

WELL LOG Driller not drilled Licensed - yes _____ no _____
Depth 40' (two) logs to be submitted when drilled
Remarks _____

MAP Map No. 4084-3 Map located in Water Right xx Map file _____
 Type of Map Drawn Prepared by RR P.E.

+++++

REVIEWED This Application was received within 30 days of the date received, accepted as complete, Number assigned and written up for advertisement before the Board on:
3/17/82.

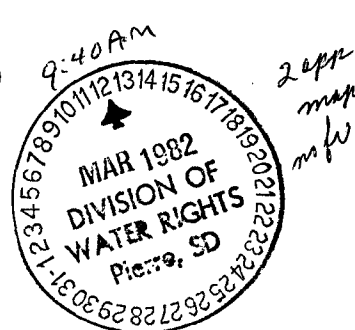
 (Signed)

+++++

PROTESTS Letters/Petitions in File - yes _____ no _____ Remarks _____

REMARKS Date _____
 F.F. & C. Final Decision, including F.F. & C. of Law were adopted _____
 OF LAW, Date _____
 FINAL Final Decision mailed to parties and/or parties notified that Final Decision was
 DECISIONS adopted _____
 ETC. Remarks _____

*Similar wells as Missouri Basin Power Appl. not same
 aquifer. more surface source*

No. 4880-3Map No. 4084-3 Water Division No. 3 BIG SIOUX RIVER District
Above for Office Use 10170203

APPLICATION FOR PERMIT To Appropriate Water within the State of South Dakota

Check one of the following:

New ☒ Vested Right _____ Future Use _____

Change in Diversion _____ Additional Diversion _____

Change in Acreage _____ Additional Acreage _____

1. Name of Applicant Henry Carlson Phone No. (605) 336-2410
 Post Office Address P. O. Box 1213, Sioux Falls, State SD 57101
(Street, RR, or Box) (Town) (Zip Code)
 If a corporation show date and place of incorporation _____

2. Method of accomplishing work (contract, employment of others, or by direct labor) Contract3. Name of diversion work Henry Carlson Office Building4. Amount of water claimed (cubic feet per second) 0.5 CFS total withdrawal - 0.1 consumptive use5. Source of water supply two wells

6. Location of point of diversion Lot 8 of Eagan's Subdivision of Lots 5-15 (except Lot A in Lot 12), block 47 and lots 1,2,4B 5 and portions of 14, 15 block 46 and a portion of vacated Bennett Street and Covell Ave. in the Airport Addition to City of Sioux Falls, SD
NE 1/4 SW 1/4 SEC. 8-T10N-R49W County Minnehaha

7. Annual period or periods during which water is to be used January 1, thru December 318. Use to be made of water, (irrigation, industrial, municipal, commercial, recreation, etc.) Commercial (Heat Pump)

9. For irrigation use, Total number of acres to be irrigated 50 Acres of lawn
@ 50 GPM

List below each forty acre subdivision, or lot, or fraction thereof and show number of acres to be irrigated in each.

Land Description	No. Acres Irr.

Land Description	No. Acres Irr.

Attach sheet if more space is needed

10. Time required to complete construction of water supply system 0.67 5 years. Additional time required to complete application of water to the proposed beneficial use 0.00 4 years.

11. Choice of county newspaper for publication of Notice of Intent to Appropriate Water Sioux Falls Argus Leader

12. Principal Features of the Proposed Water Supply System.

A. Works proposed to divert water from its natural source.

Two water supply-injection wells

B. Works proposed to transport water to place of use.

Class 160 PVC piping and fittings

C. Works proposed to apply water to beneficial use. The water will serve as a source of heat in the winter for a geothermal heat pump building heating system and as heat pump cooling water in the summer. Whenever the lawn requires watering during the summer, a 50 GPM pump diverts that quantity of water to a lawn sprinkling system.

Estimated Total Cost \$ 500,000.00

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

STATE OF SOUTH DAKOTA)
 County of Minnehaha)ss.

I, R. A. Fraser

the applicant, certify that I have read the foregoing application and have examined the attached map and that the matters therein stated are true and that I intend, and am able to complete the necessary construction.

Signed R. A. FraserSubscribed and sworn to before me this 9th day of March, 1982Iola Brendtro

Notary Public (or other qualified officer)

IOLA BRENDTRO
 NOTARY PUBLIC

MY COMMISSION EXPIRES APRIL 14, 1982

WATER RIGHT APPLICATION APPROVAL

The Water Management Board hereby approves Water Right Application No. 4880-3

HENRY CARLSON

POB 1213, Sioux Falls

South Dakota 57101

(Post Office Address)

(State)

With the following qualifications.

The ~~irrigation~~ well approved under this Permit is located near domestic wells which may obtain water from the same aquifer. The ~~irrigation~~ well owner, under this Permit, shall control his ~~irrigation~~ withdrawals so there is not a reduction of needed water supplies in adequate domestic wells.

Date of first receipt of application MARCH 12, 1982

Date of return to applicant for correction, amendments or changes required _____, 19____

Date of receipt of corrected application _____, 19____

Approved APRIL 7, 1982, Recorded in Book _____ Page _____

WATER RIGHT PERMIT NO. 4880-3

The Water Management Board hereby grants and issues this Water Right Permit No. 4880-3 authorizing the construction of the water use system and the putting of water to beneficial use as stated in the Application and as qualified in the Water Right Application approval, subject, however, to the following limitations and conditions:

1. The date from which applicant may claim right is MARCH 12, 1982
2. The equivalent of at least one-fifth of the work above specified is to be completed on or before OCTOBER 7, 1984
3. The whole of said work is to be completed on or before APRIL 7, 1987
4. The limit of time from proof of beneficial use of water appropriated in accordance herewith is APRIL 7, 1991
5. The water appropriated shall be used for the purpose of COMMERCIAL GEOTHERMAL HEAT

6. The prior right of all persons who, by compliance with the laws of the State of South Dakota, have acquired a right to the use of water must not be injuriously affected by this appropriation.

7. The amount of the appropriation herein granted shall not exceed .50 cubic feet per second; neither shall it exceed the capacity of the above described water supply system, nor shall it exceed the amount of water needed for beneficial uses served, and if for irrigation purposes said appropriation must be limited to not more than 2 acre feet per acre per year and be limited to not more than one-seventieth (1/70) of one cubic foot of water per second of time for each acre of land to which water is actually and beneficially applied

for irrigation on or before APRIL 7, 1991; said water to be used during the following described annual period: CONTINUOUSLY

Witness my hand this 13TH day of APRIL, 1982

THE WATER MANAGEMENT BOARD

By: John H. Hatcher
Chief Engineer, Water Rights

Certificate of Construction Issued _____, 19____

Water License Issued _____, 19____

D Well Information

- (1) Drill Hole, Diameter 16 inches, Depth 40 feet
- (2) Casing, Type Black steel, Diameter 8 inches, Thickness 0.322 inches
(wood, concrete, steel, etc)
- (3) Screen, Type stainless steel, Diameter 8 inches, Length 15 feet
- (4) Gravel Pack, Thickness 4, Length of gravel pack 25 feet

E. Dugout Information or Estimates

- (1) Surface dimensions, _____, Depth _____

F. Fill out for Either a Well or a Dugout.

(1) Water Bearing Materials. (Attach a copy of test well log)

