dakotas Region of South Dakota, for US Army Corps of Engineers, SD DWNR, SDGS, Vermillion, SD, 57069.
- Rahn, P.H., 1979, Groundwater Resources of Western SD, for US Army Corps of Engineers, SDSM&T Project No. 2533, Rapid City, SD, 57701.
- Water Rights, 1990, Records for Permit Nos. 1965-2 and 1726-2, SD DWNR, Division of Water Rights, Joe Foss Bldg., Pierre, SD, 57501.

SOUTH Dakota Department of
Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

January 29, 1990

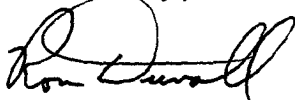
Mary K Garness
Rapid City Journal
PO Box 450
Rapid City SD 57709

Dear Ms. Garness:

This letter is in response to receipt of the enclosed Proof of Publication on January 26, 1990. I am returning the Proof of Publication because your signature was omitted. Please sign the Proof of Publication where indicated and return to the Division of Water Rights. The petition can not be considered by the Water Management Board until a signed Proof of Publication is received.

Thank you for your time and consideration.

Sincerely,



Ron Duvall
Natural Resources Engineer
605 773-3352

enc.



United States Department of the Interior

TAKE
PRIDE IN
AMERICA

GEOLOGICAL SURVEY

Rm. 237-515 9th Street
Rapid City, South Dakota 57701
January 10, 1990



James A. Goodman, Hydrologist
S. D. Department of Water & Natural
Resources, Water Rights Division
Joe Foss Building
Pierre, South Dakota 57701

Dear Jim:

The information on well 1N 7E 32BDBB you requested is enclosed. Our data shows the well to be in the Deadwood. After looking at drillers logs from nearby wells, I agree with you. I also think this well is in the Madison. We will make the appropriate change in our data base. Thank you for bringing this to our attention.

On the other matter of the bond log for RC-1 well, I will forward a copy of the log as soon as I receive it from Randy Taylor.

For the Subdistrict Chief:

Sincerely,

Earl A. Greene
Hydrologist

Enclosures

DATE: 01/09/90

WELL INFO FOR 1N 7E 32BDBB

C001	Site ID (station number)	440019103181801
C002	Type of site	W
C003	Record classification	C
C004	Source agency code	USGS
C006	District code	46
C007	State code	46
C008	County code	103
C009	Latitude	440019
C010	Longitude	1031818
C011	Lat-long accuracy code	F
C012	Local well number	1N 7E32BDBB
C013	Land-net location	NWSENW 32 T1N R7E
C014	Name of location map	RAPID CITY WEST
C015	Scale of location map	24000
C016	Altitude of land surface	3990
C017	Method altitude determined	M
C018	Altitude accuracy	10
C019	Topographic setting	S
C020	Hydrologic unit code	10120110
C023	Primary use of site	W
C024	Primary use of water	P
C027	Hole depth	700
C028	Depth of well	700
C030	Water level	540
C031	Date water level measured	19830804
C033	Source of water-level data	D
C034	Method water level measured	S
C040	Date site record last updated	19891025
C303	Date site record created	19830819
C712	Data availability in other Ground Water files	Y
C714	Aquifer code	371DDWD
C802	Station-type codes	Y
C815	Locator sequence number	01
C900	Station name	1N 7E32BDBB
C063	Name of contractor	HAMM DRLG
C723	Record number for construction subrecord	1
C754	Record type for CONS subrecord of CONS file	CONS
C755	Last update for CONS subrecord of CONS file	19860224
C161	Owner	CLARKSON RICHARD
C718	Sequence number for OWNR subrecord of MISC file	1
C768	Record type for OWNR subrecord of MISC file	OWNR
C769	Last update for OWNR subrecord of MISC file	19860225
C187	Date of visit	19830804
C188	Person who made visit	HERN D
C737	Sequence number for VIST subrecord of MISC file	1
C774	Record type for VIST subrecord of MISC file	VIST
C775	Last update for VIST subrecord of MISC file	19860225
C093	Aquifer code	371DDWD
C304	Contributing unit	P
C721	Sequence number for GEOH subrecord of GEOH file	1
C748	Record type for GEOH subrecord of GEOH file	GEOH
C749	Last update for GEOH subrecord of GEOH file	19860225
C095	Aquifer date -geo	19830804
C126	Aquifer-static-level	540
C132	Aquifer contribution	100
C256	Parent sequence number for AQFR subrecord	1
C742	Sequence number for AQFR subrecord of GEOH file	1

