D. Mark & Joy Lynn 63-11995 & 63-11996 Notes by: D. Thiel

Hearing on Dec 20, 1994 Hearing Officer: Glen Saxton

Applicant Mark Lynn present & represented by Dana Hofstetter

Protestants present:

Donald B. Jensen -

Terry Goicoechea Jensen -

Melvin E. Gahley - Willowbrook Water (Homeowners) Assn.

Willowbrook Water Assn

- 28 users on common system
- 5 individual
- Located downstream & across the road from the proposed wells
- Has had to rebuild wells

Willowbrook is allowed to intervene, per hearing officer

Dana Hofstetter

378 acres described, in Gem & Ada Co, 4 cfs

One well in Ada, one well in Gem

Rule 40 information will be provided, except the county letters have been requested - responses not received.

Objection - to ruling that one $25 protest fee applies to the protest of two applications

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Terry Scanlan

- Jensen well appears to have perched water table
- Cascading water noted in the well during Sept 93 measurement
- Depth to water in 9/93 was 200+ ft

A → - Depth to water prior to pumpage in the spring?

Exhibit 10 → - When drilled, depth to water was ≈ 30'

- Why is aquifer on the right (near the Jensen well) shown to extend to the ground surface?

? → - Describe what is happening in Figure 2, Exhibit 1
Appears to be irrigation recharge

Suggestion: Ask Steve Baker to study Hydrogeologic reports

Specific capacity of Lynn well ≈ 40'/ft
Specific capacity of Willowbrook '93 well = 2.8'/ft

∴ it appears that the Lynn well is in a different aquifer than the Willowbrook well

Transmissivity of Lynn wells ≈ 100,000 gpd/ft

per Scanlan: ∴ in the Lynn well area, wells can be drilled which will provide for the proposed appropriations

X Exam

Mark Lynn Property has good soil, would make a good cattle operation if irrigated.
Would like to irrigate in 1995

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Mark Lynn, Cont.

No plans to sell the property.

Existing wells:

1- Trailer house
2,3 Domestic
4 Irr

} No difficulties obtaining water

Positive economic impact in developing wells.

Project will provide more feed for area.

Don Jensen

Concerned about water

Has had opportunity to drill more wells

Concerned that the investment will not pay off.

Has 200 head of cattle, for winter headquarters. Has noticed much water fluctuation.

Water level is probably now down to 60-100'.

Well seems to take advantage of cascading water

Well is 400' deep, pump at 380'

Jim Bean Pearl Route Eagle

Lives @ Pearl

Uses spring flow for domestic use. Has owned property for 40 yrs.

1 stock well a mile above Donald Jensen's

Terry G. Jensen

Paid $30K for irr well

MAPTECH MED
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Terry Jensen, cont.

Surface water does not seem to travel as far as the Chapparall area.

Does not want to have to redrill. Presently has IOWRB loan.

Opposes new wells in the area.

Melvin E. Gahley

Drawdown during the year is about 35'

Redrilled well via IWRB loan last year.

No objections to wells. Can we have wells curtailed?

Desires protection for water rights.

Thought: Require Lynn well system to provide a USGS gauging well.

Note: Exhibit 13 (8½ x 11") repro will be sent to us. by Dana H.

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In the Matter of Applications for Permit Nos. 63-11995 and 63-11996 in the Name of D. Mark and/or Joy Lynn

APPLICANTS' EXHIBIT LIST

Admitted by Hearing Officer		
Yes	Exhibit 1:	September 2, 1994 letter and attachments from Terry Scanlan to David Tuthill regarding "Request to Reactivate Applications for Permit."
Yes	Exhibit 2:	IDWR, "Ground-Water Conditions in the Dry Creek Area, Eagle, Idaho" (June 1991).
Yes	Exhibit 3:	November 11, 1994 letter and attachments from Terry Scanlan to Dana Hofstetter regarding "Aquifer Test Results - Mark Lynn Ranch on Willow Creek."
Yes	Exhibit 4:	December 16, 1994 letter and attachments from Terry Scanlan to Dana Hofstetter regarding "Mark Lynn Water Rights."
Yes	Exhibit 5:	Map showing locations of proposed wells and proposed places of use.
Yes	Exhibit 6:	USGS, Geologic Map and Section, Western Snake River Plain and Surrounding Area, "Professional Paper 1408-G."
Yes	Exhibit 7:	IDWR, Figure 4-2 Index Map of a Portion of Southwestern Idaho showing Isotope Sample Locations and Major Lineaments in the Western Snake River Plain and Adjacent Areas, "Water Information Bulletin No. 30 Geothermal Investigations in Idaho Part 11" (December 1981).
Yes	Exhibit 8:	Map showing approximate locations of Lynns', Donald Jensen's, Chaparral and Willowbrook wells.
Yes	Exhibit 9:	Map showing locations of wells with cross-sectional line.
Yes	Exhibit 10:	Hydrogeologic cross-section extending from Donald Jensen's wells to the Willowbrook wells.
Yes	Exhibit 11:	USGS, Configuration of the Water Table and Depth to Water, Spring 1980, Water Level Fluctuations and Water Movement in the Snake River Plain Regional Aquifer System, Idaho and Eastern Oregon, "USGS Hydrologic Investigations Atlas HA-703" (1988).
Yes	Exhibit 12:	Enlarged and colored portion of Exhibit 11.

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Yes Exhibit 13: Schematic of groundwater and surface water flow directions.

Yes Exhibit 14: December 19, 1994 letter from Dana Hofstetter to the Ada County Commissioners requesting comments on the local public interest.

Yes Exhibit 15: December 19, 1994 letter from Dana Hofstetter to the Gem County Commissioners requesting comments on the local public interest.

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JUN 29 1995

OWNER CODE	NAME & ADDRESS	PRIORITY DATE	WATER USE	USE PERIOD FROM	USE PERIOD TO	DIVERSION RATE	DIVERSION VOLUME
C	D MARK LYNN	01/01/1900	IRRIGATION	03-15	11-15	1.86 CFS	
C	JOY LYNN		STOCKWATER	01-01	12-31	0.09 CFS	
	4831 SKYLINE DR						
	EAGLE ID 83616				TOTAL DIVERSION:	1.95 CFS	
	(208) 939-0684						

Water Source: WILLOW CREEK Tributary to: BOISE RIVER Stage: BENEFICIAL USE

Point(s) of Diversion:	T05N R01W	S03	SWNW	ADA County
		S04	SESE	ADA County
	T06N R01W	S34	SESE	GEM County
		S35	SWSW	GEM County
Point(s) of Beginning Stream Reach:	T05N R01W	S03	NWSWNE	ADA County
		S04	NWSESE	ADA County
Point(s) of Ending Stream Reach:	T05N R01W	S03	SESWNW	ADA County
	T06N R01W	S35	NWSWSW	GEM County

Place of use Legal Description for: IRRIGATION

			NE				NW				SW				SE				
			NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	
T	R	S	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	SUM
05N	01W	3		15			10												25.0
06N	01W	34													10		18	25	53.0
06N	01W	35											15						15.0
																	TOTAL ACRES		93.0

Place of use location for STOCKWATER is the same location as described for: IRRIGATION

POU County: ADA, GEM

Non-Irrigation Uses: S/400 RANGE, INSTREAM STOCKWATER

Other Rights: A63-03004, A63-08044, 63-10775

Dates: Exam Made Date: Verified Date:

Misc: Water District Number: Field Inspection Flag:
Presumption Flag:

JUN 29 1995

AJ0749NP
No. A63-28380

IDAHO DEPARTMENT OF WATER RESOURCES
ADJUDICATION CLAIM PROFILE REPORT
(REGIONAL)

DATE: 03/03/95
PAGE: 1

OWNER CODE	NAME & ADDRESS	PRIORITY DATE	WATER USE	USE PERIOD FROM	USE PERIOD TO	DIVERSION RATE	DIVERSION VOLUME
C	D MARK LYNN	03/01/1940	IRRIGATION	03-15	11-15	6.20 CFS	
C	JOY LYNN		STOCKWATER STORAGE	01-01	12-31		2.50 AFA
	4831 SKYLINE DR		DIVERSION TO STORAGE	01-01	12-31	0.50 CFS	
	EAGLE ID 83616						
	(208) 939-0684			TOTAL DIVERSION:		6.20 CFS	2.50 AFA

Water Source: WILLOW CREEK Tributary to: BOISE RIVER Stage: BENEFICIAL USE

Point(s) of Diversion:			
T05N R01W	S03	SWNW	ADA County
	S04	SESE	ADA County
T06N R01W	S34	SESE	GEM County
	S35	SWSW	GEM County

Place of use Legal Description for: IRRIGATION

			NE				NW				SW				SE				
			NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	
T	R	S	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	Lt Ac	SUM
05N	01W	2						15	05										20.0
05N	01W	3	35	20	15	10	+20		05			20							105.0
05N	01W	4			02	15					40				30	40	01	30	158.0
06N	01W	34															02	10	12.0
06N	01W	35											15						15.0
																	TOTAL ACRES		310.0

POU County: ADA, GEM

Non-Irrigation Uses: D/400 RANGE

Other Rights: A63-03004, A63-08044, A63-28379, 63-10775

Dates: Exam Made Date: Verified Date:

Misc: Water District Number: Field Inspection Flag:
Presumption Flag:

January 1, 1995

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WATER RESOURCES
WESTERN REGION

State of Idaho
Department of Water Resources
Western Region
Director, R. Keith Higginson
Manager, David R. Tuthill
2735 Airport Way
Boise, Idaho 83705

Re: Application for Permits No. 63-11995 and 63-11996

Dear Sirs:

We the residents of the Chaparrall Subdivision, Willowbrook Subdivision and Donald B. Jensen are not satisfied beyond any doubt that the issuance of the above water permits will indeed hinder and/or greatly decrease the water supply in the Willow Creek drainage which is our immediate water source. With respect to Terry Scanlan P. E., Scanlan Engineering and all the colorful charts, grafts and displays admitted into evidence at the hearing held on December 20, 1994, references to hydraulic and geologic barriers are not significantly proven but in fact are theory.

As Mr. Jensen and Mr. Bean stated our water supply is most likely from the Pearl Mt. area and by the looks of the snow pack in this area there is a lack of. Both these families are long time residents and depend on ranching as a life source. As Mr. Jensen stated he only farms about 160 acres just enough to supply his cattle with winter feed. With this in mind we fail to see the need for Mr. Lynn to irrigate almost 400 acres for the twenty or so cows that he has and indeed does not depend on for his livelihood. This does not seem to adhere to the conservation of water. With the permit that allows the Lynn's to irrigate at present, the 26 acres is more than adequate to raise enough hay for the livestock presently owned.

The question as to benefiting the community as a whole by the hiring of one or two employees for Mr. Lynn's operation does not out way the factor of 75 plus families in this area suffering in lost land values by lack of water and or putting us in the position of having to deepen our wells because of the additional 1800 gpm being pummped out of the Lynn wells should these permits be issued.

The question of fairness to Mr. Lynn was presented. In respect to fairness we believe that Mr. Lynn knew before he purchased this property that it has been a dryland farm for many, many years and he was well aware of the existing water rights that went with the property. Each and everyone of us knew of our water rights and excepted them as such...this is the price you pay to live in the country among other things. Know one begrudges Mr. Lynn to be lucky enough to afford everything he has, however we would all like to be able to keep

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what a lot of us have sunk our every last cent into and to keep it green without the added threat of not enough water to do so.

In conclusion the area residents do not believe this be in the best interest of our community as a whole at this time and/or in the near future. We sincerely hope that this community can rest easy with your decision.

Sincerely;

Terry Goicoechea/Jensen

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DEC 30 1994
WATER RESOURCES
WESTERN REGION

B. Newal Squyres
Dana L. Hofstetter
HOLLAND & HART
Suite 1400, West One Plaza
Post Office Box 2527
Boise, Idaho 83701
Telephone: (208) 342-5000
Facsimile: (208) 343-8869

Attorneys For D. Mark Lynn and Joy Lynn

BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF APPLICATIONS FOR PERMIT NO. 63-11995 AND 63-11996 IN THE NAME OF D. MARK AND/OR JOY LYNN	Case No. 63-11995 and 63-11996 ANSWER TO LETTER OF INTERVENOR WILLOWBROOK WATER ASSOCIATION

COME NOW D. Mark Lynn and Joy Lynn (hereinafter the "Lynns") and for their answer to the December 8, 1994 letter (the "Letter") of Intervenor Willowbrook Water Association ("Willowbrook") regarding application for Permit Nos. 63-11995 and 63-11996 admit, deny and allege as follows:

FIRST DEFENSE

The Letter, and each and every allegation thereof, fails to state a claim upon which relief may be granted.

SECOND DEFENSE

All allegations not specifically admitted in this Answer are hereby denied.

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THIRD DEFENSE

1. In answer to paragraph 1, the Lynns admit that Willowbrook wishes to be considered an intervenor in this proceeding but deny the remaining allegations in paragraph 1.

2. In answer to paragraph 2, the Lynns admit that a prehearing conference was held December 6, 1994 but are without sufficient information to form a belief as to the truth of the remaining allegations of paragraph 2 and therefore deny the same.

3. In answer to paragraph 3, the Lynns admit that there has been a drought in recent years but deny that there has been a decline in static water level in the area, deny that the proposed diversions would impact the domestic well located adjacent to Willow Creek and are without sufficient information to form a belief as to the truth of the remaining allegations of paragraph 3 and therefore deny the same.

4. In answer to paragraph 4, the Lynns deny that the proposed wells would reduce the quantity of water under existing water rights, but are without sufficient information to form a belief as to the truth of the remaining allegations of paragraph 4 and therefore deny the same.

5. In answer to paragraph 5, the Lynns admit that there is a water rights moratorium in effect for certain diversions from surface and groundwater sources within the Boise River Drainage Area but deny that the diversions under Application for Permit Nos. 63-11995 and 63-11996 are subject to the moratorium.

JUN 29 1995

FOURTH DEFENSE

The aquifer tapped by Willowbrook wells are hydraulically separated from the aquifer under the Lynns' property by a geologic barrier.

FIFTH DEFENSE

The diversion of water under Applications for Permit Nos. 63-11995 and 63-11996 will not reduce the quantity of water under existing water rights, including those held by Willowbrook.

SIXTH DEFENSE

The water supply is sufficient for issuance of Permit Nos. 63-11995 and 63-11996.

SEVENTH DEFENSE

The Letter was not properly and timely filed with the Idaho Department of Water Resources.

EIGHTH DEFENSE

Willowbrook's groundwater diversions are not at reasonable groundwater levels.

NINTH DEFENSE

Any difficulties Willowbrook has experienced with their wells are due to aquifer transmissivity at the Willowbrook site, well construction or other factors unrelated to static water levels which have not declined.

TENTH DEFENSE

The proposed diversions will not tap groundwater sources tributary to the Boise River and therefore are not subject to the

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moratorium covering surface and groundwater sources in the Boise River Drainage Area. Additionally, the proposed diversions qualify for a case-by-case exemption from the moratorium on the basis that there will be no effect on prior surface and groundwater rights because of location.

WHEREFORE, the Lynns pray for relief as follows:

1. That the Letter be denied;

2. That Permit Nos. 63-11995 and 63-11996 be approved and issued; and

3. For such other and further relief as the Idaho Department of Water Resources deems just and proper.

DATED this 30th day of December, 1994.

HOLLAND & HART

By _____
Dana L. Hofstetter, for the firm
Attorneys for D. Mark Lynn and
Joy Lynn

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CERTIFICATE OF SERVICE

I hereby certify that on this 30th day of December, 1994, I caused to be served a true and correct copy of the foregoing by the method indicated below, and addressed to the following:

Terry Goicoechea Jensen 8968 Deer Lane Eagle, ID 83616	✓ U.S. Mail ____ Hand Delivered ____ Overnight Mail ____ Telecopy (Fax)
Donald B. Jensen 8661 West Beacon Light Rd. Star, ID 83669	✓ U.S. Mail ____ Hand Delivered ____ Overnight Mail ____ Telecopy (Fax)
Richard B. Roberts Willowbrook Water Association 9333 Spangler Place Eagle, ID 83616	✓ U.S. Mail ____ Hand Delivered ____ Overnight Mail ____ Telecopy (Fax)
Original to: David Tuthill, Manager Western Regional Office Idaho Department of Water Resources 2735 Airport Way Boise, ID 83705-5082	____ U.S. Mail ✓ Hand Delivered ____ Overnight Mail ____ Telecopy (Fax)

for HOLLAND & HART

47836/34168.3002

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JUN 29 1995

HOLLAND & HART
ATTORNEYS AT LAW

DENVER
DENVER TECH CENTER
COLORADO SPRINGS
ASPEN
BILLINGS
BOISE
CHEYENNE
JACKSON
SALT LAKE CITY
WASHINGTON, D.C.

SUITE 1400
WEST ONE PLAZA
BOISE, IDAHO 83702-7714
MAILING ADDRESS
P.O. BOX 2527
BOISE, IDAHO 83701-2527

TELEPHONE (208) 342-5000
FACSIMILE (208) 343-8869

Dana L. Hofstetter

December 28, 1994

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WATER RESOURCES
WESTERN REGION

One

David R. Tuthill, Manager
Western Regional Office
Idaho Department of
Water Resources
2735 Airport Way
Boise, ID 83705-5082

Re: In the Matter of Applications for Permit Nos. 63-11995 and 63-11996 in the name of D. Mark and/or Joy Lynn

Dear Mr. Tuthill:

With regard to my correspondence to you dated December 27, 1994, I believe a copy of Exhibit 13 was inadvertently provided to you instead of a version with an original exhibit sticker. Therefore, I now enclose Applicants' Exhibit 13 with an original exhibit sticker.

Thank you for your consideration and I apologize for any inconvenience this may have caused.

Sincerely,

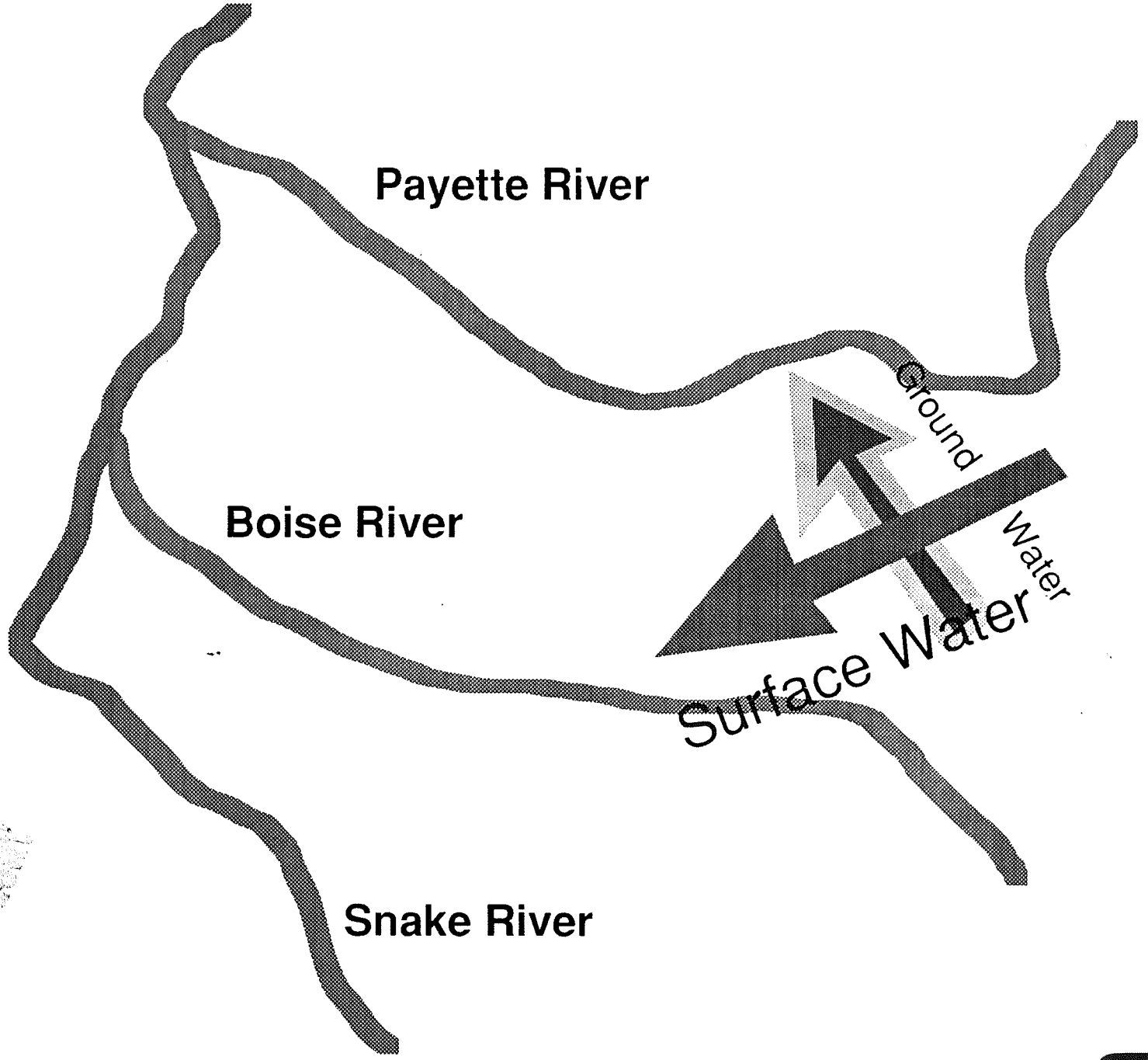
HOLLAND & HART

Dana L. Hofstetter

DLH:tb
Enclosure

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[illegible]
JUN 29 1995



JUN 28

JGHCO Dec 94

EXHIBIT
APPLICANTS'
13
PENGAD-Bayonne, N. J.

HOLLAND & HART
ATTORNEYS AT LAW

DENVER
DENVER TECH CENTER
COLORADO SPRINGS
ASPEN
BILLINGS
BOISE
CHEYENNE
JACKSON
SALT LAKE CITY
WASHINGTON, D.C.

SUITE 1400
WEST ONE PLAZA
BOISE, IDAHO 83702-7714
MAILING ADDRESS
P.O. BOX 2527
BOISE, IDAHO 83701-2527

TELEPHONE (208) 342-5000
FACSIMILE (208) 343-8869

Dana L. Hofstetter

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WATER RESOURCES
WESTERN REGION

December 27, 1994

David R. Tuthill, Manager
Western Regional Office
Idaho Department of
Water Resources
2735 Airport Way
Boise, ID 83705-5082

Re: In the Matter of Applications for Permit Nos. 63-11995 and 63-11996 in the name of D. Mark and/or Joy Lynn

Dear Mr. Tuthill:

Per your request I enclose a reduced 8-1/2 x 11 copy of Applicants' Exhibit 13 used at the hearing last week. I also enclose copies of the deeds confirming Mark and Joy Lynn's ownership of the property covered by the applications.

Please contact me if you need additional information.

Sincerely,

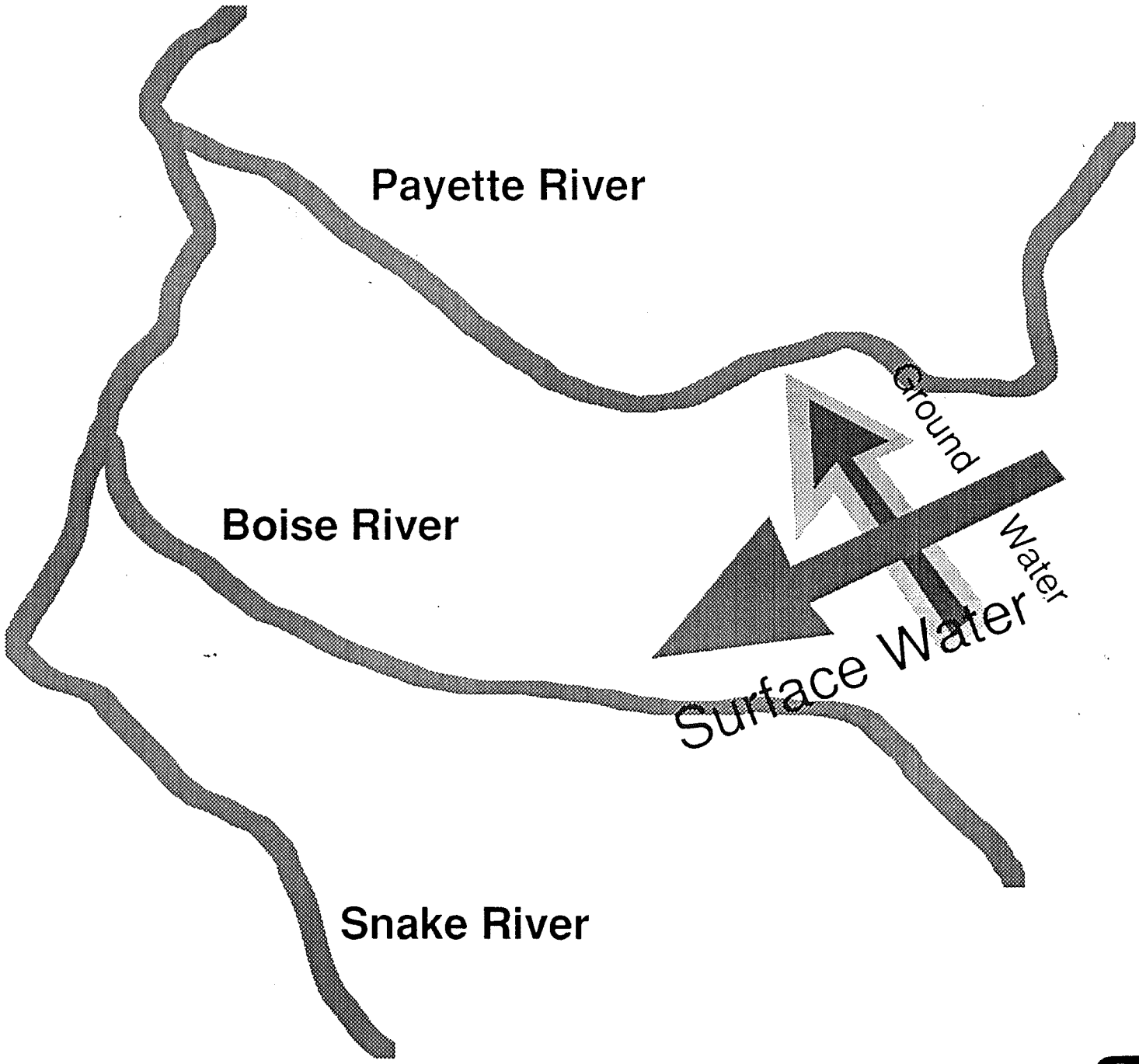
HOLLAND & HART

Dana L. Hofstetter

DLH:mg
encl.

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JUN 29 1995

JGHCO Dec 94

EXHIBIT
APPLICANTS'
13

FA-86165-JD

1511001470

DEED BY PERSONAL REPRESENTATIVE

THIS DEED, made by ROBERT HELMICK and KEITH HELMICK, as Personal Representatives of the Estate of ALBERT HELMICK, deceased, the Grantors, to

MARK LYNN and JOY LYNN, husband and wife, Grantees,
whose address is: 4831 Skyline Drive - Eagle, ID 83616 ;

WHEREAS, said Grantor is the qualified personal representative of said estate, filed as Probate Number SP92-159, in Gem County, Idaho;

THEREFORE, Grantors sell, grant, and convey to Grantees the following described real property, situated in Ada County, Idaho, to-wit:

93111193

FIRST AMERICAN TITLE CO.
ADA COUNTY, ID. FOR ___
J. DAVID NAVARRO
RECORDER BY Klason
'93 FEB 12 PM 4 17

All in Section 2, Twp 5 N., R. 1 W., B.M., Ada County, Idaho:
N½ of the NE¼ of the SW¼ of the NW¼ AND
SW¼ of the NE¼ AND
SE¼ of the NW¼ AND
NW¼ of the SW¼ of the NW¼ AND
N½ of the SW¼ of the SW¼ of the NW¼ AND
S½ of the SE¼ of the SW¼ of the NW¼ AND
Government Lots 2, 3 and 4

All in Section 3, Twp. 5 N., R. 1 W., B.M., Ada County, Idaho:
Government Lots 1, 2 and 3
S½ of the NE¼ AND
NW¼ of the SE¼ AND
SW¼ of the NW¼ AND
NW¼ of the SW¼

All in Section 4, Twp. 5 N., R. 1 W., B.M., Ada County, Idaho:
S½ of the NE¼ AND
NE¼ of the SW¼ AND
NW¼ of the SE¼ AND
E½ of the SE¼

Including water rights, if any, appurtenant thereto or used in connection therewith, and including any easements or rights of ways appurtenant to or used for the benefit of said described premises. Subject to easements, rights of ways, reservations and exceptions, if any.

Said property is conveyed "as is" and accepted by grantees subject to:

a. all U. S. Government reservations in Patents;
b. all oil and gs leases; easements, existing or of record;
c. oil and mineral rights reserved in certain Quitclaim Deeds recorded in Ada County in reference Lot 3, Sec. 3, T. 5 N., R. 1 W. B.M.; and
d. lack of recorded access to and from certain lands;

all of which are noted under title of Exceptions, First American Title Co. of Idaho, Helmick-Lynn Order No. FA 86165, commitment date February 2, 1993. Said property is also conveyed and accepted by Grantee subject to any reservations and exceptions shown anywhere in said title commitment. Grantees have examined the said title commitment and accept this conveyance without any covenants, warranties, express or implied, or agreement on part of grantors, in their official or personal capacities, as to the reservations and exceptions noted in said title commitment.

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JUN 29 1995

with all appurtenances. This deed is executed by grantors as Personal Representatives of said Estate as above noted, and any general covenants of warranty herein contained are restricted to grantor in the representative capacity, and not as an individual grantor.

Said property is conveyed "as is" under existing boundary fences, if any, after reasonable inspection by the grantee, and grantor does not make any representations or warranties as to the qualifications or suitability of said land or premises for water or electrical power, or as to said land or improvements meeting any Federal, State, of local laws, rules or regulations pertaining to zoning, building, subdividing, platting, surveys, planning and use, health, ecology, drainage, irrigation, water quality, sewage or disposal systems, hazardous materials and toxic wastes. Grantor makes no warranties as to surveys, boundaries, or any matter mentioned in this paragraph. There are no warranties, express or implied, as to merchantability, in a general sense or for a particular purpose, except as herein contained in writing, if any.

EXECUTED THIS 12th day of February, 1993.

Robert Helmick

Keith Helmick

Personal Representatives of the Estate of Albert Helmick, deceased

STATE OF IDAHO,)
) ss.
County of Ada.)

On this 12th day of February, 1993, before me, a Notary Public in and for said State, personally appeared ROBERT HELMICK and KEITH HELMICK, known to me or having been proven to me to be the persons whose names are subscribed to the within instrument as Personal Representatives of the estate of ALBERT HELMICK, and acknowledged to me that the same was executed as the Personal Representatives of said Estates.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

Tina L. Smith

Notary Public for State of Idaho;
Residing at Boise, Idaho.
Commission Expires: 7-25-93

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JUN 29 1995

DEED BY PERSONAL REPRESENTATIVE

THIS DEED, made by ROBERT HELMICK and KEITH HELMICK, as Personal Representatives of the Estate of ALBERT HELMICK, deceased, the Grantors, to

MARK LYNN and JOY LYNN, husband and wife, Grantees,

whose address is: 4831 Skyline Drive - Eagle, ID 83616;

WHEREAS, said Grantor is the qualified personal representative of said estate, filed as Probate Number SP92-159, in Gem County, Idaho;

THEREFORE, Grantors sell, grant, and convey to Grantees the following described real property, situated in Gem County, Idaho, to-wit:

All in Section 35, Twp. 6 N., R. 1 W., B.M., Gem County, Idaho:
The SW¼ of the SW¼
All being in Section 34, Twp. 6 N., R. 1 W., B.M., Gem County, Idaho:
S½ of the SE¼ AND
NE¼ of the SE¼

Including water rights, if any, appurtenant thereto or used in connection therewith, and including any easements or rights of ways appurtenant to or used for the benefit of said described premises. Subject to easements, rights of ways, reservations and exceptions, if any.

Said property is conveyed "as is" subject to reservations in U.S. Patent recorded January 8, 1909, Book 1 of Patents, at page 246, records of Gem County, Idaho, and reservations in UI. S. Patent recorded January 16, 1991, in Book A of Patents at page 446. Grantee has notice of said reservations and accepts the same without warranties or covenants, express or implied, on the part of grantors, in reference said patent reservations.

with all appurtenances. This deed is executed by grantors as Personal Representatives of said Estate as above noted, and any general covenants of warranty herein contained are restricted to grantor in the representative capacity, and not as an individual grantor.

Said property is conveyed "as is" under existing boundary fences, if any, after reasonable inspection by the grantee, and grantor does not make any representations or warranties as to the qualifications or suitability of said land or premises for water or electrical power, or as to said land or improvements meeting any Federal, State, of local laws, rules or regulations pertaining to zoning, building, subdividing, platting, surveys, planning and use, health, ecology, drainage, irrigation, water quality, sewage or disposal systems, hazardous materials and toxic wastes. Grantor makes no warranties as to surveys, boundaries, or any matter mentioned in this paragraph. There are no warranties, express or implied, as to merchantability, in a general sense or for a particular purpose, except as herein contained in writing, if any.

EXECUTED THIS 12th day of February, 1993.

MICROFILMED
JUN 29 1995

Robert L Helmick
Robert Helmick

Keith A Helmick
Keith Helmick

Personal Representatives of the Estate of Albert Helmick, deceased

STATE OF IDAHO,)
) ss.
County of Ada.)

On this 12th day of Februars, 1993, before me, a Notary Public in and for said State, personally appeared ROBERT HELMICK and KEITH HELMICK, known to me or having been proven to me to be the persons whose names are subscribed to the within instrument as Personal Representatives of the estate of ALBERT HELMICK, and acknowledged to me that the same was executed as the Personal Representatives of said Estates.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

Tina L Smith
Notary Public for State of Idaho;
Residing at Boise, Idaho.
Commission Expires: 7-25-93

175016
Gem County, IDAHO) ss.
Recorded at request of
First American Title Co.
Time 3:34 PM
Date February 12, 1993
Instru. No. 175016
Recorded as a Deed
RELEASED
JUN 29 1995
Lorna R. Kolodziej, Clerk
Ex-officio Recorder
By: Judy Bigham
Deputy
Fees $6.00

SCANLAN ENGINEERING
Groundwater and Environmental Engineering

September 2, 1994

Mr. David Tuthill
Idaho Department of Water Resources
2735 Airport Way
Boise, ID 83705

Subject: Request to Reactivate Applications for Permit

Dear Mr. Tuthill:

Mr. D. Mark Lynn currently has two applications for permit on file with the Idaho Department of Water Resources. The applications (63-11995 and 63-11996) seek to appropriate groundwater for irrigation of a total of 378 acres located along Willow Creek in Sections 34 and 35, T6N, R1W and Sections 2, 3 and 4, T5N, R1W.

As you and I discussed at our meeting of August 22, 1994, Mr. Lynn is aware of the current moratorium on processing new applications for permit in the Boise River Basin. However, as provided for under item 9.b. of the amended moratorium order dated April 30, 1993, Mr. Lynn seeks approval of these applications based on (1) USGS data which indicate that the aquifer is tributary to the Payette River rather than to the Boise River, (2) the remote location of the proposed points of diversion (Mr. Lynn's wells) relative to other wells, and (3) no evidence of local long-term water-level declines.

Mr. Lynn requests that Application Nos. 63-11995 and 63-11996 are processed as primary water rights and that his existing Willow Creek rights become supplemental water rights. Typically by June or July each year flows in Willow Creek are insufficient to supply water to Mr. Lynn. When snow levels are low, Willow Creek can become unavailable even by March or April. It would be preferable for the Willow Creek rights to become supplemental.

Details are related to the proposed application are provided in the following sections.

LOCAL HYDROLOGY

Groundwater is found in Mr. Lynn's existing wells at an approximate static depth of 400 feet (elevation 2360). The wells and proposed place of use are located along Willow Creek, an intermittent stream that drains the granitic highlands in the vicinity of Pearl. Willow Creek is a losing stream in the vicinity of the proposed points of diversion and for several miles upstream and downstream. Willow Creek and tributary gulches are thought to be the primary source of local groundwater recharge. Additional recharge is probably derived from direct infiltration of precipitation and from canal leakage in the Boise Valley.

by USGS 12/20/94
Admitted

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APPLICANTS'
1

600 East River Park Lane, Suite 105
Boise, Idaho 83706

Telephone (208) 383-4140
Facsimile (208) 383-4156

Groundwater beneath the site is found in sedimentary aquifers of the Idaho Group. Review of local well logs suggests that the aquifer beneath the property should have a relatively high transmissivity, based on a predominance of coarse sand in the material descriptions on the driller's logs. The upper portion of the aquifer is probably semiconfined to unconfined, due to the apparent scarcity of significant clay layers. Deeper portions of the aquifer are probably semiconfined.