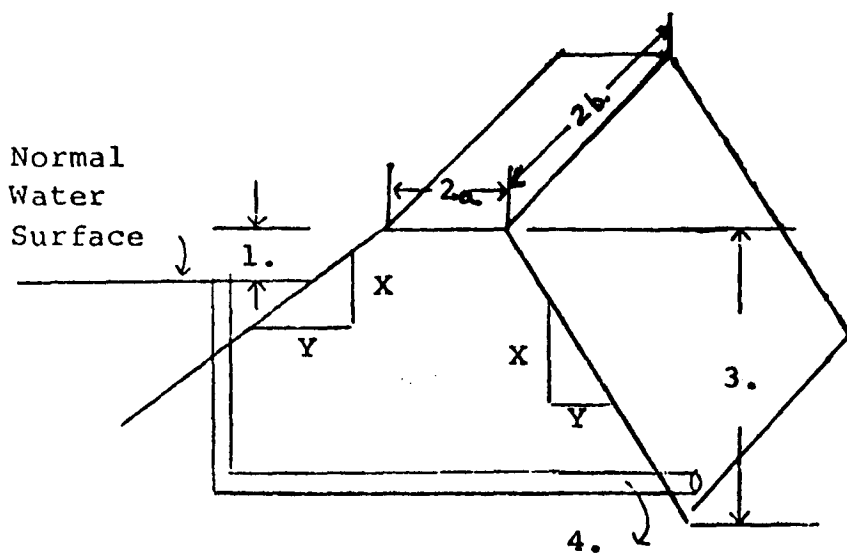
- Depth to top of water bearing material 15 feet
- Depth to bottom of water bearing material 40 feet
- Depth to water (ground surface to water level) 15 feet

(2) Distance to nearest existing household or livestock watering well.

- On same owner's property None rds.
- On property owned by others None rds.

G Water Storage Dams N/A

If the proposed water use system contains one or more water storage dams, please show in the space below, the height, length, maximum water depth, surface area, drainage area, storage capacity, dam slope, dimensions, location and size of outlet works, of each storage dam. The location of each water storage dam should be shown on the water right map.



1. Freeboard _____
- 2a Crest width _____ b. length _____
3. Height of Dam _____
4. Outlet dimensions:
Pipe diameter _____
Spillway width _____
- X & Y slope:
Upstream _____
Downstream _____
- Surface area of impoundment _____
- Drainage area above dam _____

RAP
Signature of Applicant

C OF RUSSELL AVENUE

125'

162.5'

125.45'

DIVERSION NO. 1

244.2'

LOT 8

120.0'

235.1'

68.8'

115.1'

96.4'

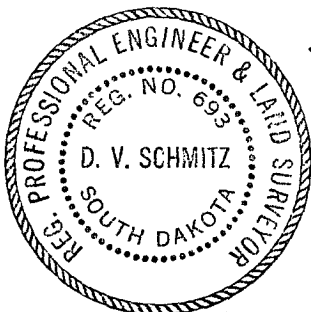
C OF BAILEY STREET

SCALE 1"=60'

125.0'

103.6'

40'



DIVERSION NO. 1

Located 15' East and 70' South of the NW corner of Lot 8 of Egan's Subdivision of Lots 5 thru 15, except Lot A of Lot 12, Block 47, and Lots 1, 2, 4B, 5 and portions of 14 and 15, Block 46, and a portion of vacated Bennet Street and Covell Avenue, Airport Addition to the City of Sioux Falls, South Dakota

Note:

This diversion is located in the NE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Section 8, T101N, R49W of the 5th P. M., Minnehaha County.

SURVEYORS CERTIFICATE

I, D, V, Schmitz, of Schmitz, Kalda & Associates, a Registered Land Surveyor of the State of South Dakota, do hereby certify that I have on and before February 25, 1982 mapped the area as shown above for the purpose of water appropriation.

D. V. Schmitz
D. V. Schmitz, Registered Land Surveyor

~~Map # 488-3~~

Appl. 488-3

DESIGN DATA

SUMMER	OUTSIDE	INSIDE	DIFFERENCE
DRY BULB	96 F	78 F	(To-Ti) =
WET BULB	76 F	66 F	X X X X
DEW POINT	F	F	X X X X
RELATIVE HUMIDITY	%	%	X X X X
TOTAL ENTHALPY BTU PER LB. OF DRY AIR			(Ho-Hi) =
GRAINS OF MOISTURE PER LB. OF DRY AIR			(HRo-HRi) =
WINTER	F	F	T.D.

LATITUDE _____ TIME _____ AM _____ PM

WALL COLOR	ROOF COLOR	WINDOWS
LIGHT ☐	LIGHT ☐	AWNINGS ☐
MEDIUM ☐	MEDIUM ☐	SHADES ☐
DARK ☐	DARK ☐	BARE ☐

SUMMARY OF HEAT GAINS

ITEM NO.	ITEM	SENSIBLE	LATENT
17	TRANS. & SOLAR	36,435	
17	TRANSMISSION		
18	DUCTS		
22	BODY	6,000	6,000
29	EQUIPMENT	34,000	
32	INFILTRATION		
33	TOTAL SENSIBLE	76,435	X X X X X X
34	TOTAL LATENT	6,000	←
35	TOTAL HEAT GAINS	82,435	

SENSIBLE HEAT RATIO

ITEM 33	_____	=
ITEM 35	_____	=
37	DRY BULB TEMP. AIR SUPPLY =	F.
38	WET BULB TEMP. AIR SUPPLY =	F.
39	RISE IN DRY BULB TEMP. OF AIR SUPPLY ROOM D. B. - ITEM 37 =	F.
40	TOT. AIR SUPPLY = $\frac{\text{ITEM 33}}{1.1 \times \text{ITEM 39}}$ = CFM	
41	_____ = CFM	

41	HEAT LOAD OF VENTILATION AIR	
42	NO. PEOPLE 30 X 20 CFM/PERSON = 600 CFM	
43	CFM O. A. 800 X 4.5 X 9 (Ho-Hi) = 24,300 BTU/HR	

TOT. COOLING LOAD ON COILS & REFR. APPAR.

ITEM 35	82,435
PLUS ITEM 42	24,300
43	TOT. COOLING LOAD BTU/HR. 106,735

TONNAGE EQUIVALENT OF COOLING LOAD

44	ITEM 43 106,735 = 8.9 TONS
----	----------------------------

COOLING AND HEATING LOAD ESTIMATE SHEET

COPYRIGHT 1965



DATE 3/10/82 JOB NO. 9112 EST. BY J. Fay
 NAME HENRY CALSON
 ADDRESS _____
 CITY & STATE SARASOTA FL
 BRANCH OFFICE _____
 ROOM TOTAL BUILDING FLOOR _____ SH. NO. _____
 L'GTH 152 W'DTH 60 HT. 11 VOL. _____ CU. _____

TRANSMISSION & SOLAR SENSIBLE HEAT GAIN

HEAT LOSS

ITEM NO.	ITEM	AREA SQ. FT.	TEMP. DIFF.	"U" FACTOR	BTU/HR.	TEMP. DIFF.	"U" FACTOR	BTU/HR.
1	EXTERIOR WALL N	1740	12	.07	1461	90	.07	10,962
2	EXTERIOR WALL S	1740	19	.07	2314	90	.07	10,962
3	EXTERIOR WALL E	754	14	.07	739	90	.07	4,750
4	EXTERIOR WALL W	754	20	.07	1055	90	.07	4,750
5	ROOF	8400	56	.05	23,520	90	.05	31,800
	GLASS SUMMARY CALCULATIONS	AREA SQ. FT.		SOLAR FACTOR				
6	EXTERIOR GLASS N	186		9.45	11.6 + 7 = 18.6	3050	.8	13,392
7	EXTERIOR GLASS S	231				4296	.8	14,632
8	EXTERIOR GLASS							
9	EXTERIOR GLASS							
10	SKYLIGHTS							
11	TOTAL TRANSMISSION & SOLAR				36,435			99,248