**South Dakota Department of
Water & Natural Resources**

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

January 12, 1990

NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATES, CONTACT
THE NEWSPAPER RIGHT AWAY.

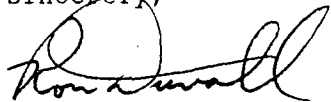
Richard and Morry Clarkson
8315 West 55th Ave S.
Rapid City, SD 57702

Dear Sirs:

Water Permit Application No. 2108-2 for rural water use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice of hearing has been sent to the Publisher of the Rapid City Journal printed at Rapid City SD. For your information, a copy of the notice is enclosed. Copies of the report and the Chief Engineer's recommendation are also enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice of Hearing and to arrange for payment. Early contact with the paper can eliminate delays. The publisher has been instructed to publish your notice once each week for two consecutive weeks with the last publication to occur twenty days before the board meeting. We must receive Proof of Publication before the application can be considered by the Water Management Board.

Sincerely,



Ron Duvall
Natural Resources Engineer
605 773-3352

enclosures





Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

January 12, 1990

Rapid City Journal
PO Box 450
Rapid City, SD 57709

ATTN: Legal Publications:

Enclosed is a Notice of Hearing on Application No. 2108-2 to be published twice. Please publish the first notice on or before January 18, 1990 with the second publication 7 days later.

The APPLICANT MUST VERIFY TO YOU THAT THE NOTICE IS TO BE PUBLISHED, before you make the first publication. Please BILL the APPLICANT for the cost of publication. The APPLICANT is Richard and Morry Clarkson, 8315 West 55th Ave. S. Rapid City, SD 57702.

A copy of BOTH publications must be SENT to the WATER RIGHTS DIVISION. IMMEDIATELY return the FIRST publication with the FIRST Transmittal form on the bottom of this page. The first copy is needed to check the publication for errors so any corrections can be made in the second publication. Publication errors can invalidate the public notice and cause the applicant costly delays.

Please be sure the SECOND publication is returned IMMEDIATELY with the enclosed Proof of Publication form. DO NOT WAIT until the end of the month or the billing cycle. The permit application cannot be considered by the Water Management Board until proof of publication has been received.

Sincerely,

Ron Duvall
Natural Resources Engineer
605 773-3352

enclosures

-----CUT HERE-----

FIRST TRANSMITTAL NOTICE

TO: Ron Duvall
Water Rights Division
Joe Foss Building
Pierre SD 57501-3181

No. _____

Date _____

We are in receipt of your letter of _____ enclosing Notice of Hearing to
Appropriate Water by Application No. _____ which was first published in our issue
of _____. ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.

Name

Newspaper



Instruction to Newspaper - Publish first Notice on or before January 18, 1990 with 2nd publication 7 days later. The applicant is responsible for payment.

NOTICE OF HEARING on Application No. 2108-2 to Appropriate Water

Notice is given that Richard and Morry Clarkson, 8315 West 55th Ave. S., Rapid City, SD 57702 has filed an application for a water permit to appropriate 0.09 cubic feet of water per second from 1 existing well (Madison Formation) approximately 700 feet deep located in the NE1/4 NW1/4 Section 32-T1N-R7E. Water is used by the Clarkson Subdivision for rural water system purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer of the Water Rights Division recommends APPROVAL of Application No. 2108-2 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water and 4) it is in the public interest. This application will be considered by the Water Management Board in the Roosevelt - Jefferson Room, Howard Johnson, 2211 LaCrosse, Rapid City, SD on March 7, 1990 at 10:00 am. The Chief Engineer's recommendation is not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer or 4) deny this application based on the facts presented at the public hearing.