Given the thick unsaturated zone beneath the site, the proposed appropriation will not be capable of inducing additional losses from Willow Creek. As a result, no impact to Willow Creek surface water flows are anticipated.

Groundwater Flow Direction

The proposed points of diversion and place of use are both located within the Boise River surface water drainage basin. However, groundwater flow direction appears to be toward the Payette River Valley, approximately 3 miles to the northeast. This flow direction is based on the USGS Hydrologic Investigations Atlas HA-703 (Configuration of the Water Table and Depth to Water, Spring 1980, Water-Level Fluctuations, and Water Movement in the Snake River Plain Regional Aquifer System, Idaho and Eastern Oregon), which provides a water table contour map of the western Snake River Plain. As shown on Figure 1, this map clearly indicates that the proposed points of diversion are tributary to the Payette River. As a result, these groundwater applications would not be subject to the Boise River Basin Groundwater Moratorium.

Note that the water surface elevations in three USGS observation wells located to the southeast (Well 5N, 1W, 36ABB1), south (Well 05N, 01W, 16CAB1), and southwest (Well 5N, 2W, 22CAD1) are higher than the groundwater elevation at the proposed points of diversion by approximately 185 feet, 165 feet, and 65 feet, respectively. These elevations also suggest a northwesterly regional flow direction (i.e., toward the Payette River Basin) in the Willow Creek vicinity.

Documented Water-Levels

We are not aware of any significant long-term water-level declines in the general vicinity of Willow Creek. The hydrographs of USGS-monitored observation wells in the area, discussed below, provide no indication of water-level decline.

- Well 5N, 2W, 22CAD1 is located on the north side of Willow Creek, approximately seven miles southwest (downstream) of the proposed points of diversion. The hydrograph of this well (bottom of Figure 2) shows an overall rising water-level trend since the late 1960s, except for a few years in the early 1990s. The spring 1994 water level in the well was within one foot of the historic high for this well. The water surface elevation at this well is approximately 2425 feet.

- Another observation well (Well 5N, 1W, 36ABB1) in the general vicinity of Willow Creek is located along the north edge of the Boise Valley, about 6 miles southeast of the proposed points of diversion. The hydrograph of this well (top of Figure 2) shows no sign of long-term water-level decline. The water-surface elevation at this well is approximately 2545 feet.

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- The currently monitored observation well that is closest to the proposed points of diversion is Well 6N, 1W, 18DAA2. This is a shallow (31 feet) well located about five miles to the northwest of the proposed points of diversion. The hydrograph of this well (Figure 3) does not show a long-term decline. However, this well appears to taps a shallow perched aquifer, probably in direct hydraulic connection with Willow Creek, and is therefore not representative of regional aquifer groundwater levels in the vicinity of the proposed points of diversion.

- Historic data are available for a well (5N, 1W, 16CAB1) which is located three miles southwest of the proposed points of diversion, near the south side of Chaparrel Subdivision (where most of the existing local water rights and domestic wells are located). This well was monitored for several years during the 1970s, and the elevation of the water surface was approximately 2,525 feet (Figure 4).

DESCRIPTION OF LOCAL WATER USE

Visual Well Search in the Vicinity of the Proposed Points Of Diversion

The proposed points of diversion are located more than one mile from any existing wells (not including existing wells owned by Mr. Lynn). A well search by Scanlan Engineering on August 13, 1994 found only six wells within a two-mile radius of the property (not including the existing wells owned by Mr. Lynn). These wells include four domestic wells and what appear to be two stock water wells.

There are numerous wells located between two and three miles from the proposed points of diversion. The majority of these wells are domestic wells in the vicinity of Chaparrel subdivision. There also are two or more wells used for irrigation in the Chaparrel subdivision area. The only other irrigation wells that were located are two wells found along the North Fork of Willow Creek, northeast of the proposed points of diversion.

Existing well locations are shown on Figure 5.

Recorded Groundwater Rights In The Vicinity Of The Proposed Point Of Diversion

Recorded water rights with points of diversion within an approximate radius of 3 to 4 miles are shown on Figure 6 and listed on Table 1. A total of 28 recorded water rights were found in the search area outlined on Figure 6.

Within a one-mile radius of the proposed points of diversion are three recorded water rights. These rights are three licenses in the name of Albert Helmick. Mr. Lynn is current owner of these licenses.

There are two recorded water rights with points of diversion located between one and two miles from the proposed points of diversion. One of these water rights is for domestic use and the other water right is for domestic and stockwater. Thus, there are no recorded irrigation groundwater rights within two miles of the proposed points of diversion.

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There are approximately 13 recorded water rights that appear to have points of diversion within a radius of between two and three miles of the points of diversion proposed by these applications. The majority of these water rights are for domestic and irrigation uses.

Licensed or permitted diversions for irrigation from groundwater sources within three miles of the proposed points of diversion (not including the existing applications and licenses owned Mr. Lynn) total 4.53 cfs. Mr. Lynn's existing licenses total an additional 0.59 cfs.

Adjudication Claims for Groundwater In The Vicinity Of The Proposed Point Of Diversion

A listing of Snake River Basin Adjudication claims (Table 2) for groundwater within the search area in Figure 6 includes no additional irrigation claims not included in the listing of water rights in Table 1. However, a few additional domestic and stockwater claims within a three-mile radius of the proposed points of diversion are listed in Table 2 but are not listed on Table 1.

SUMMARY

The Department should approve the applications given (1) the aquifer is tributary to the Payette River, (2) the wells are in a remote location, and (3) there are no documented water-level decline problems in the area.

Please call me with any questions concerning these applications.

Sincerely,

Terry M. Scanlan

Terry M. Scanlan, P.E., P.G.
Engineer/Hydrogeologist

cc: Mark Lynn
Dana Hofstetter

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TABLE 1
LOCAL WATER RIGHTS
(See Figure 6 for search area)

(OD-5816)
WR5816NP
SELECTION FILE: TSF

IDAHO DE...RTMENT OF WATER RESOURCES
SOURCE SUMMARY REPORT
BY WATER SOURCE/POINT OF DIVERSION

DATE: 06/30/94
TIME: 08:17:13
PAGE: 1

WATER SOURCE: GROUNDWATER

Map #	WATER RIGHT NUMBER	OWNER NAME	O C	PRIORITY DATE	STG	POINT OF DIVERSION	POD FLAG	TOTAL DIVERSION	TOTAL ACRES	WATER USES
1	63-08044	HELMICK, ALBERT F.	C	10/01/1974	L	05N 01W 3 NWNE		0.050 CFS	1.0	01,04,43
2	63-10775	HELMICK, ALBERT F	C	09/08/1989	L	05N 01W 3 NWNE		0.040 CFS	0.2	01,04
3	63-11996	LYNN, D MARK	C	02/25/1993	A	05N 01W 3 NWNE	2	2.000 CFS	183.0	01
4	63-04093	BOEHM, STELLA	C	02/01/1938	S	05N 01W 4 SWSE		0.020 CFS		43
5	63-11539	WATKINS, ARTHUR DONALD	C	05/31/1991	L	05N 01W 9 NENE		0.040 CFS		04,43
6	63-03574	LEACH, WILLIAM	C	12/30/1966	L	05N 01W 9 NESW		0.150 CFS	28.0	01,43
7	63-07416	KLINGER, WERT N.	C	04/16/1971	L	05N 01W 9 SWSW		0.030 CFS		04,43
8	63-07700	CHAPARREL WATER ASSN.	C	12/18/1972	L	05N 01W 9 SWSW		1.070 CFS	129.0	01,43
9	63-04438	SMITH, CLYDE J.	C	04/15/1929	S	05N 01W 9 SWSW		0.380 CFS	19.0	01
10	63-03576	CHAPARREL WATER ASSN.	C	01/16/1967	L	05N 01W 16 NENW		1.010 CFS	36.0	01,43
11	63-07700	CHAPARREL WATER ASSN.	C	12/18/1972	L	05N 01W 16 NENW		1.070 CFS	129.0	01,43
12	63-09210	LYTLE, BUD	C	01/26/1979	L	05N 01W 16 SENW		0.160 CFS	4.0	01,43
13	63-10860	FIREBIRD RACEWAY INC	C	07/25/1989	L	05N 01W 16 NWSW		0.090 CFS	2.0	01,10,43
14	63-07396	BOISE VALLEY RACING ASSN. INC.	C	02/21/1971	L	05N 01W 16 SWSW		0.200 CFS		07
15	63-07534	KEZAR, BERTHA E.	C	12/21/1971	L	05N 01W 17 NENE		0.020 CFS		43
16	63-10596	STEELE, ROBERT W.	C	03/09/1988	P	05N 01W 17 NENE		0.110 CFS	10.0	01
17	63-03269	WILLOWBROOK PROPERTY OWNERS ASSN.	C	12/07/1961	L	05N 01W 17 NWNE		0.200 CFS		43
18	63-08190	TARTER, C. D.	C	08/15/1975	L	05N 01W 17 SWNE		0.120 CFS	4.0	01,04,43
19	63-08252	WARD, ELMER K.	C	01/12/1976	L	05N 01W 17 SWNE		0.140 CFS	5.0	01,43
20	63-03269	WILLOWBROOK PROPERTY OWNERS ASSN.	C	12/07/1961	L	05N 01W 17 SWNW		0.200 CFS		43
21	63-07623	WILLOWBROOK PROPERTY OWNERS ASSN.	C	09/07/1972	L	05N 01W 17 SENW		1.150 CFS	121.0	01
22	63-08254	SHOCKLEY, BURREL J.	C	01/16/1976	L	05N 01W 17 SENW		0.200 CFS	10.0	01
23	65-00896	HEMBREE, LEON R.	C	03/04/1905	D	06N 01W 21 NWNW		0.040 CFS		43
24	65-01366	HETHERINGTON, HERBERT G.	C	02/06/1955	D	06N 01W 21 NWNW		0.040 CFS		43,10
25	63-07002	SMITH, ELWOOD T.	C	06/05/1967	L	06N 01W 25 NWNW		1.560 CFS	127.0	01,04
26	65-01714	MABE, DALE E.	C	04/01/1967	D	06N 01W 29 NWNW		0.040 CFS		43,04
27	63-11995	LYNN, D MARK	C	02/25/1993	A	06N 01W 34 SESE		2.000 CFS	195.0	01
28	63-03004	HELMICK, ALBERT	C	11/04/1954	L	06N 01W 34 SESE		0.500 CFS	25.0	01,43

TABLE 2
LOCAL ADJUDICATION CLAIMS
(See Figure 6 for search area)

(OD-5B16)
AJ5B16WP
SELECTION FILE: TSF

IDAHO DEPARTMENT OF WATER RESOURCES
ADJUDICATION SOURCE SUMMARY REPORT
BY WATER SOURCE/POINT OF DIVERSION

DATE: 06/30/94
TIME: 08:23:17
PAGE: 1

WATER RIGHT NUMBER	CURRENT OWNER NAME	PRIORITY DATE	STG	POINT OF DIVERSION	POD FLAG	TOTAL DIVERSION	TOTAL ACRES	WATER USES
WATER SOURCE: GROUNDWATER								
A63-08044	LYNN, D MARK	10/01/1974	L	05N 01W 3 NWNE		0.050 CFS	1.0	01,04,43
A63-18564	HIGHLAND LIVESTOCK & LAND CO.	05/01/1979	J	05N 01W 3 NESENW		0.040 CFS		04
A63-22357	MCFADDEN, LYLE	09/15/1979	J	05N 01W 5 NWNE		0.060 CFS		43,04
R63-22357	MCFADDEN, LYLE	09/15/1979	J	05N 01W 5 NWNE		0.060 CFS		43,04
A63-22204	RACHILLA, DEE	05/20/1967	J	05N 01W 8 NESE		0.010 CFS		43
A63-22203	RACHILLA, DEE	05/20/1970	J	05N 01W 8 SESE		0.040 CFS		43
A63-20917	CLUFF, WALTER S.	07/21/1977	J	05N 01W 9 NESW		0.040 CFS		43
A63-04438	RICHARD, MERT G.	04/15/1929	S	05N 01W 9 SWSW		0.380 CFS	19.0	01,43
A63-07700	CHAPARREL WATER ASSN.	12/18/1972	L	05N 01W 9 SWSW		1.070 CFS	129.0	01,43
A63-15963	ANDERSON, MARTIN	06/14/1972	J	05N 01W 9 SESW		0.080 CFS		43,04
A63-03576	CHAPARREL WATER ASSN.	01/16/1967	L	05N 01W 16 NENW		1.010 CFS	36.0	01,43
A63-07700	CHAPARREL WATER ASSN.	12/18/1972	L	05N 01W 16 NENW		1.070 CFS	129.0	01,43
R63-18391	SWAFFORD, CRAIG A	01/23/1976	J	05N 01W 16 NWSE		0.060 CFS		43,04
A63-18391	SWAFFORD, CRAIG A	01/23/1976	J	05N 01W 16 NWSE		0.060 CFS		43,04
A63-07534	STEELE, ROBERT W.	12/21/1971	L	05N 01W 17 NENE		0.020 CFS		43,04
A63-03269	WILLOWBROOK PROPERTY OWNERS ASSN.	12/07/1961	L	05N 01W 17 NWNE		0.200 CFS		43
A63-08252	WARD, JOHN M.	01/12/1976	L	05N 01W 17 SWNE		0.140 CFS	5.0	01,43
A63-08190	FRANKS, STEVE E.	08/15/1975	L	05N 01W 17 NWSWNE		0.120 CFS	4.0	01,04,43
A63-17891	MOORE, DON G.	08/20/1979	J	05N 01W 17 SWNWNW		0.040 CFS		43
A63-03269	WILLOWBROOK PROPERTY OWNERS ASSN.	12/07/1961	L	05N 01W 17 SWNW		0.200 CFS		43
A63-07623	WILLOWBROOK PROPERTY OWNERS ASSN. I	09/07/1972	L	05N 01W 17 SENW		1.150 CFS	121.0	01
A63-08254	LITTLE LAND & LIVESTOCK CO.	01/16/1976	L	05N 01W 17 SENW		0.200 CFS	10.0	01
A63-16717	GEIER, TRUSTE, LOWELL	08/12/1982	J	06N 01E 19 NENE		0.060 CFS		43,04
A63-18124	JENKINS, HOWARD B.	03/31/1982	J	06N 01E 19 SENW		0.090 CFS		43,04
A65-00896	HEMBREE, LEON R.	03/04/1905	D	06N 01W 21 NWNW		0.040 CFS		43
R65-00896	HEMBREE, LEON R	03/04/1905	J	06N 01W 21 NWNW		0.040 CFS		43
A65-01366	HETHERINGTON, HERBERT G.	02/06/1955	D	06N 01W 21 NWNW		0.040 CFS		43,10
A63-07002	JENSEN, DONALD B.	06/05/1967	L	06N 01W 25 SENWNW		1.560 CFS	127.0	01,04
A65-01714	WERBER, KENT W.	04/01/1967	D	06N 01W 29 NWNW		0.040 CFS		43,04
A63-20810	LITTLE LAND & LIVESTOCK, CO.	01/01/1959	J	06N 01W 32 SESW		0.230 CFS		04
A63-03004	LYNN, D MARK	11/04/1954	L	06N 01W 34 SESE		0.500 CFS	25.0	01,43
A63-20963	HIGHLAND LAND & LIVESTOCK CO., INC.	01/01/1877	J	06N 01W 36 SENW		0.160 CFS		43,04

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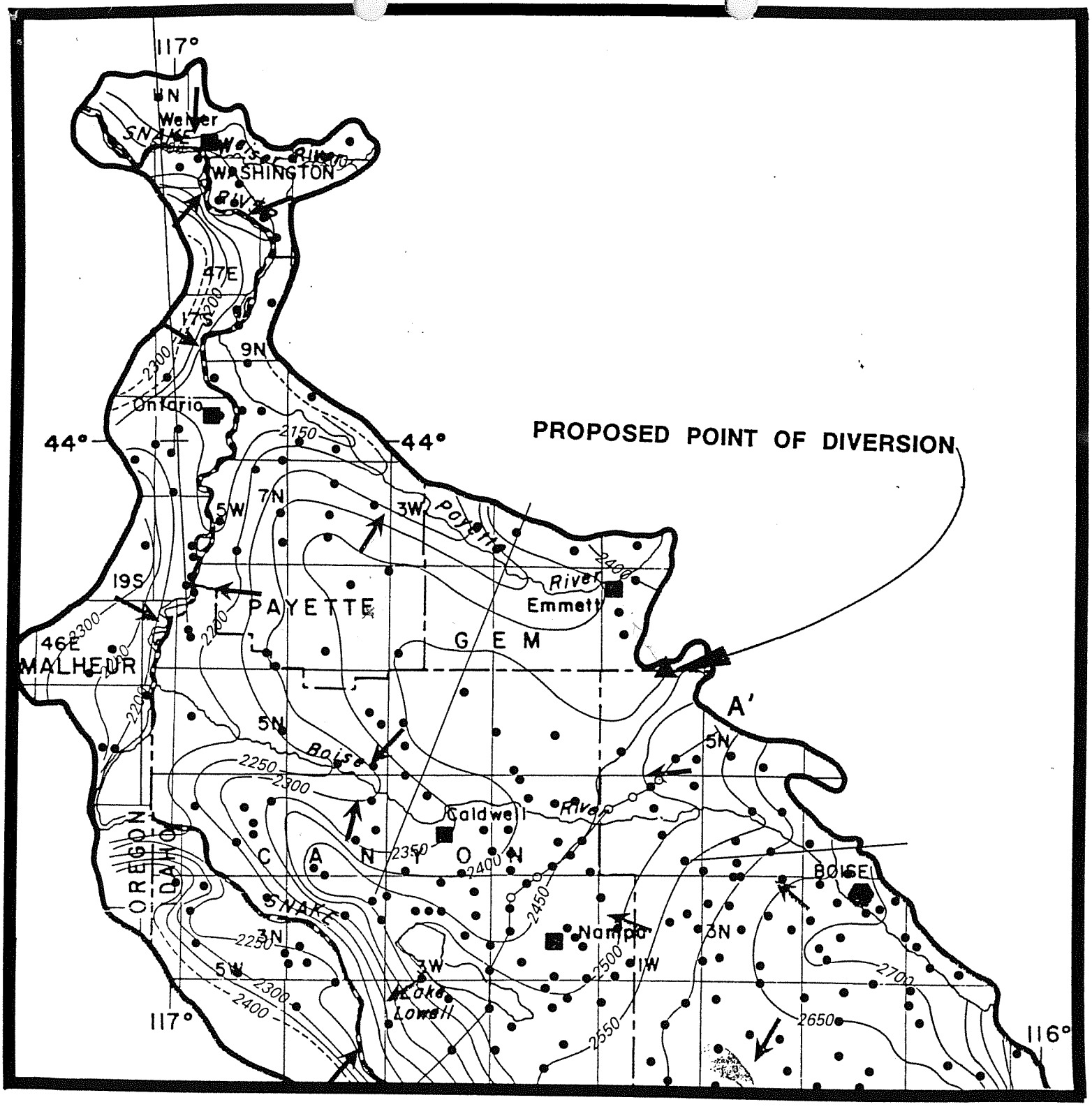


FIGURE 1
WATER-TABLE CONTOUR MAP FOR
THE WESTERN SNAKE RIVER PLAIN
(source: USGS Hydrologic Investigations Atlas HA-703, 1988)

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WELL 05N 01W 36ABB1 SITE NUMBER 434406116240801

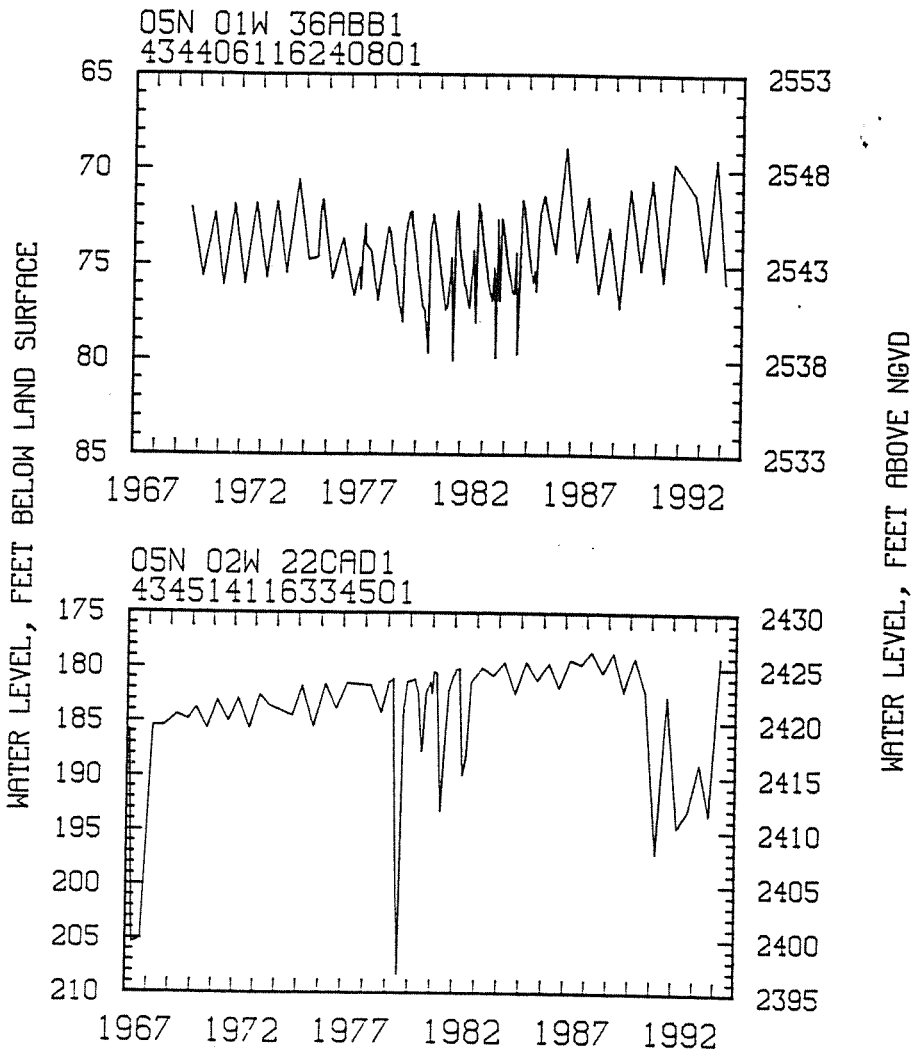
DRILLED DOMESTIC WATER-TABLE WELL IN IDAHO GROUP, DIAM 6 IN, REPORTED DEPTH 105 FT, CASED TO 105 FT. LSD ABOUT 2,618 FT NGVD OF 1929. MP NO. 1 TOP OF PIPE IN WELL SEAL, 0.70 FT BELOW LSD (SINCE AUG. 27, 1969).

RECORDS AVAILABLE 1969 TO CURRENT YEAR.

HIGHEST WATER LEVEL 68.84 FEET BELOW LAND SURFACE DATUM SEP 16, 1986.

LOWEST WATER LEVEL 78.02 FEET BELOW LAND SURFACE DATUM MAY 18, 1979.

	WATER LEVEL		WATER LEVEL
MAR 22, 1989	75.83 S	SEP 11, 1989	69.59 S



WELL 05N 02W 22CAD1 SITE NUMBER 434514116334501

FORMERLY SITE ID NO. 434601116342601, WELL NO. 05N 02W 22CAA1. DRILLED IRRIGATION WATER-TABLE WELL IN IDAHO GROUP, DIAM 12 TO 8 IN, REPORTED DEPTH 450 FT, 12-IN CASING TO 303 FT, 8-IN CASING 284-403 FT, PERFORATED 279-403 FT. LSD ABOUT 2,610 FT NGVD OF 1929. MP NO. 1 TOP OF 1 1/2-IN VERTICAL ACCESS PIPE ON SOUTH SIDE OF PUMP, 1.50 FT ABOVE LSD (SINCE FEB. 21, 1967).

RECORDS AVAILABLE 1967 TO CURRENT YEAR.

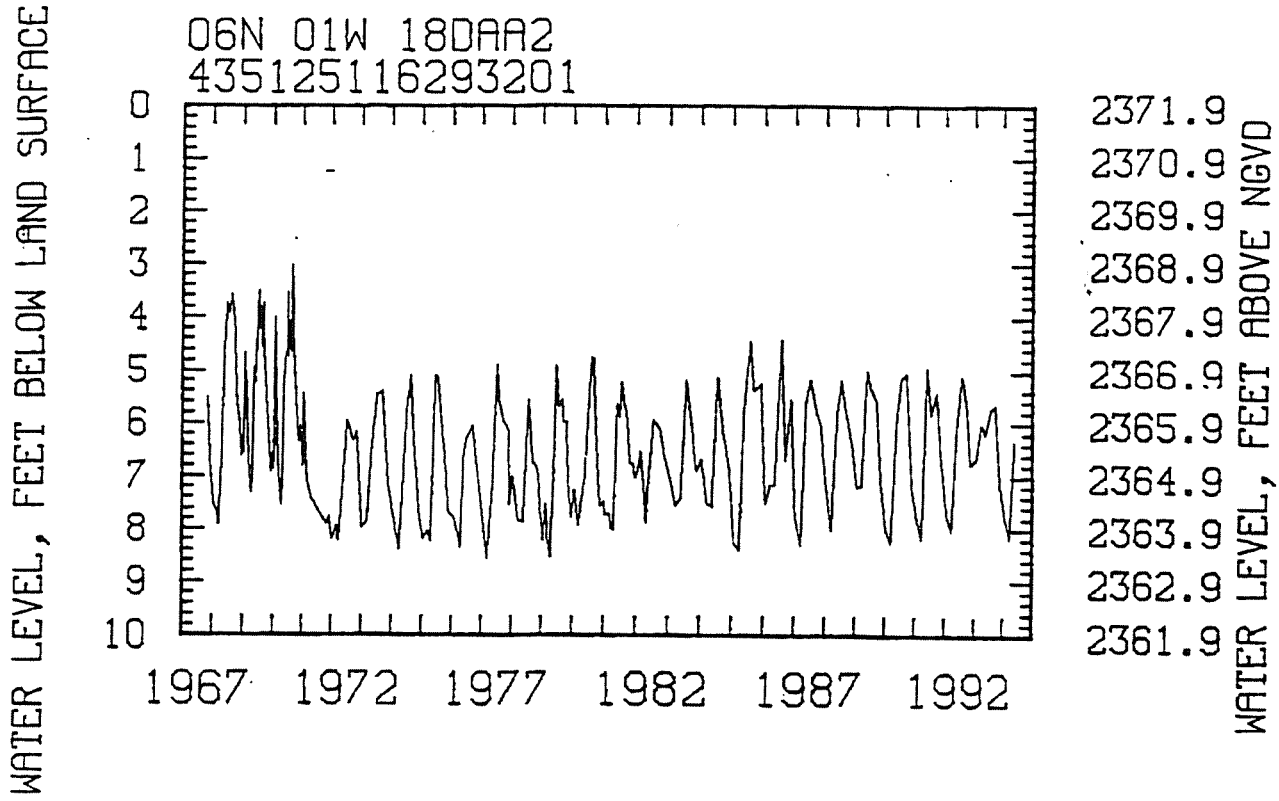
HIGHEST WATER LEVEL 178.55 FEET BELOW LAND SURFACE DATUM MAR 15, 1988.

LOWEST WATER LEVEL 187.83 FEET BELOW LAND SURFACE DATUM JUL 22, 1981.

	WATER LEVEL		WATER LEVEL
MAR 22, 1989	178.63 SV	SEP 21, 1989	182.23 SV

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FIGURE 2



WELL 06N 01W 18DAA2 SITE NUMBER 435125116293201

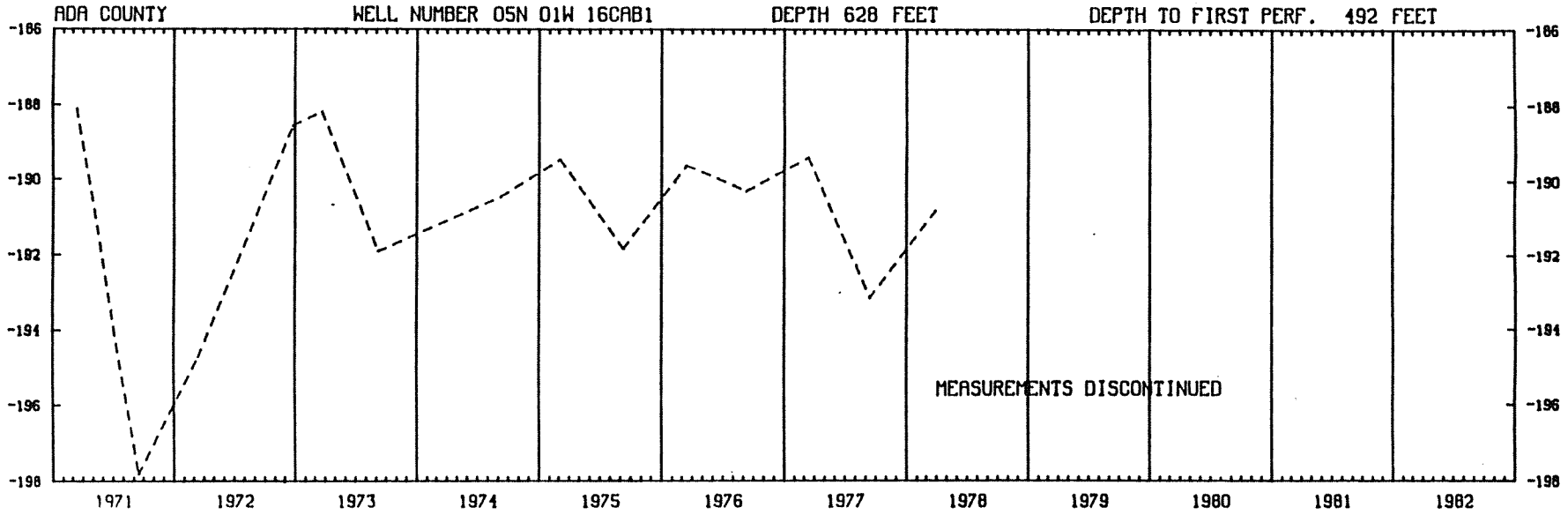
FORMERLY SITE NO. 435125116293501. DRILLED DOMESTIC WATER-TABLE WELL IN SAND AND GRAVEL OF QUATERNARY AGE, DIAM 4 IN, DEPTH 30.9 FT, CASED TO 22 FT. LSD 2,371.90 FT ABOVE SEA LEVEL, SUPPLEMENTARY ADJUSTMENT OF 1961. MEASUREMENTS PRIOR TO NOV. 9, 1971, MADE BY US BUREAU OF RECLAMATION. RECORDER INSTALLED OCT. 17, 1968. RECORDER REMOVED MAY 28, 1971. MP NO. 1 TOP OF 4-IN CASING NORTH SIDE, 0.26 FT ABOVE LSD (SINCE NOV. 9, 1967).

RECORDS AVAILABLE 1967 TO CURRENT YEAR
HIGHEST WATER LEVEL 3.04 FEET BELOW LAND SURFACE DATUM AUG 24, 1970.
LOWEST WATER LEVEL 8.57 FEET BELOW LAND SURFACE DATUM MAR 14, 1977.

	WATER LEVEL		WATER LEVEL		WATER LEVEL
NOV 16, 1992	6.77 S	MAR 29, 1993	6.01 S	JUL 30, 1993	5.74 S
JAN 25, 1993	6.67 S	MAY 24	6.19 S	SEP 21	5.66 S

FIGURE 3

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434615N1162758.1 05N 01W 16CAB1 DARRELL FISHER ADA COUNTY

DRILLED DOMESTIC WATER-TABLE WELL IN IDAHO GROUP, DIAM 8 IN (20 CM), REPORTED DEPTH 628 FT (191 M), CASED TO 492 FT (150 M), OPEN HOLE. LSD ABOUT 2,715 FT (828 M) ABOVE MSL DATUM OF 1929. MP NO. 1 TOP OF 8-IN (20-CM) CASING SOUTHWEST SIDE, 1.50 FT (0.457 M) ABOVE LSD (SINCE MAR. 10, 1967).

HIGHEST WATER LEVEL 188.12 FT (57.339 M) BELOW LSD, MAR. 15, 1971.
LOWEST WATER LEVEL 191.90 FT (58.491 M) BELOW LSD, SEP. 7, 1973.
RECORDS AVAILABLE 1967-74.

WATER LEVELS IN FEET BELOW LSD.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB. 27, 1974	195.07A	SEP. 11, 1974	190.44		

A WELL BEING PUMPED.

JUN 29 1995
Idaho Water Resources Board

FIGURE 4

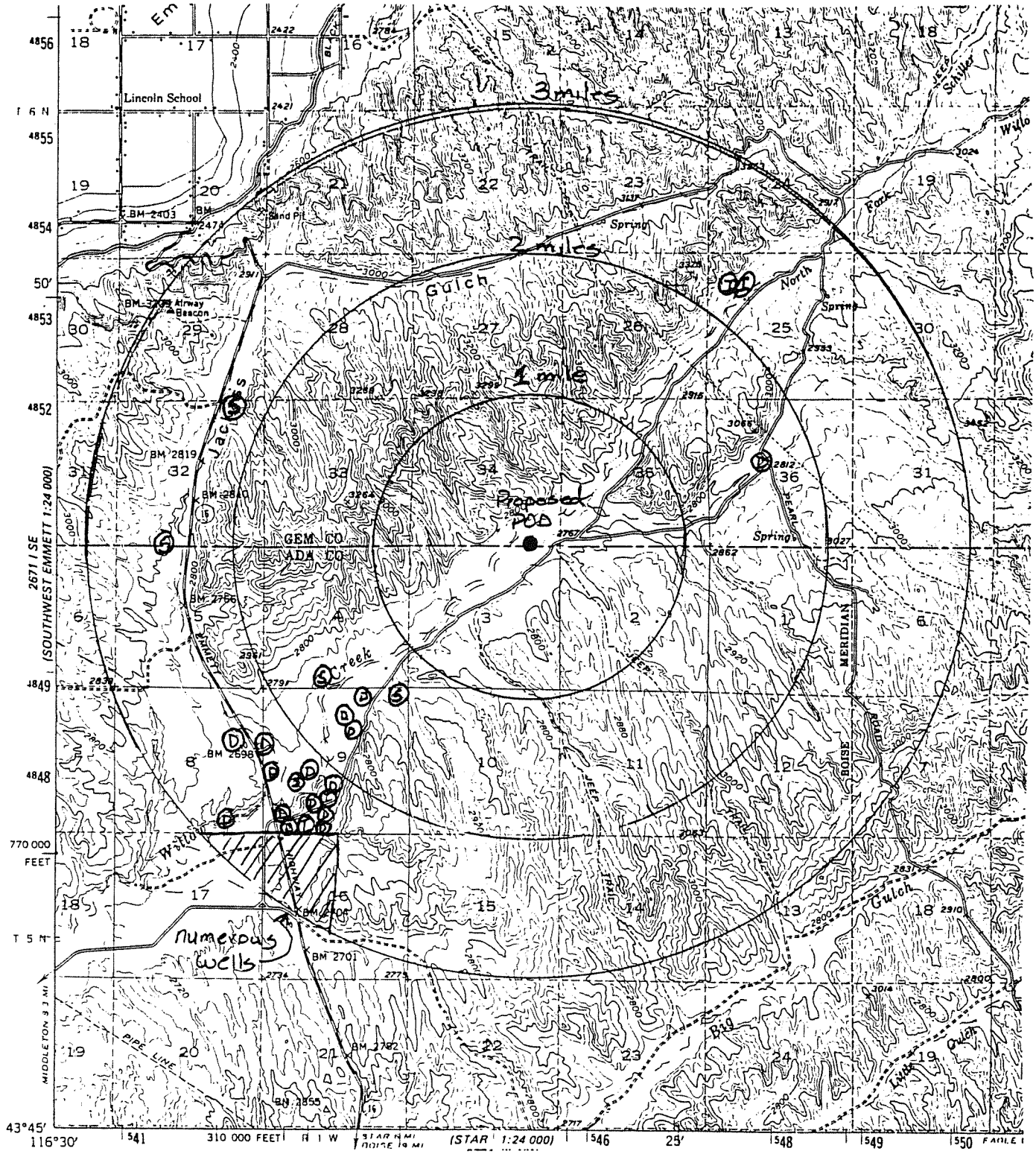


FIGURE 5
WELLS LOCATED WITHIN 3 MILES OF THE PROPOSED POINT OF DIVERSION
(Wells were located visually on 8/13/94. Applicant's wells are not shown. Uses are assumed (D=domestic, S=stock, I=irrigation))

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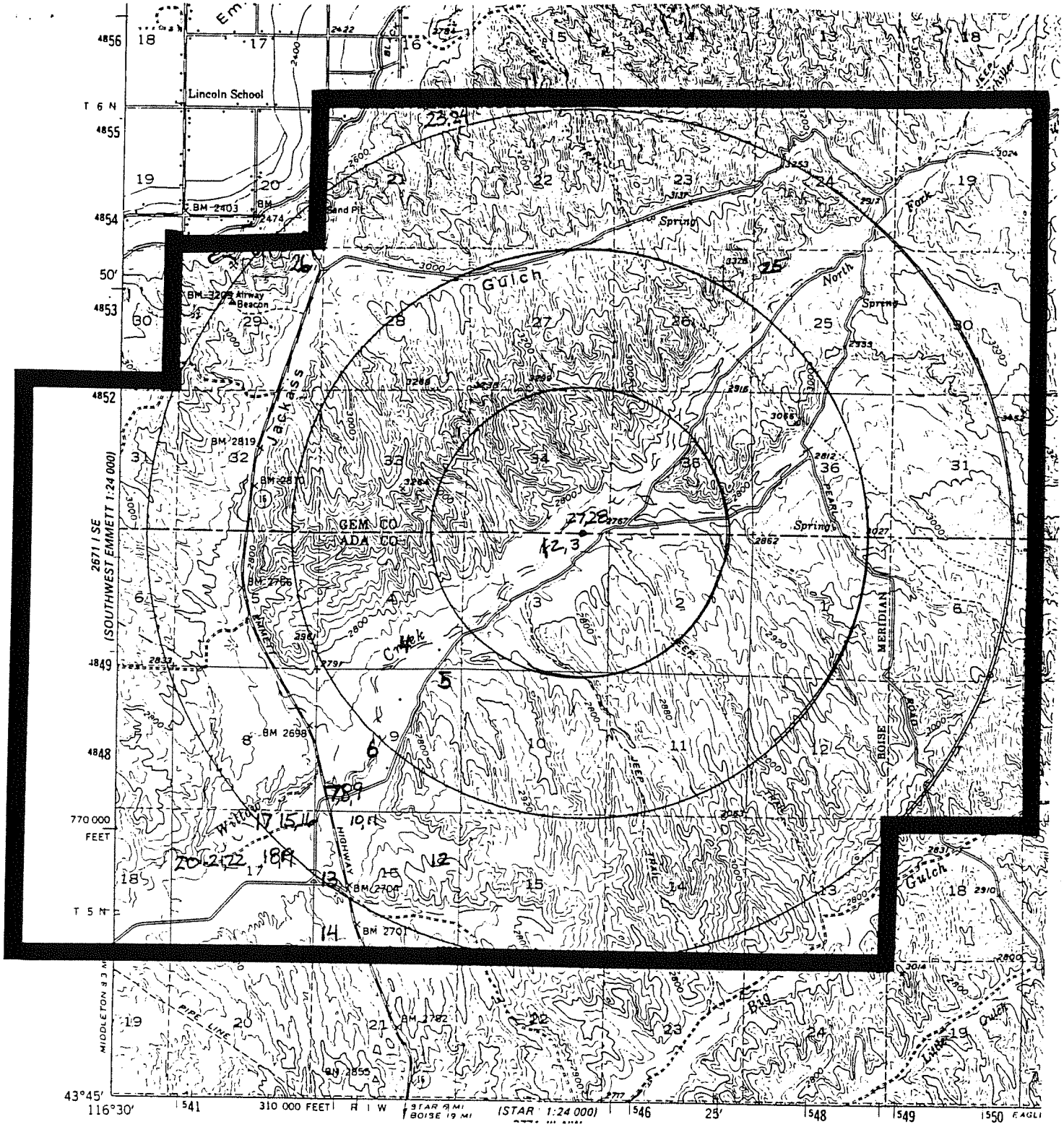


FIGURE 6
RECORDED WATER RIGHTS WITHIN 3 MILES OF THE PROPOSED POINT OF DIVERSION
(Map numbers correspond to numbers listed on Table 1.
Search area outlined by black line.)