TRANSMISSION SENSIBLE HEAT

12	FLOORS							
13	CEILINGS							
14	PARTITIONS							
15	GLASS IN PARTITIONS							
16	MISCELLANEOUS (INFILT. FOR HEATING)							
17	TOTAL TRANSMISSION							
18	DUCT GAINS							

BODY HEAT GAINS

19	SENSIBLE	NO. PEOPLE	30 X 200	6,000	
20	LATENT (QUIET)	NO. PEOPLE	30 X 200		6,000
21	LATENT (ACTIVE)	NO. PEOPLE	X		
22	TOTAL BODY HEAT GAINS				

EQUIPMENT HEAT GAINS

23	ELECTRIC LIGHTS	10,000 WATTS X 3.4	34,000	
24	SMALL ELECTRIC MOTORS (2 H.P. & SMALLER)	H.P. X 3600		
25	LARGE ELECTRIC MOTORS (3 H.P. & LARGER)	H.P. X 3000		
26	ELECTRIC EQUIPMENT	WATTS X 3.4		
27	GAS EQUIPMENT	NO. X		
28	MISC.	NO. X		
29	TOTAL EQUIPMENT GAINS			

INFILTRATION GAINS (CHECK VENTILATION ITEM 42)

30	SENSIBLE ROOM VOL	C.F. X .018 X	AIR CHANGES X (To-Ti)		X X X X X X
31	LATENT ROOM VOL	C.F. X .011 X	AIR CHANGES X (HRo-HRi)	X X X X X X	
32	TOTAL INFILTRATION HEAT GAINS				

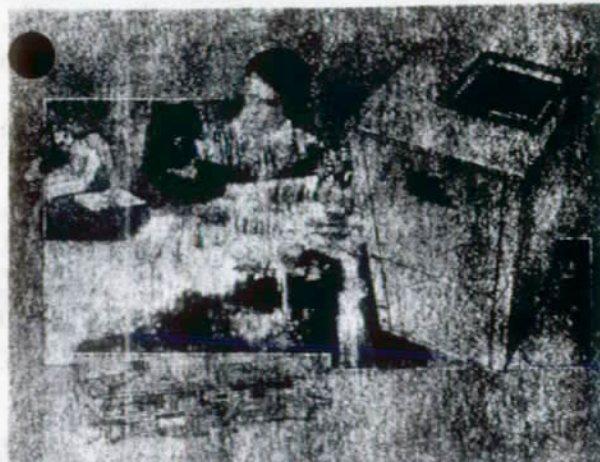
45 GPM WATER
WEIR
@ 15 TONS

12.8 TONS
HEATING

54,500
HEAT LOSS
163,748

Friedrich Geo-Thermal™ Heat Pump performance specifications

(Low temperature models)



MODEL	MODE	
805 036	HEAT	BTUH
		WATTS
		C.O.P.
	COOL	BTUH
		WATTS
		E.E.R.

COP range 3.19 - 3.58

805 042	HEAT	BTUH
		WATTS
		C.O.P.
	COOL	BTUH
		WATTS
		E.E.R.

COP range 3.1 - 3.6

805 048	HEAT	BTUH
		WATTS
		C.O.P.
	COOL	BTUH
		WATTS
		E.E.R.

COP range 3.5 - 3.8

805 060	HEAT	BTUH
		WATTS
		C.O.P.
	COOL	BTUH
		WATTS
		E.E.R.

COP range 3.3 - 3.8

ENTERING WATER TEMPERATURES				
45°	50°	55°	60°	65°
34.6	36.9	39.5	42.1	45.0
3170	3300	3420	3550	3680
3.19	3.27	3.38	3.47	3.58
40.6	39.7	38.9	38.2	37.5
2920	2940	2960	2980	3000
13.9	13.5	13.1	12.8	12.5

EER range 12.5 - 13.9

39.0	42.0	45.4	48.9	52.8
3650	3810	3970	4130	4290
3.1	3.2	3.4	3.5	3.6
53.8	52.7	51.6	50.7	49.9
3770	3800	3830	3850	3880
14.3	13.9	13.5	13.2	12.8

EER range 12.8 - 14.3

48.6	51.9	55.2	58.8	62.7
3970	4310	4440	4590	4780
3.5	3.5	3.6	3.75	3.8
58.0	56.8	55.6	54.6	53.5
3870	3900	3920	3950	3980
14.98	14.6	14.2	13.8	13.4

EER range 13.4 - 14.98

50.0	53.7	57.6	62.0	66.8
4380	4580	4780	4990	5180
3.3	3.4	3.5	3.6	3.8
67.5	66.1	64.7	63.5	62.3
4840	4870	4900	4930	4970
14.0	13.6	13.2	12.9	12.5

EER range 12.5 - 14.0

RATING CONDITIONS: Capacities (BTUH expressed as 1,000) of each unit are shown for various entering water temperatures. The flow rate (gallons per minute) is a variable of the refrigerant pressure. The water supply should be capable of at least 3 GPM per ton of capacity. (12,000 BTUH = 1 ton), ratings at 70° return air heating, 80/67° return air cooling.

Friedrich®

A Division of Wylain, Inc.



Friedrich Air Conditioning & Refrigeration Co.
P.O. Box 1540 • 4200 North Pan Am Expressway
San Antonio, Texas 78295
(512) 225-2000



Continuing engineering research results in steady improvements.
Therefore, these specifications are subject to change without notice.

Printed in U.S.A.

RECEIPT

WATER RIGHTS COMMISSION

State of South Dakota

No 4 8766

PIERRE, March 15, 1982

RECEIVED OF Henry Carlson, P.O. Box 1213, Sioux Falls, SD 57101

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

Fee for Application for Permit to Appropriate Water No. 4880-3 (examination, processing, recording and filing)	150	00
Fee for inspecting Construction, and issuing Cert. of Construction No.		
Fee for inspecting Beneficial Use, and issuing Water License No.		
Fee for issuing Location Certificate-Dry Draw, No.		
Fee for filing		
Fee for certified copy of		
Fee for Print copy of map		
Fee for Certifying		
Fee for (any other work as provided by law)		
TOTAL	150	00

WATER RIGHTS COMMISSION

By John Hatch
Chief Engineer, Executive Officer
JOHN HATCH/ms



CITY OF SIOUX FALLS

SOUTH DAKOTA



DEPARTMENT OF WATER

DICK PETERSON
COMMISSIONER IN CHARGE
LES HASH
MANAGER
JON SMITH
ASSISTANT MANAGER
DAVID BOONE
CIVIL ENGINEER II
GARY MEYER
CIVIL ENGINEER II
ERTIS OSTERBERG
UTILITIES CONTROLLER

March 9, 1982

Henry Carlson Construction Co.
P.O. 1213
Sioux Falls, SD 57101

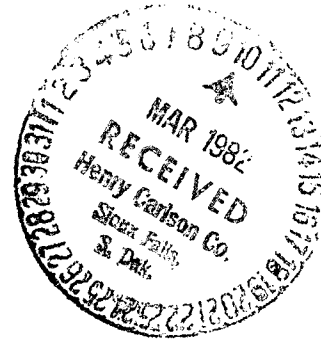
Attention Greg Lundgren

Dear Sir:

In reference to your application for a water rights permit for a withdrawal well and injection well to operate a heat pump at 805 West Russell, the City Water Department has no objection as long as the water quality of the aquifer does not change and the wells do not cause any interference with the City wells.