Any interested person that intends to participate in the hearing before the Board by presenting evidence or cross-examining witnesses according to SDCL 1-26, must file a written petition with BOTH the applicant and Chief Engineer by February 23, 1990. The Chief Engineer's address is "Water Rights Division, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)". The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application and the signature and mailing address of the petitioner or legal counsel if legal counsel is obtained. The applicant need not file a petition. Contact the Water Rights Division to request information on this application or to assure access to the hearing by the handicapped.

This hearing is an adversary proceeding. Any person filing a petition and/or the applicant have the right to be represented by a lawyer. These and other due process rights will be forfeited if not exercised. Decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law. The time of the hearing will also be automatically delayed for at least twenty days upon written request to the Chief Engineer from the applicant or a petitioner. The request for a delay must be received by February 23, 1990.

This application is made pursuant to SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-15; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15; 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15.

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
) ss.
 County _____)

I, Mary K. Garness

certify that the attached printed Notice was taken
 from the Rapid City Journal

A newspaper which during the whole time of publication of
 said notice herein after stated, has been and is printed and
 published in the Rapid City Journal

City _____ of Rapid City

County of Pennington and State of South Dakota;
 that the said notice was published in said newspaper on the
 following two dates:

January 18, 1990

January 25, 1990

Mary K. Garness
 (Signature)

Bookkeeper
 (Title)

January 25, 1990
 (Date Signed)

Cost of Printing: Ran 8 2/16 inches legal advertising

in the Rapid City Journal on January 18 & 25

@ \$4.20 per inch = \$68.26

Ran public notice of water appropriation L470



Jan. 18, 25 L470

NOTICE OF HEARING ON APPLICATION NO. 2188-2 TO APPROPRIATE WATER

Notice is given that Richard and Marry Clarkson, 8315 West 55th Ave. S., Rapid City, S.D. 57702 has filed an application for a water permit to appropriate 0.09 cubic feet of water per second from 1 existing well (Madison Formation) approximately 700 feet deep located in the NE 1/4 NW 1/4 Section 32-T1N-R7E. Water is used by the Clarkson Subdivision for rural water system purposes.

Pursuant to SDCL 46-2A-2, the Chief Engineer of the Water Rights Division recommends APPROVAL of Application No. 2188-2 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water and 4) it is in the public interest. This application will be considered by the Water Management Board in the Roosevelt-Jefferson Room, Howard Johnson's, 2211 LaCrosse, Rapid City, SD on March 7, 1990 at 10:00 a.m. The Chief Engineer's recommendation is not final or binding upon the Board. The Board is authorized to 1) approve, 2) approve with qualifications, 3) defer or 4) deny this application based on the facts presented at the public hearing.

Any interested person that intends to participate in the hearing before the Board by presenting evidence or cross-examining witnesses according to SDCL 1-26, must file a written petition with BOTH the applicant and Chief Engineer by February 23, 1990. The Chief Engineer's address is "Water Rights Division, Foss Building, 523 E. Capitol, Pierre, SD 57501 (605-773-3332)." The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application and the signature and mailing address of the petitioner or legal counsel if legal counsel is obtained. The applicant need not file a petition. Contact the Water Rights Division to request information on this application or to assure access to the hearing by the handicapped.

This hearing is an adversary proceeding. Any person filing a petition and/or the applicant have the right to be represented by a lawyer. These and other due process rights will be forfeited if not exercised. Decisions of the Board may be appealed to the Circuit Court and State Supreme Court as provided by law. The time of the hearing will also be automatically delayed for at least twenty days upon written request to the Chief Engineer from the applicant or a petitioner. The request for a delay must be received by February 23, 1990.