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GROUND-WATER CONDITIONS IN THE DRY CREEK AREA, EAGLE, IDAHO

by
Steven J. Baker

Idaho Department of Water Resources
Boise, Idaho

IDENTIFIED
JUN 29 1995

June, 1991

Admitted by CGS
12/20/1994

EXHIBIT
APPLICANTS'
2

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INTRODUCTION

Purpose and Objectives

Due to continued growth in the Boise Valley, increased use of the ground-water resources has brought about concerns of over-development in certain areas. Land that was once used for growing crops or raising livestock is gradually being converted to multi-family subdivisions. People who initially sought the enjoyment of the simpler country life are finding that increased urbanization is gradually encroaching on them and with it some perceived problems.

An area northwest of Boise, near the small community of Eagle (see Figure 1) is one of the areas that is feeling the effects of expanding development. Some of the problems that have been expressed by well owners in this area include: declining well yields, especially near the end of the irrigation season; sand production during extended periods of pumping, which in some cases has required cleaning and/or deepening of certain wells; and water-quality problems that include hardness and high iron content.

Beginning in spring of 1989, a study was conducted by the Idaho Department of Water Resources (IWDR) in order to address these concerns over the ground-water resources in the area. This report is the outcome of that study. The report has been organized in the following format. The local geology is presented first in order to provide a description of the media through which the ground water moves. The next section discusses the principal factors that control the movement of the ground water in the area. A brief discussion of the ground-water quality in the area follows. Sections on conclusions and recommendations complete the report.

Description of Study Area

The study area occupies about nine square miles immediately northeast of Eagle (see Figure 2). The area is drained by Dry Creek which roughly bisects the study area from northeast to southwest and is a tributary of the Boise River. Foothills of the Boise mountains occur along the northern and eastern margins of the study area. The main portion of the study area, however, consists of a gentle southwest sloping terrace. Elevations range from 2950 feet (ft) above mean sea level (MSL) at the crest of the foothills that occur in the study area to around 2560 ft above MSL near Eagle.

The Farmers Union Canal traverses the study area from southeast to west-central. It is used to deliver surface water from the Boise River system to the area for irrigation needs.

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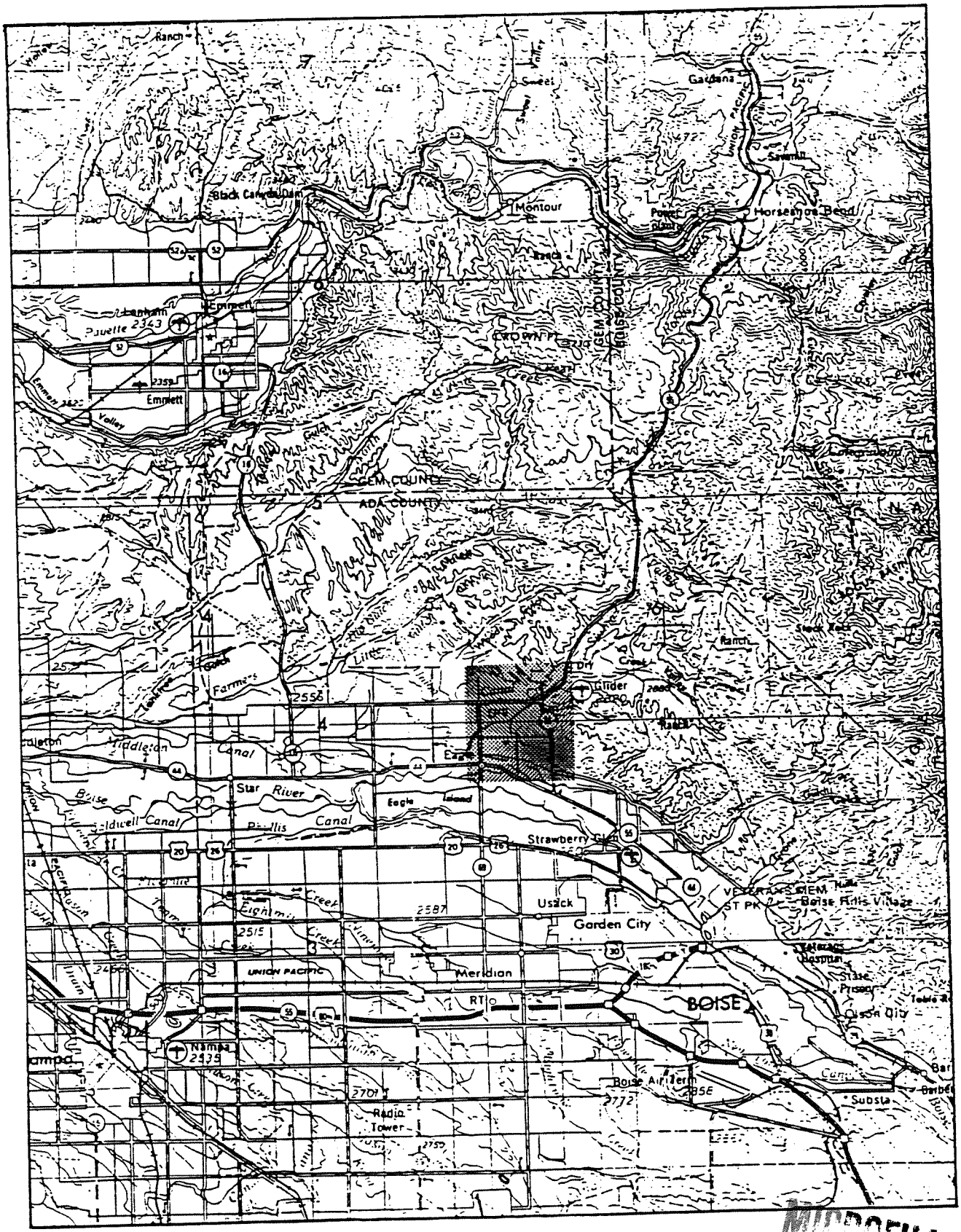
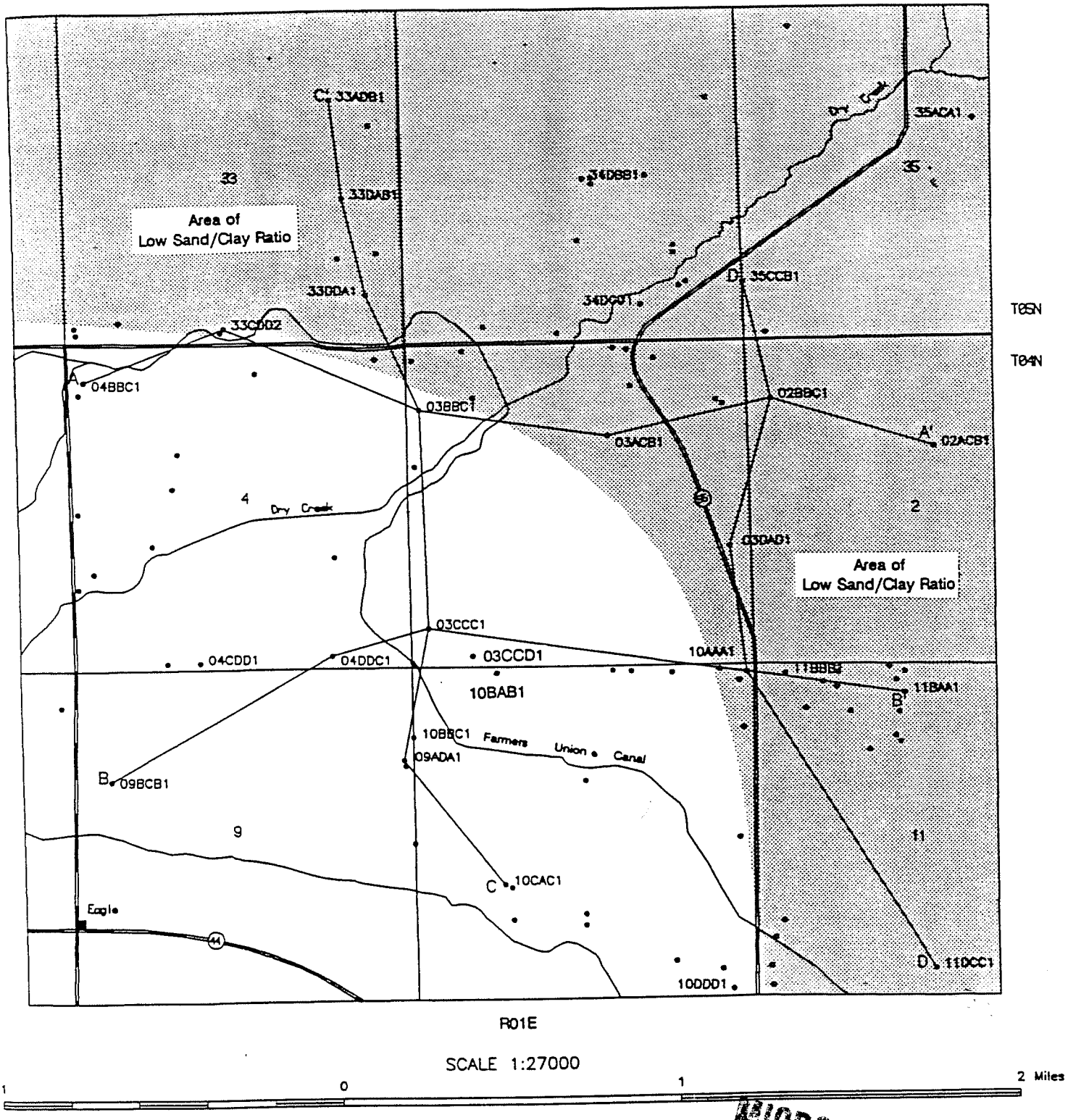


Figure 1. Location of study area

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Figure 2. MAP SHOWING LOCATIONS OF INVENTORIED WELLS AND GEOLOGIC CROSS SECTIONS

Previous Work

Previous studies that have been conducted in the area were regional in nature and only briefly touched upon the area of interest. A report by Savage (1958) describes the geology of Ada and Canyon counties. Mitchell and Bennett (1979) compiled a small-scale regional geologic map that covers the area. Recent mapping in the Boise foothills have been performed by S.H. Wood (a professor at Boise State University), W.L. Burnham (retired from U.S. Geological Survey), and K.L. Othberg (a geologist with the Idaho Geological Survey), and are currently unpublished. A report by Dion (1972) discusses the effects of land-use changes on the shallow ground-water system in the Boise Valley.

Well-Numbering System

The well-numbering system used in this report is identical to the system that is used by the U. S. Geological Survey (USGS) in Idaho (see Figure 3). The system indicates the location of wells within the official rectangular subdivision of the public lands, with reference to the Boise base line and meridian. The first two segments of the number designate the township and range. The third segment gives the section number, followed by three letters and a numeral, which indicate the ¼ section (160-acre tract), ¼-¼ section (40-acre tract), ¼-¼-¼ section (10-acre tract), and serial number of the well within the tract. Quarter sections are lettered A, B, C, and D in counterclockwise order from the northeast of each section. Within quarter sections, 40-acre and 10-acre tracts are lettered in the same manner. For instance, well 01N-04E-04CDA1 corresponds to the legal location NE¼, SE¼, SW¼, Section 4, Township 1 North, Range 4 East, and was the first well inventoried in that tract.

Acknowledgements

The author would like to thank each of the well owners in Dry Creek area that took the time to visit with IDWR personnel and allow them to inventory their wells. Bill Pardew, a local resident and a retired civil engineer with the Idaho Transportation Department, was an invaluable resource throughout the course of this study and his assistance is very much appreciated. Spencer Wood, a geology professor at Boise State University, spent numerous hours in the field acquiring data, in addition to providing technical assistance during this study. His help is greatly appreciated. The author would also like to thank Chuck Feast of CH2M Hill consulting firm for the meticulous work that he provided during the long-term aquifer test that was conducted in the study area.

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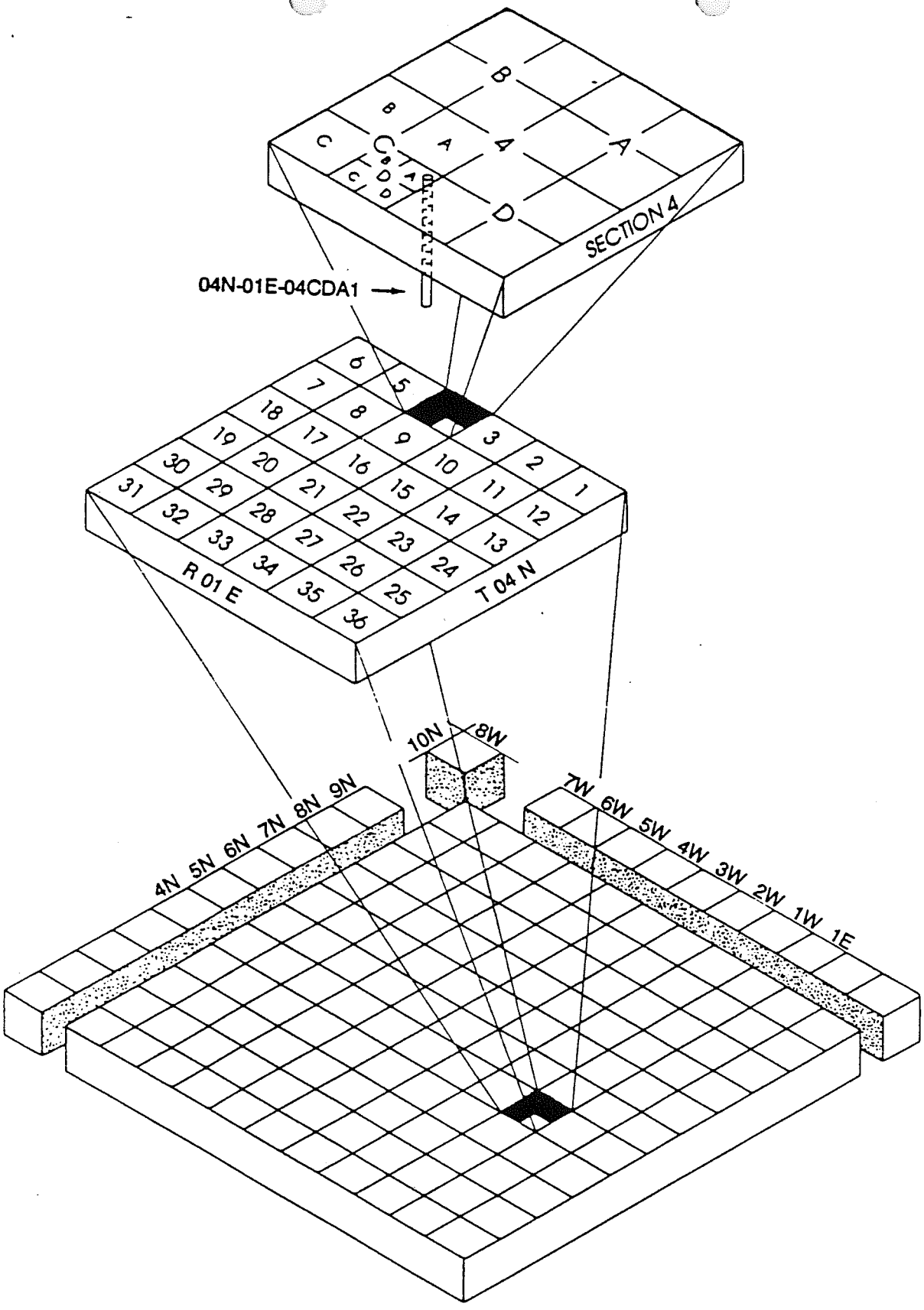


Figure 3. Well-numbering system

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GEOLOGIC FRAMEWORK

The rocks that underlie the study area range in age from Pliocene to Holocene. During these past five million years of geologic history, numerous events have taken place and are recorded in rocks that were deposited in the region. Four geologic cross sections were constructed from Well Driller's Reports and are shown on Figures 4 - 7. The locations of each of the sections are shown on Figure 2. These sections were included to assist in describing the subsurface geology of the Dry Creek area.

Certain geologic events that occurred prior to the emplacement of the known rocks in the area greatly influenced the types of rocks that were deposited later. These earlier events include a long period of intrusion, uplift, and volcanism, and are responsible for the creation of the western Snake River Plain graben (down-thrown fault block) during this time. Within this large depression in the plain, a lake was created. Streams carrying sediments from the adjacent uplands were deposited in the lake. The Dry Creek area occurs within this transition zone between fluvial (stream-deposited) sediments and lacustrine (lake-deposited) sediments.

Coarser materials were deposited along the stream channels and shores of the lake. Finer silts and clays were carried out into the lake where they settled to it's floor. The lake level changed throughout time and as a result so did the areal extent of the lake. At low levels, streams would deposit coarser sediments further into the interior of the plain, whereas, during high levels, the lake would inundate previous shorelines and deposit fine sediments.

The sediments that accumulated during this period are collectively known as the Glenns Ferry Formation. This formation underlies the Dry Creek area, however, its composition appears to vary considerably throughout the area according to Well Driller's Reports. The sediments that occur in the foothills and adjacent lowlands comprise massive silty clay with fine sand stringers. The shaded area shown on Figure 2 approximately delineates this area of low sand/clay ratio. The Glenns Ferry Formation that underlies the shallow subsurface in the remaining portion of the study area contains greater quantities of sand and lesser amounts of clay. The occurrence of a northwest-trending normal fault is thought to explain these lateral changes in sediment composition (Wood, 1991). Detailed geologic mapping immediately to the east along with data from an east-west seismic profile a few miles to south of the study area support this theory.

By the beginning of the Pleistocene (about two million years ago), downcutting by the ancestral Snake River in Hells Canyon caused the natural dam of the lake to become breached and allowed it to drain. Fluvial processes predominated during this time and the ancestral Boise River system was created. Coarse sands and gravels were

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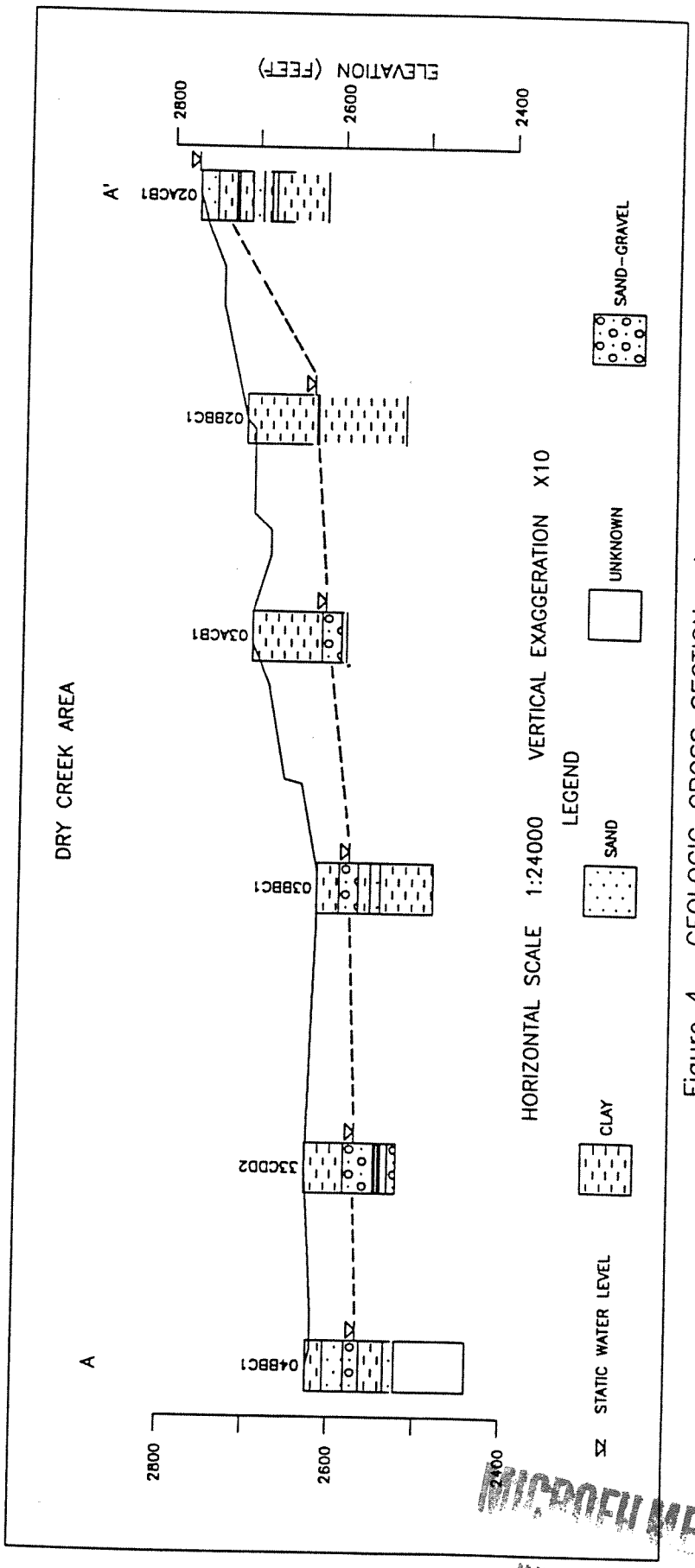


Figure 4. GEOLOGIC CROSS SECTION A – A'

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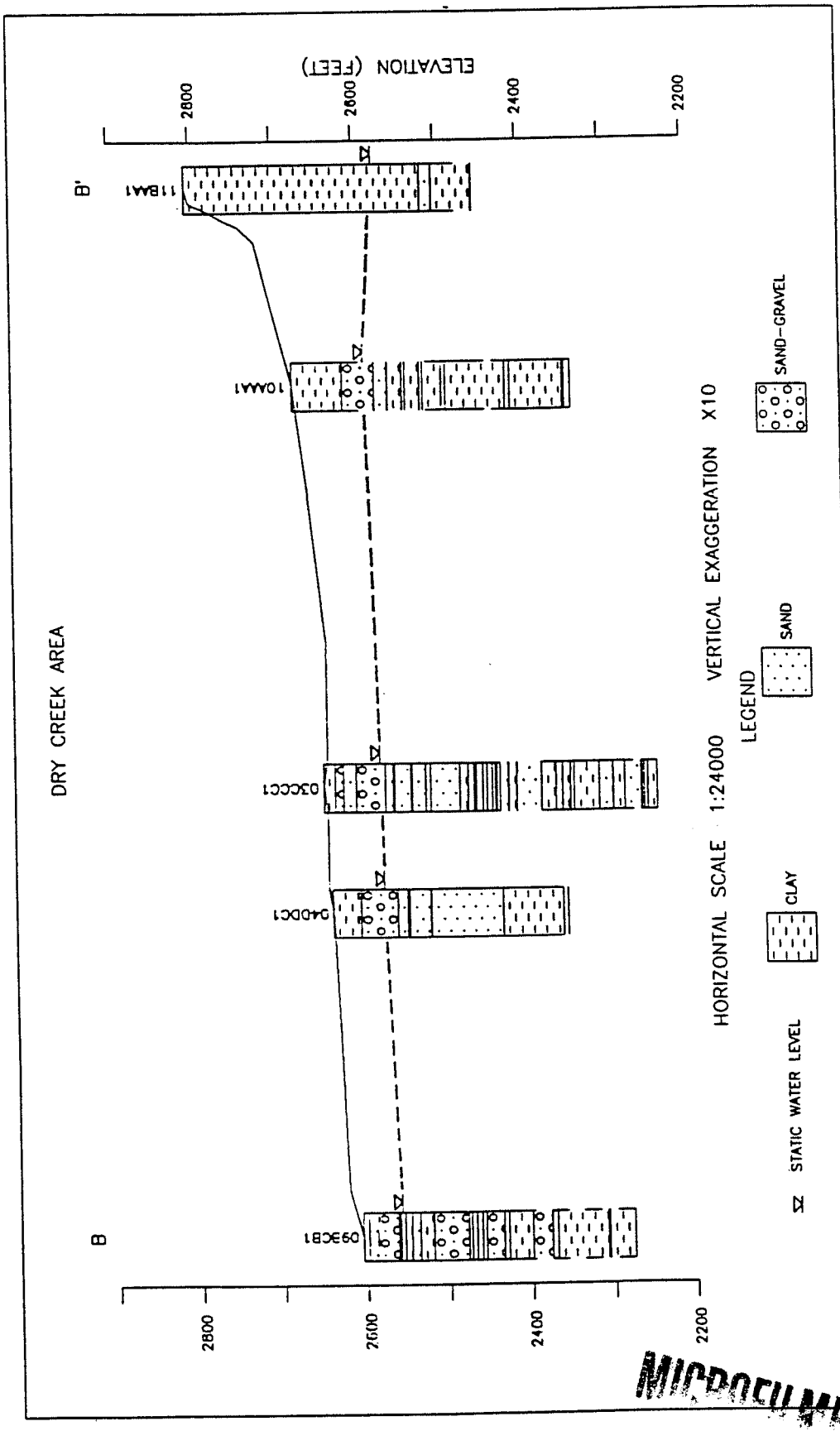


Figure 5. GEOLOGIC CROSS SECTION B – B'

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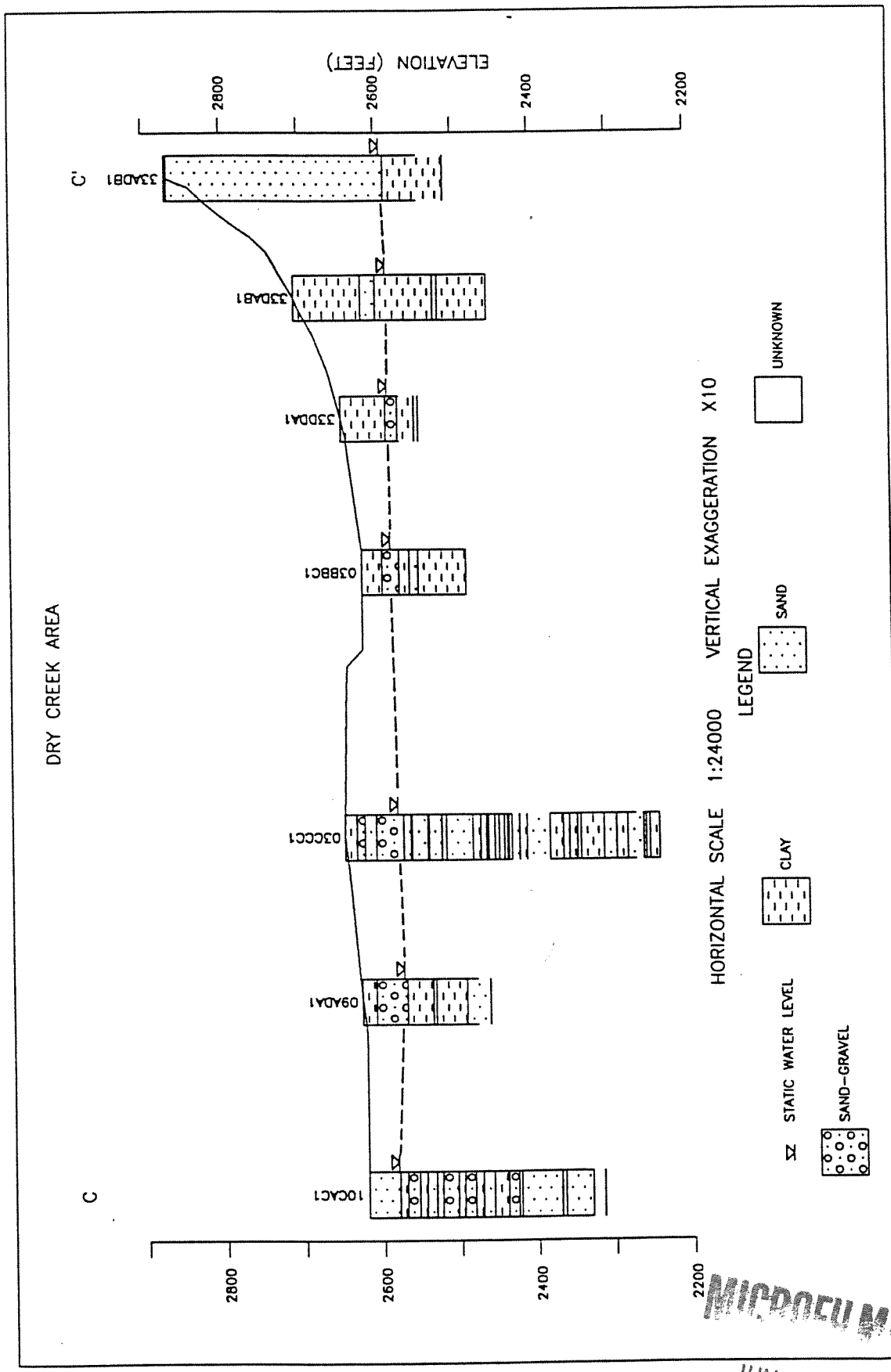


Figure 6. GEOLOGIC CROSS SECTION C – C'

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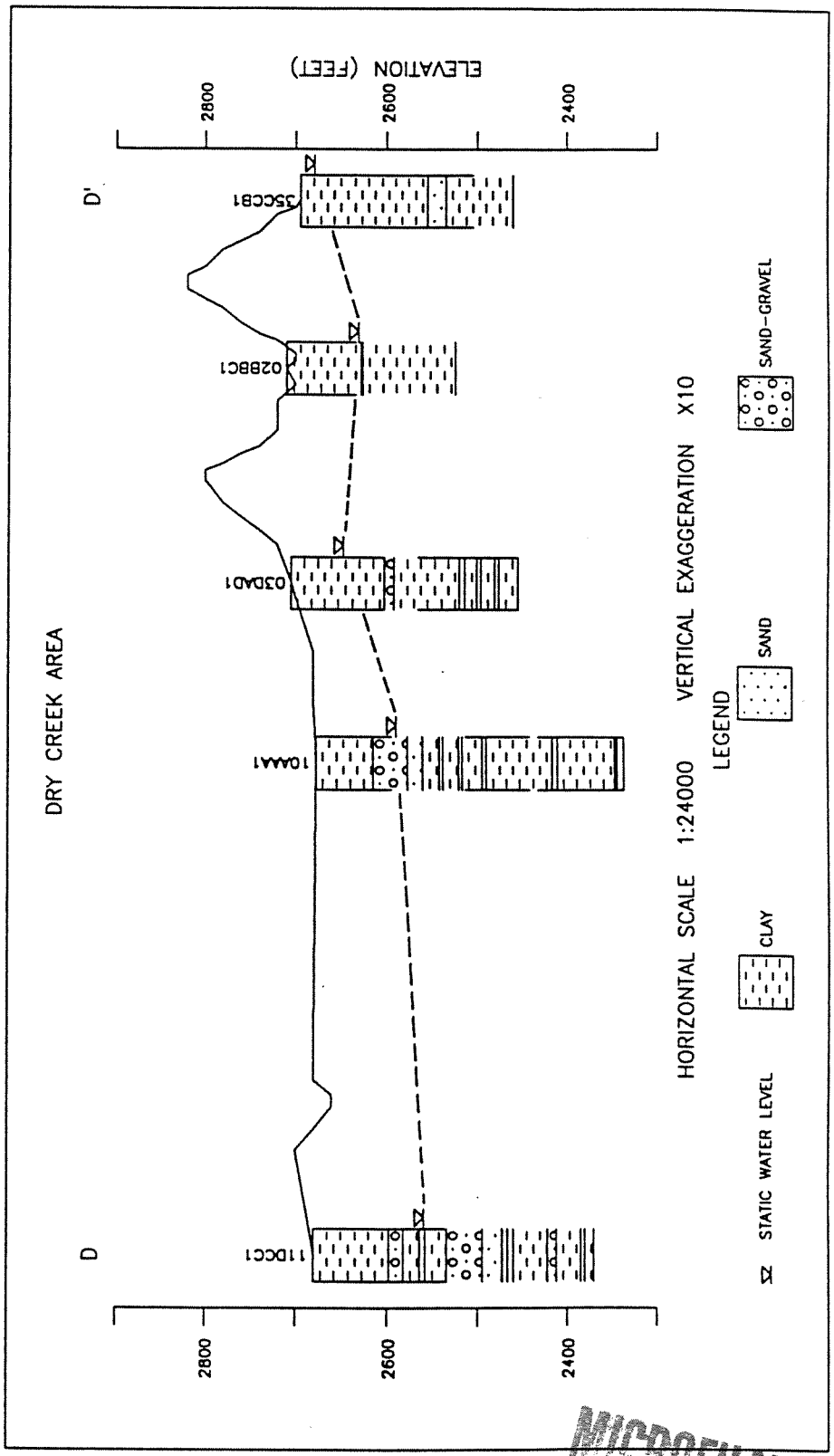


Figure 7. GEOLOGIC CROSS SECTION D – D'

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deposited within its channel and fine silts and clays accumulated along its banks during floods. The course of the river continuously changed through time. Sediments that were deposited would later be entrenched during successive downcutting phases. Sand and gravel deposits that occur in the shallow subsurface in the study area record a time when the Boise River occupied the area during the history of its development.

HYDROLOGIC REGIME

Occurrence and Movement of Ground Water

Ground water occurs throughout the entire study area. It fills the void spaces or pores between the sediment grains that underlie the area. The size of the pores determines the amount of water that can be stored in a given volume of sediment, and is termed porosity. The degree of interconnection between individual pores determines the ability for the water to move from pore to pore. This property is termed permeability. Fine-grained sediments such as silts and clays have relatively high porosities, but low permeabilities; whereas, coarser-grained sediments such as sands and gravel have lower porosities, but higher permeabilities.