Sincerely,

Les Hash, Manager



ADMINISTRATIVE OFFICE:
224 W. 9TH STREET
SIOUX FALLS, S. D. 57102
TEL. 605-339-7031

PURIFICATION PLANT:
2100 N. MINNESOTA AVE.
SIOUX FALLS, S. D. 57104
TEL. 605-339-7028

DISTRIBUTION AND SERVICE:
666 ALGONQUIN AVE.
SIOUX FALLS, S. D. 57104
TEL. 605-339-7044

AN EQUAL OPPORTUNITY EMPLOYER

FRITZEL • KROEGER • GRIFFIN • BERG

ARCHITECTS ENGINEERS PLANNING CONSULTANTS

fkgb

March 18, 1982

Ms. Betty Westerland
Division of Water Rights
Joe Foss Building
Pierre, SD 57501



Dear Ms. Westerland:

Re: Henry Carlson Office Building
Sioux Falls, South Dakota

To supplement the information sent to you March 16, we will design a closed system and will forward the mechanical plans when completed. Where Henry Carlson will construct the building, we assume an early spring construction.

Please contact our office if additional information is required.

Yours truly,

FRITZEL . KROEGER . GRIFFIN . BERG

James J. Foy
James J. Foy, P.E.

g1

cc: Henry Carlson

FRITZEL • KROEGER • GRIFFIN • BERG

ARCHITECTS ENGINEERS PLANNING CONSULTANTS

fkgb

March 16, 1982

Ms. Betty Westerland
Division of Water Rights
Joe Foss Building
Pierre, South Dakota 57501



Dear Ms. Westerland:

Re: Henry Carlson Office Building
Sioux Falls, South Dakota

We have under design at this time, a small office building for Henry Carlson which will be constructed this spring. We propose using water source heat pumps which will require approximately 45-60 gpm water, from a shallow well. The water will be returned to the soil through a second well in winter and used for lawn in summer with excess returned through the second well.

Test wells will be dug when construction starts. Enclosed is one of several manufacturer's products being considered for this installation. A heat exchange system will be incorporated to protect the evaporators from impurities. Approximately 15 tons will be installed.

If you have any questions, please contact our office.

Yours truly,

FRITZEL . KROEGER . GRIFFIN . BERG

James J. Foy, P.E.

JJF:vg

Enc.

cc Henry Carlson

Publish first publication, on or before March 26, 1982

NOTICE OF HEARING ON
APPLICATION TO APPROPRIATE WATER

Pierre, South Dakota 57501

March 17, 1982Notice is hereby given Henry Carlson whose post office

address is POB 1213, Sioux Falls, South Dakota, has made an application in accordance with the provisions of SDCL 46-1-1 thru 46-1-9; 46-1-12 thru 46-1-14; 46-2-9 thru 46-2-11, 46-2-13; 46-5-1 thru 46-5-8, 46-5-10 thru 46-5-22, 46-5-25, 46-5-41 (~~ground~~) 46-6-3 thru 46-6-5, 46-6-6.1, 46-6-10, 46-6-13, 46-6-14, (~~future use~~) 46-5-30, (~~transfer lands~~) 46-5-22 thru 46-5-25 and Board Rules ARSD 74:02:01:01 thru 74:02:01:15, (~~future use~~) 74:02:01:23 thru 74:02:01:26 (~~46-5-30~~) 74:02:07:01 thru 74:02:07:03, for a permit to appropriate for beneficial use

0.50 cubic feet of water per second of time from groundwater (two wells)

through the Henry Carlson Office Building, the point (s) of diversion which ~~is~~ (are) to be located in the NW1/4

of Section 8, Twp. 101 N, Range 49 W. Said water to be used for purpose of providing ~~irrigation on portions of the following described land:~~

water for Commercial use and heat pump system

This Application No. 4880-3 will be considered by the Water Management Board at Meeting Room #1, Kneip Bldg. Church & Illinois, Pierre SD upon the 7th day of April, 1982.

at 10 A.M. The Board is authorized to make a determination on this application at the hearing. All interested persons may appear and be heard. Any person who may be affected by a Board decision who desires to present evidence or cross-examine witnesses according to SDCL 1-26 may notify the Board in writing prior to the hearing or orally at the hearing.

This hearing is an adversary proceeding. Any person has the right to be present or to be represented by a lawyer. These and other due process rights will be forfeited if they are not exercised at the hearing. Decisions of the Board may be appealed to the Circuit Court and the State Supreme Court as provided by law.

Any handicapped person wishing to attend this hearing can contact the Water Rights Division, DWNr, Joe Foss Building, Pierre SD, prior to the hearing date for assistance to assure access to the hearing.

For the Water Management Board

cc: applicant

BETTY WESTLUND, Water Rights Specialist

WNR-806-2/82

PROOF OF PUBLICATION

STATE OF SOUTH DAKOTA)
County Minnehaha) ss.

I, Karen Walker hereby

certify that the annexed printed copy of Notice of Intent to Appropriate

Water was taken from the Argus Leader

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

city of Sioux Falls

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

Wednesday, March 24, 1982

Wednesday, March 31, 1982

Karen Walker
(Signature)

Notary Public, South Dakota
(Title)

March 31, 1982

(Date Signed)

Cost of Printing: 5 1/2" per publication;

11" @ \$3.61/inch = \$39.71

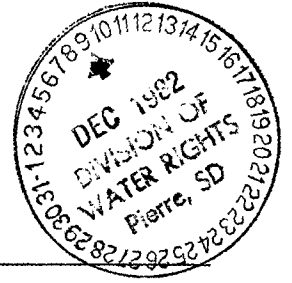
NO. 4880-3
NOTICE OF HEARING
ON APPLICATION TO
APPROPRIATE WATER
Pierre, South Dakota 57501
Notice is hereby given Henry
Carlson, whose post office ad-
dress is POB 1213, Sioux Falls,
South Dakota, has made an appli-
cation in accordance with the pro-
visions of SDCL 46-1-1 thru 46-1-9;
46-1-12 thru 46-1-14; 46-2-9 thru 46-
2-11; 46-2-13; 46-5-1 thru 46-5-8; 46-
5-10 thru 46-5-22; 46-5-25; 46-6-1,
46-6-3 thru 46-6-5; 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, for a permit to appro-
priate for beneficial use 0.50 cubic
feet of water per second of time
from groundwater (two wells)
through the Henry Carlson Office
Building, the point(s) of diversion
which are to be located in the
NE 1/4 SW 1/4 of Section 8, Twp. 101
N, Range 49 W. Said water to be
used for purpose of providing
water for Commercial use and
heat pump system.
This Application No. 4880-3 will
be considered by the Water Man-
agement Board at Meeting Room
#1, Kneip Bldg., Church & Illinois,
Pierre, SD upon the 7th day of
April, 1982, at 10 A.M. The Board
is authorized to make a determi-
nation on this application at the
hearing. All interested persons
may appear and be heard. Any
person who may be affected by a
Board decision who desires to
present evidence or cross-exam-
ine witnesses according to SDCL
1-26 may notify the Board in writ-
ing prior to the hearing or orally
at the hearing.
This hearing is an adversary
proceeding. Any person has the
right to be present or to be repre-
sented by a lawyer. These and
other due process rights will be
forfeited if they are not exercised
at the hearing. Decisions of the
Board may be appealed to the Cir-
cuit Court and the State Supreme
Court as provided by law.
Any handicapped person wish-
ing to attend this hearing can con-
tact the Water Rights Division,
DWR, Joe Foss Building,
Pierre, SD, prior to the hearing
date for assistance to assure ac-
cess to the hearing.