This application is made pursuant to SDCL 46-1-1 thru 46-1-9, 46-1-12 thru 46-1-15; 46-2-3.1, 46-2-9, 46-2-11, 46-2-13, 46-2-17; 46-2A-1 thru 46-2A-10, 46-2A-12, 46-2A-14, 46-2A-15; 46-5-1 thru 46-5-11, 46-5-13 thru 46-5-15, 46-5-24, 46-5-25, 46-5-30.2, 46-5-30.4, 46-5-31; 46-6-3, 46-6-3.1, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14; and Board Rules ARSD 74:02:01:01 thru 74:02:01:15.



Department of Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

APR 25 1990

Richard & Morry Clarkson
8315 West 5th Ave S
Rapid City SD 57702

Dear Sirs:

Enclosed is Water Permit No. 2108-2 as approved by the Water Management Board authorizing construction of the water system and the application of water beneficial use, not exceeding the limits as specified in the Water Permit.

We will schedule an inspection so that the Water License may be issued to you, thus completing your acquisition of a Water Right.

Very truly yours,

A handwritten signature in black ink, appearing to read "John Hatch". The signature is written in a cursive style.

JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352

enclosures



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

November 14, 2001

2108-2 & 2295-2

Colonial Pine Hills Sanitary District
c/o Jay Chittim, Operator
4605 Dunsmore Road
Rapid City SD 57702

Dear Mr. Chittim:

On October 9, 2001 the investigation of the water use system, including the extent of application of water to beneficial use, as developed under Water Permit Nos. 2108-2 (Clarkson well) and 2295-2 (Conifer and Country Side South Main wells), was completed by Ken Buhler, a staff engineer with our program. The final water right documents, the water licenses, can now be issued.

State law require that we charge a \$50.00 fee for the investigation and issuance of each water license. Upon receipt of the \$100.00 fee, we will complete processing the water licenses.

The licensed water right will be similar to a property right that can not be lost as long as the water use continues and you abide by the permit requirements.

Also, enclosed is a *Notice of Transfer of Ownership* form for Water Permit No. 2108-2. The form needs to be completed, signed by the owner, notarized and returned with a \$2.50 filing fee. The check or money order for the fees (\$102.50) should be made payable to the "Water Rights Program".

If you have any questions regarding the water permit, investigation of your water use system or payment of the fee, please contact Genny McMath with our program at (605) 773-3352.

Sincerely,

Karen Schlaak

Karen Schlaak
Water Rights Program

enclosure

NOTICE OF TRANSFER OF OWNERSHIP

To: Chief Engineer
Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181

No. 2108-2

Date: 12/4/01

I/We request that Water Permit No. 2108-2

formerly owned by: Richard and Morry Clarkson

be transferred to: (name & address) Colonial Pine Hills Sanitary District, 4605 Dunsmore Rd, Rapid City SD 57702

Telephone No. 605 348-1364

Title to the following described land(s)/property has been transferred as described above:

Clarkson Well - NE 1/4 NW 1/4 Section 32-T1N-R7E

I/We understand that the validity of Water Permit No. 2108-2 has not been determined by this transfer action. If I/We have any questions on validity, I/We understand that only the Water Management Board has the authority to determine if a water permit/right is valid (see note).

You are requested to file this "Notice of Transfer" in the appropriate file with the Water Rights Program, as evidence of the change of ownership.

A fee of Two Dollars and Fifty Cents (\$2.50) is attached to cover the filing fees as required under SDCL 46-2-13.

STATE OF SOUTH DAKOTA)

County of Pennington)

I/We Linda Iverson Resident being first duly sworn on my oath depose and say that my relation to the above described undertaking is that of Owner, that I have read the above foregoing statement, and that I know of my own personal knowledge that the information herein stated is true.