Inflow or recharge to the ground-water system occurs from natural or artificial (man caused) sources. The natural sources of recharge include deep percolation of precipitation and from infiltration of surface water along tributaries of the Boise River (such as Dry and Spring Creeks). Artificial recharge occurs through infiltration of unconsumed irrigation water from the Boise River system. The Farmers Union Canal is the main canal that delivers surface water to the Dry Creek area. Since water is continuously applied to crops throughout the irrigation season, recharge from this source provides a significant portion of inflow to the ground-water system in these areas.

Outflow or discharge from the ground-water system also occurs by both natural and artificial means. Natural discharge may occur where the land surface and water table intersect, causing springs or seeps to issue. Several of these occur in the higher elevations surrounding the study area and discharge intermittently throughout the year. Natural discharge also occurs as underflow leaving the study area to the southwest. Some of the underflow leaving the area discharges into the Boise River, immediately to the south of the study area and contributes to its base flow. Artificial discharge occurs through pumpage from wells. This type of discharge undoubtedly accounts for a major portion of the water leaving the ground-water system.

In spring of 1989, IDWR inventoried 101 wells in the Dry Creek area and measured depth to water in most of them. Some of the wells were re-measured in summer and fall of that year. Figure 2 shows

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the locations of the wells that were inventoried. Pertinent information about the wells that are referred to in this report are included in Table 1. From the water-level data, the elevation of the potentiometric surface was constructed for the area and is shown on Figure 8. The potentiometric surface is an imaginary surface coinciding with the hydraulic head in the aquifer system. The water level in a well defines the elevation of the potentiometric surface at that point.

The potentiometric surface map of the area indicates the direction and slope of the ground-water system, since ground water moves from areas of higher elevation to areas of lower elevation. As can be seen, the predominant direction of movement is from northeast to southwest. The slope of the potentiometric surface ranges from about 100 feet per mile (ft/mi) in the northeast portion of the study area to about 40 ft/mi in the remaining portion of the study area. Several factors are responsible for this significant change in slope, but the main ones probably include: 1) lateral variations in sediment composition and associated permeabilities; 2) recharge from irrigation water in the southwestern portion of the study area causing artificial rising of the potentiometric surface; 3) locally concentrated pumpage causing the potentiometric surface to be artificially subdued in areas (example: the northwest quarter of Section 11, Township 1 North, Range 4 East).

Water-Level Fluctuations

Fluctuations in the potentiometric surface in an area are indicative of changes in the amount of ground water held in storage. These changes occur within an annual cycle and over time.

Annual variations in storage are due to the timing and magnitude of seasonal recharge and discharge events. In areas where natural recharge is the dominant annual event, the potentiometric surface begins to rise during spring snowmelt and peaks in early summer, and then declines until the following year's snowmelt. The foothills along the northern and eastern margins of the study area follow this annual trend. In areas where artificial recharge from unconsumed surface water occurs, the natural trend is greatly modified. As irrigation water is applied in late spring, the potentiometric surface continues to rise throughout the irrigation season and peaks in late fall, and then follows the normal decline. Ground-water withdrawal generally increases during the irrigation season and can greatly subdue the recharge events depending upon the magnitude of pumpage in an area.

Long-term changes in storage are due to cumulative differences in the amounts of annual recharge and discharge. During extended periods of drought, the amount of ground water in storage declines, whereas, during periods of above-normal precipitation, storage

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Table 1. Records of selected wells

Elevation: Estimated from USGS topographic maps and field surveys (datum is National Geodetic Vertical Datum of 1929).

Depth to water: Measured by IDWR during spring 1989. Negative values indicate above land surface.

Use of water: H - Domestic; I - Irrigation; P - Public supply; S - Stock; U - Unused.

Well number	Elevation of land surface (ft)	Well depth (ft)	Depth to first well opening (ft)	Depth to water (ft)	Use of water	Date of well completion
04N-01E-02ACB1	2770	150	61	-2.0	I	07/01/73
02BBC1	2710	185	75	78.7	H	06/09/75
03ACB1	2700	110	106	85.1	H	02/20/74
03BBC1	2620	135	--	36.9	H	03/22/74
03CCC1	2645	405	215	71.8[1]	P	03/07/91
03CCD1	2645	171	168	67.7	H	09/01/71
03DAD1	2705	250	100	57.2	U	06/01/72
04BBC1	2610	185	98	57.5	H	04/11/66
04CDD1	2620	~300	--	59.1	U/I	--
04DDC1	2635	285	276	61.6	H	11/20/72
09ADA1	2625	165	149	54.2	I	07/12/88
09BCB1	2605	328	208	46.7	P	06/21/80
10AAA1	2677	340	82	87.3	I	10/26/50
10BAB1	2635	~75	--	62.5[1]	H	--
10BBC1	2625	98	--	53.8	H	09/09/62
10CAC1	2620	305	290	50.1	P	06/01/73
10DDD1	2600	141	128	16.4	H	04/05/69
11BAA1	2805	350	329	227.8	H	02/06/67
11BBB1	2690	203	120	103.3	H	12/11/62
11DCC1	2680	310	145	120.1	H/I	05/10/71
05N-01E-33ADB1	2870	360	326	277.5	H	05/12/82
33CDD2	2630	106	--	57.3	H	06/09/71

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Table 1. Records of selected wells -- continued

Well number	Elevation of land surface (ft)	Well depth (ft)	Depth to first well opening (ft)	Depth to water (ft)	Use of water	Date of well completion
05N-01E-33DAB1	2705	250	248	119.1	H/I	02/12/79
33DDA1	2645	100	75	60.3	H/S	02/21/76
34DBB1	2680	175	--	31.2	I	12/15/66
34DCD1	2655	54	8	9.6[2]	H	11/14/56
35ACA1	2720	--	--	--	I	--
35CCB1	2695	235	190	15.2	H	04/23/76

[1] Measured by C.F. Feast on 3/26/91 prior to aquifer test
[2] Measured by USGS on 3/11/70

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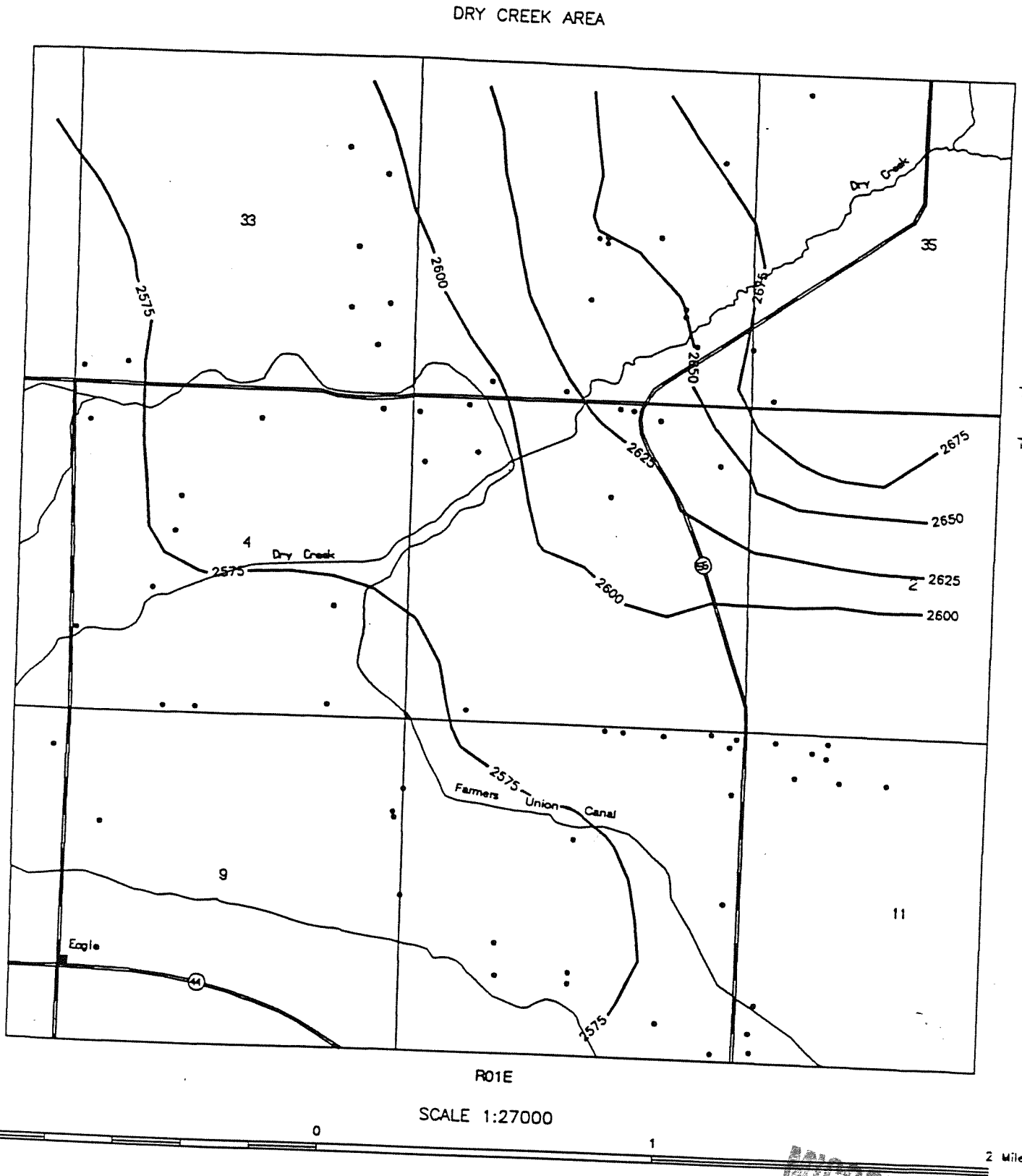


Figure 8. GENERALIZED POTENTIOMETRIC SURFACE MAP, SPRING 1989

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increases. As pumpage increases in an area, more water is removed from storage. If the amount of land that is irrigated with surface water is reduced with time, then the amount available for recharge to the ground-water system is also reduced. Each of these factors contributes to long-term changes in storage.

Little data is available on the long-term trends of ground-water storage in the Dry Creek area. Water-level hydrographs of wells 04N-01E-03DAD1 and 05N-01E-34DBB1 are shown on Figure 9. Both wells are monitored by the USGS and are currently the only wells in the study area that have depth to water measured in them regularly.

Of the two wells, 05N-01E-34DBB1 is the only well that has a sufficient period of record to warrant some analysis. Long-term trends in water levels for this well generally follow annual variations in precipitation. During the 1970's, precipitation was generally at or slightly below average as were water levels. Whereas, in early 1980's, precipitation was above average and so were water levels. Since 1987, drought conditions have prevailed and water levels have been on a downward trend. Water levels have only varied about 3 feet from highest trough to lowest trough, suggesting that recharge and discharge have remained relatively constant.

Another source of limited information that indicates what changes in ground-water storage have occurred over time are the differences between two periods of mass water-level measurements. Six wells that were measured in fall 1989 by IDWR had also been measured for Dion's (1972) study in the fall of 1970. Based on this sparsely-distributed data, a water-level change map was constructed and is shown on Figure 10.

As can be seen, the southwest portion of the study area has experienced greater than five feet of water-level decline over the 19 year period. Several factors are probably responsible for the observed declines. Natural recharge has undoubtedly been reduced with the recent drought conditions. Since 1977, the annual amount of water diverted into the Farmers Union Canal has declined by greater than 10 percent from the preceding 27 year period and as result artificial recharge to the ground-water system has also been reduced. Increased pumpage in this area may also be responsible for the observed declines. Several public supply and irrigation wells have been completed in this area during the 19 year time span.

Based on measurements in well 04N-01E-11BBB1, there has been a few feet of rise in water level in this area. Increased development in the Dry Creek area does not appear to have had adverse effects on local water levels during this 19 year period.

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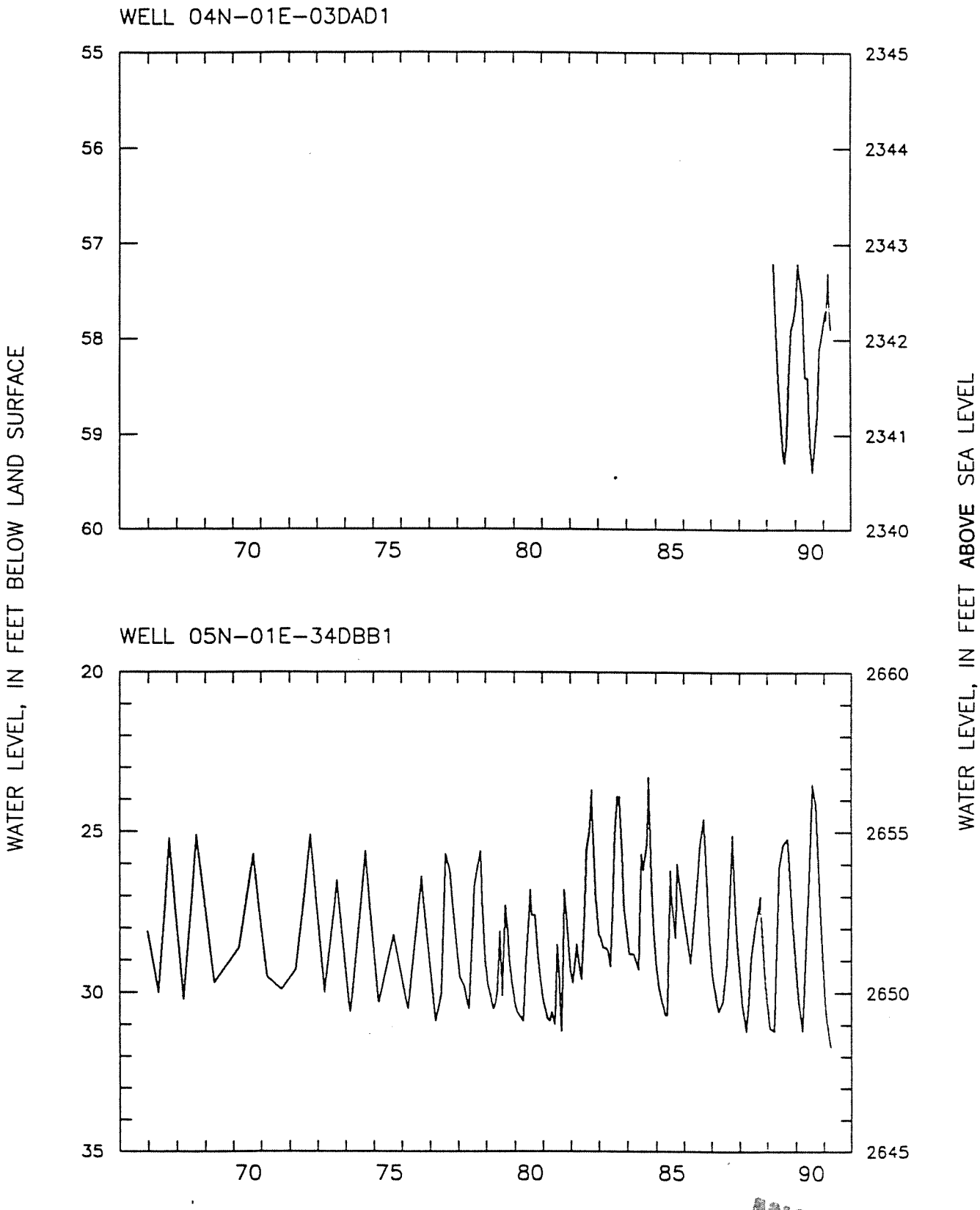
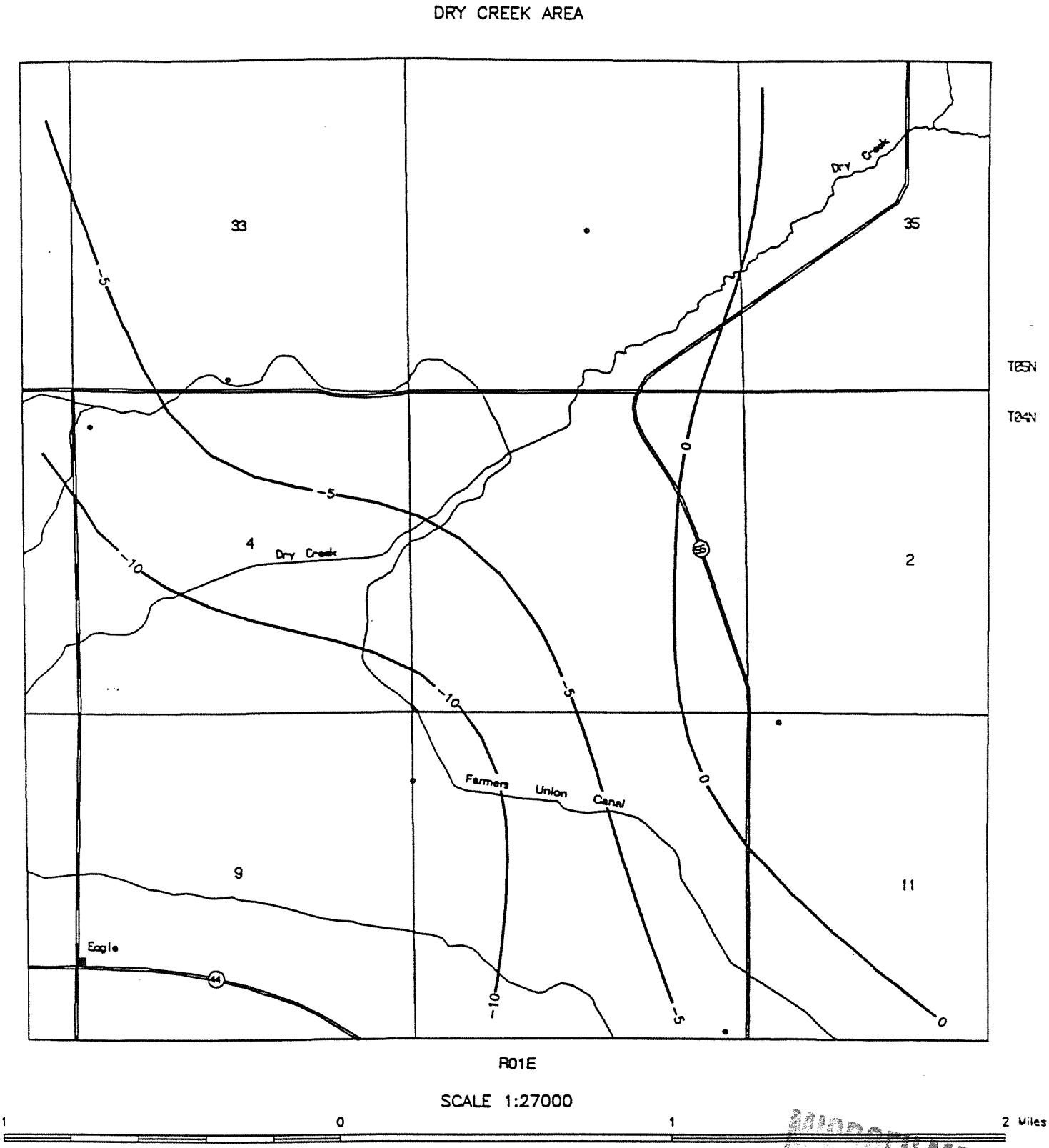


Figure 9. HYDROGRAPHS OF WELLS 04N-01E-03DAD1 AND 05N-01E-34DBB1

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Figure 10. GENERALIZED WATER-LEVEL CHANGE MAP, FALL 1970-89

Ground-Water Hydraulics

Long-Term Aquifer Test

On March 26, 1991, a 30-day aquifer test was initiated at well 04N-01E-03CCC1 in order to determine the effects of pumping this well on the local ground-water system. The well was pumped continuously during the test at an average rate of 743 gallons per minute (gpm). Drawdown was measured in the pumping well along with several wells in the immediate area. A listing of the observed drawdowns in selected wells at the end of pumping is shown on Table 2. A brief summary and interpretation of the test results follows. For a more detailed discussion of the test, refer to the consultants' report (Feast, 1991) cited in the list of references.

Table 2. Observed drawdowns after pumping well 04N-01E-03CCC1 for 30 days

Well number	Distance from pumping well (ft)	Drawdown after 30 days of pumping (ft)	Remarks
04N-01E-03CCC1	–	81.0	–
03CCD1	800	3.84	–
10BAB1	1350	2.47	–
09ADA1	2300	1.04	–
04CDD1	3600	1.03	Wells pumping to the southwest of this well may have contributed to observed drawdown.
03DAD1	4900	–	No measurable effects were observed.
10AAA1	5000	–	No discernable effects were observed, however, measuring device inaccuracy may have contributed to this.

Conventional methods that are used to analyze aquifer tests and determine hydraulic properties of an aquifer system are not able to account for the complexities that were encountered during this test. These complexities include the following: 1) the high degree of stratification (layering) of the water-bearing material which greatly slowed the vertical movement of water to the pumping well and caused drawdown trends to steepen with time as delayed drainage gradually lessened; 2) lateral variations in sediment composition caused the cone of depression to be asymmetrical (that is, the cone was steeper but of less areal extent towards the area of low sand/clay ratio than it was in opposing directions at any given

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time); and 3) two weeks into the test, water was diverted into Farmers Union Canal which provided recharge to the ground-water system late in the test.

Based on the early-time data acquired from the test (before the effects of the above complexities became significant), the hydraulic properties of the aquifer system were estimated. These data imply that the transmissivity (T) of the aquifer system in the vicinity of the pumped well is between 33000 to 92000 feet squared per day (ft^2/d) or 247,000 to 688,000 gallons per day per square foot (gpd/ft^2). The estimated storage coefficient (S) ranges from 6.4×10^{-4} to 8.4×10^{-2}. The reasons for the large range in S values is probably the result of delayed drainage of the cone of depression and the different depths that the observation wells are completed in the aquifer system. After sufficient time when the effects of the delayed drainage would have lessened, the aquifer system would probably have responded as an unconfined system and as a result have an S in the range of 10^{-2} to 10^{-1}. However, with all the complexities that occurred later in the test this theory can only be evaluated with a more sophisticated numerical model. Lack of data and limited time did not allow this approach to be tested.

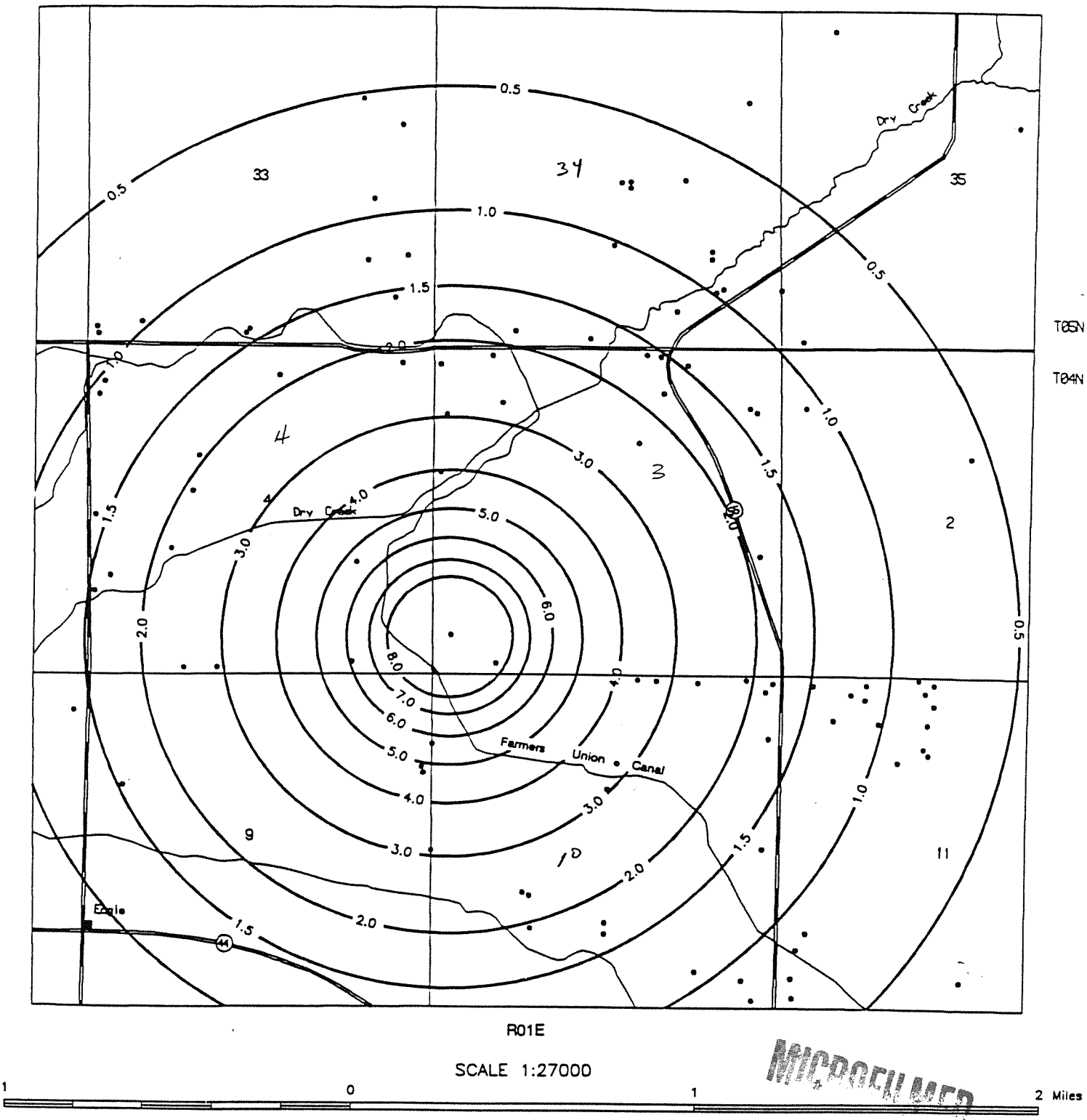
Due to the factors that where encountered during this test, the reliability of predicting the long-term effects of pumping well 04N-01E-03CCC1 are extremely limited. However, assuming that steady-state conditions prevailed late in the test (in other words, observed drawdown trends would have remained unchanged with continued pumping), the following predictions were made. By extrapolating these late-time trends five more months into the future and adjusting the pumping rate for the anticipated long-term discharge rate of 1000 gpm, the configuration of the cone of depression was constructed and is shown on Figure 11. As can be seen, the cone is depicted as being symmetrical in shape when in actuality it probably is not. Limited information as to its actual shape required this simplification. As a result, estimated drawdowns may be less than what are shown in the area of low sand/clay ratio and greater in the opposing directions. Because of the uncertainty of what effects the cessation of artificial recharge at the end of the irrigation season would have had on the expanding cone of depression, it was not possible to extend the observed drawdown trends any further in time.

Well Interference versus Well Density

Many of the complaints that IDWR has received in the Dry Creek area concerning declining well yields have been concentrated in the foothills area. This type of problem is commonly related to greater pumping lifts that are caused by declining water levels. The poor water-bearing properties of the material in this area and close proximity of wells to each other probably contributes to this problem, especially late in the irrigation season.

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Figure 11. MAP SHOWING ESTIMATED DRAWDOWN FROM PUMPING WELL 04N-01E-03CCC1 AT 1000 GPM FOR 6 MONTHS

A hypothetical analysis of local well interference in this area was performed. According to surveyors' plats of subdivisions in this area, wells appear to be spaced about 250 ft apart from each other on the average. Most lots are thought to have at least one well. Based on well test data from Well Driller's Reports, T appears to average around 1000 ft^2/d or 7500 gpd/ft^2. Since the aquifer system in this area is composed of thin sand stringers interbedded with massive clay layers, it most likely occurs under confined conditions with S ranging around 10^{-4}.

Based on the above parameters, the cumulative effects of drawdown in a given well from 24 other equally-spaced wells pumping at the same rate are as follows. At the end of the irrigation season (approximately 180 days), each well pumping 1 gpm continuously would result in almost 4 ft of additional drawdown in a given well. During short-term but increased use the following effects were estimated. If each well is pumping 10 gpm continuously for 8 hours, the additional drawdown would be around 16 ft.

This analysis has shown that local well interference in the foothills area can significantly add to the observed well yield declines. Other factors, such as extended periods of below-normal precipitation, faulty well construction, and additional groundwater development in adjacent areas can also contribute to these more localized problems.

Well Construction Practices

Well construction practices vary greatly throughout the study area. The type of construction used to complete a well can greatly affect its life and efficiency. Due to the fine-grained nature of the water-bearing material in the area, the production of sand from wells can be a significant problem. Many wells in the area are completed with a minimum amount of casing. This causes a large portion of the hole to be unsupported and allows sediments to slough into a well. Over time, the yield of a well can decline because of the gradual loss of the amount of open interval in a well. Pumping sand can also cause excessive wear to a pump and require it to be serviced more frequently.

The best method of well construction to use in Dry Creek area to inhibit the sand production includes the following. Factory-wrapped well screen should be selectively set adjacent to each of the principal permeable zones encountered in the well. Blank well casing is then installed between each of the screened intervals. A gravel envelope should be placed in the annulus between the wall of the hole and the wall of casing adjacent to the screen intervals. Finally, the well should be completely developed before the well is put into use. This type of well is initially more expensive, but will be worth it over the long haul with the cost savings from the elimination of sand filters, well cleaning and/or deepening, and pump repairs.

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A statistical comparison between well use and selected well characteristics was performed. The results of this analysis are shown on Table 3. The term specific capacity (SC) is defined as the yield of a well in gpm per foot of drawdown. Note the difference between each of the average specific capacities for domestic wells in the two topographic settings. The average SC for the lowlands is about double the value for the foothills. This means the average amount of drawdown in a domestic well located in the foothills is about twice that of a domestic well in the lowlands for a given discharge rate. Also notice the greater SC values for the irrigation and public supply wells in the lowlands than domestic wells in the same area. The reasons for this are probably related to the larger well diameters, greater depth of penetration into the aquifer system and more efficient well construction between the two groups.

Table 3. Comparison between use of well and selected well characteristics

Use of well and topographic settings	Average water level (ft)	Average total depth (ft)	Average open interval[1] (ft)	Average yield (gpm)	Average specific capacity (gpm/ft)	Number of wells
Domestic						
Lowlands	50.2	124.9	23.6	30.8	4.4	221
Foothills	129.6	274.7	85.1	27.6	2.1	62
Irrigation						
Lowlands	64.4	188.5	53.4	177.4	10.0	17
Public supply						
Lowlands	58.6	301.1	54.1	340.0	13.9	7

[1] Includes all uncased, perforated, and screened intervals in a well

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GROUND-WATER QUALITY

Limited information is available regarding the quality of the ground water in the Dry Creek area. A total of ten samples have been collected and analyzed from eight wells in the study area. The samples were acquired during various studies and/or time periods. One sample was collected during Nace and others' (1957) study, six others were taken for Dion's (1972) study, and the remaining three were obtained during miscellaneous visits to the area. The results of the analyses are shown on Table 4.

Ground water in the study area appears to be a calcium-sodium bicarbonate type. The water ranges from low to slightly mineralized and is moderately hard to very hard. No analyses of dissolved iron were performed on any of the samples. However, due to reports by well owners regarding red iron staining in laundry and plumbing fixtures, iron concentrations probably exceed 0.3 mg/L in some areas. The reasons for the hardness and high iron content in the ground water are probably from naturally occurring factors and are related to the mineral composition of water-bearing material.

The concentrations of most analyzed constituents are within the range of the recommended drinking water standards established by the U.S. Environmental Protection Agency (1976). Fluoride concentrations in well 05N-01E-35ACA1 was the only case where the recommended levels were exceeded. According to EPA, excessive levels of fluoride in drinking water supplies can produce objectionable dental fluorosis.

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Table 4. Chemical analyses of water from selected wells

(All constituents reported in mg/L)

Well number	Sample date	Specific conductance (µmhos/cm)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)
04N-01E-04BBC1	08/13/70	461	43	7.2	50	3.2	270	15	2.0	0.30	9.5
10AAA1	08/21/53	390	32	6.0	38	2.0	190	30	9.0	--	--
10BBC1	06/25/70	363	--	--	--	--	--	--	5.0	--	3.7
10DDD1	07/15/70	236	--	--	--	--	--	--	1.0	--	1.8
11BBB1	06/25/70	367	--	--	--	--	--	--	10	0.90	--
05N-01E-34DBB1	10/07/75	612	65	18	39	4.5	300	91	8.4	0.60	--
34DCD1	06/25/70	652	--	--	--	--	--	--	13	--	4.6
35ACA1	03/25/70	245	--	--	--	--	--	--	--	13	--
	05/31/72	285	4.3	0.10	57	3.2	110	23	4.9	11	--
	09/02/88	283	3.8	0.08	58	3.1	--	24	4.7	8.3	--

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CONCLUSIONS

According to available information, it appears that the ground-water resources in the Dry Creek area are not currently over-developed. That is, the current annual discharge rate for the area does not appear to exceed the long-term annual recharge rate. However, the effects of further development of the ground-water system are uncertain and continued monitoring of water levels in the area is essential.

Local declines in the potentiometric surface have occurred, but available data indicate the amount of these declines have been minor in comparison to the saturated thickness of the entire aquifer system. Four consecutive years of drought have undoubtedly reduced the amount of recharge to the area and have caused water levels in wells to be lower. Due to the poor hydraulic properties of the aquifer system in the area of low sand/clay ratio (see Figure 2), well spacing appears to be a major factor in contributing to the declining well yields that have been experienced in this area. Faulty well construction practices have also added to well owners' problems throughout the study area.

RECOMMENDATIONS

The current observation well network in the Dry Creek area is inadequate to monitor the effects of continued development of the ground-water resources in the area. Another observation well should be located in the southwest portion of the study area where development appears to be most concentrated. Well 04N-01E-04CDD1 (see Figure 2) seems like a good candidate. It is an unused irrigation well that is about 300 ft deep. A Well Driller's Report does not appear to exist for the well, so little is currently known about its completion. Therefore, it would be extremely useful to have the well geophysically logged so that the open interval and nature of the water-bearing material can be determined. An arrangement should be made with the well owner, so the well can be used for monitoring for a extended period of time. This well could be added to the IDWR-USGS cooperative observation well network.

As more farm land is used for multi-family subdivisions, the increased demand on the ground-water system in the Dry Creek area is not the only change that would be imposed on it. A reduction in the amount of artificial recharge from unconsumed surface water could also result if surface water irrigation is not continued in these areas. Therefore, if development is allowed to expand, it is crucial that all economically-feasible steps be taken to continue the use of surface water for irrigation. This will also reduce the amount of ground water that is pumped.

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SCANLAN ENGINEERING

Groundwater and Environmental Engineering

November 11, 1994

Ms. Dana Hofstetter
Holland and Hart
P.O. Box 2527
Boise, ID 83701-2527

Subject: Aquifer Test Results - Mark Lynn Ranch on Willow Creek

Dear Dana:

An aquifer water-level recovery test was conducted at Mark Lynn's ranch on Willow Creek during the period of October 17 through October 21, 1994. Data collection consisted of measurements of water levels in (1) the irrigation well, (2) the mobile home / stock water well, (3) the Mark Lynn house well, and (4) the Corbett Lynn house well. The test indicates that the aquifer tapped by Mr. Lynn's irrigation well is highly permeable and productive, with an estimated transmissivity of 100,000 gallons per day per foot (gpd/ft). Storage coefficient could not be directly calculated, but appears to be approximately 0.01. Based upon these aquifer parameters, pumping of 2000 gallons per minute (gpm) for six months will have a water-level impact of about 7 feet at a distance of one mile from the Lynn wells, about 4 feet at a distance of two miles from the wells, and about 2.5 feet at a distance of three miles from the wells. Anticipated worst-case water-level drawdown after 40 years of pumping at 2,000 gpm for six months per year would be less than 9 feet at a distance of two miles from the pumping center of the Lynn wells, and less than 7 feet at a distance of three miles from the pumping center of the Lynn wells. Water-level measurements also suggest that current water levels do not show any significant declines in comparison to 1993 or 1970 water levels. A short discussion of terms, testing details and test results are discussed below, and test data are attached.

DEFINITIONS OF TERMS

The following terms utilized in this report are used to describe aquifer hydraulic properties.

Storage Coefficient. Storage coefficient or storativity describes the manner in which an aquifer stores water and yields water to a well. Storativity can be described by two broad categories of aquifer storage -- confined and unconfined.

- In confined aquifers (also known as artesian aquifers), the water level rises above the top of the aquifer in which it is encountered. The top of the aquifer is usually defined by the contact with a lower permeability layer (such as a clay aquitard overlaying a sand aquifer). When wells completed in confined aquifers are pumped, there is no unwatering of the aquifer unless the water level falls below the top of the aquifer. Instead, water flowing to the well during pumping is derived from

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expansion of the water and the aquifer matrix. Water-level response to pumping of a confined aquifer is a pressure response, which occurs rapidly and for considerable distances from a well. Storage coefficient values for confined aquifers typically range from about 0.001 to 0.00001.