For the Water
Management Board
BETTY WESTLUND,
Water Rights Specialist
March 24 & 31, 1982

573



NOTICE OF COMPLETION OF WORKS AND/OR
APPLICATION OF WATER TO BENEFICIAL USE



Post Office _____

Date December 8, 1982

TO: Water Rights Commission
Joe Foss Building
Pierre, South Dakota 57501

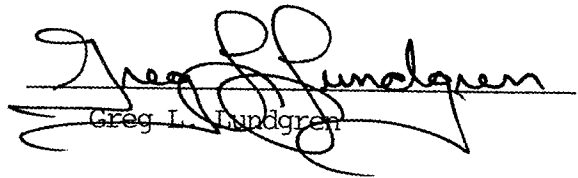
Dear Sirs:

This is to inform you that I have completed the construction of the water diversion system and/or that I have put the water to beneficial use to maximum extent it is going to be used, not exceeding the amounts as specified in Water Right No. 4880-3.

Water Right Permit No. 4880-3 states that the diversion system is to be constructed by Henry Carlson Company, and that the water is put to beneficial use by Henry Carlson.

The diversion system was completed on June 14, 1982. Applying the water to beneficial use was completed on October 26, 1982.

You may schedule an inspection so that the Certificate of Construction and/or the Water License may be issued, thus completing my acquisition of a water right.


Greg L. Lundgren

SOUTH Dakota Department of
Water & Natural Resources

Joe Foss Building Water Rights Division
Pierre, South Dakota 57501

(605) 773-3352

April 16, 1982

Henry Carlson
POB 1213
Sioux Falls SD 57101

Dear Mr. Carlson:

Enclosed herewith is your Water Right Permit No. 4880-3 as approved by the Water Management Board authorizing you to construct your water diversion system and apply the water to beneficial use, not exceeding the limits as specified in said Water Right Permit No. 4880-3.

Also enclosed is FORM 10, Notice of Completion of Works and Application of Water to Beneficial Use, which you are to complete and submit to the Water Management Board when you have completed the system and/or have put the water to beneficial use. The Board can then schedule an inspection so that your Certificate of Construction and/or Water License may be issued to you, thus completing your acquisition of a Water Right.

Very truly yours,

JOHN HATCH, Chief Engineer
Water Rights Division

JH:ks

enclosure

NOTE: The Water Management Board has requested that you be advised that complete engineering plans and specifications for this project must be submitted to the Division of Water Quality - Dept. of Water & Natural Resource for review and approval prior to construction.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

April 26, 1993

4880-3

Henry Carlson Corp.
P.O. Box 1213
Sioux Falls, SD 57101

Dear Sir:

The inspection of your water use system and the inspection of the extent of application of water to beneficial use, as developed under Water Permit No. 4880-3, has been completed. Your final water right document, the Water License, can now be issued.

Statutes require that we charge a \$50.00 fee for the inspection and issuance of the Water License. Upon receipt of the \$50.00 fee from you, we will begin processing your Water License.

South Dakota Water Law 46-5-30.1 requires that a permit holder may not divert water until the \$50.00 license fee has been paid. Please contact us if you have any questions.

Sincerely,

Cheryl F. Frost
Secretary
Water Rights Division
(605) 773-3352

NOTE: On check or money order, please specify your permit number.
This will insure proper handling of the fee.

**HENRY CARLSON
COMPANY**

GENERAL CONTRACTORS • 1105 WEST RUSSELL • SIOUX FALLS, S. DAK. 57118



POST OFFICE BOX 84010
PHONE (605) 336-2410
FAX (605) 332-1314

April 29, 1993

South Dakota
Department of Environment & Natural Resources
Joe Foss Building
523 E. Capitol
Pierre, South Dakota 57501-3181

Attention: Cheryl F. Frost, Secretary
Water Rights Division

Dear Ms. Frost:

We enclose our check in the amount of \$50.00 to cover payment for
Water License for Water Permit No. 4880-3. Please mail the license
to our address as shown above.

RECEIPT

Division of Water Rights

413753

South Dakota Department of Environment and Natural Resources

Pierre, _____ April 30, 19 93

RECEIVED OF Henry Carlson Co, General Contractors, 1105 W Russell, Sioux Falls, SD 57118
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. <u>4880-3</u>	50	00
Fee for Filing Transfer Form _____		
Fee for Filing Extension Request _____		
Fee for _____		

(Any Other Work Provided by Law)	Total	50 00

By John H. Hatch
Chief Engineer

South Dakota

GREAT FACES. GREAT PLACES.

**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

November 26, 1991

Bob Fraser
Henry Carlson Co.
P.O. Box 1213
Sioux Falls, SD 57101

Dear Mr. Fraser:

I visited your office on September 25, and spoke with you concerning the licensing of Water Permit No. 4880-3 for the well(s) placed for both consumptive use, and operation of a heat pump in the Henry Carlson office building. At that time, you agreed to obtain the construction plans from the design engineers. I need the following information to complete the water license:

- 1) Pump capacity, Size, No. stages for pumps on each well
- 2) Type and length of lines carrying water through system
- 3) Amount of water used by heat pump system, amount of water used for consumptive purposes and amount used for watering lawn
- 4) General schematic of entire system and the specifications of the heat pump used

Please forward this information at your earliest convenience.

Your immediate response is greatly appreciated, and if you have further questions, please feel free to contact me.

Sincerely,

Gregory C. Johnston

Gregory C. Johnston
Natural Resources Engineer
Water Rights Division
(605) 773-3352

HENRY CARLSON COMPANY

GENERAL CONTRACTORS • 1105 WEST RUSSELL • SIOUX FALLS, S. DAK. 57118

POST OFFICE BOX 84010

PHONE (605) 336-2410

FAX (605) 332-1314

December 4, 1991

Mr. Gregory C. Johnston
Dept. of Environment & Natl. Resources
Joe Foss Building
523 East Capitol
Pierre, SD 57501



Dear Mr. Johnston:

I am answering your letter of November 26, 1991 to Mr. Bob Fraser of our office concerning Water Permit #4880-3.

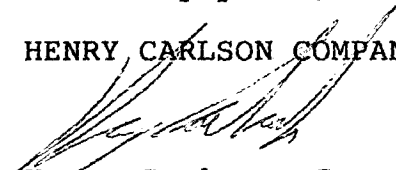
The pump has a capacity of 26 gallons per minute. It is a 3 HP and is a 15 stage pump. The pump is in only one well. The wells are approximately 132 feet apart and are approximately 25 feet south of the building. The water is carried from the well in Class 160 PVC piping to the inside of the building where it is then carried in copper lines through the heat pump system.

No water is consumed by the heat pump system as the water is returned through well No. 2. We have not been using the well for lawn watering due to its iron content. I have enclosed copies of the heat pump specifications showing a diagram of the piping diagram.

If you need any additional information, please contact me.

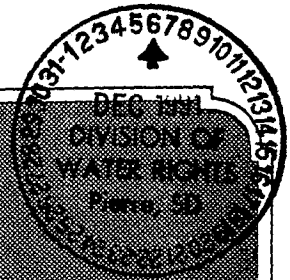
Sincerely yours,

HENRY CARLSON COMPANY


Henry Carlson, Jr.
President
HC/tr

Encl.