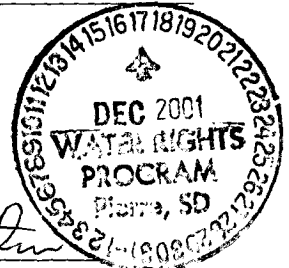
Linda Iverson
(Signed)

Subscribed and sworn to before me this 4th day of December, 2001.



Jimmy L. McArthur
(Notary Public)

my commission expires 1/16/04



NOTE: Water permits may be cancelled for nonconstruction within the five year construction period. Once a water permit is developed and the water used, the permit becomes a right. A water right may be lost for three reasons:

1. Abandonment - no intent to use water and use is abandoned.
2. Forfeiture - no use of water for three year period without legal excuse.
3. For a third violation of a condition of a water permit/right.

RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

NO 417024

Pierre, December 17, 2001

RECEIVED OF Colonial Pine Hills Sanitary District, 4605 Dunsmore Rd., Rapid City, SD 57702
the following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. _____ to Appropriate Water, to construct
and to put water to beneficial use _____

Fee for Application for Permit No. _____ to Appropriate Water, for Future
Use _____

Fee to retain Future Use Permit No. _____ after period of seven years.

Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water
License No. _____

Fee for Filing Transfer Form 2108-2

2 50

Fee for Filing Extension Request _____

Fee for _____

(Any Other Work Provided by Law)

Total

2 50

By

Darland Eichele
Chief Engineer gm

RECEIPT

Water Rights Program

South Dakota Department of Environment and Natural Resources

N^o 417006

Pierre, December 5, 2001

RECEIVED OF Colonial Pine Hills Sanitary Dist., 74605 Dunsmore Rd., Rapid City, SD 57702-8950
the following amount in fees for services rendered as provided for by law: (Richard & Morry Clarkson)

Fee for Application for Permit No. _____ to Appropriate Water, to construct
and to put water to beneficial use _____

Fee for Application for Permit No. _____ to Appropriate Water, for Future
Use _____

Fee to retain Future Use Permit No. _____ after period of seven years.

Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water
License No. 2108-2

Fee for Filing Transfer Form _____

Fee for Filing Extension Request _____

Fee for _____

(Any Other Work Provided by Law)

Total

50 00

By

Darland Erbe

Chief Engineer

gm

Permit No. 2108-2 & 2295-2
Upper Cheyenne River - Water District

Other permit/license(s) associated with project: 1726-2

Contact Person & Address: Jay Chittim (operator), 4605 Dunsmore Rd, Rapid City, SD 57702

Report Of Examination Of Works

On, October 9, 2001, I made a thorough examination of the water use system constructed by Richard and Morry Clarkson of Rapid City, SD holder of Permit No. 2108-2, bearing the priority of October 2, 1989 authorizing the diversion of 0.09 cu. ft. per second of the waters of groundwater (Madison aquifer) for suburban housing development purposes, in Pennington County. The water use system has been acquired by Colonial Pine Hills Sanitary District and should be transferred to the same.

On, October 9, 2001, I also made a thorough examination of the water use system constructed by Colonial Pine Hills Sanitary District of 4605 Dunsmore Rd, Rapid City, SD 57702 holder of Permit No. 2295-2, bearing the priority of October 8, 1993 authorizing the diversion of 0.33 cu. ft. per second of the waters of groundwater (Deadwood aquifer) for suburban housing development purposes, in Pennington County.