- In unconfined aquifers (also known as water-table aquifers), the top of the aquifer is the water table. When a well completed in an unconfined aquifer is pumped, water is released from storage by draining or unwatering of the aquifer matrix. In comparison to a confined aquifer, the water-level response to pumping of an unconfined aquifer occurs slowly and over a smaller distance from the pumping well. Storage coefficient values for unconfined aquifers typically range from about 0.2 to 0.001.

In simplified terms, the difference between unconfined and confined aquifers is analogous to the difference between water flow in open channels (unconfined) or in pipes (confined). In general, pumping of unconfined aquifers results in less water-level interference with other wells than pumping of confined aquifers.

Transmissivity. Transmissivity describes the permeability of an aquifer, or the relative ease at which water flows through the aquifer material. Transmissivity is defined as the amount of water in gallons per day that would flow through a one-foot width of the aquifer under a hydraulic gradient of 1.0. High transmissivity values indicate that the aquifer transmits water readily, and will yield large amounts of water to wells.

My experience from testing individual Idaho Group aquifer zones tapped by successful municipal or irrigation wells has been that transmissivities in the Boise area typically range from about 10,000 gpd/foot to about 50,000 gpd/ft. Transmissivity is much higher in the vicinity of Eagle and Star (where the transmissivity of individual aquifer zones may exceed 100,000 gpd/ft) due to a relative abundance of clean and coarse sand layers within the sedimentary section. Since numerous aquifer zones, separated by confining layers (aquitards), may exist in any particular vertical section of the overall Idaho Group aquifer system of the Western Snake River Plain, the overall aquifer transmissivity may be several times greater than that of individual aquifers. Baker (IDWR Open File Report, 1991) estimated transmissivity of the aquifer system in the lower Dry Creek area to range from 247,000 to 688,000 gpd/ft.

TEST METHODS

The original plan for testing called for a series of pre-test water-level measurements to determine stabilized water levels or pre-test water-level trends, followed by a water-level recovery test when the irrigation well pump was turned off for the season. Unfortunately, there was a miscommunication with Mr. Lynn's staff on test schedule, and the irrigation well pump was turned off approximately 45 minutes prior to my arriving on site for pre-test water-level measurements. As a result, I did not obtain stabilized pumping water-level measurements or early-time recovery data. However, I was able to obtain sufficient late-time recovery water-level data to provide an estimate of local aquifer transmissivity.

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In addition to the long-term recovery test, I conducted a short-term (90-minute) drawdown test of the irrigation well and a short-term (17-minute) recovery test of the mobile home / stock water well. These tests provided additional data related to local aquifer hydraulic parameters and well responses.

Water levels were measured with electric-line well sounders. Measurement points were the tops of the steel well casings at the house wells and the tops of the water level measurement ports (about 0.2 feet above tops of well casings) at the irrigation well and mobile home / stock water well.

ANALYSIS OF TEST DATA

Test data were analyzed by the Theis non-equilibrium equation, using semi-logarithmic straight-line solutions. Plotting of water levels on a semi-logarithmic time scale produces a straight line that can be used to determine transmissivity and storage coefficient. These theoretical analyses assume that the aquifer has an infinite extent, is isotropic and homogenous, does not receive recharge, and has a uniform thickness. While these conditions do not occur in nature, the derived results give the best approximation available. Analyses are described individually below.

Irrigation Well Long-Term Recovery

The irrigation well is reportedly 480 feet deep, and is equipped with two pumps, 5 hp and 25 hp. The larger pump had been pumping continuously at an approximate rate of 172 gpm for more than 30 days prior to shut-down for the recovery test. The 172 gpm approximate pumping rate is estimated from the pump performance curve based upon measured pump lift and discharge pressure. I understand that the smaller pump operates intermittently, primarily to provide domestic water for Mr. Lynn's house. The average pumping rate for the 5 hp pump is probably no more than a few gpm, and was not considered in the calculations.

Long-term irrigation well recovery was plotted on a semi-logarithmic time scale. This method assumes that the pumping water level in the well had been relatively stable prior to pump shut-down (which is a reasonable assumption based on the short-term pumping test response). The water-level recovery response at the well suggests an approximate aquifer transmissivity of 77,000 gpd/ft.

Depth to water at the end of the recovery period (October 21, 1994) was 384.4 feet. I measured the depth to water below the top of the well casing at 382.5 feet on September 9, 1993. This suggests less than two feet of static water-level change in the past year. This amount of static water level change does not indicate any significant water-level decline in the aquifer, particularly in light of the fact that the well had not been pumped for irrigation in 1993.

Irrigation Well Short-Term Drawdown and Recovery Test

A semi-logarithmic plot (adjusted to account for pre-test recovery trend) of short-term drawdown from the 90-minute pumping test suggests a near-well transmissivity of about 157,000 gpd/ft. A semi-logarithmic plot of short-term water-level recovery

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plotted against t/t' (pumping time divided by recovery time) suggests a near-well transmissivity of about 123,000 gpd/ft.

Mobile Home / Stock Water Well Long-Term Recovery

The 440-foot deep mobile home / stock water well is located approximately 275 feet west of the irrigation well. This well is equipped with a 3 hp pump and was pumped continuously (except for the 17-minute short-term recovery test) before and during the 5-day long-term recovery test period.

Long-term mobile home / stock water well recovery was plotted on a semi-logarithmic time scale. This method assumes that the pumping water level in the well had been relatively stable prior to irrigation pump shut-down. All long-term recovery water levels were measured with the pump running. The water-level recovery response at the well suggests that the aquifer tapped by the irrigation well and the mobile home / stock water well has an approximate transmissivity of 108,000 gpd/ft.

Evaluation of the response of this well provides the best opportunity to determine aquifer storage coefficient. Unfortunately, a direct calculation of storage coefficient cannot be derived because there was no pre-test water level data because the irrigation pump was turned off prior to my arrival on site. However, comparison of the water level responses during the long-term recovery and short-term irrigation well pumping tests with the calculated responses for various values of storage coefficient indicates a probable value of about 0.01. This suggests unconfined (i.e. water table) aquifer storage conditions. Unconfined storage conditions are advantageous when well interference is a concern, because the cone of depression around the pumping well is smaller and less extensive than with confined (i.e., artesian) storage conditions..

Note that the well driller's report for this well (Albert Helmick, 440-foot domestic well, 1970) indicated a static depth to water of 375 feet below land surface in 1970. Current static (non-pumping) depth to water would be about 377 feet below land surface, which indicates about 2 feet of water-level decline in the past 24 years. Considering that the area has experienced drought conditions for the past several years, a 2-foot decline does not indicate any problems with long-term water level decline or aquifer depletion.

Mobile Home / Stock Water Well Short-Term Recovery

The mobile home / stock water well had been pumping continuously for several months prior to the short-term recovery test. Estimated pumping rate based upon lift, pressure, and horsepower was 20 gpm. A short-term recovery test was conducted by shutting down this well for about 17 minutes and measuring water-level response. A semi-logarithmic plot of short-term recovery suggests a near-well transmissivity of about 90,000 gpd/ft.

Mark Lynn House Well

The Mark Lynn house well is located about 1,500 feet northeast of the irrigation well. Water-level monitoring at the Mark Lynn house well showed a gradual water level

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increase of 0.1 feet during the first three days of the recovery period, followed by a decline of about 0.1 feet during the last two days of recovery. The fluctuations might not be attributable to irrigation well impacts, but rather might be regional fluctuations or barometric fluctuations. These minor water-level fluctuations suggest that either (1) the Mark Lynn house well might be completed in deeper zones that are not in direct hydraulic connection with the unconfined aquifer tapped by the irrigation well, or (2) that recovery impacts at 1,500 feet were imperceptible because the storage coefficient is greater than the estimated 0.01. For instance, recovery of only 0.05 feet would be predicted if the storage coefficient was 0.1 rather than 0.01. Note that the pump in this well did not operate during the recovery test period.

Corbett Lynn House Well

The 580-foot deep Corbett Lynn well is about 3,000 feet northeast of the irrigation well. The pump in this well operated intermittently during the recovery test period to supply domestic water. Water levels in the Corbett Lynn well showed a similar response as in the Mark Lynn well, consisting of a slight rise during the first few days of the recovery period followed by a decline at the end of the recovery period. This response suggests that either (1) the Corbett Lynn well might be completed in deeper zones that are not in direct hydraulic connection with the unconfined aquifer tapped by the irrigation well, or (2) that recovery impacts at 3,000 feet were imperceptible because the storage coefficient is greater than the estimated 0.01.

Depth to water during the recovery period ranged from 393.92 to 394.02 feet below the top of the well casing. I measured a depth to water below the top of the well casing at 394.4 feet on September 9, 1993 in this well. Therefore, the water level was about 0.4 feet higher than the water level 13 months previously. Note also that the well driller's report (June 1993) lists a static water level of 400 feet below ground surface, which is about 8 feet lower than current static water level. It is not known if this discrepancy suggests a seasonal fluctuation in water level or simply an inaccurate measurement by the driller.

CALCULATION OF PUMPING IMPACTS

Future impacts to local groundwater levels from Mr. Lynn's existing and proposed irrigation pumping were calculated using the Theis non-equilibrium equation.

Mr. Lynn's existing water right license and pending applications for permit result in a total future diversion rate of about 2,000 gpm for irrigation. Based upon an average aquifer transmissivity of 100,000 gpd/ft and an average storage coefficient of 0.01, calculated water-level drawdown after six months of continuous pumping would range from about 7 feet at a distance of one mile from the pumping center of the existing and proposed Lynn wells, to about 4 feet at a distance of two miles, and about 2.5 feet at a distance of three miles.

Long-term drawdown resulting from an intermittent pumping schedule (i.e., six months off, six months on) can be estimated by replacing the cycling well with two imaginary wells, one pumping continuously at a rate that would produce the same volume as the cycled well, and the other pumping for one cycle at a rate equal to the difference between

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the rate of the actual pumping well and that of the first imaginary well. In the case of the Lynn wells, after 20 years of irrigation at 2,000 gpm for six months per year, the calculated drawdown at the end of the irrigation season would be about 8 feet at a distance of two miles from the pumping center of the wells, and about 6 feet at a distance of three miles from the pumping center of the wells. After 40 years of irrigation at 2,000 gpm for six months per year, the calculated drawdown at the end of the irrigation season would be about 9 feet at a distance of two miles from the pumping center of the Lynn wells, and about 7 feet at a distance of three miles from the pumping center of the Lynn wells.

The above calculations assume an extensive homogenous aquifer with no annual recharge. Since the aquifer receives annual local recharge from Willow Creek and incident precipitation, and regional recharge from streams and irrigation in the Boise and Payette valleys, these calculated drawdowns should be considered worst-case, and are therefore conservative. Similarly, the average irrigation season pumping rate of 2,000 gpm is very conservative because lower pumping rates will occur during the early and late portions of the irrigation season, and because only a portion of the 2,000 gpm would be consumed through evapotranspiration. The unconsumed portion of the pumping (probably about 1/3 of the total) will return to aquifer as recharge.

SUMMARY AND CONCLUSIONS

Results of testing indicate an approximate aquifer transmissivity in the uppermost aquifer beneath Mr. Lynn's ranch of about 100,000 gpd/ft. Storativity of this aquifer appears to be about 0.01, which indicates unconfined (water table) conditions. Unconfined storage conditions are consistent with the predominance of unconsolidated sand strata in the Willow Creek area. Deeper aquifer zones, such as those penetrated by the Mark Lynn and Corbett Lynn house wells, might be confined or semiconfined by indurated sandstone or mudstone layers.

Based upon the aquifer parameters listed above, anticipated worst-case water-level drawdown after 40 years of pumping at 2,000 gpm for six months per year would be less than 9 feet at a distance of two miles from the pumping center of the Lynn wells, and less than 7 feet at a distance of three miles from the pumping center of the Lynn wells. Actual drawdown will likely be less.

Please call me with any questions concerning these test results.

Sincerely,

Terry M. Scanlan

Terry M. Scanlan

Enclosures

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Lynn Irrigation Well Long-Term Recovery Test

Date	Time	Elapsed Time (minutes)	Raw Reading (feet)	Depth to Water (feet)	Remarks
10/17/94	10:30			385.3±	estimated pumping water level
10/17/94	10:30	0			pump off(±30 minutes)
10/17/94	11:15	45	382.38	384.63	sounder 2.25 feet long
10/17/94	11:56	86	382.29	384.54	
10/17/94	12:20	110	382.22	384.47	
10/17/94	13:33	183	382.13	384.38	
10/17/94	13:47	197	382.13	384.38	
10/18/94	8:05	1295	381.62	383.87	
10/19/94	18:40	3370	381.25	383.50	
10/21/94	18:41	6251	381.13	383.38	

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Lynn Irrigation Well Short-Term Drawdown Test

Date	Time	Elapsed Time (minutes)	Raw Reading (feet)	Depth to Water (feet)	Drawdown (feet)	t/t'	Remarks
10/17/94	13:47:00		382.13	384.38			"static"
10/17/94	13:52:30	0.0					irrigation pump on
10/17/94	13:54:00	1.5	384.95	387.20	2.82		
10/17/94	13:56:00	3.5	385.06	387.31	2.93		
10/17/94	14:03:00	10.5	385.12	387.37	2.99		
10/17/94	14:09:00	16.5					30.5 psi discharge
10/17/94	14:10:00	17.5	385.12	387.37			
10/17/94	14:15:00	22.5					384.28' @ mobile home well
10/17/94	14:19	26	385.17	387.42	3.04		
10/17/94	14:39						384.25' @ mobile home well
10/17/94	14:42	50	385.22	387.47	3.09		
10/17/94	14:59	67	385.24	387.49	3.11		
10/17/94	15:03						384.29' @ mobile home well
10/17/94	15:14	81	385.26	387.51	3.13		
10/17/94	15:18						384.24' @ mobile home well
10/17/94	15:22	90	385.27	387.52	3.14		
10/17/94	15:23	91					irrigation pump off
10/17/94	15:24	0.5	382.90	385.15	0.77	183	recovery
10/17/94	15:24	1	382.68	384.93	0.55	92	
10/17/94	15:25	1.5	382.59	384.84	0.46	62	
10/17/94	15:25	2	382.52	384.77	0.39	47	
10/17/94	15:26	3	382.49	384.74	0.36	31	
10/17/94	15:27	4	382.43	384.68	0.30	24	
10/17/94	15:28	5	382.40	384.65	0.27	19	
10/17/94	15:29	6	382.38	384.63	0.25	16	
10/17/94	15:30	7	382.32	384.57	0.19	14	
10/17/94	15:31	8	382.30	384.55	0.17	12	
10/17/94	15:31	8.25				12	small pump on
10/17/94	15:32	9.4				11	small pump off
10/17/94	15:36						384.24' @ mobile home well
10/17/94	15:38	15.3	382.22	384.47	0.09	7	
10/17/94	15:40	17	382.21	384.46	0.08	6	
10/17/94	15:43	20	382.19	384.44	0.06	6	
10/17/94	15:46	23					384.22' @ mobile home well

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Lynn Mobile Home and Stockwater Well
Long-Term Recovery Test

Date	Time	Elapsed Time (minutes)	Depth to Water (feet)	Remarks
10/17/94	10:30	0		irrigation well off(±30 minutes)
10/17/94	11:43	73	384.57	pump running
10/17/94	14:15	225	384.28	pump running
10/17/94	15:36	306	384.23	pump running
10/18/94	8:09	1299	383.98	pump running
10/19/94	18:50	3380	383.70	pump running
10/21/94	18:53	6263	383.64	pump running

Lynn Mobile Home and Stockwater Well
Short-Term Test

Date	Time	Elapsed Time (minutes)	Depth to Water (feet)	Remarks
10/17/94	11:43		384.57	pump running
10/17/94	11:46:30	0		pump off
10/17/94	11:47:00	0.5	381.70	recovery
10/17/94	11:47:30	1.0	381.32	
10/17/94	11:48:00	1.5	379.70	
10/17/94	11:49:00	2.5	379.48	
10/17/94	11:50:00	3.5	379.45	
10/17/94	11:51:00	4.5	379.43	
10/17/94	11:52:00	5.5	379.43	
10/17/94	12:03:00	17	379.39	
10/17/94	12:03:40			pump on
10/17/94	12:04:40		384.14	
10/17/94	12:05:40		384.72	
10/17/94	12:06:40		384.72	
10/17/94	12:07:40		384.65	
10/17/94	12:08:40		384.63	
10/17/94	12:09:40		384.58	22 psi tank pressure

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Mark Lynn House Well
Long-Term Recovery Test

Date	Time	Elapsed Time (minutes)	Depth to Water (feet)	Remarks
10/17/94	12:40	130	394.77	
10/17/94	12:54	144	394.76	
10/18/94	8:25	1315	394.69	
10/19/94	19:10	3400	394.66	
10/21/94	19:10	6280	394.76	

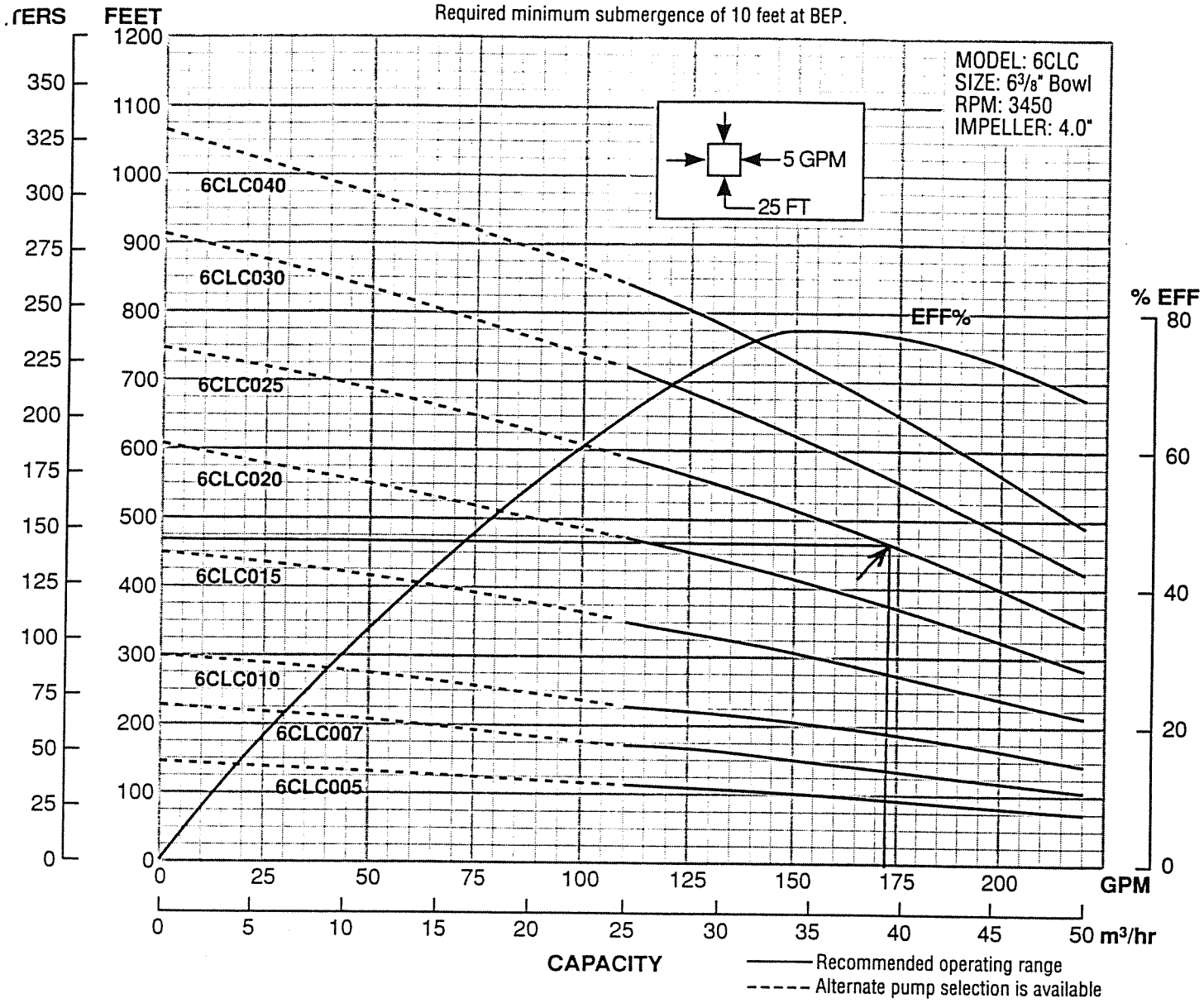
Corbett Lynn House Well
Long-Term Recovery Test

Date	Time	Elapsed Time (minutes)	Depth to Water (feet)	Remarks
10/17/94	13:13	163	394.01	
10/18/94	8:40	1330	393.97	
10/19/94	19:25	3415	393.92	
10/21/94	19:25	6295	394.02	

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10/17/94 pwl = 38' @ 30.5psi, assume head loss '2'
TOH = 467 ∴ Q = 172 gpm

Model 6CLC 160 GPM

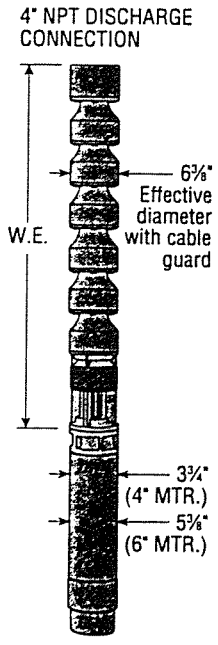


Dimensions and Weights

HP	Stages	W.E. Order Number	W.E. Length	W.E. Wt. (lbs.)
5	2	6CLC00544CTS	20 7/32	71
		6CLC00564CTS	21 3/16	72
½	3	6CLC00744CTS	25 21/64	88
		6CLC00764CTS	26 5/8	90
0	4	6CLC01064CTS	32 39/64	106
5	6	6CLC01564CTS	42 55/64	140
0	8	6CLC02064CTS	53 3/32	174
5	10	6CLC02564CTS	63 21/64	208
0	12	6CLC03064CTS	73 37/64	242
0	14	6CLC04064CTS	87 55/64	274

nensions in inches and weights in lbs. Do not use for construction purposes.)

E NOTE:
r motors separately.
ıtermediate horsepower pumps consult factory.
line is recommended operating range. The dotted
----) signifies an alternate pump selection is available.
e specify all options changes in W.E. order number.



Materials of Construction

Part Name	Material
Shaft	ASTM A582 TYPE 416
Coupling	ASTM A582 S41600 CD
Suction Adapter	ASTM A48 CL 40
Discharge Bowl	ASTM A48 CL 30B
Rubber Bearings	RUBBER
Optional Bronze Bearings	ASTM B584
Discharge Bowl Bearing	ASTM B584
Taperlocks	ASTM A108 GR 101B
Bowl	ASTM A48 CL 30B
Upthrust Collar	ASTM A276 S41400
Impeller	ASTM B145-4A
Fasteners	SAEJ429 GR 8
Cable Guard	ASTM A240 S 30400
Suction Strainer	ASTM A240 S 30400

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238-7
4/92

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Department of Water Resources

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

USE TYPEWRITER OR BALLPOINT PEN

Corbett Lynn Well

1. WELL OWNER

Name MARK LYNN

Address 4831 SKYLINE DR. EAGLE, ID. 83616

Drilling Permit No. 63-93-W-0182

Water Right Permit No. _____

2. NATURE OF WORK

XX New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

XX Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☐ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	8 inches	+ 1 feet	480 feet
.250 inches	6 inches	+2 feet	540 feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No
Manufacturer _____ Type _____
Top Packer or Headpipe _____
Bottom of Tailpipe _____

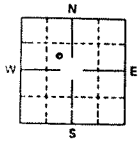
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 40 Material used in seal: ☐ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County GEM
Address of Well Site _____ (give at least name of road)
T. 6N N ☒ or S ☐
E ____ ¼ NW ¼ Sec. 35, R. 1W E ☐ or W ☒

7. WATER LEVEL

Static water level 400 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
40	500	2 HRS.

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
12	0	2	SANDY TOP SOIL		X
12	2	40	SAND & GRAVEL		X
8	40	280	DECOMPOSED GRANITE SAND		X
8	280	315	BROWN SANDSTONE		X
8	315	420	DECOMPOSED GRANITE SAND		X
8	420	426	BROKEN BROWN ROCK	X	
8	426	460	DECOMPOSED GRANITE SAND	X	
8	460	480	LIGHT COLORED SANDSTONE	X	
6	480	530	DECOMPOSED FINE GRANITE SAND	X	
6	530	560	HARD GRAY SANDSTONE	X	
6	560	580	COURSE LOOSE GRANITE SAND	X	

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Western Regional Office

10.

Work started 4-19-93 finished 6-5-93

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name BILL DOTY DRILLING CO., INC. Firm No. 42
Address 106 CALLOWAY CALDWELL, ID 83605 Date 6-17-93
Signed by Drilling Supervisor _____
and
(Operator) _____
(If different than the Drilling Supervisor)

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E TYPEWRITER OR
BALL POINT PEN

State of Idaho
Department of Reclamation

ELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

Mobile Home / Stock Water Well

WELL OWNER

Name ALBERT HETMICK

Address CHAPARRAL RD.

Owner's Permit No.

NATURE OF WORK

☐ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

METHOD DRILLED

☐ Cable ☐ Rotary ☐ Dug ☐ Other

WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 440 feet

Casing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
.025 inches	6 inches	0 feet	430 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☐ No

Perforated? ☐ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation 1/8 inches by 3 inches

Number		From	To
90	perforations	432 feet	440 feet
	perforations	feet	feet
	perforations	feet	feet

Well screen installed? ☐ Yes ☐ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☐ No Size of gravel

Packed from feet to feet

Surface seal? ☐ Yes ☐ No To what depth 20 feet

Material used in seal ☐ Cement grout ☐ Puddling clay

LOCATION OF WELL

Sketch map location must agree with written location.

N

W E

S

County Ada

¼ ¼ Sec. T. N, R. W

ADDITIONAL SHEETS IF NECESSARY

7. WATER LEVEL

Static water level 375 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
30		

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	80	DARK SAND		
	80	100	LOOSE SAND		
	100	230	SAND		
	230	240	[illegible]		
	240	375	COARSE SAND		
	375	440	[illegible]		

10.

Work started NOV 70 finished DEC 70

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Driller's or Firm's Name [illegible] Number

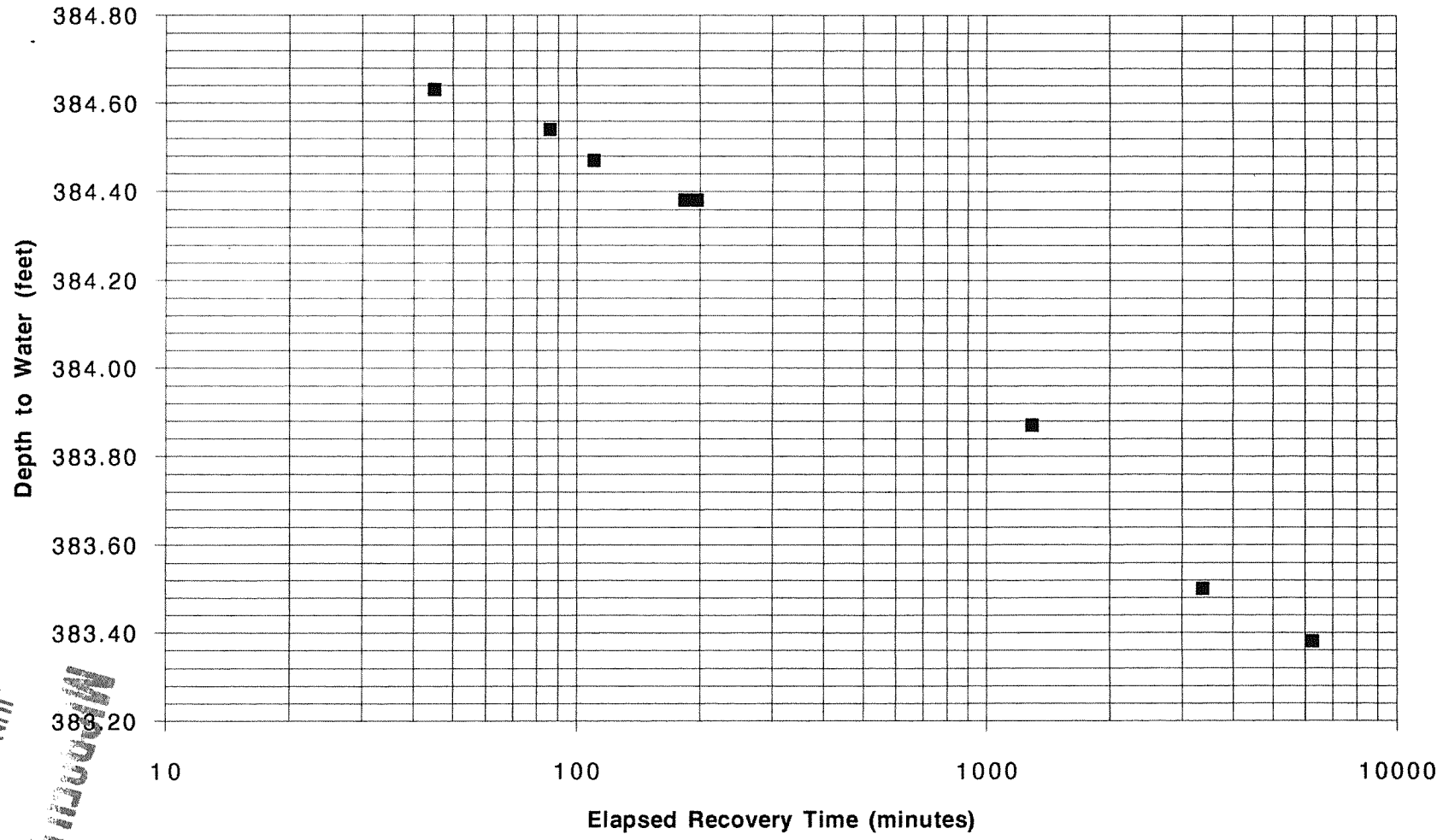
Address

Signed By Date

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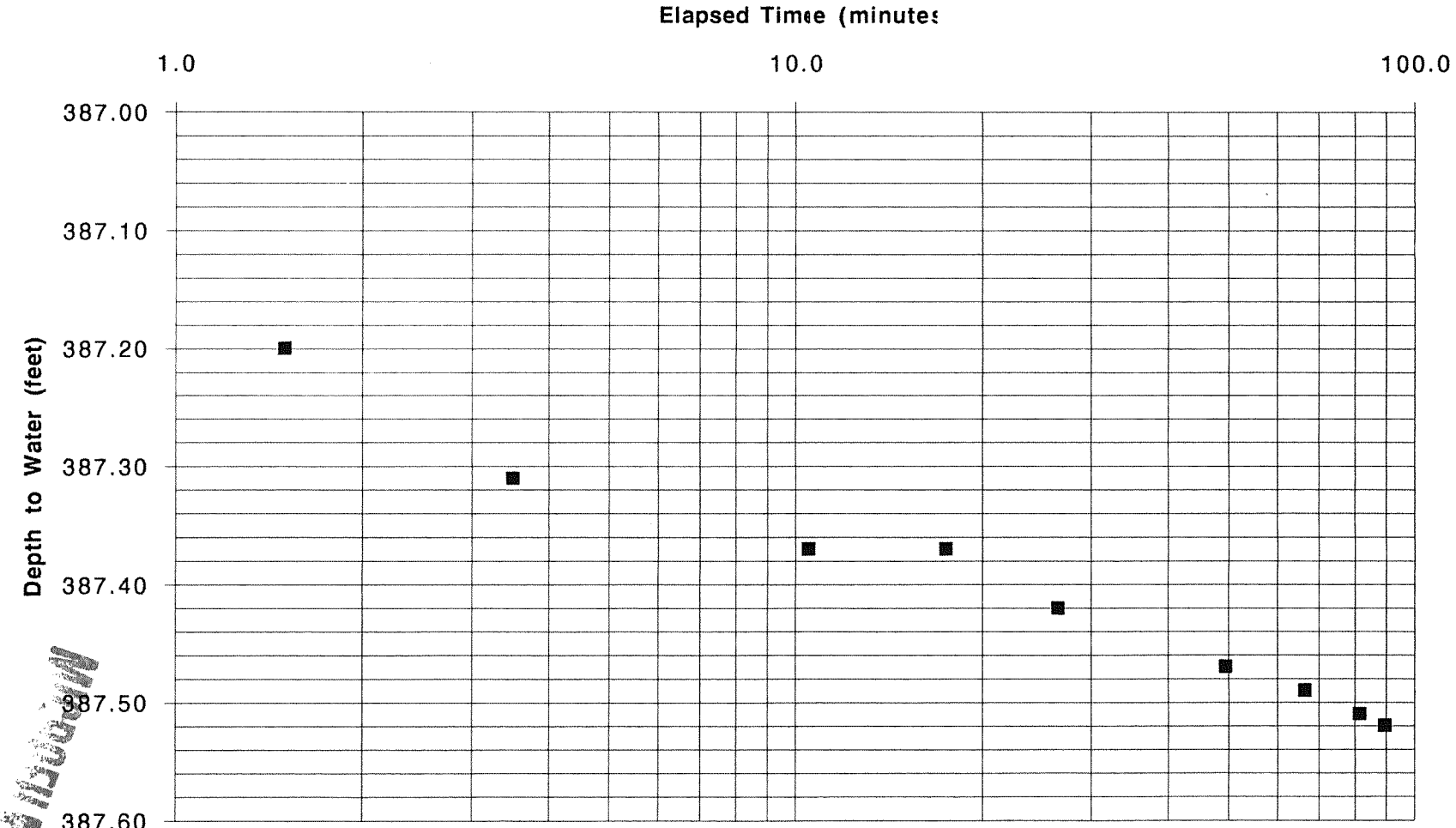
THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

Lynn Irrigation Well Long-Term Recovery



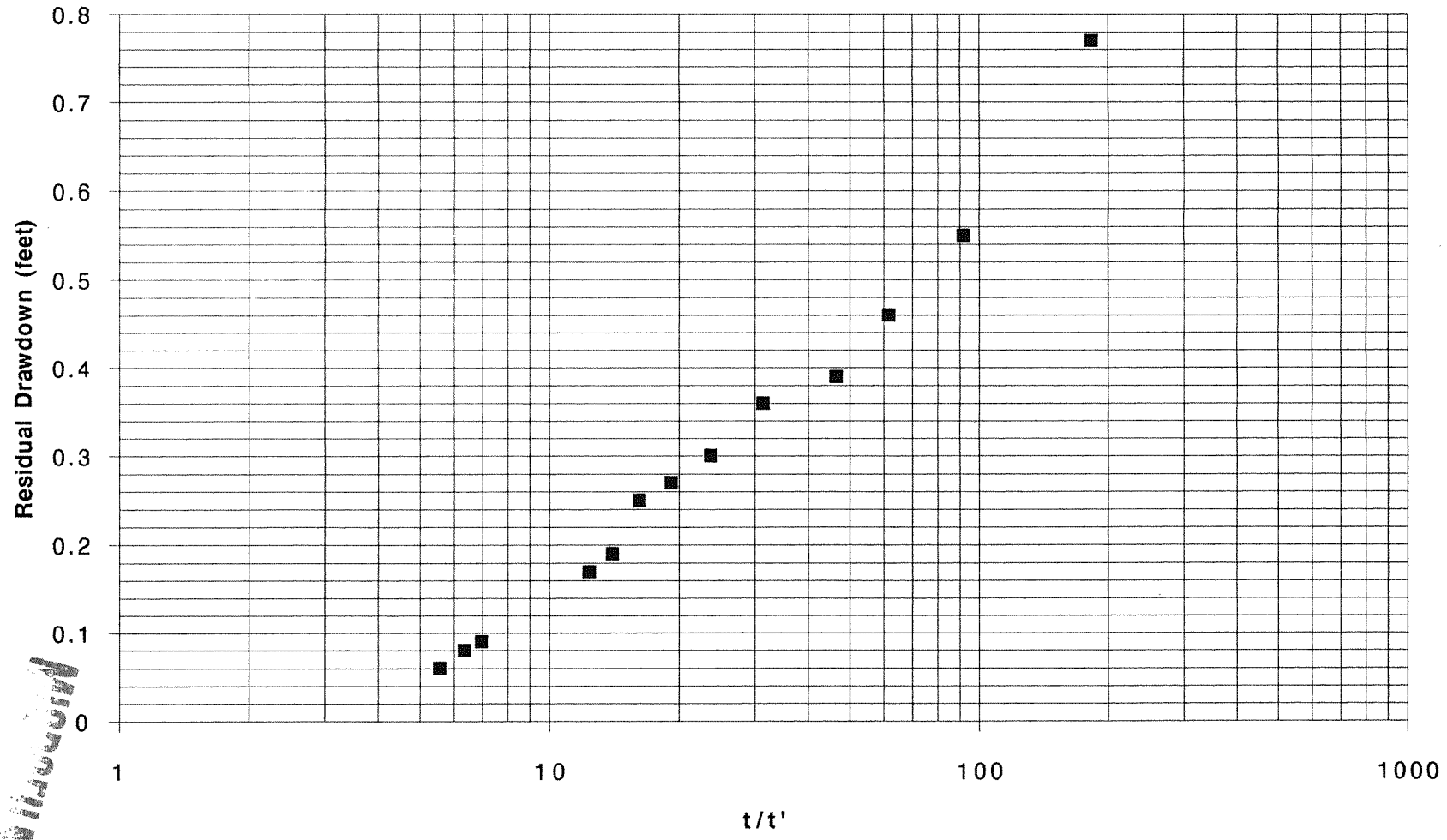
JUN 29 1995
Washington State Department of Ecology