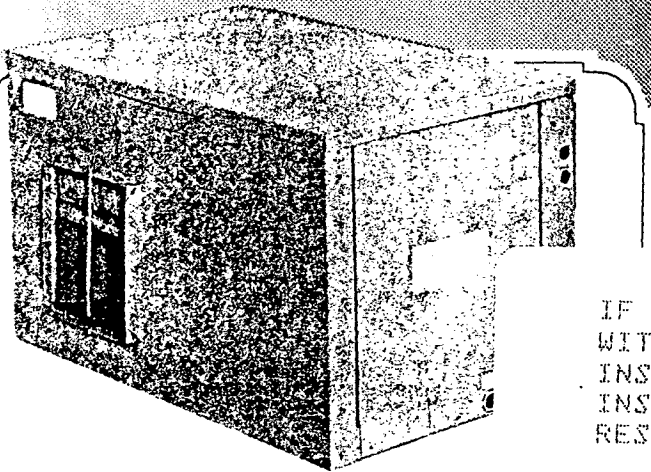




GROUND WATER HEAT PUMPS

1-1/4 thru 5 Tons

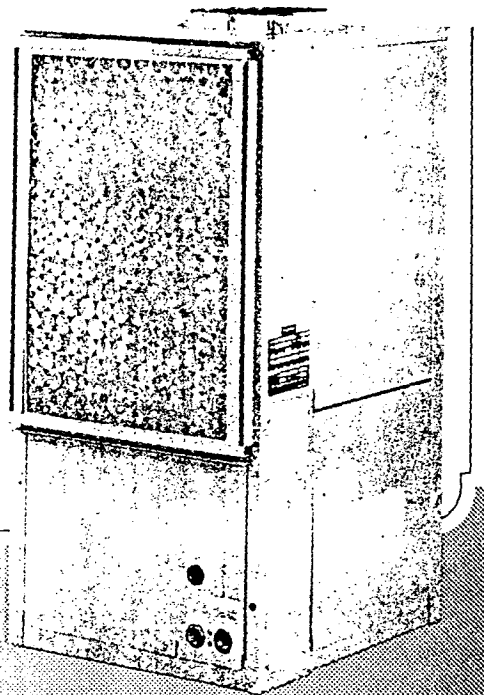
INSTALLATION, START-UP and SERVICING PROCEDURES



MODELS

CW
UW
FW

IF THE UNITS ARE TO BE INSTALLED
WITHOUT RETURN AIR DUCT WORK,
INSTALLATION CODES MAY LIMIT THE
INSTALLATION TO SINGLE STORY
RESIDENCES.



PRINTED: DECEMBER, 1981

SINGER
CLIMATE CONTROL DIVISION

401 RANDOLPH STREET
RED BUD, ILLINOIS 62278

SINGER RESERVES THE RIGHT TO DISCONTINUE, OR CHANGE AT ANY TIME, SPECIFICATIONS OR DESIGNS WITHOUT NOTICE
AND WITHOUT INCURRING OBLIGATIONS.

7790-107

GHP-003

INSTALLATION PROCEDURES

TEMPORARY HEAT . . . Ground Water Heat Pumps are not recommended as a source of temporary heat. During construction, filters quickly become filled with construction dirt and debris which impairs operation of machines. Also construction dirt lodged in a machine is most difficult to remove. Separate means of providing temporary heat during construction, plastering, etc., is strongly recommended.

BEFORE INSTALLING . . . Blower wheels are blocked with paperboard chocks which must be removed prior to unit installation. All compressors are internally spring mounted and no hold down bolts need to be removed.

LOCATION AND ACCESS.

1. Installing contractor will find it beneficial to talk to well driller and/or plumber before installing heat pumps.
2. We recommend that contractor cover heat pumps with drop cloth or vinyl film to protect machines during finishing of building. This is important where spraying of fireproof material on bar joists, sand blasting wood ceilings or metal panels, and plastering of partitions, etc. has not been completed. A word

of caution to general contractor can be helpful in protecting owner's investment.

3. Attic locations will require access provision for future servicing or removal of the unit.
4. Be sure there is screwdriver access to electrical and blower service panels (two sides).
5. Be sure there is adequate filter access.
6. Floor mounted heat pumps should be mounted on a piece of rubber backed carpet or similar isolation material a little larger than base area for isolation between machine and floor.
7. For closet applications using louvered door, do not position heat pump unit with filter facing louvered door.
8. For suspended mounting a combination hanger bracket vibration isolator assembly including isolator washer, has been developed for field installation.
9. A discharge collar is provided on all models to facilitate ductwork connection. A canvas connector is recommended between the discharge collar and duct transformation.

PIPING

1. NON-DEDICATED WATER WELL SYSTEM.

A manual valve should be located between the pressure tank and the heat pump inlet (supply) to provide adjustment of the water flow rate. Also recommended is an automatic water valve (slow acting solenoid valve, dual acting, pressure actuated regulating valve or motorized valve) located on the outlet (return) line after the Heat Pump. This is to insure that the water flow ceases when the compressor stops operating. This valve is generally wired in a 24V control circuit to open when the compressor is energized and to close when the

compressor is turned off. The slower the automatic valve opens and closes, the less water hammer noise will result. To further reduce objectionable water hammer noise, the installation of a simple air trap ahead of the valve is recommended.

2. DEDICATED WATER WELL.

A manual valve should be located between the well pump and the Heat Pump inlet (supply) to provide adjustment of the water flow rate. In addition, a check valve should be located between the manual valve and the well pump to prevent loss

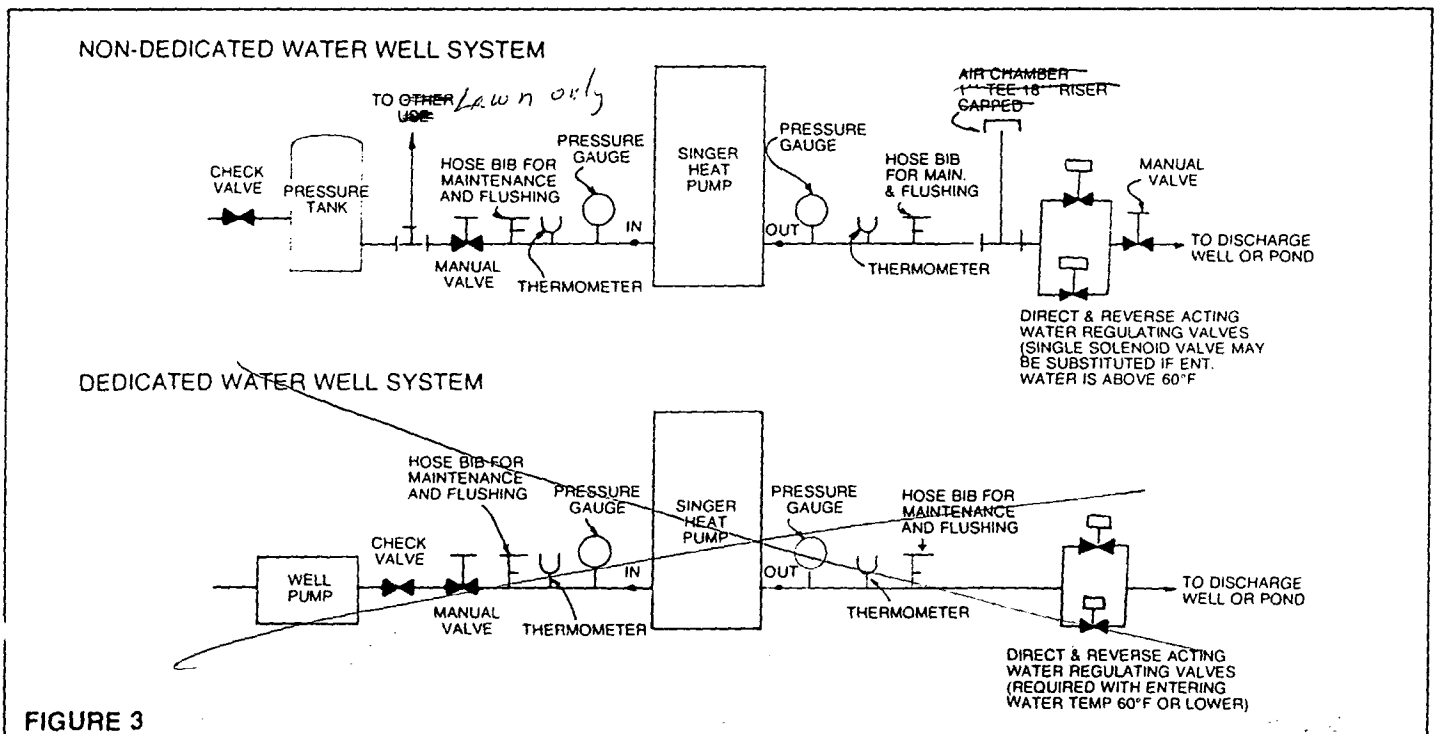


FIGURE 3

Air flow rate (cubic feet per minute) and temperature limits are in consideration of nameplate utilization voltage, and water at nominal flow rate and temperature.