The system is in the following condition good. The points of diversion are located as follows, "Clarkson Well": 850 feet south and 1810 feet east of the Northwest corner of Sec. 32, T1N-R7E with a longitude of -103.305302 and a latitude of 44.007187; "Conifer Well": 1850 feet south and 1900 feet east of the Northwest corner of Sec. 32, T1N-R7E with a longitude of -103.304895 and a latitude of 44.004496; and "Country Side South Main Well": 1530 feet south and 660 feet east of the Northeast corner of Sec. 31, T1N-R7E with a longitude of -103.304495 and a latitude of 44.005381. The works are capable of diverting and conveying to the place of use 0.044 cu. ft. per second of water from the Clarkson Well (Madison aquifer); and 0.178 cu. ft. per second of water from the Conifer Well (Deadwood aquifer); and 0.111 cu. ft. per second from the Country Side South Main Well (Deadwood aquifer) which is to be used for suburban housing development purposes. Water has been put to beneficial use and the licenses should be issued for 0.044 cfs from the Madison aquifer (No. 2108-2) and 0.289 cfs from the Deadwood aquifer (No. 2295-2).

Review of Permit Qualifications And Regulations:

- 1) Special qualifications to permits being abided by yes
- 2) All structures, wells and lands on map yes
- 3) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period na
- 4) Exceptions to compliance are: none

Report On the Specifics of the System

Clarkson Well Information:

- 1) Well Drilling Firm: Hamm Drilling
- 2) No. of Wells one

3) Depth(s) 700 feet

4) Well log is available no

Casing:

1) Diameter 5 inches

2) Length unknown feet

3) Type steel

Screen:

1) Type open hole completion

2) Length unknown feet

3) Static water level 540 feet

Pump\ Motor:

1) Pump Make Hitachi

2) Pump Model 6191255980

3) Capacity 20 GPM

4) Motor Make Hitachi

5) Horsepower rating 10 hp

Conifer Well Information:

1) Well Drilling Firm: Taylor Drilling

2) No. of Wells one

3) Depth(s) 1020 feet

4) Well log is available yes

Casing:

1) Diameter 7 inches

2) Length 902 feet

3) Type steel

Screen:

1) Type open hole completion

2) Length 118 feet (open hole interval)

3) Static water level 420 feet

Pump\ Motor:

1) Pump Make Grundfos

2) Pump Model 80S300-31-DS

3) Capacity 80 GPM

4) Motor Make Franklin

5) Horsepower rating 30 hp

Country Side South Main Well Information:

1) Well Drilling Firm: Taylor Drilling

2) No. of Wells one

3) Depth(s) 945 feet

4) Well log is available yes

Casing:

1) Diameter 7 inches

2) Length 861 feet

3) Type steel

Screen:

1) Type open hole completion

2) Length 84 feet (open hole interval)

3) Static water level 472 feet

Pump\ Motor:

1) Pump Make Hitachi

2) Pump Model 689937E

3) Capacity 50 GPM

4) Motor Make Hitachi

5) Horsepower rating 25 hp

Distribution System:

1) Type PVC 2) Size 6 inches 3) Length $\cong$ 19,000 feet

1) Type PVC 2) Size 4 inches 3) Length $\cong$ 2,000 feet

1) Type PVC 2) Size 10 inches 3) Length $\cong$ 500 feet

Service Connections 1) Type Polyethylene 2) Size 1 inches

COMMENTS: Colonial Pine Hills Sanitary District consists of two separate systems with Country Side South serving approximately 194 users and Colonial Pine Hills/Whispering Pines serving approximately 218 users. Colonial Pine Hills/Whispering Pines system consists of three wells: (1) WP Main Well; (2) Naylor Well; and (3) Croyle Well, which are covered under Water License No. 1726-2.

The Country Side South system consists of three well: (1) Clarkson Well; (2) Conifer Well and (3) CSS Main Well.