Lynn Irrigation Well Short-Term Drawdown Test



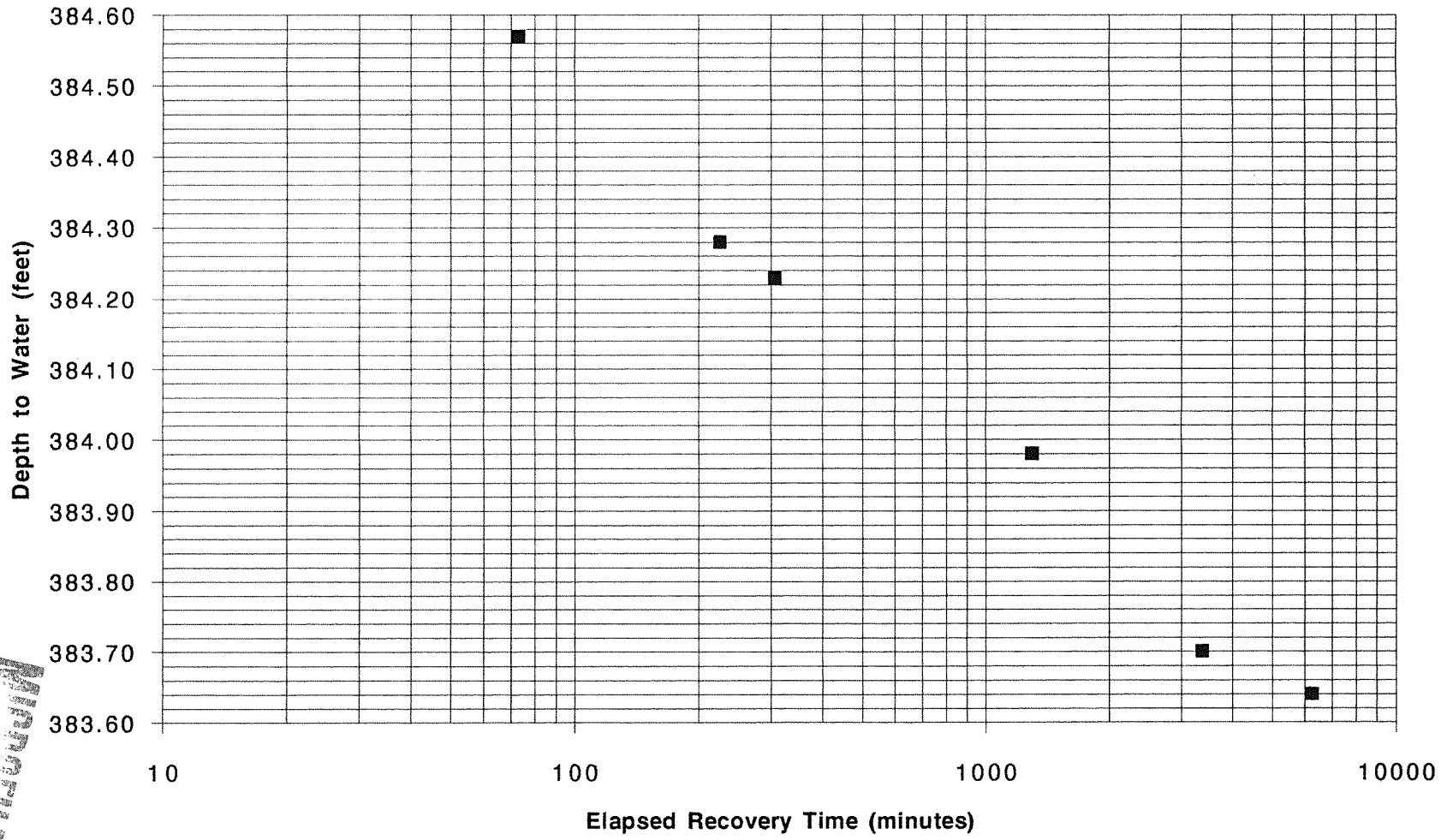
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Lynn Irrigation Well Short-Term Recovery



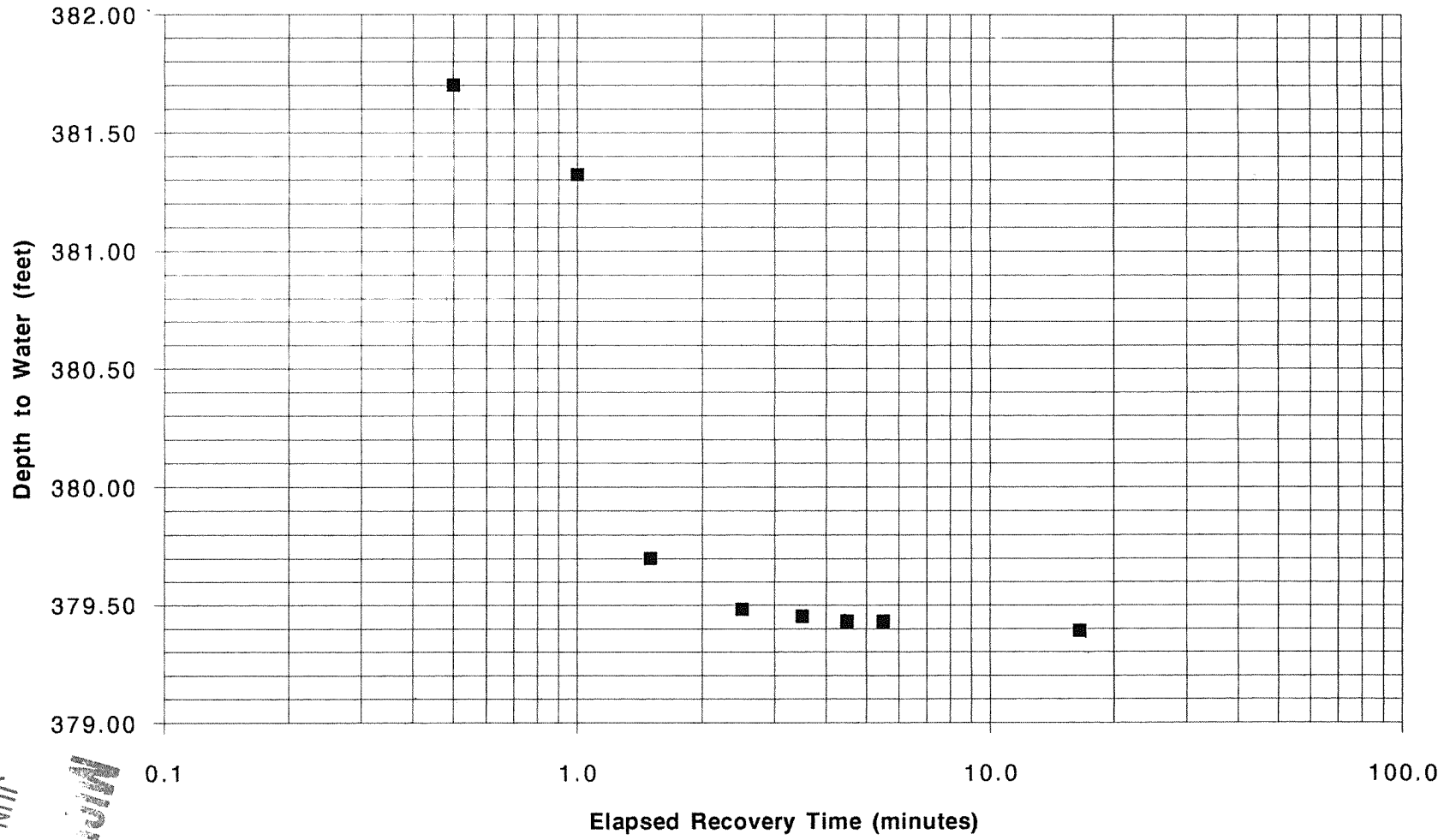
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Mobile Home and Stockwater Well (Observation) Long-Term Recovery Test



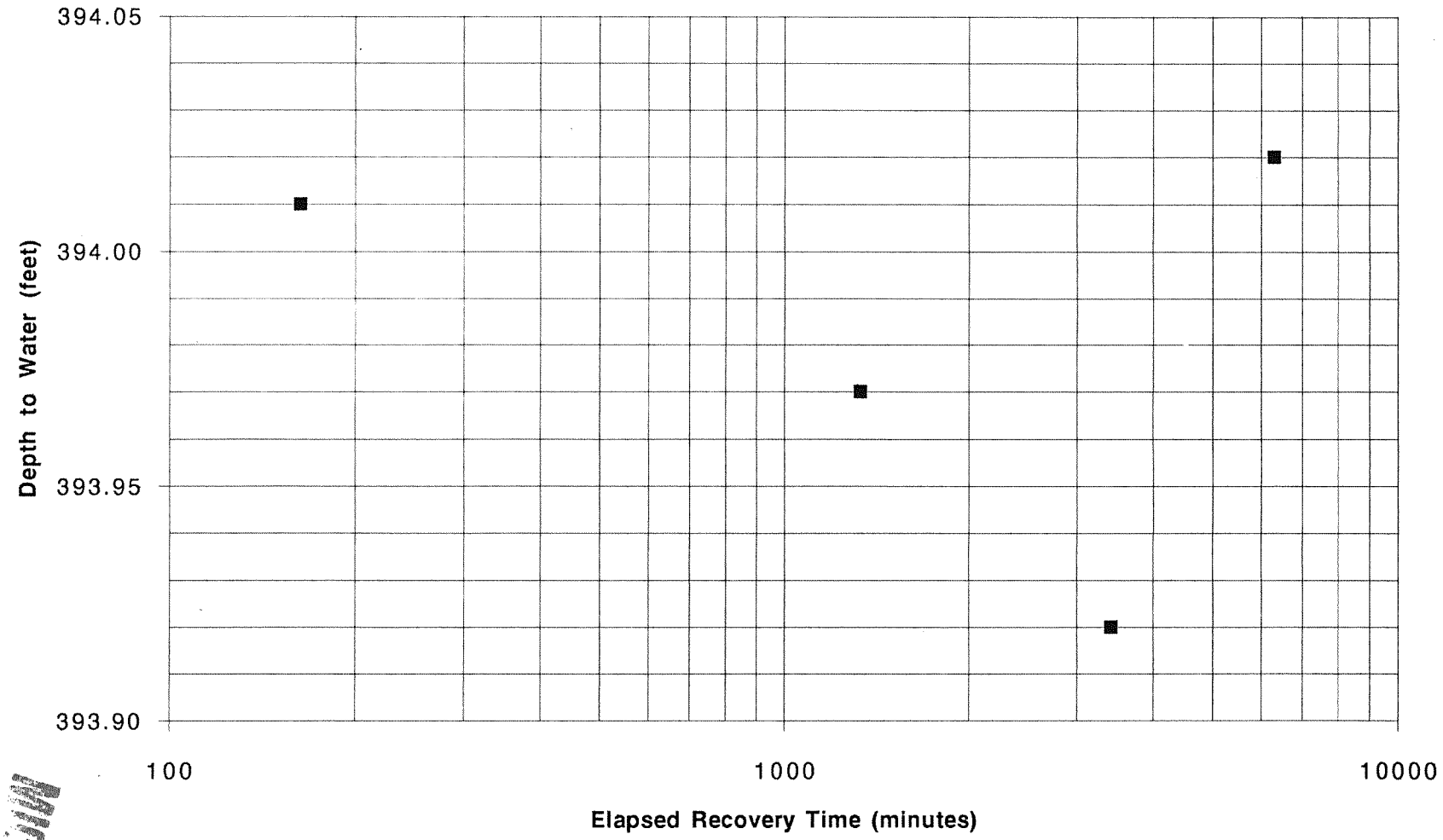
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Mobile Home and Stockwater Well Short-Term Recovery Test 10/17/94



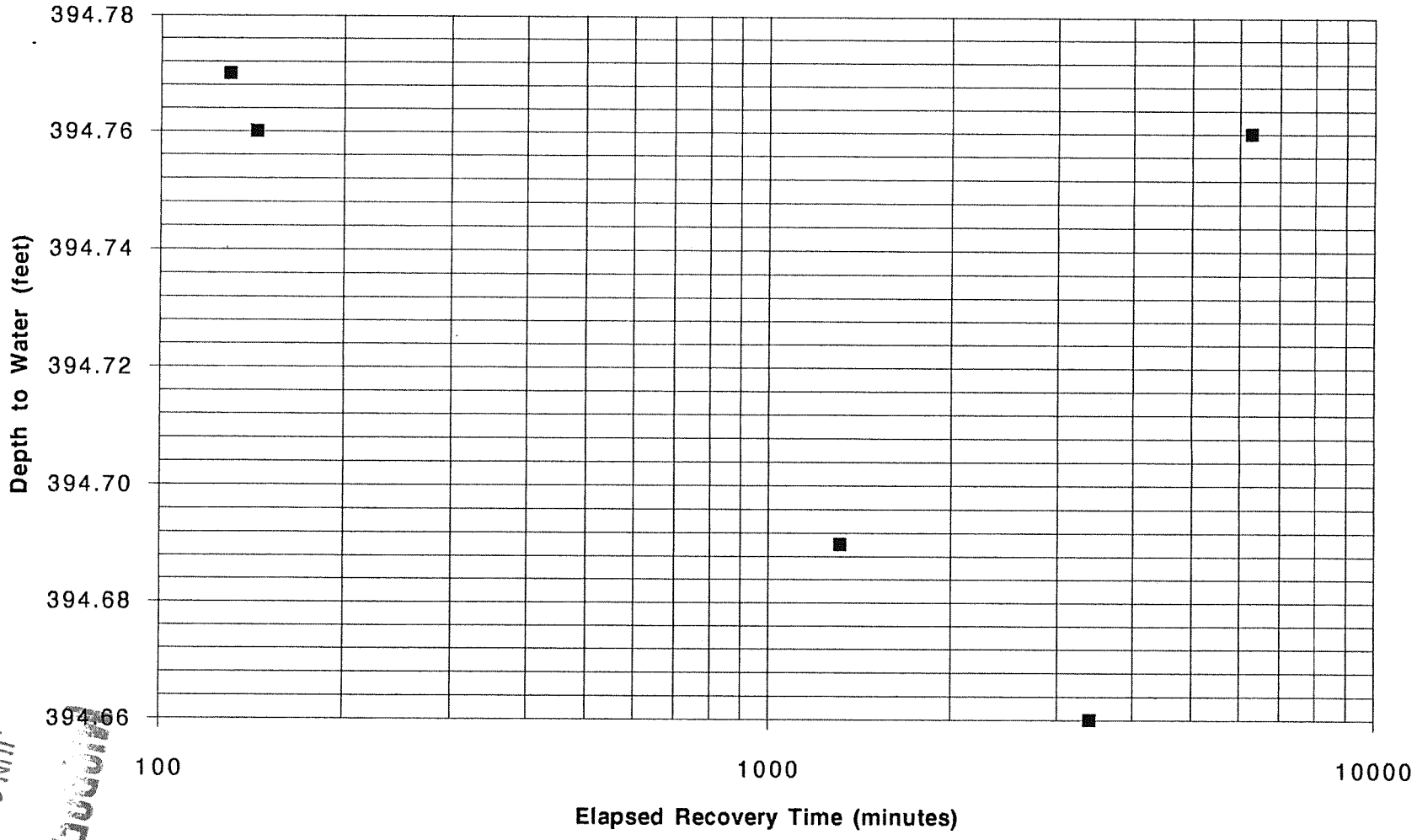
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Corbett Lynn House Well (Observation) Recovery



JUN 29 1995

Mark Lynn House Well (observation) Long-Term Recovery



JUN 29 1995

Drawdown calculations using the Theis equation

Q=	172	(gpm)
rad=	275	(feet)
T=	108000	(gpd/ft)
S=	0.01	(dimensionless)

time (days)	time (minutes)	Drawdown (feet)
1.00	1440	0.688
5.00	7200	0.980
10.00	14400	1.106
20.00	28800	1.233
30.00	43200	1.307
40.00	57600	1.359
50.00	72000	1.400
60.00	86400	1.433
70.00	100800	1.461
80.00	115200	1.486
90.00	129600	1.507
100.00	144000	1.526
200.00	288000	1.653
300.00	432000	1.727
365.00	525600	1.763

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Drawdown calculations using the Theis equation

Q=	2000	(gpm)
rad=	15840	(feet)
T=	100000	(gpd/ft)
S=	0.01	(dimensionless)

time (days)	time (minutes)	Drawdown (feet)
1.00	1440	0.000
5.00	7200	0.000
10.00	14400	0.002
20.00	28800	0.056
30.00	43200	0.179
40.00	57600	0.338
50.00	72000	0.558
60.00	86400	0.736
70.00	100800	0.907
80.00	115200	1.070
90.00	129600	1.226
100.00	144000	1.373
180.00	259200	2.319
280.00	403200	3.140
365.00	525600	3.664
1825	2628000	7.126
3650	5256000	8.686
7300	10512000	10.260

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Drawdown calculations using the Theis equation

Q=	2000	(gpm)
rad=	5280	(feet)
T=	100000	(gpd/ft)
S=	0.01	(dimensionless)

time (days)	time (minutes)	Drawdown (feet)
1	1440	0.001
5	7200	0.423
10	14400	1.226
20	28800	2.319
30	43200	3.070
40	57600	3.637
50	72000	4.092
60	86400	4.472
70	100800	4.798
80	115200	5.083
90	129600	5.337
100	144000	5.565
180	259200	6.861
280	403200	7.850
365	525600	8.448
1825	2628000	12.110
3650	5256000	13.696
7300	10512000	15.283
14600	21024000	16.871

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Drawdown calculations using the Theis equation

Q=	2000	(gpm)
rad=	10560	(feet)
T=	100000	(gpd/ft)
S=	0.01	(dimensionless)

time (days)	time (minutes)	Drawdown (feet)
1	1440	0.000
5	7200	0.005
10	14400	0.081
20	28800	0.423
30	43200	0.865
40	57600	1.226
50	72000	1.546
60	86400	1.832
70	100800	2.088
80	115200	2.319
90	129600	2.530
100	144000	2.724
180	259200	3.875
280	403200	4.798
365	525600	5.367
1825	2628000	8.953
3650	5256000	10.528
7300	10512000	12.110
14600	21024000	13.696

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SCANLAN ENGINEERING
Groundwater and Environmental Engineering

December 16, 1994

Ms. Dana Hofstetter
Holland and Hart
P.O. Box 2527
Boise, ID 83701-2527

Subject: Mark Lynn Water Rights

Dear Dana:

Following the prehearing conference of December 6, 1994, I investigated water levels south of the Lynn ranch, in the vicinity of the wells owned by Willow Brook Water Corporation and Chaparell Water Users Association. This investigation consisted of evaluation of well logs in Sections 16 and 17, Township 5 North, Range 1 West. This evaluation builds upon previous well log evaluations for the areas closer to the Lynn ranch, north of Section 17 and east of Highway 16.

Some random observations and conclusions from the evaluation are listed below. A summary table of well logs is attached. Also attached are well log copies and a location map.

- I estimate that groundwater elevations average about 2370±25 feet in the wells found in Section 9 (the area just north of Chaparell subdivision). The exception to this is the Chaparell Water Users irrigation well (located on the south side of Chaparell Road, near the south edge of Section 9) which has a static water-level elevation of approximately 2520 feet. This indicates a water-level elevation at the Chaparell Water Users irrigation well that is about 150 feet higher than the water table on the north side of Chaparell Road.

- The water table elevation at the Lynn ranch, two miles north of the wells in Section 9 is approximately 2370 feet, essentially equal to the water level in the Section 9 wells. This suggests a relatively flat water table along Willow Creek from the Section 9 wells to the Lynn ranch.

- The USGS water level contour map (Atlas HA-703) estimates a water-table elevation of about 2350 feet in the Emmett Valley, immediately downstream from Emmett. This would indicate a relatively flat water table in the area extending from Willow Creek to the Emmett Valley, with only about 20 feet of fall from the Willow Creek area (Section 9 and the Lynn Ranch) to the Emmett Valley. A flat water table is an indication of high permeability in the aquifer.

- Groundwater levels in the Willowbrook and Chaparell subdivision areas are considerably higher than the water levels found in the Section 9 wells along Willow

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Admitted by LGS
12/20/94

600 East River Park Lane, Suite 105
Boise, Idaho 83706
Telephone (208) 383-4140
Facsimile (208) 383-4156

Creek north of Chaparell subdivision. The Willowbrook wells have a water-table elevation of approximately 2500 feet. The wells in Chaparell subdivision have a water-table elevation of about 2520 feet.

- My initial impression was that the Willowbrook and Chaparell wells are tapping perched aquifers because of the significant difference in water-table elevation compared to the wells located to the north. However, a former USGS monitor well (628-foot deep, Darrell Fisher) located on the south side of the Chaparell subdivision area also has a 2520-foot water level elevation. Since this well is cased to nearly 500 feet, it is unlikely that it taps a perched water zone. Instead, the regional groundwater surface in the Willowbrook and Chaparell areas appears to be at an elevation of approximately 2500 to 2525 feet.

- A groundwater "cascade" or some other steep water-table gradient feature occurs in the vicinity of Chaparell Road, since the regional groundwater surface is above elevation 2500 feet on the south side of the road, and below elevation 2400 feet on the north side of the road. The reason for this feature is unclear, but it may represent a transition from a zone of moderate permeability (on the south) to a zone of high permeability (on the north). This steep gradient feature might be analogous to other areas where moderate permeability aquifers discharge into deeper, high-permeability, regional aquifers. Examples of this situation in eastern Idaho are (1) the Mud Lake barrier (south of Mud Lake) and (2) the steep water table found where the Little Lost River aquifer discharges into the main Snake Plain aquifer (near Howe). Alternatively, there could be some sort of a structural barrier (i.e. intrusive body or fault) to groundwater movement which inhibits flow from the Chaparell area to the Section 9 well area. The well logs give no indications of an igneous intrusive body which would cause a subsurface dam. It is possible that a fault offset could cause this steep gradient feature. A similar feature exists at Crane Creek Country Club, where faulting causes more than 300 feet of water level difference over about a half-mile distance.

- The 450-foot Bill Leach well in Section 9 shows evidence of perched water zones, as the driller's log noted "seasonal water" at 10, 80, and 185 feet depths, and a static depth to water of 300 feet at the 450-foot depth. This well is located on land owned by Mark Lynn, immediately north of the Chaparell subdivision area.

- The Willowbrook Water Corporation well logs show no sign of water-level declines since 1977, with water levels showing no change (or perhaps a slight rise) in the logs of wells completed in 1977, 83, 92, and 93. These wells list static water levels of 167, 150, 150, and 152 feet, respectively. In contrast, the original Willowbrook well (Dale Hanley, 1972) indicated a static water level of 63 feet. It is not known if this higher water level was an error on the well log, a true measurement, or a reflection of a perched groundwater zone (the well is gravel packed to near the ground surface). A former USGS monitor well one mile east of the Willowbrook wells on the east side of Highway 16 does not show any water level decline in the period of 1971 (priot to the 1972 Hanley well) to 1978 (after the 1977 Willowbrook well). Therefore, I find no good evidence of significant water-level declines in this area.



JUN 29 1995

- The elevation of the Farmers Union Canal where it crosses Highway 16 (3 miles north of Highway 44 and 3 miles south of Chaparell Road) is about 2600 feet. Drain ditches are needed at elevation 2500 feet approximately one mile north of Highway 44. The water table elevation in the Beacon Light Road vicinity is probably about 2540 feet. I estimate that the water table elevation beneath the Farmers Union Canal at Highway is about 2550 feet. The Farmers Union Canal may be the groundwater divide between the Boise and Payette River basins. Alternatively, the divide may occur beneath the hills north of the Farmers Union Canal and south of the Chaparell subdivision.

The significance of the above information is that there is some sort of geologic feature that causes a steep drop in the water table near the north side of the Chaparell subdivision. This feature indicates some sort of hydraulic separation or barrier between the aquifer tapped by the Lynn wells and the haquifer in the vicinity of the subdivisions. The water level difference between the north and south sides of Chaparell Road provides additional assurance that the wells tapped by the subdivision users should not be significantly impacted by Mark Lynn's proposed groundwater development.

The water table elevations also provide additional evidence that the direction of groundwater movement at the Lynn ranch is northwesterly toward the Payette River, as groundwater cannot move south (upgradient) toward Chaparell/Willowbrook subdivisions and the Boise River.

Please call me to discuss this information.

Sincerely,

Terry M. Scanlan

Terry M. Scanlan

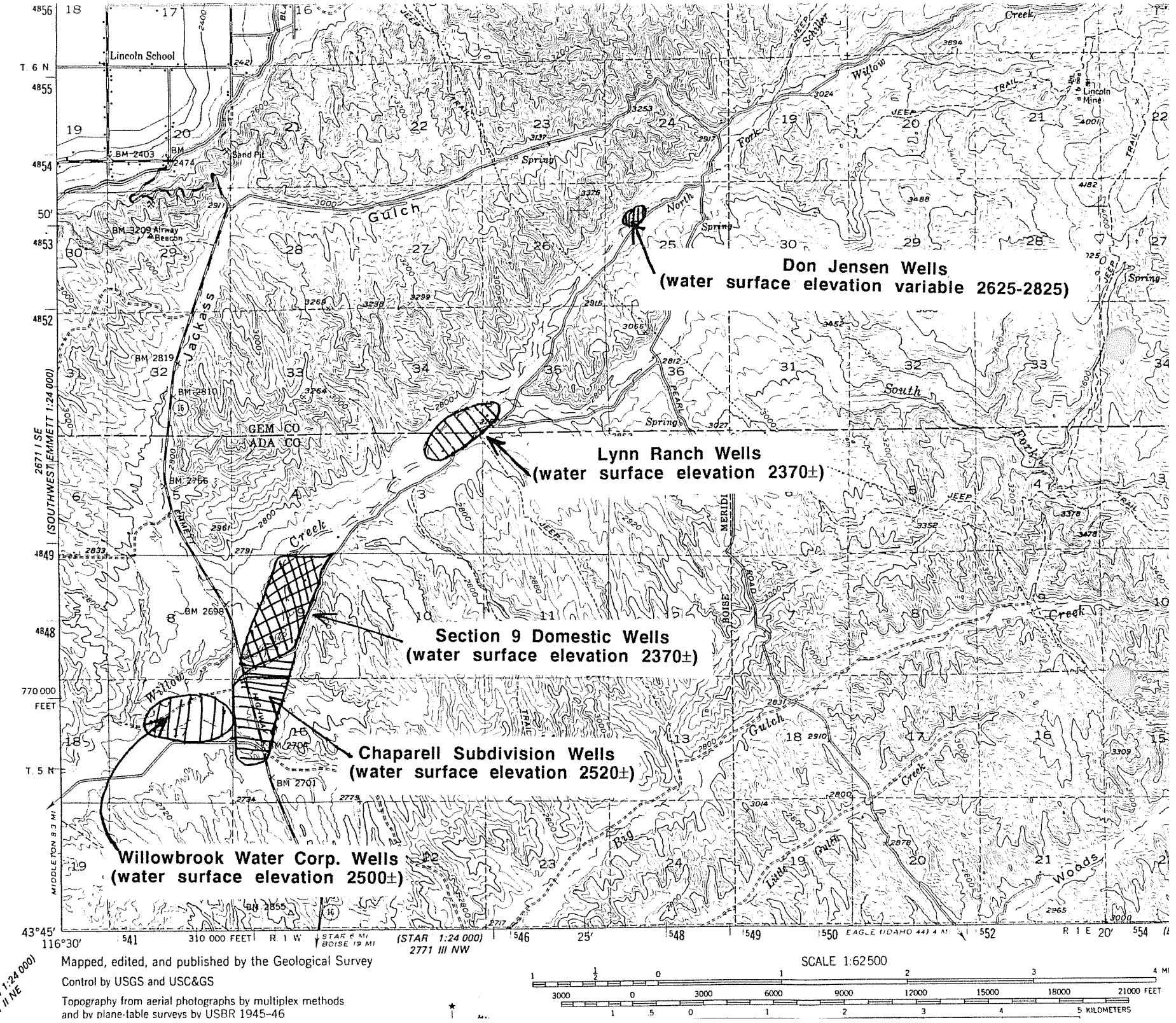
cc: Mark Lynn

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No.	Legal Description 1/4	1/4	Sec.	T	R	Owner	Well Depth	Static Water Level	Estimated Ground Elevation*	Estimated Water Elevation	Date	Remarks
1	SE	SE	3	5	1	Don Watkins	505		2900	<2400	Mar-81	no static listed
2	NE	SW	3	5	1	Lester Garrett	591	425	2825	2400	Aug-78	
3	NW	NE	3	5	1	John Beaner	421	352	2750	2400	Aug-79	
4	NW	NE	3	5	1	Albert Helmick	440	375	2740	2365	Dec-70	Lynn Mobile Home, DTW=377 10/94
5	SE	NE	3	5	1	Mark Lynn	623	395	2755	2360	Oct-93	Should be NWNE
6	SE	SE	7	5	1	Phillip Wilson	160	3			Feb-90	(probably wrong legal description)
7	NE	SE	8	5	1	Dee Rachilla	190		2700		Jul-70	no static listed
8	SE	NE	8	5	1	Dee Rachilla	17	12	2700	2690	Feb-71	
9	SW	SW	9	5	1	Chaparell Water Users	425	157	2680	2520	Sep-91	
10		SW	9	5	1	Dee Rachilla	351	312	2700	2390	Jan-71	
11	NW	SE	9	5	1	Lonnie Flynn	421	345	2690	2345	Nov-92	
12	SE	SW	9	5	1	Dave Tooiler	393	325?	2700	2375	Jun-72	
13	SW	SW	9	5	1	Wert Klinger	340		2680		Jun-71	no static listed
14	NE	SW	9	5	1	Walt Cluff	385	335	2680	2345	Jul-77	
15	SW	SW	9	5	1	Wert Klinger	350	311	2680	2369	Apr-72	
16	NE	SE	9	5	1	Cal Kimball	405	341	2690	2349	Oct-83	
17	NW	SW	9	5	1	Bill Leach	450	300	2680	2380	Oct-66	
18	SE	NW	16	5	1	AJ Henrie	358	183	2720	2537	Sep-93	
19	NW	SW	16	5	1	Bill New (Firebird Inc.)	345	185	2700	2515	Oct-89	
20	NE	SW	16	5	1	Lowell Geier	190	170	2700	2530	Oct-69	
21	SE	SW	16	5	1	Bruce Walker	320	230	2760	2530	Jul-70	
22	NE	SW	16	5	1	Lowell Geier	298	171	2700	2529	Dec-69	
23	NE	SW	16	5	1	Lowell Geier	281	172	2700	2528	Sep-69	
24	NE	SW	16	5	1	Darrell Fisher	628	195	2716.5	2522	Feb-74	former USGS monitor well; no log
25	SE	NW	17	5	1	Willow Brook Water Corp	340	150	2650	2500	Jan-92	
26	SE	NW	17	5	1	Willow Brook Water Corp	400	152	2650	2498	Aug-93	
27	SE	NW	17	5	1	Willow Brook Water Corp	435	150	2650	2500	Jul-83	
28	NW	NE	17	5	1	Willow Brook Prop Owners	279	167	2660	2493	Mar-77	
29	NE	NW	17	5	1	Donald G. Moore	202	172	2660	2488	Jun-91	
30	SE	NW	17	5	1	Dale Hanley	327	63	2650	2587	Jun-72	original Willow Brook well
31	NW	NW	25	6	1	Don Jensen	370	17	2840	2823	Feb-80	DTW=217' on 9/9/93
32	SE	NE	26	6	1	Chuck Pearce	72	54	2900	2850	Dec-72	(probably wrong legal description)
33	SE	NE	26	6	1	David Prichard	89	59	2900	2850	Jul-72	(probably wrong legal description)
34	SW	SW	35	6	1	Gerald Dunbar	135	80	2765	2685	Apr-73	(probably wrong legal description)
35	SE	NW	35	6	1	Mark Lynn	580	400	2765	2365	Jun-93	should be SWSW, Corbett Lynn well

*Ground elevation estimated from USGS 7.5-minute topographic map. Estimated accuracy is ±20 feet where well location is known, but may be ±50 feet where well location is based on legal description only.

MICROFILMED JUN 29 1995


Don Jensen Wells
(water surface elevation variable 2625-2825)
Lynn Ranch Wells
(water surface elevation 2370±)
Section 9 Domestic Wells
(water surface elevation 2370±)
Chaparell Subdivision Wells
(water surface elevation 2520±)
Willowbrook Water Corp. Wells
(water surface elevation 2500±)
Lincoln School
Sand Pit
BM 2403
BM 3209 Airway Beacon
BM 2819
BM 2810
BM 2766
BM 2698
BM 2700
BM 2701
BM 2855
Jackass Gulch
Willow Creek
Big Gulch
Little Gulch
Woods Creek
North Fork
South Fork
Pearl Spring
GEM CO
ADA CO
Lincoln Mine
JEEP TRAIL
BOISE MERIDIAN
EMMETT
MIDDLETON 8.3 MI
STAR 6 MI
BOISE 19 MI
EAGLE (IDAHO) 4.4 MI
(SOUTHWEST EMMETT 1:24 000)
2671 I SE
(STAR 1:24 000)
2771 III NW
T. 6 N.
T. 5 N.
R. 1 W.
R. 1 E.
310 000 FEET
770 000 FEET
116°30'
43°45'
Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Topography from aerial photographs by multiplex methods and by plane-table surveys by USBR 1945-46
SCALE 1:62500
1 0 1 2 3 4 MI
3000 0 3000 6000 9000 12000 15000 18000 21000 FEET
1 .5 0 1 2 3 4 5 KILOMETERS

JUN 29 1995

DEPARTMENT OF WATER RESOURCES

BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Don Watkins

Address 200 So. Maple Grove Rd., Boise, ID

Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test ☐ Municipal

☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

☐ Other (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☒ Reverse rotary

☐ Cable ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Casing schedule: ☐ Steel ☐ Concrete ☐ Other

Thickness	Diameter	From	To
250	inches to 3/4 inches	+ 2 feet	212'4" feet
	inches inches	feet	feet
	inches inches	feet	feet
	inches inches	feet	feet

Was casing drive shoe used? ☐ Yes ☐ No

Was a packer or seal used? ☐ Yes ☐ No

Perforated? ☐ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation inches by inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☐ No

Manufacturer's name U.S. Steel

Type Slotted Model No.

Diameter Slot size Set from 210'6" feet to 497'10" feet

Diameter Slot size Set from feet to feet

Gravel packed? ☒ Yes ☐ No ☐ Size of gravel 3/8 minus

Placed from 158 feet to 505 feet

Surface seal depth 158 Material used in seal: ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth

Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata

Describe access port

6. LOCATION OF WELL

Sketch map location must agree with written location.

N / W / E / S

Subdivision Name

Lot No. Block No.

County Ada

SE ¼ SE ¼ Sec. T. N/S, R. E/W.

7. WATER LEVEL

Static water level feet below land surface.

Flowing? ☐ Yes ☐ No G.P.M. flow

Artesian closed-in pressure p.s.i.

Controlled by: ☐ Valve ☐ Cap ☐ Plug

Temperature °F. Quality

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
28	0	2	Top Soil		
	2	4	Hard Pan		
	4	10	Yellow Coarse Sand		
	10	24	Fine to Coarse Sand (White)		
	24	34	Fine to Coarse Sand (White)		
	34	44	Fine to Coarse Sand (White)		
	44	49	Clay w/fine to Coarse Sand		
	49	52	Silty Clay w/ Med. to Coarse Sand Mixed		
	52	54	Fine to Med. Sand		
	54	64	Med.-Coarse Sand w/ Stks. Cla		
	64	94	Fine to Coarse Sand (White)		
	94	184	Fine to Coarse Sand		
	184	204	Med. to Coarse Sand w/ Stks.	Clay	
	204	225	Med. to Coarse Sand		
	225	255	" " " " w/ Ltle.Pea	Gr.	
	255	265	Fine to Coarse Sand w/ White	Clay	
	265	355	Fine to Coarse Sand w/ Sma. Amt. Pea Gravel		
	355	385	Fine to Coarse Sand		
	385	435	Fine to Coarse Sand w/ Little Amt. White Clay		
	435	465	Fine to Coarse Sand w/ Very Little Clay		
	465	485	Fine to Coarse Sand w/ Small Amt. White Clay		
	485	505	Fine to Coarse Sand w/ Small Amt. Blue & White Clay		

RECEIVED

MAY 5 1981

Department of Water Resources
Western Regional Office

10.