AIR FLOW RATE

The air volume in cubic feet per minute is shown in the table below. For each model, the maximum air flow is the value to the left, at minimum external static pressure. The minimum air flow is the value to the right, at maximum external static pressure.

Air flow rate limitations are more critical on heating than on cooling; therefore, if the installation provides adequate air flow on heating, the reduced air flow resulting from wet coil on cooling may be ignored.

MODEL	CFM VS. EXTERNAL STATIC PRESSURE						
	.05	.10	.15	.20	.25	.30	.35
CW-UW-FW							
160	640	625	600	570	490	460	N/A
220	740	720	685	645	605	755	535
300	965	955	940	925	900	875	850
380	1320	1295	1270	1240	1200	1175	1130
450	1535	1520	1510	1490	1475	1455	1430
600	N/A	N/A	1950	1900	1825	1800	1780

Nominal CFM (Rated Conditions)

NOTES:

1. Available External Static Pressure is total external to machine and reasonably clean filter.
2. External Static Pressure resulting from discharge ductwork fittings and register some times tends to be over estimated in design. Above data are the results of rigorous laboratory tests. They are not altered to compensate for over estimates or added safety factors.
3. N/A. Not recommended. Do not apply machine in this area.
4. All blowers are direct driven. Motor synchronous speed is 1200 RPM for all models.
5. All CFM shown at dry air conditions. For approximation of wet CFM operation on same system ductwork and grille use a factor of 94% of dry CFM.

AIR TEMPERATURE LIMITS

The maximum and minimum Entering Air Temperature (EAT) at

the NOMINAL air and water flow rates shown in the Air Volume Chart and Water Flow Chart are:

	COOLING	HEATING
*MINIMUM E.A.T., °F	52/NA	40 d.b.
NOMINAL E.A.T., °F	80/67	70 d.b.
MAXIMUM E.A.T., °F	95/78	80 d.b.

*For maximum and minimum temperature limits at other than nominal air flow rates, adjust temperature values to provide equivalent enthalpy. SINGER Application Engineering can perform this psychrometric analysis upon request.

For cold start-up; auxiliary heat must be used to raise house temperature to minimum E.A.T level.

WATER-FLOW RATE/TEMPERATURE LIMITS

Water is the condensing medium when operating in the cooling mode, and water is the cooling load when the cycle is reversed to the heating mode.

WATER FLOW RATE

The minimum water flow rate is approximately 2 GPM per 12,000 BTUH of unit rated cooling capacity, (for both heating and cooling with entering water temperatures 75° and below).

The maximum water flow rate is 2 times the minimum rate for heating and cooling.

WATER TEMPERATURE LIMITS

The maximum and minimum entering water temperature (E.W.T), at the nominal air and water flow rates, shown in Air Volume and Water Flow Chart are:

	COOLING	HEATING
MINIMUM E.W.T, (°F)	40	40
MAXIMUM E.W.T, (°F)	95	85

ENVIRONMENT TEMPERATURE LIMITS

The environment within which the heat pump is installed should not be too hot or too cold. For example, if installed in the attic, high summer temperatures and low winter temperatures will diminish the units performance.

Under no circumstances should this equipment be installed out of the conditioned space when outside temperatures persist below freezing.

When desired and where climate permits installation out of the conditioned space, heavily insulate the outside of the unit and ductwork. It is also advisable to heat tape the water pipes, espe-

OPERATING LIMITS TABLE

					WATER FLOW RATE (GPM) (MINIMUM 40°F E.W.T.)												AIR TEMPERATURE (°F) (DB/WB)									
					VOLTAGE				COOLING CYCLE (MAXIMUM 95°F E.W.T.)						HEATING CYCLE (MAXIMUM 85°F E.W.T.)											
					208V POWER		230V POWER		75°F E.W.T. BELOW			75°F E.W.T. ABOVE			BELOW 55°F E.W.T.			ABOVE 55°F E.W.T.			COOLING			HEATING		
MODELS	MIN	MAX	MIN	MAX	MIN	NOM	MAX	MIN	NOM	MAX	MIN/NOM	RECOM- MENDED	MAX	MIN	NOM	MAX	MIN	NOM	MAX	MIN	NOM	MAX				
CW-UW 160	187	229	207	253	2.5	2.5	5.0	2.5	3.8	5.0	2.5	3.8	5.0	2.5	2.5	5.0	52/NA	80/67	95/78	40/NA	70/NA	80/NA				
CW-UW 220	187	229	207	253	3.2	3.2	6.4	3.2	4.7	6.4	3.2	4.7	6.4	3.2	3.2	6.4	52/NA	80/67	95/78	40/NA	70/NA	80/NA				
CW-FW 300	187	229	207	253	4.4	4.4	8.8	4.4	6.6	8.8	4.4	6.6	8.8	4.4	4.4	8.8	52/NA	80/67	95/78	40/NA	70/NA	80/NA				
CW-FW 380	187	229	207	253	5.5	5.5	11.0	5.5	8.2	11.0	5.5	8.2	11.0	5.5	5.5	11.0	52/NA	80/67	95/78	40/NA	70/NA	80/NA				
CW-FW 450	187	229	207	253	6.6	6.6	13.2	6.6	10.0	13.2	6.6	10.0	13.2	6.6	6.6	13.2	52/NA	80/67	95/78	40/NA	70/NA	80/NA				
CW-FW 600	187	229	207	253	8.8	8.8	17.6	8.8	13.2	17.6	8.8	13.2	17.6	8.8	8.8	17.6	52/NA	80/67	95/78	40/NA	70/NA	80/NA				



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

December 20, 1991

Sioux Well Drilling
1401 E. 63rd ST.
Sioux Falls, SD 57104

Dear Sirs:

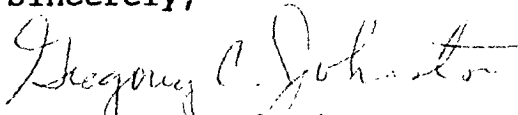
I am writing to inquire about well completion reports for 2 wells you drilled and completed on the NE1/4 SW1/4 Section 8-T101N-R49W for Henry Carlson Corporation in 1982 or 1983. The wells were used for a geothermal heating system in their office building. In addition, I also need any information you may have on the following:

- 1) Pump - Make, model, size and capacity of pump placed in each well
- 2) Motor - Make and model

Please send all information you may have concerning these wells to me as soon as possible.

Your immediate response will be greatly appreciated, and if you have any questions, please feel free to contact me.

Sincerely,


Gregory C. Johnston
Natural Resources Engineer
Water Rights Division
(605) 773-3352

File No. 4880-3

Water Rights Division -DENR

Conversation or File Documentation

NAME OF PERSON OR FILE: Henry Carlson, Inc.