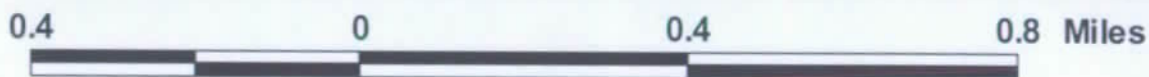
Ken Buhler

Natural Resources Engineering Specialist
DENR, Water Rights Program

Nov. 1, 2001

Date

Water Right Map 2295-2 & 2108-2



Colonial Pine Hills Sanitary District Consists of two independent systems:

Colonial Pine Hills/Whispering Pines

No. 1726-1 Croyle Well
Naylor Well
WP Main

Country Side South

No. 2108-2 Clarkson Well
No. 2295-2 Conifer Well
CSS Main

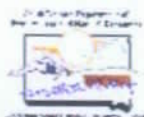
N

S



Ken Buhler

Ken Buhler
Natural Resources Engineering Specialist
DENR-Water Rights Program



STATE OF SOUTH DAKOTA

WATER LICENSE NO. 2108-2

(1) Richard and Morry Clarkson, Rapid City SD made Application No. 2108-2, October 2, 1989 for a water permit to divert 0.09 cubic feet of water per second from groundwater (one well), Pennington County, South Dakota for suburban housing development purposes. Permit No. 2108-2, with a priority date of October 2, 1989 was approved March 7, 1990 and issued to the applicant for diversion of water with construction of the described water supply system completed and the application to beneficial use of said water completed.

On December 17, 2001, Water Permit No. 2108-2 was transferred to Colonial Pine Hills Sanitary District.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the construction of the water supply system and is entitled to divert 0.044 cubic feet of water per second for beneficial use. The location of the diversion point is Clarkson Well – 850 feet south and 1,810 feet east of the northwest corner of Section 32-T1N-R7E (NE ¼ NW ¼).

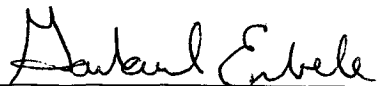
(3) The permit holder has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use at Colonial Pine Hills Sanitary District.

Colonial Pines Hills Sanitary District consists of two separate systems known as Country Side South and Colonial Pines Hills/Whispering Pines.

Water License No. 1726-2 authorizes the three wells utilized by Colonial Pines Hills/Whispering Pines.

Water License Nos. 2108-2 and 2295-2 authorize the three wells utilized by Country Side South.

(4) Pursuant to South Dakota Water Law 46-5-30.1 Colonial Pine Hills Sanitary District, 4605 Dunsmore Rd, Rapid City SD 57702 the holder and/or owner of Water Right No. 2108-2 is issued a license to appropriate water, the right to use 0.044 cubic feet of water per second from groundwater (one well) with a priority date of October 2, 1989 from the location specified in (2) of this license for suburban housing development purposes. This license is subject to any limitations or qualifications listed in Water Right No. 2108-2 and subject to South Dakota State Law.


GARLAND ERBELE, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

APR 16 2002

date





**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

APR 16 2002

2108-2

Colonial Pine Hills Sanitary District
% Jay Chittim, Operator
4605 Dunsmore Road
Rapid City, SD 57702

Dear Mr. Chittim:

Enclosed is Water License No. 2108-2. This is the final water right document completing your process of obtaining a Water Right. Enclosed is Receipt No. 417006 in the amount of \$50.00 which you paid for the investigation and issuance of the Water License and Receipt No. 417024 in the amount of \$2.50 which you paid for Filing Transfer Form.

For your information SDCL 46-6-27 requires that if the owner of an existing well, such as the well authorized by Water Right No. 2108-2, constructs a replacement well and does not plan to use the old well, the old well is considered abandoned and must be plugged. Also, any well that is being used or is not considered abandoned must be valved and controlled, if flowing, or sealed and capped so that no leaking occurs either underground or at the surface.

As long as you use the water beneficially, as stated in the Water License, the State Water Laws provide that you have a continuing right to use the water. If you have any questions, please contact our office.

Sincerely,

Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

CLARKSON WELL WR# 2108-2

COLONIAL PINES HILLS SANITARY DISTRICT

Constant-Rate Test and Recovery Data Clarkson Well

Date: June 7, 2001
 Tested by: Weston Engineering, Inc., Upton, Wyoming
 Monitoring Equipment: 120 Psi pressure gauge. Flow rates controlled by gate valve and flow rates monitored by flow meter, 5 gallon bucket and stop watch.
 Discharge: 25 and 30 gpm
 Comments: Airline and pump set at 720 feet.