Work started 2/25/81 finished 3/14/81

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Intermountain Drilling Co., Ind. Firm No. 203

Address P.O. Box 551 Caldwell, ID 83605 Date 4-1-81

Signed by (Firm Official)

and

(Operator)

MICROFILMED

JUN 29 1995

DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

BALLPOINT PEN

State law requires this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Lester Garrett

Address Willow Creek, Idaho

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning) _____

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal

☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary

☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1 feet	588 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

_____ diameter ____ Slot size ____ Set from _____ feet to _____ feet

_____ diameter ____ Slot size ____ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____

Placed from _____ feet to _____ feet

Surface seal depth 20 Material used in seal: ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth

Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata

Describe access port _____

6. LOCATION OF WELL

Attach map location must agree with written location.

N / W / E / S

Subdivision Name _____

Lot No. _____ Block No. _____

Nila

¼ SW¼ Sec. 3, T. 5 N/S, R. 1 E/W.

7. WATER LEVEL

Static water level 425 feet below land surface.

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Artesian closed-in pressure _____ p.s.i.

Controlled by: ☐ Valve ☐ Cap ☐ Plug

Temperature _____ °F. Quality _____

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
NOT TEST		

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8"	0	1	Topsoil		
6"	1	7	Rock & clay		X
6"	7	25	Broken clay		X
6"	25	440	Sand & gravel		X
6"	440	588	" "	X	
6"	588	594	Hard clay	X	
6"	594		Sand	X	

Department of Water Resources
Western Regional Office

10.

Work started 8/23/78 finished 8/30/78

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name [illegible] Drilling

Address [illegible] Date 9/10/78

Signed by (Firm Official) [illegible]

and

(Operator) [illegible]

JUN 29 1995

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY

ARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name JOHN ~~BIVIN~~ Beaven

Address EAGLE, IDAHO PEARL ROUTE

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning) _____

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 2 feet	399'11" feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

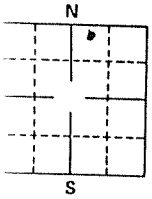
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 25' Material used in seal: ☐ Cement grout ☒ Puddling clay ☒ Well cuttings
Drilling procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
ADA _____
¼ NE ¼ Sec. 3 _____
USE ADDITION

7. WATER LEVEL

Static water level 352 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature ____ °F. Quality _____

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
20		2

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8"	0'	1'	top soil		X
8"	1'	15'	sand		X
8"	15'	25'	gravel		X
6"	25'	82'	sand with clay stringers		X
6"	82'	270	granite sand		X
6"	270'	300	granite snd with clay streaks		X
6"	300'	368'	granite sand		X
6"	368'	421'	blue clay		X
6"	421'		granite sand	X	

RECEIVED
JUN 5 1980
Department of Water Resources
Western Regional Office

10.

Work started 8-28-79 finished 8-31-79

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name BILL DOTY WELL DRILLING Firm No. 42
Address Rt#7Caldwell, Idaho Date 2-7-80
Signed by (Firm Official) Bill Doty
and
Bill Doty

MICROFILMED
JUN 29 1995

Y TO THE DEPARTMENT

L TYPEWRITER OR
BALL POINT PEN

State of Idaho
Department of Reclamation

ELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

VELL OWNER

lame ALBERT HEIMICK

ddress CHAPARRAL RD.

)wner's Permit No.

IATURE OF WORK

☐ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

ROPOSED USE

☐ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

IETHOD DRILLED

☐ Cable ☐ Rotory ☐ Dug ☐ Other

'ELL CONSTRUCTION

iameter of hole 6 inches Total depth 440 feet

asing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
.025 inches	6 inches	0 feet	[illegible] feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

as a packer or seal used? ☐ Yes ☐ No

erforated? ☒ Yes ☐ No

ow perforated? ☒ Factory ☐ Knife ☐ Torch

ze of perforation 1/8 inches by 3 inches

Number		From	To
90	perforations	432 feet	440 feet
	perforations	feet	feet
	perforations	feet	feet

ell screen installed? ☐ Yes ☐ No

anufacturer's name

ype Model No.

iameter Slot size Set from feet to feet

iameter Slot size Set from feet to feet

avel packed? ☐ Yes ☒ No Size of gravel

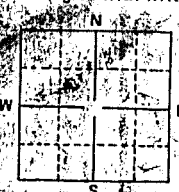
aced from feet to feet

rface seal? ☐ Yes ☒ No To what depth 20 feet

aterial used in seal ☐ Cement grout ☒ Puddling clay

OCATION OF WELL

etch map location must agree with written location.



unty Ada

¼ ¼ Sec. T. N R. W

ADDITIONAL SHEETS IF NECESSARY

7. WATER LEVEL

Static water level 75 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
30		

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	80	HARD SAND		
	80	100	LOOSE SAND		
	100	230	SAND		
	230	240	[illegible]		
	240	375	COARSE SAND		
	375	440	COARSE SAND		

10.

Work started NOV 70 finished DEC 70

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Driller's or Firm's Name [illegible] Number

Address

Signed By Date

RECEIVED
JUN 29 1995

THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

Form 238-7
6/93

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ball Point Pen

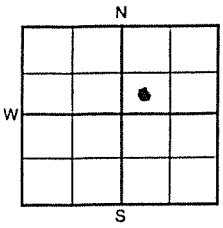
NOV 18 1993
WATER RESOURCES
WESTERN REGION

RECEIVED
NOV 15 1993
Department of Water Resources

1. DRILLING PERMIT NO. 63- 93- W- 0619 -000
Other IDWR No. _____

2. OWNER:
Name MARK LYNN
Address 6500 CHAPPARRAL
City EAGLE State ID Zip 83616

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.



T. 5N North XX or South ☐
R. 1W East ☐ or West XX
Sec. 3 , ____ 10 acres 1/4 SE 40 acres 1/4 NE 160 acres 1/4
Gov't Lot ____ County CANYON

Address of Well Site 6500 CHAPPARRAL, EAGLE, ID.
(Give at least Direction + Distance to Road or Landmark)

Lot No. _____ Block No. _____ Subd. Name _____

4. PROPOSED USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK
☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD
☐ Mud Rotary XX Air Rotary XX Cable ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENT & CEMENT	200	170		POURED
CEMENT & BENT	170	150		PUMPED
BENT & CEMENT	150	140		POURED
SURFACE SEAL AROUND 12" TO 20'				

Was drive shoe seal tested? YES ☐ NO ☒ How? _____

8. CASING/LINER:

Diameter	From	To	Guage	Casing	Liner	Steel	Plastic	Welded	Threaded
12	+1	79	250	X		☒	☐	☒	☐
8	+2	551	250	X		☒	☐	☒	☐
6	523	543				☐	☐	☐	☐
6	573	623				☐	☐	☐	☐

Final location of shoes 551
Top Packer or Headpipe 523 Bottom Tailpipe 623

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
☒ Screens Type 304 Material STAINLESS

From	To	Slot Size	Number	Diameter	Tele/Pipe Size	Casing	Liner
543	563	.040		6	PIPE	☐	☒
563	573	.030		6	PIPE	☐	☒
						☐	☐
						☐	☐

10. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Depth	Time
NO TEST			

Temperature of water _____ Was a water analysis done? Yes ☐ No ☐
By whom? _____
Water Quality (odor, etc.) _____
Bottom Hole Temperature _____

11. STATIC WATER LEVEL:
395 ft. below surface Depth artesian flow found _____
Artesian pressure _____ lb. Describe access port _____
Describe Controlling Devices: _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	GPM	SWL
14	0	5	TOP SOIL		
14	5	25	SAND & GRAVEL		
12	25	40	SANDY YELLOW CLAY		
12	40	60	SANDSTONE		
12	60	79	LOOSE SAND		
12	79	180	SANDSTONE		
12	180	235	COURSE SAND		
8	235	240	SANDSTONE		
8	240	250	SAND & PEA GRAVEL		
8	250	300	SANDSTONE		
8	300	320	SANDY BROWN CLAY		
8	320	340	SANDSTONE		
8	340	350	SANDY BROWN CLAY		
8	350	380	SANDSTONE		
8	380	385	SAND		
8	385	400	SANDSTONE		
8	400	410	SAND & GRAVEL		
8	410	440	SANDSTONE		
8	440	450	BROWN SAND	?	395
8	450	480	SANDSTONE		395
8	480	485	FINE SAND		395
8	485	540	BLACK SANDSTONE		395
8	540	550	COURSE SAND		395
8	550	570	COURSE SAND & GRAVEL		395
8	570	590	COURSE SAND		395
8	590	600	COURSE BROWN SAND		395
8	600	620	BROWN SAND		395

JUN 29 1995

Date: Started 7-10-93 Completed 10-18-93

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name BILL DOTY DRILLING CO., INC. Firm No. 42
Firm Official _____ Date 11-1-93
and
Supervisor or Operator _____ Date 11-1-93
(Sign once if Firm Official & Operator)

238-7

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

ELL OWNER

ame Phillip Wilson

ddress 208. MAIN ST. STAR IDAHO

wner's Permit No. 63-90-W-007

TURE OF WORK

New well ☐ Deepened ☐ Replacement
Well diameter increase
Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

OPOSED USE

Domestic ☐ Irrigation ☐ Test ☐ Municipal
Industrial ☐ Stock ☐ Waste Disposal or Injection
Other _____ (specify type)

ETHOD DRILLED

Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
Cable ☐ Dug ☐ Other _____

ELL CONSTRUCTION

sing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
2.50 inches	6 inches	+ 1 feet	183 feet
___ inches	___ inches	___ feet	___ feet
___ inches	___ inches	___ feet	___ feet
___ inches	___ inches	___ feet	___ feet

s casing drive shoe used? ☒ Yes ☐ No
s a packer or seal used? ☒ Yes ☐ No
forated? ☐ Yes ☒ No
w perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
e of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

ll screen installed? ☒ Yes ☐ No
nufacturer's name Houston
pe STAINLESS ST. Model No. 304
ameter 5" Slot size 25 Set from 155 feet to 160 feet
ameter ___ Slot size ___ Set from ___ feet to ___ feet
vel packed? ☐ Yes ☒ No ☐ Size of gravel _____
ced from _____ feet to _____ feet
face seal depth 18' Material used in seal: ☐ Cement grout
☒ Bentonite ☒ Puddling clay ☐ _____
lling procedure used: ☐ Slurry pit ☐ Temp. surface casing
☒ Overbore to seal depth
thod of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld
☐ Cemented between strata
scribe access port _____

7. WATER LEVEL

Static water level 3 feet below land surface.
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 54 °F. Quality GOOD
Describe artesian or temperature zones below

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
50	63'	1

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	3	CLAY		X
	3	18	SAND & GRAVEL	X	
6	18	33	SAND & GRAVEL	X	
	33	41	SANDY CLAY		X
	41	152	CLAY W/ FINE SAND STREAKS	X	
	152	160	MEDIUM SAND	X	

RECEIVED
FEB 13 1990
Department of Water Resources

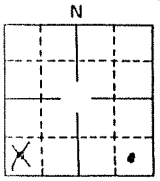
RECEIVED
FEB 14 1990
Department of Water Resources
Western Regional Office

10.

Work started JAN. 24. 1990 finished FEB. 2. 1990

LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name PEARSON
ADDITION
Lot No. 3 & 4 Block No. 6
ty ADA
¼ SE ¼ Sec. 7 T. 5 N S R. 1 E W

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Cousse Well Drilling Firm No. 409
Address EAGLE, IDAHO Date FEB. 2. 1990
Signed by (Firm Official) Gary E. Cousse
and
(Operator) _____

MICROFILMED
JUN 29 1995

BALL POINT PEN

Department of Reclamation

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

WELL OWNER

Name Lee Rachilla & Hallowy Village

Address Rt. 1 Eagle Idaho

Owner's Permit No.

NATURE OF WORK

☐ New well ☐ Deepened ☐ Replacement

☑ Abandoned (describe method of abandoning) Cutted Pipe and pit and filled with dirt taken out

PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

METHOD DRILLED

☐ Cable ☒ Rotary ☐ Dug ☐ Other

WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 190 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
1/4 inches	8 inches	0 feet	190 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation inches by inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☒ No Size of gravel

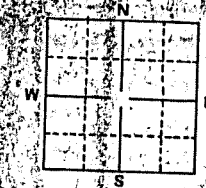
Placed from feet to feet

Surface seal? ☐ Yes ☐ No To what depth feet

Material used in seal ☐ Cement grout ☐ Puddling clay

LOCATION OF WELL

Sketch map location must agree with written location.



County Ada

NE ¼ SE ¼ Sec 8 T. 5 N/S, R. 1 E/W

(over)

7. WATER LEVEL

Static water level feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	6	Rich Clay soil		
8	6	14	Sand		
8	14	22	Clay, Yellow		
8	22	24	Sand		
8	24	31	Yellow Clay		
8	31	34	Sand		
8	34	40	Yellow Clay, Blue		
8			Small water Bearing		
8	40	160	Various Material		
8	160	190	Sand Yellow Brown - Sand		

10.

Work started July 9-70 finished July 25-1970

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Albert Kerrigan 63

Driller's or Firm's Name Number

Rt. 1 Box Kuna Idaho

Address

Albert Kerrigan July-1970

Signed By Date

ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

MICROFILMED JUN 29 1995

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

WELL OWNER

Name Dee Rachilla To Village Halfway

Address Pearl Rt. Eagle, Idaho

Owner's Permit No.

NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

PROPOSED USE

for garden + lawn

☐ Domestic ☒ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

METHOD DRILLED

☐ Cable ☐ Rotory ☐ Dug ☐ Other

WELL CONSTRUCTION

+1 above ground

Diameter of hole 8 inches Total depth 17 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
1/4 inches	8 inches	0 feet	17 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☒ Torch

Size of perforation 1/8 inches by 3 inches

Number	From	To
192 perforations	12 feet	16 feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☐ No Size of gravel

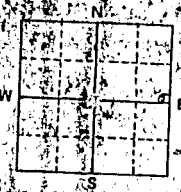
Placed from feet to feet

Surface seal? ☒ Yes ☐ No To what depth 12 feet

Material used in seal ☐ Cement grout ☒ Puddling clay

LOCATION OF WELL

Sketch map location must agree with written location



County

¼ NE ¼ Sec. 8 T. 5 N/S R. 1 E/W

7. WATER LEVEL

Static water level 12 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow

Temperature 53 ° F. Quality average

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☒ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
32	34	3

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
11	0	6	Sand gravel loam		
11	6	12	sand & dirt		
8	12	16	sand gravel & little clay at bottom (wet)		
	16	17	Clay		

10.

Work started Feb 2 - 1971 finished Feb 4 - 1971

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Gilbert Koinzan 63

Driller's or Firm's Name Number

Rt 1 New Plymouth Idaho

Address

Gilbert Koinzan Jan 12 - 19 71

Signed By Date

JUN 29 1995

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 60 days after the completion or abandonment of the well.

WELL OWNER
Name CHAPARELL WATER USERS ASSN.
Address P.O. BOX 507 EAGLE ID 83616
Drilling Permit No. 63-91-W-088
Water Right Permit No. 63-07700

NATURE OF WORK REPLACEMENT
☐ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

PROPOSED USE IRRIGATION
☐ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

METHOD DRILLED REVERSE ROTARY
☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

WELL CONSTRUCTION SEE ATTACHED

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
_____ inches	_____ inches +	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer's name ROSCOE MOSS
Type CONTINOUS WIRE Model No. HEAVY
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Gravel packed? ☒ Yes ☐ No ☐ Size of gravel 3/8
Placed from 425 feet to 110 feet
Surface seal depth 110 Material used in seal: ☐ Cement grout ☐ Bentonite ☒ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port 2" PIPE

7. WATER LEVEL
Static water level 157 feet below land surface.
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA NOT AVAILABLE
☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

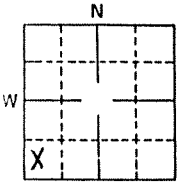
9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
28					
	0	5	TOPSOIL		X
	5	10	SANDY LOAM		X
	10	13	SAND & GRAVEL		X
	13	25	SAND W/ CLAY STREAKS		X
	25	55	FINE TO COARSE SAND		X
	55	65	FINE TO MED. SAND		X
	65	85	COARSE SAND		X
	85	91	BROWN CLAY		X
	91	105	MEDIUM SAND		X
	105	155	COARSE SAND		X
	155	175	BROWN CLAY		X
	175	213	GRAY CLAY		X
	213	215	BROWN CLAY		X
	215	225	COARSE GOLDEN SAND	X	
	225	235	COARSE SAND & PEA GRV.	X	
	235	265	FINE TO CRSE SAND	X	
	265	269	LITE BRN CLAY		X
	269	425	COARSE SAND & PEA GRV.	X	

SEP 9 1991
Department of Water Resources
Western Regional Office

10.
Work started 9/4/91 finished 9/14/91

LOCATION OF WELL
Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County ADA
SW SW 9 SN 1W
¼ ¼ Sec. _____, T. _____ N ☐ S ☐ R. _____ E ☐ W ☐

11. DRILLERS CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Firm Name PETE COPE DRILLING Firm No. 213
Address 6505 W CHINDEN Date 9/9/91
Signed by (Firm Official) Joseph Jones
and
(Operator) Joseph Jones

Missoula
JUN 29 1995

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

Chaparell Water users Assn.
P.O. Box 507
Eagle ID 83616
Permit# 63-91-w-088

"16"casing record .250 wall welded

1	-	285	286
305	-	325	20
335	-	350	15
360	-	375	15
385	-	395	10
415	-	425	10

356 total casing

16" Screen record .40 slot Roscoe Moss Continous wire.

285	-	305	20
325	-	335	10
350	-	360	10
375	-	385	10
395	-	415	20

70 total screen

426 total screen+casing

MICROFILMED
JUN 29 1995

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Reclamation

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

1. WELL OWNER

Name Kell, Rachilla Holloway Village

Address Route 2, Pearl Rt Eagle Idaho

Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 351 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
4 inches	6 inches	0 feet	351 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☐ No

Perforated? ☒ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☒ Torch

Size of perforation 1/2 inches by 1/8 inches

Number	From	To
19 1/2 perforations	341 feet	350 feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☐ No Size of gravel

Placed from feet to feet

Surface seal? ☐ Yes ☐ No To what depth feet

Material used in seal ☐ Cement grout ☐ Puddling clay

LOCATION OF WELL

Sketch map location must agree with written location.

N W E S

County

¼ ¼ Sec. T N/S, R E/W

7. WATER LEVEL

Static water level 3.12 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow

Temperature 70 ° F. Quality Average

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other Bailer

Discharge G.P.M.	Draw Down	Hours Pumped
14	6 11	3

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	10	Dark Brown Silty		
6	10	14	Sand/gravel Pea Gravel		
6	14	25	Sand Soft water bearing		
6	25	80	Mostly Clay & some sand		
6	80	90	Sand		
6	90	110	Green Clay		
6	110	120	Sandy Clay & Sand		
6	120	140	Sandy Clay		
6	140	158	Light Sandy Clay		
6	158	180	Basaltgravel Clay		
6	180	190	Water Basalt		
6	190	225	Brown sandy Clay & Yellow		
6	225	240	Clay Yellow, Green, Brown, Pea gravel		
6	240	310	Varicolor Sandy and Yellow Clay		
6	310	320	Sand Water bearing		
6	320	330	Light Brown Clay		
6	330	340	Light Brown Sandy Silt		
6	340	351	Brown Red Coarse Gravel & Lava Rock Clay		

10.

Work started 9/10/95 finished 9/11/95

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Date 9/29/1995

Driller's or Firm's Name Number

Address

Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE, BLUE AND PINK COPIES TO THE

orm 238-7
4/92

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

USE TYPEWRITER OR BALLPOINT PEN

1. WELL OWNER

Name Lonnie Flynn

Address 8660 Chappell Rd. Star Id

Drilling Permit No. 63-92-C.-839

Water Right Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

METHOD DRILLED

☐ Rotary ☐ Air ☐ Auger ☐ Reverse rotary
☒ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter		From	To
.250 inches	6 inches	+	1 feet	414 feet
.258 inches	5 inches		409 feet	414 feet
.258 inches	5 inches		419 feet	421 feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☒ Yes ☐ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches

Number		From	To
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer Houston Type 304
Top Packer or Headpipe 4'9"
Bottom of Tailpipe 2'

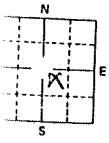
Diameter 5 Slot size .020 Set from 414 feet to 419 feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 18 Material used in seal: ☐ Cement grout
☒ Bentonite ☒ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port Well Cap.

LOCATION OF WELL

Sketch map location **must** agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Ada
Address of Well Site 8660 Chappell Rd.
(give at least name of road)
W ¼ SE ¼ Sec. 9 T. 5 N ☒ or S ☐, R. 1 E ☐ or W ☒

USE ADDITIONAL SHEETS IF NECESSARY

7. WATER LEVEL

Static water level 345 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☒ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
32	400	24

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	2	Top Soil		X
	2	20	Sand & Clay		X
	20	155	Dry Sand		X
	155	160	Clay		X
	160	200	Dry Sand		X
	200	290	Dry Sand Course		X
	290	345	Dry Course Sand		X
	345	358	Course Sand		
	358	421	Blue Course Sand.	X	
				X	

RECEIVED
DEC 28 1992
Department of Water Resources

DEC 23 1992
Department of Water Resources
Western Regional Office

10.

Work started 30 Oct 92 finished 16 Nov 92

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Dennis Phipps Firm No. 332
Address Meridian Id Date 16 Nov 92
Signed by Drilling Supervisor Dennis Phipps
and
(Operator) _____
(If different than the Drilling Supervisor)

MICROFILMED
JUN 29 1995

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

WELL OWNER

Name Dave Taylor

Address 2711 S. Curtis Boise, Idaho

Owner's Permit No. _____

NATURE OF WORK

☑ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

PROPOSED USE

☑ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

METHOD DRILLED

☑ Cable ☐ Rotory ☐ Dug ☐ Other

WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 393 feet

Casing schedule: ☑ Steel ☐ Concrete

Thickness	Diameter	From	To
1/4 inches	6 inches	+1 feet	39½ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☑ No

Perforated? ☐ Yes ☑ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☑ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☑ No Size of gravel _____

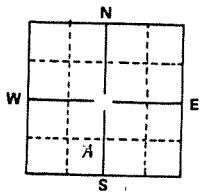
Placed from _____ feet to _____ feet

Surface seal? ☑ Yes ☐ No To what depth 20 feet

Material used in seal ☐ Cement grout ☑ Puddling clay

LOCATION OF WELL

Sketch map location must agree with written location.



County Ada

SE ¼ SW ¼ Sec. 9, T. 5 N/S, R. 1 E/W

7. WATER LEVEL

Static water level 93 325 feet below land surface

Flowing? ☐ Yes 6 ☑ No G.P.M. flow _____

Temperature _____ ° F. Quality _____

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☑ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
25	0	2

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	4	[illegible]		
"	4	40	[illegible]		
"	40	95	[illegible]		
"	95	110	[illegible]		
"	110	135	[illegible]		
"	135	165	[illegible]		
"	165	195	[illegible]		
"	195	225	[illegible]		
"	225	245	[illegible]		
"	245	265	[illegible]		
"	265	272	[illegible]		

10.

Work started June 1 1972 finished June 14 1972

RECEIVED
JUN 29 1995

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Nicholson Well Drilling 54
Driller's or Firm's Name Number

9210 W. Rose St. Boise Idaho
Address

[signature] July 10 1972
Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

BALL POINT PEN

Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

WELL OWNER

Name Kent M. Klinger

Address Rural Rt. Eagle Idaho

Owner's Permit No. _____

NATURE OF WORK

☐ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

filled with fine sand & clay

PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

METHOD DRILLED

☐ Cable ☐ Rotary ☐ Dug ☐ Other

WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 340 feet

Casing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
____ inches	____ inches	____ feet	____ feet
____ inches	____ inches	____ feet	____ feet
____ inches	____ inches	____ feet	____ feet
____ inches	____ inches	____ feet	____ feet
____ inches	____ inches	____ feet	____ feet

Was a packer or seal used? ☐ Yes ☐ No

Perforated? ☐ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation ____ inches by ____ inches

Number	From	To
____ perforations	____ feet	____ feet
____ perforations	____ feet	____ feet
____ perforations	____ feet	____ feet

Well screen installed? ☐ Yes ☐ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ____ Slot size ____ Set from ____ feet to ____ feet

Diameter ____ Slot size ____ Set from ____ feet to ____ feet

Gravel packed? ☐ Yes ☐ No Size of gravel _____

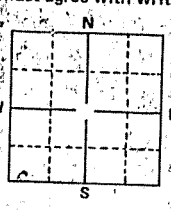
Placed from ____ feet to ____ feet

Surface seal? ☐ Yes ☐ No To what depth ____ feet

Material used in seal ☐ Cement grout ☐ Puddling clay

LOCATION OF WELL

Sketch map location must agree with written location.



County Ada

¼ SW¼ Sec. 9 T. 5 N/S, R. 1 E/W

7. WATER LEVEL

Static water level ____ feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow ____

Temperature ____ ° F. Quality ____

Artesian closed-in pressure ____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	4	black loam		
	4	6	sand		
	6	25	gravel, clay & sand		
	25	40	" " "		
	40	50	pretty sand with gravel		
	50	95	gravel, sand & clay		
	95	100	gravel, gray clay & sand streaks		
	100	110	clay		
	110	130	yellow clay & fine sand		
	130	200	gray clay		
	200	220	coarse gravel & clay		
	220	250	clay, clay stone & shale		
	250	300	" " "		
	300	340	mostly sand		
			The sandstone shale		
			seem to be on a slant		
			first kind of shale and about		
			40 ft of sand and gravel		
			300 lbs. pull off casing pulling		
			down a ring was taken to		
			30 ft pull pulled loose		
			70 ft Used pulling casing		
			off 26 ft from top left		
			44 ft Casing in ground		
			formed Very little water		

10. Work started Feb 8 1971 finished June 2 - 1971

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Gilbert Koinzan 83

Driller's or Firm's Name Number

Rt 1, New Plymouth Idaho

Address

Gilbert Koinzan June 12 - 1972

Signed By Date

RECEIVED JUN 29 1995

ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Walt Cluff

Address Pearl Route Eagle, Id.

Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 385 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	8 inches	+ 1 feet	370 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? ☒ Yes ☐ No

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation inches by inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☒ No Size of gravel

Placed from feet to feet

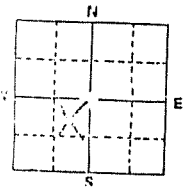
Surface seal depth 30' Material used in seal ☐ Cement grout ☐ Puddling clay ☒ Well cuttings

Sealing procedure used ☐ Slurry pit ☐ Temporary surface casing ☒ Overbore to seal depth

6. LOCATION OF WELL

63

Sketch map location must agree with written location.



Subdivision Name None

Lot No. None Block No. None

County Ada

NE ¼ SW ¼ Sec. 9, T. 5 N/S, R. 1 E/W

ADDITIONAL SHEETS IF NECESSARY

7. WATER LEVEL

Static water level 335 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
75-100		

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	2	Top Soil		X
	2	15	Clay & Gravel		X
	15	40	Clay & Sand		X
	40ay	90	Clay		X
	90	115	Clay & Course Gravel		X
	115	120	Fine Sand	X	
	120	160	Clay & Course Sand		X
	160	180	Gravel		X
	180	280	Clay & Course Sand		X
	280	290	Crevices		X
	290	330	Clay & Course Sand		X
	330	350	Gravel	X	
	350	385	Clay & Course Sand		X
	385		Gravel	X	

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Department of Water Resources

10.

Work started 6/20/77 finished 7/21/77

11. DRILLERS CERTIFICATION

Firm Name Ted Hunsperger Well Drlg. No. 290

Address 4250 Mtn View Dr. Date 7/22/77

Signed by (Firm Official) Ted Hunsperger

and

(Operator) Ted Hunsperger

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BALL POINT PEN

Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

Rec'd 5-30-72

WELL OWNER

Name Wert, M. Klinger

Address Pearl Rt. Eagle Idaho

Owner's Permit No.

NATURE OF WORK

☐ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

METHOD DRILLED

☐ Cable ☐ Rotory ☐ Dug ☐ Other

WELL CONSTRUCTION

Diameter of hole 6 inches Total depth feet

Casing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
1/4 inches	6 inches	~~0~~ feet	350 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	Inches	feet	feet

Is a packer or seal used? ☐ Yes ☒ No

Perforated? ☒ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☒ Torch

Size of perforation 1/8 inches by 3 inches

Number	From	To
288 perforations	340 feet	348 feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☒ No Size of gravel

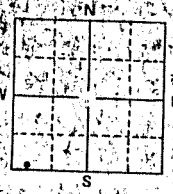
Placed from feet to feet

Surface seal? ☒ Yes ☐ No To what depth 18 feet

Material used in seal ☐ Cement grout ☒ Puddling clay

LOCATION OF WELL

Attach map location must agree with written location.



County Ada

NW¼ SW¼ Sec. 9 T. 5 N/S R. 1 E/W

7. WATER LEVEL

Static water level 311 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow

Temperature 58° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
15 Bailes	1	3

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
10	0	3	Clay		
10	3	6	Sand sand stone clay		
8	6	28	Variation of sandstreaks		
	28	29	shale trace		
	29	40	gray clay		
	40	42	sand + trace		
	42	84	Variation sandstone clay + few sandstreaks		
	84	98	Clay + fine sand		
	98	125	sand + fine gravel		
	125	135	yellow clay		
	135	182	Clay + sand streaks		
	182	200	blue clay		
	200	225	blue sand + clay		
	225	245	Variation Clay sandstone + hard shell streaks		
	245	310	Variation Clay sandstone + hard		
	310	350	mostly sand rubed getting coarser as going down	X	
			Measurements from top of ground		
			Bottom two feet filled with small gravel + Cobel stones		
			pipe left 1ft above ground		

10. Work started Aug. 16 19 71 finished April 11, 1972

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Albert Koinzan 63
Driller's or Firm's Name Number

Rt 1 New Plymouth Idaho
Address

Albert Koinzan May 21 - 1972
Signed By Date

ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

ARCHIVED

JUN 29 1995

Form 238-7
82

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

JUN 25 1984

Department of Water Resources

WELL OWNER

Name Cal Kimball
Address 119 15th. Ave. North Nampa, ID 83651

Owner's Permit No. _____

NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☒ Cable ☐ Dug ☐ Other _____

WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches +	1.5 feet	389 feet
.250 inches	5 inches	385 (390) feet	390 feet
.250 inches	5 inches	395 feet	400 feet
.250 inches	5 inches	405 feet	408 feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☒ Yes ☐ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation ____ inches by ____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer's name Johnston
Type 304 Stainless Model No. _____
Diameter 5 Slot size 30 Set from 390 feet to 395 feet
Diameter 5 Slot size 40 Set from 400 feet to 405 feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 40 Material used in seal: ☐ Cement grout ☐ Bentonite ☒ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port _____

7. WATER LEVEL

Static water level 341 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
not tested		

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	8	brown sandy clay		x
8	8	26	brown gravel, sand, clay		x
8	26	42	yellow clay, gravel		x
6	42	65	yellow clay		x
6	65	90	yellow sandy clay		x
6	90	136	cemented gravel		x
6	136	139	loose sand and gravel	x	
6	139	165	yellow sandy clay, gravel		x
6	165	207	yellow sandy clay		x
6	207	331	blue clay		x
6	331	378	brown clay and gravel		x
6	378		coarse sand	x	

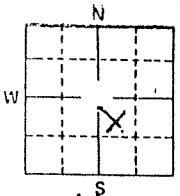
Department of Water Resources
Western Regional Office

10.

Work started 8/3/83 finished 10/1/83

LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Ada
¼ ¼ Sec. 9, T. 5 N. N/S, R. 1 W E/W.

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Engleman Drilling Firm No. 47
Address Rt. 3 Box 3397A Nampa, ID 83651 Date _____
Signed by (Firm Official) Ray Engleman
and
(Operator) Tony Engleman

RECEIVED JUN 29 1995

REPORT OF WELL DRILLER

State of Idaho — Department of Reclamation

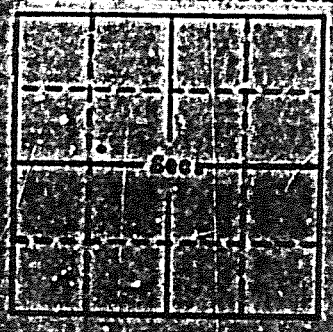
State law requires that this report shall be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

WELL OWNER:
Name Bill Leach
Address Star # Willow Creek Road, Hwy. #16

Owner's Permit No. [illegible]
NATURE OF WORK (check): Replacement well [X]
New well [ ] Deepened [ ] Abandoned [ ]
Water is to be used for: Domes. & Irrigation
METHOD OF CONSTRUCTION: Rotary [ ] Cable [X]
Dug [ ] Other [ ] (explain)
CASING SCHEDULE: Threaded [ ] Welded [X]
8in "Diam. from 0 ft. to 390 ft.
"Diam. from ft. to ft.
"Diam. from ft. to ft.
"Diam. from ft. to ft.
Thickness of casing: .250" Material:
Steel [X] concrete [ ] wood [ ] other [ ]

(explain)
PERFORATED? Yes [ ] No [X] Type of perforator used:
Size of perforations: by
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
WAS SCREEN INSTALLED? Yes [ ] No [X]
Manufacturer's name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.
CONSTRUCTION: Well gravel packed? Yes [X]
No. [X] Size of gravel Gravel placed from ft. to ft. Surface seal provided? Yes [ ] No [ ] To what depth? ft. Material used in seal? Cased through clay
Did any strata contain unusable water? Yes [ ]
Type of water? Depth of strata ft. Method of sealing strata off
Was surface casing used? Yes [X] No. [ ]
Cemented in place? Yes [ ] No [X]

Locate well in section



Size of drilled hole: 8in. Total depth of well: 450 ft. Standing water level below ground: 320 ft. Temp. Fahr: 85 Test delivery: gpm or cfs Pump? [X] Bail [ ]
Size of pump and motor used to make test:
1/30/1962 not tested
Length of time of test: Hrs. Min.
Drawdown ft. Artesian pressure: ft. above land surface Give flow cfs or gpm. Shutoff pressure:
Controlled by: Valve [ ] Cap [X] Plug [ ]
No control [ ] Does well leak around casing?
Yes [ ] No [X]

DEPTH FEET FROM	DEPTH FEET TO	MATERIAL	WATER YES OR NO
0	10	Sandy topsoil	no
10	14	sand & corse gravel	yes *
14	30	clay	no
30	80	sand & clay	no
80	85	wet sand	yes *
85	130	clay	no
130	185	sand & clay	no
185	192	Corse wet sand	yes *
192	207	Blueish clay & sand	no
207	335	Corse sand & brown clay	no
335	365	Corse sand	yes
365	371	clay	no
371	377	sand	yes
377	382	clay	no
382	387	sand	yes
387	3987	clay	no
3987	450	Sand stone	yes
		* Note; Seasonal water	

Work started: October 1, 1966
Work finished: October 14, 1966
Well Driller's Statement: This well was drilled under my supervision and this report is true to the best of my knowledge.
Name O. F. Baker
Address Box A1, Middleton, Idaho
Signed by [signature]
License No. 37 Date 9 Jan. 1967

[illegible] 29 199[illegible]

238-7
92

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name ~~Henrie,AJ~~
Address 9019 N. Broadwood Dr.
Eagle, Idaho83616
Drilling Permit No. ~~63-93-W-0875~~
Water Right Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
250 inches	6 inches +	1 feet	360.9 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☐ No
Manufacturer _____ Type _____
Top Packer or Headpipe _____
Bottom of Tailpipe _____

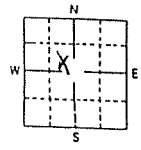
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 18 Material used in seal: ☐ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port Sanitary Well Cap

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Gem
Address of Well Site Same
(give at least name of road)

SE ¼ NW ¼ Sec. 16 T. 5 N ☒ or S ☐
R 1 E ☐ or W ☐

7. WATER LEVEL

Static water level 183 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
30	355	2

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
9"	0	1	Top Soil		No
9"	1	18	Sandy Brn. Clay		NO
6"	18	25	Sandy Brn. Clay		No
6"	25	58	Brown Sand		NO
6"	58	205	Brown Sandy Clay		NO
6"	205	270	Blue Sand & Clay		NO
6"	270	282	White/Big Clean Sand	Yes	
6"	282	300	Blue Sand & Clay		NO
6"	300	301	Granite/Sand 30gpm		NO
6"	301	320	Heaving Sand	Yes	
6"	320	340	Blue Sandstone		NO
6"	340	350	Blue Clay		NO
6"	350	351	Sand		NO
6"	351	358	Sandstone		NO

RECEIVED
NOV 19 1993
WATER RESOURCES
WESTERN REGION

10.