ADDRESS: P.O. Box 1213, Sioux Falls, SD 57101

COUNTY: Minnehaha

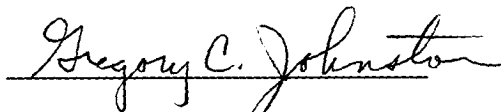
DATE: 12/15/92

TELEPHONE: 336-2410

RE: Well Completion Reports for two wells used at Henry Carlson,
Inc. building

COMMENTS:

Wrote and called Sioux Well Drilling for well completion reports for a supply and a recharge well used for the geothermal heating system at Henry Carlson, Inc. The wells were drilled in 1981-82, and Sioux Well Drilling was unable to find the well completion reports. Form 2A has some general information about the supply well and this was used on the water license and exam of works.



Gregory C. Johnston

Natural Resources Engineer

DENR, Water Rights Division



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

April 10, 1992

Henry Carlson, Jr.
1105 West Russell
Sioux Falls, SD 57118

Dear Mr. Carlson:

I am writing to request the well completion reports for both the supply and recharge wells drilled for your heat pump system in the Henry Carlson building. I believe Mr. Fraser told me it was Sioux Well Drilling who completed both wells. Check with them for the reports. If they are not available, please let me know and we will complete the licensing of Water Permit No. 4880-3 without them.

In addition, I need the make, model number and pressure (psi) of the 3 horsepower pump placed in the supply well, as well as the diameter and approximate length of the Schedule 160 PVC carrying the water from the supply well to your system.

Your immediate attention on this matter is greatly appreciated, and if you have further questions, please feel free to contact me.

Sincerely,

Gregory C. Johnston
Natural Resources Engineer
Water Rights Division
(605) 773-3352

Permit No. 4880-3

Big Sioux River Water District

Report Of Examination Of Works And/Or Application of Water To Beneficial Use

TO: Chief Engineer, Division of Water Rights, DENR, Foss Bldg., Pierre, SD 57501

I have this day made a thorough examination of the water use system constructed by Henry Carlson Corp. of P.O. Box 1213, Sioux Falls, SD 57101 holder of Permit No. 4880-3, bearing the priority of March 12, 1982 authorizing the diversion of 0.5 (0.1 cfs consumptive use) cu. ft. per second of the waters of the Big Sioux Aquifer-Sioux Falls Management Unit for geothermal heating/cooling purposes, in Mimnehaha County.

I have to report on the conditions of the same as follows:

A. Works used to divert the water:

One supply well - 40' deep, 25' of 8" black steel casing and 15' of stainless steel screen; Submersible pump - 15 stages, Make and Model unknown, 3 HP, 26 GPM; One recharge well

B. Works used to transport water to place of use:

200' of 3" Schedule 160 PVC

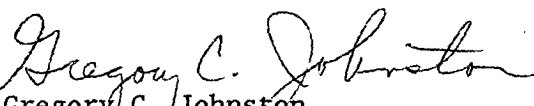
C. Works used to apply water to beneficial use:

Model CW-FW Singer Heat Pump (Specifications enclosed in file), no water is being used for lawn watering

The system is in the following condition good. The point of diversion is located Well No. 1 (Supply well) - 3705'S and 2805'W; No. 2 (Recharge well) - 3700'S and 2753'W - both from the NE corner of Section 8-T101N-R49W. The works are capable of diverting and conveying to the place of use 0.06 cu. ft. per second of water which is to be used for geothermal heating/ cooling. Water has been put to beneficial use. The license should be issued for 0.06 cfs.

Applicable permit qualifications have been complied with ☒ Yes No

Exceptions to compliance are: None Date 9/25/91


Gregory C. Johnston
Natural Resources Engineer
DENR, Water Rights Division

LICENSE FOR PERMIT NUMBER 4880-3

1. Legal location of wells: No. 1 (Supply Well) is 3705'S and 2805'W; No. 2 (Recharge Well) is 3700'S and 2753'W - both from the NE corner of Section 8-T101N-R49W

Dams and Structures N/A

2. Well Information: Well Drilling Firm Sioux Falls Well Drilling

Completion Report? Yes No X No. of Wells 2 Depth(s) 40/? feet

Casing a) diameter 8/? inches Screen a) type Stainless Steel

 b) length 25/? feet b) length 15/? feet

 c) type Black Steel Static Water Level 15/? feet

Pump a) make Unknown Motor a) make unknown

 b) model Unknown b) model no. Unknown

 c) size Unknown c) horsepower rating 3

 d) capacity 26 GPM d) serial no. Unknown

 e) turbine pump - no. of stages 15

 f) operating PSI unknown

3. Distribution lines or canals

 a) size 3 inches

 b) type Schedule 160 PVC

 c) length 200 feet

4. System Type a) Heat pump system - diagrams enclosed in file

NOTE: For Permits with additional wells or changes in well locations,
record the following for each well: pumping capacity, date
constructed, well driller and if a well log is available.

Indicate any other permit(s) which are associated with project

Yes No Check Items

- N/A 1. Soil and water permit lands agree with lands being irrigated
 and lands listed on permit?
- X 2. Special qualifications to permit being abided by?
- X 3. All structures, wells and lands on map?
- N/A 4. Irrigation Questionnaires checked to determine if permit
 owner started irrigation by end of construction period?
- X 5. Is chemigation used?
- N/A 6. If yes, does equipment comply with chemigation rules?

REMARKS: 0.1 cfs permitted for consumptive use (watering lawn) never used

NOT TO SCALE

NO. 4880-3

HENRY CARLSON

N 30-L
1"=754'

NE corner

Section 8-T101N-R49W

Drawn by:

Gregory C. Johnston

Gregory C. Johnston

Natural Resources

Engineer

Water Rights Division

DENR

12/16/92

Section 8-T101N-R49W:

NE 1/4 SW 1/4

(Supply)
Well No. 1

Henry Carlson
Building

(Recharge)
Well No. 2

4880-3

STATE OF SOUTH DAKOTA
WATER LICENSE NO. 4880-3

(1) Henry Carlson, of P.O. Box 84010, Sioux Falls, SD 57118 made Application No. 4880-3, March 12, 1982 for a water permit to appropriate 0.50 cubic feet of water per second from groundwater, Minnehaha County, South Dakota for geothermal heating purposes. Permit No. 4880-3, with a priority date of March 12, 1982 was approved April 7, 1982 and issued to the applicant(s) for diversion of water with construction of the described water supply system to be completed on or before April 7, 1987 and for the application to beneficial use of said water on or before April 7, 1991.

(2) It is certified that the applicant 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 .06 cubic feet of water per second for beneficial use. The location of the diversion points are Well No. 1 (supply well) - 3705 feet S and 2805 feet W; Well No. 2 (recharge well) - 3700 feet S and 2753 feet W - both from the NE corner of Section 8 T101N-R49W (NE¼ SW¼).

(3) The applicant has complied with the provisions of South Dakota State Law relating to the application of water to beneficial use for geothermal heating purposes.

(4) Pursuant to South Dakota Water Law 46-5-30.1 Henry Carlson of P.O. Box 84010, Sioux Falls, SD 57118 the holder and/or owner of Water Permit No. 4880-3 is issued a license to appropriate water, the right to use 0.06 cubic feet of water per second from groundwater with a priority date of March 12, 1982 from the location specified in (2) of this license. The water is to be used for purpose of geothermal heating purposes. This license is subject to any limitations or qualifications listed in Water Permit No. 4880-3 and subject to South Dakota State Law.



SEP 20 1993

JOHN HATCH, Chief Engineer

Water Rights Division

Department of Environment and Natural Resources



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3181

SEP 20 1993

4880-3

Henry Carlson
P.O. Box 84010
Sioux Falls, SD 57118

Dear Mr. Carlson:

Enclosed is Water License No. 4880-3. This is the final water right document completing your process of obtaining a Water Right. Enclosed is Receipt No. 413753 in the amount of \$50.00 which you paid for the inspection and issuance of the Water License.

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. 4880-3, 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.

Very truly yours,

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

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enclosures