Elapsed Time (min)	Pressure (psi)	Drawdown (ft)	Comments
0	96	498.24	40 gpm
1	92	507.48	
3	87.5	517.875	
4	80	535.2	
4.5	76	544.44	
5	73.5	550.215	
5.5	69.9	558.531	
6	66	567.54	
6.5	64	572.16	
7	61	579.09	
8	59	583.71	
9	52	599.88	
11	42.5	621.825	40 gpm
12	40	627.6	
13	36	636.84	
14	34	641.46	33-37.5 gpm
16	29	653.01	
17	27.5	656.475	33-37.5 gpm
19	24	664.56	
21	22	669.18	
23	19.5	674.955	33 gpm with bucket
25	17.7	679.113	
31			Adjust to 25 gpm
33	23	666.87	
36	27.7	656.013	
41	30	650.7	
44	30.5	649.545	
52	32	646.08	
58	32.5	644.925	
64	32.5	644.925	
71	32.5	644.925	
73	29	653.01	Adjust to 30 gpm
77	27.2	657.168	
81	25	662.25	
86	23	666.87	
98	21.5	670.335	
108	20.3	673.107	
118	20	673.8	30 gpm
133	19.8	674.262	
158	19.5	674.955	Adjust up slightly
173	17	680.73	
188	16	683.04	30 gpm
210	15.5	684.195	End pump test

Table 1
Colonial Pine Hills Sanitary District
Water Quality Results
April 16, 2001

Parameters	Conifer Well	Countryside South Main Well	Clarkson Well	Whispering Pines Main Well	Naylor Well	Croyle Well
Inorganic Analysis (mg/L, except as noted)						
Alkalinity, Total	160	148	174	168	134	158
Bicarbonate	195	180	212	205	163	193
Calcium	40	36	42	41	41	48
Carbonate	<1	<1	<1	<1	<1	<1
Chloride	3	2	4	2	9	12
Conductivity @25 C (umhos/cm)	405	339	376	395	364	388
Hardness, as CaCO ₃	178	164	187	181	164	186
Langlier Index (Corrosivity)	0.163	0.494	0.178	0.18	0.291	0.099
Magnesium	19	18	20	18	15	16
pH (standard units)	7.89	8.29	7.84	7.84	7.5	7.75
Potassium	2	1	2	2	3	2
Sodium	18	8	5	12	8	8
Solids, Total Dissolved	200	180	170	190	190	190
Sulfate	48	26	13	31	20	21
Trace Metals Analysis						
Iron	0.25	2.38	<0.03	0.17	0.64	0.19
Manganese	<0.01	0.08	<0.01	<0.01	<0.01	<0.01

Highlighted wells drilled and completed in Deadwood Formation.

Table 2
Colonial Pine Hills Sanitary District
Water Quality Results

Parameters	Whispering Pines Main Well (5/31/01)	Conifer Well (6/1/01)	Countryside South Main Well (6/6/01)
Bacterial Analysis			
Coliform, Total	Absent	Absent	Absent
Coliform, E-Coli	Absent	Absent	Absent
Inorganic Analysis			
Conductivity @ 25 C (umhos/cm)	391	388	334
Sodium (mg/L)	12	13	6
Sulfate (mg/L)	36	38	29
Nutrient Analysis			
Nitrate as N (mg/L)	0.07	<0.05	<0.05
Trace Metal Analysis			
Iron (mg/L)	<0.03	0.35	0.04
Manganese (mg/L)	<0.01	<0.01	<0.01
Radiological Analysis			
Radon 222 (pCi/L)	879	1160	2160
Precision (pCi/L)	90	82	145