Work started 9/6/93 finished 9/13/93

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Can-Ada Well Drilling Firm No. 304
Address 4250 Murphy Road Kuna, Idaho Date 11/15/93
Signed by Drilling Supervisor _____
and
(Operator) Earl Skinner

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JUN 29 1995

Form 238
5/89

DEC 13 1989

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

USE TYPEWRITER OR BALLPOINT PEN

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

Department of Water Resources

1. WELL OWNER

Name BILL NEW (FIREBIRD RACEWAY INC

Address BOX 7235 BOISE, IDA. 83707

Owner's Permit No. 63-89-W-143

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☒ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
2.50 inches	6 inches +	1 feet	318 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

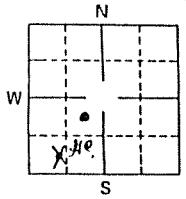
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☒ Yes ☐ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer's name ARDMARK CORP
Type PVC Model No. _____
Diameter 5 Slot size .30 Set from 303 feet to 343 feet
Diameter ___ Slot size ___ Set from ___ feet to ___ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 60 Material used in seal: ☐ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing
☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld
☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____

County ADA

NW NE ¼ SW ¼ Sec. 16, T. 3 N S I R. 1 W M

7. WATER LEVEL

Static water level 185 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 58 °F. Quality Good
Describe artesian or temperature zones below.

8. WELL TEST DATA

☒ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
25	205	2
20	200	1½

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	3	TOP SOIL		X
	3	40	BROWN CLAY		X
	40	43	COARSE SAND		X
	43	60	BROWN CLAY		X
6	60	93	BROWN CLAY		X
	93	218	BROWN CLAY with STREAKS OF COARSE SAND		X
	218	227	BLUE CLAY		X
	227	241	FINE BLACK SAND	X	
	241	302	BLUE CLAY with FINE SAND STREAKS	X	
	302	315	FINE SAND	X	
	315	325	MED SAND	X	
	325	345	COARSE BLACK SAND	X	

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Department of Water Resources
Western Regional Office

10.

Work started 9-10-89 finished 10-24-89

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name COOLSE Well Drilling Firm No. 409

Address TWIN, IDA Date 10-25-89

Signed by (Firm Official) Harry E. Coolse

and

(Operator)

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JUN 29 1995

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Reclamation

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well

1. WELL OWNER

Name Lowell Geier

Address Star Rt. Star Idaho

Owner's Permit No.

2. NATURE OF WORK

☐ New well ☐ Deepened ☐ Replacement

☑ Abandoned (describe method of abandoning) Casing pulled out filled with wet dirt & water at intervals wet soil

3. PROPOSED USE

☑ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☑ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 190 feet

Casing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
inches	8 inches	0 feet	29 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☑ No

Perforated? ☑ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☑ Torch

Size of perforation 6 inches by 3 inches

Number		From	To
204	perforations	111 feet	25 feet
	perforations	feet	feet
	perforations	feet	feet

Well screen installed? ☐ Yes ☐ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☑ Yes ☐ No Size of gravel

Placed from 19 feet to 16 feet

Surface seal? ☑ Yes ☐ No To what depth feet

Material used in seal ☐ Cement grout ☑ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



62

County ADA

NE ¼ SW ¼ Sec. 16 T. 5 N/S R. 1 E/W

7. WATER LEVEL

Static water level 170 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
14	0	3	sandy loam		
11	3	9	hard sandy pebble gravel		
11	9	16	sand & pebble gravel		
8	16	170	gray clay with occasional sand streak		
8	170	178	" " "	yes	
8	178	182	sand fine	yes	
	182	190	mostly gray clay	yes	
			The well was a total loss of water after 29 ft. The static water level is approx. 170 ft. The yield is approx. 200 gal per day. The well is to be used for domestic purposes in two families. The well was abandoned on the right of way of the Middleton-Nampa highway. The well was cased with 8 inch casing. The upper 8 feet was bored with a 14 inch auger. The upper 30 feet was bored with a 10 inch auger. The water at the static level of the well did not have enough water with a lot of black fine sand		

10. Work started Aug 16-69 finished Oct 29-69

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Albert Kromar 63
Driller's or Firm's Name Number

Address Plymouth Ida.

Signed By Albert Kromar Jan 5- 1970
Date

RECEIVED JUN 29 1995

USE ADDITIONAL SHEETS IF NECESSARY

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Reclamation

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

1. WELL OWNER

Name Bruce Walker

Address Pearl Rt Eagle, Idaho

Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 320 feet

Casing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
250 inches	6 inches	+1 feet	294 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☒ Yes ☐ No

Perforated? ☐ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation inches by inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☒ Yes ☐ No

Manufacturer's name Johnston

Type Telescope Model No.

Diameter 6 Slot size 20 Set from [illegible] feet to feet

Diameter Slot size Set from 305 feet to 315 feet

Gravel packed? ☐ Yes ☒ No Size of gravel

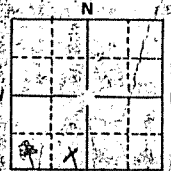
Placed from feet to feet

Surface seal? ☒ Yes ☐ No To what depth feet

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



County Ada

¼ E ¼ S W ¼ Sec. 26 T. 5 N/S, R. 1 E/W

7. WATER LEVEL

Static water level 230 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
15	10	1

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	15	Top Soil		
	15	20	Sand		
	20	38	Sandy Clay		
	38	90	Yellow Sand		
	90	98	Grey Sand		
	98	105	" somewhat		
	105	135	Sandy clay		
	135	145	Fine Sand		
	145	155	White Gravel Sand		
	155	187	Sandy clay		
	187	225	Sand		
	225	265	Sandy clay		
	265	293	Blue Shale		
	293	320	Blue Sand		
	320		Blue Shale		

10.

Work started 6-19-70 finished 7-[illegible]-70

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Marlin Wist
Driller's or Firm's Name

Number

Box 6 Mountain Home
Address

Marlin Wist 7-24-70
Signed By Date

RECEIVED
JUN 29 1995

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Reclamation

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

1. WELL OWNER

Name Lowell Geier

Address Star Rt, Star Idaho

Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches, Total depth 298 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
1/4 inches	8 inches	+1 feet	298 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☒ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☒ Torch

Size of perforation 1/4 inches by 3 inches

Number		From	To
282	perforations	288 feet	296 feet
	perforations	feet	feet
	perforations	feet	feet

Well screen installed? ☐ Yes ☐ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☒ No Size of gravel

Placed from feet to feet

Surface seal? ☐ Yes ☐ No To what depth 20 feet

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



63

County Ada

NE ¼ SW ¼ Sec. 16 T. 5 N/S, R. 1 E/W.

7. WATER LEVEL

Static water level 174 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
15	172	2

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
11	0	7	Sandy Clay Loam		
11	7	52	grass Clay with Gravel		
8	52	58	gray clay small		
8	58	166	Gravel Clay Sand		
8	166	177	Sandy Yellow Sand	yes	
8	177	197	Brown Clay with a few small Sandstone	yes	
8	197	214	Brown & blue Clay		
8	214	216	Sand	yes	
8	216	222	blue clay		
8	222	225	Sand & blue	yes	
8	225	243	Blue Clay & Sand	yes	
8	243	284	Harder blue clay and		
8	284	296	Sand shale Harder blue clay with		
	296	298	Coarser sand & gravel Blue clay for fifty bottom 2 ft of perf	yes	
			12 drive shoe		

10. Work started Nov 3-69 finished Dec 24-69

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Albert Konigan 63

Driller's or Firm's Name Number

Address Rt 1 New Plymouth Idaho

Signed By Albert Konigan Jan 5-1970

Date

USE ADDITIONAL SHEETS IF NECESSARY

MICROFILMED JUN 29 1995

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Reclamation

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

1. WELL OWNER Lowell Geier

Name ~~Stan Gittins~~

Address Star Rt. Star Idaho

Owner's Permit No. _____

2. NATURE OF WORK

☐ New well ☐ Deepened ☐ Replacement

☒ Abandoned (describe method of abandoning) hole filled with Casing pulled out Hole filled with dirt & water

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 281 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
1/4 inches	8 inches	0 feet	267 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☐ No

Perforated? ☐ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☐ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☐ No Size of gravel _____

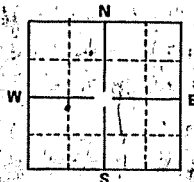
Placed from _____ feet to _____ feet

Surface seal? ☐ Yes ☐ No To what depth _____ feet

Material used in seal ☐ Cement grout ☐ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



63

County ADA

NE ¼ SW ¼ Sec. 16 T. 5 N/S, R. 1 E/W

7. WATER LEVEL

Static water level 172 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow _____

Temperature _____ ° F. Quality _____

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
11	0	3	Sandy loam		
11	3	14	fine sand & clay		
11	14	20	fine sand clay		
8	20	28	fine sand clay gravel		
8	28	79	sand & gravel		
8	79	80	clay with pebbles		
8	80	170	sand clay & fine gravel		
8	170	186	gravel & some clay		
8	186	206	sand stone		
8	206	281	Blue clay with small fine sand stringers		
			There was no volume of water over night the hole was left at time that all casing was pulled from the water		

10. Work started July 5 finished Aug 4

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

Elliott Koinzan 63
Driller's or Firm's Name Number

Address Grey Eagle Drive Star

Signed By Elliott Koinzan Date 8-5-70

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USE ADDITIONAL SHEETS IF NECESSARY

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name WILLOW BROOK WATER CORP.

Address PEARL ROUTE EAGLE, ID 83616

Drilling Permit No. 63-92-W-032

Water Right Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☒ Other GRAVEL CHUTE (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 2.5 feet	237.5 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 20' Material used in seal: ☐ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing
☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld
☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.

N / W / E / S

Subdivision Name _____

Lot No. _____ Block No. _____

County ADA

SE ¼ NW ¼ Sec. 17, T. 5 N ☐ S ☐ R. 1 E ☐ W ☒

7. WATER LEVEL

Static water level 150 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☒ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
30 GAL	325'	½ HR.

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	20	SAND		X
6	20	100	SAND, SOME CLAY		X
6	100	160	CLAY WITH SAND SEAMS		X
6	160	200	SAND	X	
6	200	210	BLUE CLAY		X
6	210	280	SAND WITH SOME CLAY STINGERS	X	
6	280	310	COURSE SAND WITH PEA GRAVEL	X	
6	310	318	CLAY (SANDY WITH PEA GRAVEL)		X
6	318	340	SAND		

RECEIVED
JUL 22 1992
Department of Water Resources

SHIPPED FEB 03 1992

10.

Work started 1-9-92 finished 1-14-92

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

BILL DOTY
Firm Name DRILLING CO., INC. Firm No. 42
106 CALLOWAY
Address CALDWELL, ID. Date 1-31-92
83605
Signed by (Firm Official) _____
and
(Operator) _____

JUN 29 1995

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

orm 238-7
11/91

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

USE TYPEWRITER OR BALLPOINT PEN

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name WILLOWBROOK WATER CORP.

Address PEARL ROUTE EAGLE, ID 83616

Drilling Permit No. 63-92-W-0032-001

Water Right Permit No. _____

2. NATURE OF WORK

☐ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☒ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Auger ☐ Reverse rotary
☒ Cable ☐ Mud ☐ Other _____
(backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	10 inches	+ 2 feet	200 feet
.250 inches	8 inches	200 feet	314 feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☒ Yes ☐ No 313'-314'
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No
Manufacturer _____ Type _____
Top Packer or Headpipe _____
Bottom of Tailpipe _____

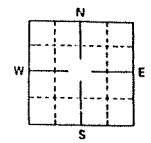
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth ___ Material used in seal: ☐ Cement grout
☐ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☐ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port _____

6. LOCATION OF WELL

Sketch map location **must** agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County ADA

SE ¼ NW ¼ Sec. 17 , T. 5 N ☒ N ☐ S R. 1 W ☐ E ☒ W

7. WATER LEVEL

Static water level _____ feet below land surface.
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
			NOTE: for original log see 63-92-W-0032-000		

JUN 1 2 1992
Department of Water Resources
Western Regional Office

10.

Work started _____ finished _____

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name BILL DOTY DRILLING CO., INC. Firm No. 42
Address 106 CALLOWAY CALDWELL, ID 83605 Date 7-31-92
Signed by Drilling Supervisor _____
and
(Operator) _____
(If different than the Drilling Supervisor)

PRELIMINARY

JUN 29 1995

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

6/93

AUG 1 8 1993
Department of Water Resources

WELL DRILLER'S REPORT

Ball Point Pen

1. DRILLING PERMIT NO. 63 - 43 - W - 0337 -
Other IDWR No. 63-07623

2. OWNER:
Name Willow Brook Water Corp.
Address Pear l Rt
City Eagle State Id Zip 83616

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

T. 5 North ☒ or South ☐
R. 1 East ☐ or West ☒
Sec. 17, SE 1/4 (10 acres) NW 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Ada

Address of Well Site Grandmason Rd.
(Give at least Direction + Distance to Road or Landmark)
Lot No. ____ Block No. ____ Subd. Name ____

4. PROPOSED USE:
☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation
☐ Thermal ☐ Injection ☐ Other ____

5. TYPE OF WORK
☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD
☒ Mud Rotary ☐ Air Rotary ☒ Cable ☐ Other ____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT (Sacks or Pounds)	METHOD
Enviroplug #8	0	20	20	Poured Dry
High yield Bent.	0	20	4	injected with mud pump

Was drive shoe seal tested? YES ☐ NO ☒ How? ____

8. CASING/LINER:

Diameter	From	To	Guage	Casting	Liner	Steel	Plastic	Welded	Threaded
14"	+4	240	250			☒	☐	☒	☐
						☐	☐	☐	☐
						☐	☐	☐	☐
						☐	☐	☐	☐

Final location of shoes 240' Blank 10" 230 to 250
Top Packer or Headpipe 20' Bottom Tailpipe 60'

9. PERFORATIONS/SCREENS
☐ Perforations Method ____
☒ Screens Type Hanson Material SS.

From	To	Slot Size	Number	Diameter	Tele/Pipe Size	Casting	Liner
250	280	30		10"	pipe	☐	☐
280	300	Blank		10"	"	☐	☐
300	340	30		10"	"	☐	☐
						☐	☐

10. WELL TESTS:
☒ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Depth	Time
EST. 500		340	Air 3 hrs
			2 hrs pumped

Temperature of water ____ Was a water analysis done? Yes ☐ No ☒
By whom? ____
Water Quality (odor, etc.) ____
Bottom Hole Temperature ____

11. STATIC WATER LEVEL:
152 ft. below surface Depth artesian flow found ____
Artesian pressure ____ lb. Describe access port 2" Blk pipe
Describe Controlling Devices: ____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	water yes GPM	water NO SWL
16	0	2	Top Soil		X
1	2	25	Course gravel-Big Rocks	X	
15½	25	186	Clay Some Sand		X
	186	200	Real Fine Sand	X	
	200	230	Clay		X
	230	252	Clay with Sand layer's	X	
	252	285	med White Sand	X	
	285	298	Clay gray	X	
	298	347	med Sand white	X	
	347	400	coarse Sand looks like grait Could be cemented		X

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Department of Water Resources
Western Regional Office

Date: Started 5-12-93 Completed 7-10-93

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Precision Firm No. 522
Firm Official Jeff Ransom Date 8-13-93
and Eddie Holder
Supervisor or Operator Brad Ransom Date 8-13-93
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

ADMIN
JUN 29 1995

orm 238-7
1/78

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name WILLOW BROOK WATER ASSN.

Address CHAPARRAL RD PEARL RT EAGLE

Owner's Permit No. _____

2. NATURE OF WORK

☐ New well ☑ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning) _____

3. PROPOSED USE

☐ Domestic ☑ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☑ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☑ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
_____ inches	12 inches	+ 1 feet	326 feet
.188 inches	10 inches	206 feet	329 feet
.250 inches	8 inches	315 feet	435 feet
_____ inches	_____ inches	_____ feet	_____ feet

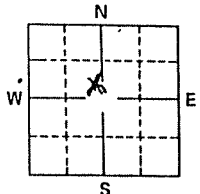
Was casing drive shoe used? ☐ Yes ☐ No SHOE ON 8"
Was a packer or seal used? ☐ Yes ☑ No 10" NO PERFS
Perforated? ☐ Yes ☐ No 8" PERFS
How perforated? ☑ Factory ☐ Knife ☐ Torch
Size of perforation 1/8 inches by 3 inches

Number		From	To
1600	perforations	325 feet	425 feet
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☑ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Diameter ____ Slot size ____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth UNK Material used in seal: ☐ Cement grout ☐ Puddling clay ☐ Well cuttings
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☑ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County ADA
SE ¼ NW ¼ Sec. 17, T. 5 N N/S, R. 1W E/W.

7. WATER LEVEL

Static water level 150 feet below land surface.
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 60 °F. Quality good

8. WELL TEST DATA NOT TESTED

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	326	435	COARSE SAND - MAY BE CEMENTED	✓	

MAR 29 1989
Department of Water Resources

10.

Work started JUN 28 83 finished JUL 12 83

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name JOHNSTON DRILLING Firm No. 92
Address RT 1 BOX 830 MELBA Date JUL 12 83
Signed by (Firm Official) E O Johnston
and
(Operator) Sam Johnston

RECEIVED
JUN 29 1995

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Willowbrook Property Owners Assoc.

Address Pearl Rt. Eagle ID. 83616

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 12 inches Total depth 279 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	12 inches	+ 1½ feet	202 feet
.365 inches	10 inches	195 feet	205 feet
.365 inches	10 inches	215 feet	230 feet
.365 inches	10 inches	235 feet	255 feet
.365 inches	10 inches	258 feet	262 feet

Was casing drive shoe used? ☒ Yes ☐ No

Was a packer or seal used? ☒ Yes ☐ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No

Manufacturer's name Johnson

Type Stainless Model No. _____

Diameter 10 Slot size 30 Set from 205 feet to 215 feet

Diameter 10 Slot size 30 Set from 230 feet to 235 feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

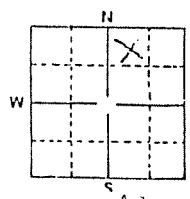
Placed from _____ feet to _____ feet

Surface seal depth 60 Material used in seal ☐ Cement grout ☒ Puddling clay ☒ Well cuttings

Sealing procedure used ☐ Slurry pit ☐ Temporary surface casing ☒ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location. 63



Subdivision Name _____

Lot No. _____ Block No. _____

County Ada

NW ¼ NW ¼ Sec. 17 T 5N 2N R 1W E W

7. WATER LEVEL

Static water level 167 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Temperature _____ ° F. Quality _____

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☒ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
60	50 ft	6

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
16	0	1	topsoil		X
16	1	41	brown clay		X
16	41	49	sandy brown clay		X
12	49	74	yellow clay		X
12	74	96	sandy yellow clay		X
12	96	106	sand		X
12	106	130	sandy clay		X
12	130	175	yellow sandy clay		X
12	175	191	Brown sandy clay		X
12	191	205	sand	X	
12	205	218	Coarse sand /clay	X	
12	218	224	muddy sand	X	
12	224	243	sand	X	
12	243	252	muddy sand	X	
12	252	259	sand	X	
12	259	261	muddy sand	X	
12	261	266	sand	X	
12	266	267	clay	X	
12	267	270	sand	X	
270		[illegible]	muddy sand	X	

10. Work started 12/9/76 finished 3/7/77 ABANDONED

11. DRILLERS CERTIFICATION

Firm Name Engleman Drilling Firm No. _____

Address 1309 Rand Boise, ID Date 3/22/77

Signed by (Firm Official) [signature]

and

(Operator) [signature]

JUN 29 1995

USE TYPEWRITER OR BALL POINT PEN

Department of Water Resources

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

WELL OWNER

Name Willowbrook Property Owners Assoc.

Address _____

Owner's Permit No. PAGE TWO OF LOG

2. NATURE OF WORK

☐ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

_____

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☐ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole _____ inches Total depth _____ feet

Casing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
_____ inches	_____ inches	+_____ feet	_____ feet
.365 inches	10 inches	264 feet	279 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☐ Yes ☐ No

Was a packer or seal used? ☐ Yes ☐ No

Perforated? ☐ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☐ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter 10 Slot size 30 Set from 255 feet to 258 feet

Diameter 10 Slot size 30 Set from 262 feet to 264 feet

Gravel packed? ☐ Yes ☐ No Size of gravel _____

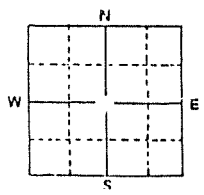
Placed from _____ feet to _____ feet

Surface seal depth _____ Material used in seal ☐ Cement grout ☐ Puddling clay ☐ Wall cuttings

Sealing procedure used ☐ Slurry pit ☐ Temporary surface casing ☐ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County _____

¼ ¼ Sec. _____, T. _____ N/S, R. _____ E/W

7. WATER LEVEL

Static water level _____ feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow _____

Temperature _____° F. Quality _____

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No

10.

Work started _____ finished _____

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11. DRILLERS CERTIFICATION

Firm Name _____ Firm No. _____

Address _____ Date _____

Signed by (Firm Official) _____

and

(Operator) _____

Form 238-7
/89

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name DONALD G MOORE

Address PEARL RT EAGLE 83616

Owner's Permit No. 63-91-Z-075

2. NATURE OF WORK

XX New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

XX Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
XX Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule XX Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 2 feet	199 feet
____ inches	____ inches	____ feet	____ feet
____ inches	____ inches	____ feet	____ feet
____ inches	____ inches	____ feet	____ feet

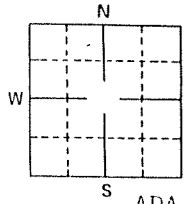
Was casing drive shoe used? XX Yes ☐ No
Was a packer or seal used? ☐ Yes XX No
Perforated? ☐ Yes XX No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation ____ inches by ____ inches

Number	From	To
____ perforations	____ feet	____ feet
____ perforations	____ feet	____ feet
____ perforations	____ feet	____ feet

Well screen installed? ☐ Yes XX No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from ____ feet to ____ feet
Surface seal depth 100 Material used in seal: ☐ Cement grout XX Bentonite XX Puddling clay ☐
Sealing procedure used: ☐ Slurry pit XX Temp. surface casing XX Overbore to seal depth
Method of joining casing: ☐ Threaded XX Welded ☐ Solvent Weld
☐ Cemented between strata
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Hanley Place
Subdivision Name Hanley
Lot No. 36 Block No. X
County ADA
NE ¼ NW ¼ Sec. 17 T. 5 (N) S R. 1 (E) W

7. WATER LEVEL

Static water level 172 feet below land surface.
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump XX Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
25	172	½

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	6	silty clay		X
	6	10	clay & gravel		X
	10	120	cemented sand & sandy clay		X
6	120	140	clay		X
	140	150	sandy clay		X
	150	155	sand		X
	155	180	clay & sandy clay	X	
	180	185	silty blue clay		X
	185	195	blue sand	X	
	195	201	blue clay		X
	201	202	blue sand	X	

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JUL 03 1991
Department of Water Resources

RECEIVED
JUL 5 1991
Department of Water Resources
Western Regional Office

10.

Work started 6/19/91 finished 6/24/91

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Stevens & Sons Firm No. 353
Address 3709 Hawthorne Drive Date 6/26/91
Signed by (Firm Official) _____
and
(Operator) _____

JUN 29 1995

BALL POINT PEN

Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

1. WELL OWNER

Name DALE L. HANLEY

Address PEARL STAR ROUTE- EAGLE, IDAHO

Owner's Permit No.

2. NATURE OF WORK

☑ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☐ Cable ☒ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 18" inches Total depth 327 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	12-3/4 inches	1 feet	19 feet
.219 inches	12 3/4 inches	19 feet	212 13 feet
inches	12 inches	212 feet	327 feet
inches	inches	feet	feet
inches	inches	feet	feet

SEE SCHEDULE OF CASING AT BASE OF FORMATION LOG

Was a packer or seal used? ☐ Yes ☐ No

Perforated? SLOTTED. ☒ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation 1/8 inches by inches

Number	From	To
perforations	228 feet	327 feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☐ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☐ No Size of gravel

Placed from 0 feet to 300 feet

Surface seal? ☒ Yes ☐ No To what depth 27 feet

Material used in seal: ☒ Cement grout ☐ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



County Ada

SE ¼ NW ¼ Sec. 17 T. 5 N S R. 1 E W

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE, BLUE, AND PINK COPIES

7. WATER LEVEL

Static water level 63 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer AIR ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
1600		

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
12 3/4	0	4	TOP SOIL		
	4	22	GRAVEL		
	22	193	CLAY		
	193	196	SAND- REAL FINE		
	196	205	GREEN CLAY		
	205	228	SAND WITH CLAY LAYERS		
	228	236	CLAY		
	236	252	GREEN CLAY W/SAND SEAMS		
	252	262	SAND-WHITE-MED GRAINED		
	262	272	CLAY		
	272	327	SAND - HARD CEMENTED WI		
			BROKEN SEAMS		
			BOTTOM - YELLOW CLAY		
			CASING SCHEDULE		
1'	--	19'	.250 PLAIN		
19'	--	219'	8" .219 PLAIN		
219'	8" --	228'	6" SLOTTED CASING		
228'	6" --	237'	PLAIN		
237'	--	247'	2" SLOTTED CASING		
247'	2" --	255'	9" PLAIN		
255'	9" --	264'	9" ROSCOE MOSS SCREEN		
264'	9" --	273'	1" PLAIN		
273'	1" --	282'	1" ROSCOE MOSS SCREEN		
282'	1" --	290'	5" PLAIN		
290'	5" --	299'	5" ROSCOE MOSS SCREEN		
299'	5" --	311'	PLAIN		
311'	--	320'	ROSCOE MOSS SCREEN		
320'	--	326'	PLAIN		

10.

Work started 6-21-72 finished 6-21-72

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

B & M WELL DRILLING CO., INC. 76

Driller's or Firm's Name Number

BOX 220 - CALDWELL, IDAHO

Address

Signed By 6/21/72

Date

RECEIVED JUN 29 1995

Form 238-7

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1 of 2

1. WELL OWNER

Name Don B. Jensen

Address Rt. 1, Star, ID 83669

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning) _____

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☒ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness		Diameter		From		To	
.250	inches	16	inches +	2	feet	30	feet
.250	inches	16	inches	70	feet	110	feet
.250	inches	16	inches	150	feet	180	feet
.250	inches	16	inches	190	feet	220	feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

Number		From		To	
_____	perforations	_____	feet	_____	feet
_____	perforations	_____	feet	_____	feet
_____	perforations	_____	feet	_____	feet

Well screen installed? ☒ Yes ☐ No
Manufacturer's name Roscoe Moss
Type _____ Model No. _____
Diameter 16 Slot size 80 Set from 30 feet to 70 feet
Diameter 16 Slot size 80 Set from 110 feet to 150 feet
Diameter 16 Slot size 80 Set from 180 feet to 190 feet
Gravel packed? ☒ Yes ☐ No ☐ Size of gravel 3/8 minus
Placed from 20 feet to 370 feet
Surface seal depth 20' Material used in seal: ☐ Cement grout
☒ Puddling clay ☐ Well cuttings
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing
☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld
☐ Cemented between strata
Describe access port 2" pipe welded on side of casing

7. WATER LEVEL

Static water level _____ feet below land surface.
Flowing? ☐ Yes ☐ No G.P.M. flow
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
28	0	11	Topsoil & Dirt		
	11	33	Brn. Clay w/some Sand		
	33	69	Sand Med. to Crse. w/some Pea Gravel		
	69	104	Brn. Clay w/some Sand		
	104	109	Sand Med. to Crse. w/some Clay		
	109	148	Sand Fine to Med.		
	148	161	Clay, Shale & some Sand		
	161	181	Sand & Clay mixed		
	181	190	Sand Med. to Crse.		
	190	201	Sand Fine to Med. w/Sandstone & Clay		
	201	204	Sand Med. to Crse.		
	204	217	Sand Fine to Med. s/some Clay		
	217	256	Sand Med. to Crse.		
	256	259	Sand Fine & some Sandstone		
	259	262	Sand Med. to Crse.		
	262	270	Blue & Brn. Clay w/some Sand		
	270	288	Sand Fine to Med. & Pea Gravel		
	288	317	Sand Med. to Crse. w/Pea Gravel		
	317	336	Sand Med. to Crse.		
	336	344	Blue Clay w/some Sand		
	344	354	Sand Crse.		
	354	370	Crse. Sand & Pea Gravel w/some Clay		

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10.

Work started 2-1-80 finished 2-20-80

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

2 of 2

BALLPOINT PEN

WELL OWNER

Name Don B. Jensen

Address

Owner's Permit No.

NATURE OF WORK

OK

☐ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning)

PROPOSED USE

OK

☐ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other (specify type)

METHOD DRILLED

OK

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other

WELL CONSTRUCTION

Casing schedule: ☐ Steel ☐ Concrete ☐ Other

Thickness		Diameter		From		To	
.250	inches	16	inches +	260	feet	290	feet
.250	inches	16	inches	330	feet	340	feet
.250	inches	16	inches	360	feet	366	feet
	inches		inches		feet		feet

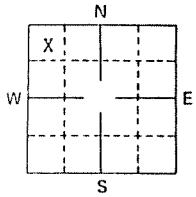
Was casing drive shoe used? ☐ Yes ☐ No
Was a packer or seal used? ☐ Yes ☐ No
Perforated? ☐ Yes ☐ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation inches by inches

Number		From		To	
	perforations		feet		feet
	perforations		feet		feet
	perforations		feet		feet

Well screen installed? ☐ Yes ☐ No
Manufacturer's name
Type Model No.
Diameter 16 Slot size 80 Set from 220 feet to 260 feet
Diameter 16 Slot size 80 Set from 290 feet to 330 feet
Diameter 16 Slot size 80 Set from 340 feet to 360 feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel
Placed from feet to feet
Surface seal depth OK Material used in seal: ☐ Cement grout ☐ Puddling clay ☐ Well cuttings
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☐ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port

LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name

Lot No. Block No.

County Gem

¼ NW ¼ Sec. 25 , T. 6N N/S, R. 1W E/W.

7. WATER LEVEL

Static water level 17 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow
Artesian closed-in pressure p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature °F. Quality

8. WELL TEST DATA

☒ Pump ☐ Bailer ☐ Air ☐ Other

Discharge G.P.M.	Pumping Level	Hours Pumped
700	278'	8 hrs.

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No

OK

10.

Work started finished

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Pete Cope Drilling Co., Inc. Firm No. 213
Address P.O. Box 561 Meridian, ID 83642 Date 6-21-80
Signed by (Firm Official)
and
(Operator)

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USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Chuck Pearce

Address R # 1 Emmett Idaho

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 72 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+ 1 feet	72 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☒ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☒ Torch

Size of perforation ¼ inches by ½ inches

Number		From	To
160	perforations	61 feet	72 feet
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

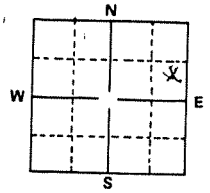
Placed from _____ feet to _____ feet

Surface seal? ☒ Yes ☐ No To what depth 30 feet

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



6 3

County Ada

SE ¼ NE ¼ Sec. 24, T. 4 N/S, R. 1 E/W

7. WATER LEVEL

Static water level 54 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow _____

Temperature 65 ° F. Quality _____

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
20	41	2

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	4	Soil		
	4	30	Gravel, some clay		
	30	54	Clay		
	54	62	Blue clay		
	62	72	Gravel	X	

10.

Work started 12/21/72 finished 12/23/72

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

E C Driscoll 14
Driller's or Firm's Name Number

930 So Wash Emmett Idaho
Address

E C Driscoll 12/26/72
Signed By Date

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

RECEIVED JUN 8 9 1995

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

1. WELL OWNER

Name David Pritchard

Address Rt 1 Emmett Idaho

Owner's Permit No.

2. NATURE OF WORK

☐ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☑ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

METHOD DRILLED

☐ Cable ☐ Rotory ☐ Dug ☐ Other

WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 59 feet

Casing schedule: ☑ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6 inches	+1 feet	57 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☑ No

Perforated? ☑ Yes ☐ No

How perforated? ☐ Factory ☐ Knife ☑ Torch

Size of perforation 1/4 inches by 3/4 inches

Number	From	To
150 perforations	57 feet	59 feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name

Type Model No.

Diameter Slot size Set from feet to feet

Diameter Slot size Set from feet to feet

Gravel packed? ☐ Yes ☒ No Size of gravel

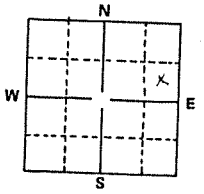
Placed from feet to feet

Surface seal? ☑ Yes ☐ No To what depth 20 feet

Material used in seal ☐ Cement grout ☒ Puddling clay

LOCATION OF WELL

Sketch map location must agree with written location.



County Ada

E ¼ NE ¼ Sec. 26, T. 4 N/S, R. 1 E/W

7. WATER LEVEL

Static water level 59 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow

Temperature 45 ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
20		

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6	0	4	Clay		
	4	55	Gravel Sand Water		
	55	63	Gravel Sand		
	63	65	Gravel Sand Clay		
	65	70	Gravel Sand Water		
	70	79	Gravel Sand Clay		
	79	82	Gravel Sand	✓	

10.

Work started 7/3/72 finished 7/11/72

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

D C Driscoll 14

Driller's or Firm's Name Number

Box 70 Emmett

Address

D C Driscoll 7/14/72

Signed By Date

RECEIVED JUN 29 1995

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BALL POINT PEN

Department of Water Administration

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Gerald Dunbar

Address Rt #3 Emmett Idaho

Owner's Permit No. _____

2. NATURE OF WORK

☐ New well ☐ Deepened ☒ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotory ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 6 inches Total depth 130 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	6" inches	+1 feet	103 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Diameter ___ Slot size ___ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____

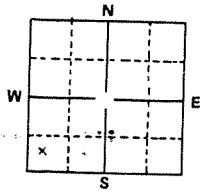
Placed from _____ feet to _____ feet

Surface seal? ☒ Yes ☐ No To what depth 18 feet

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



County Gem

SW ¼ SW ¼ Sec. 35, T. 6 N/S, R. 1 E/W

7. WATER LEVEL

Static water level 80 feet below land surface

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Temperature 60 ° F. Quality Soft

Artesian closed-in pressure _____ p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
20	AW	7

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
6"	0	5	Sandy Clay		
	5	20	Sandy Gravel & Clay		
	20	25	Gravel		
	25	35	Blue Clay		
	35	37	Sand		
	37	50	Dry Clay		
	50	51	Gravel		
	51	70	Blue Clay		
	70	72	Gravel		
	72	90	Blue Clay		
	90	92	Sandy Blue Clay		
	92	94	Sandy Coarse Clay		
	94	100	Gravel	X	
	100	105	Blue Clay		
	105	106	Gravel		
	106	135	Blue Clay		
		135	Gravel	X	

10.

Work started 3/14/73 finished 3/24/73

11. DRILLER'S CERTIFICATION

This well was drilled under my supervision and this report is true to the best of my knowledge.

E C Driscoll 14

Driller's or Firm's Name Number

930 So. Washington Emmett Idaho

Address

E C Driscoll 4/14/73

Signed By Date

RECEIVED JUN 29 1995

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Form 238/7
4/92

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Department of Water Resources

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name MARK LYNN

Address 4831 SKYLINE DR. EAGLE, ID. 83616

Drilling Permit No. 63-93-W-0182

Water Right Permit No. _____

2. NATURE OF WORK

XX New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

XX Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☐ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	8 inches	+ 1 feet	480 feet
.250 inches	6 inches	+2 feet	540 feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No
Manufacturer _____ Type _____
Top Packer or Headpipe _____
Bottom of Tailpipe _____

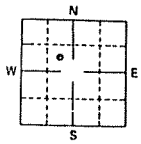
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 40 Material used in seal: ☐ Cement grout
☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port _____

6. LOCATION OF WELL

Sketch map location **must** agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County GEM
Address of Well Site _____ (give at least name of road)
SE ¼ NW ¼ Sec. 35, T. 6N N ☒ or S ☐, R. 1W E ☐ or W ☒

7. WATER LEVEL

Static water level 400 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
40	500	2 HRS.

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
12	0	2	SANDY TOP SOIL		X
12	2	40	SAND & GRAVEL		X
8	40	280	DECOMPOSED GRANITE SAND		X
8	280	315	BROWN SANDSTONE		X
8	315	420	DECOMPOSED GRANITE SAND		X
8	420	426	BROKEN BROWN ROCK	X	
8	426	460	DECOMPOSED GRANITE SAND	X	
8	460	480	LIGHT COLORED SANDSTONE	X	
6	480	530	DECOMPOSED FINE GRANITE SAND	X	
6	530	560	HARD GRAY SANDSTONE	X	
6	560	580	COURSE LOOSE GRANITE SAND	X	

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JUN 23 1993
Department of Water Resources
Western Regional Office

10.

Work started 4-19-93 finished 6-5-93

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JUN 29 1995

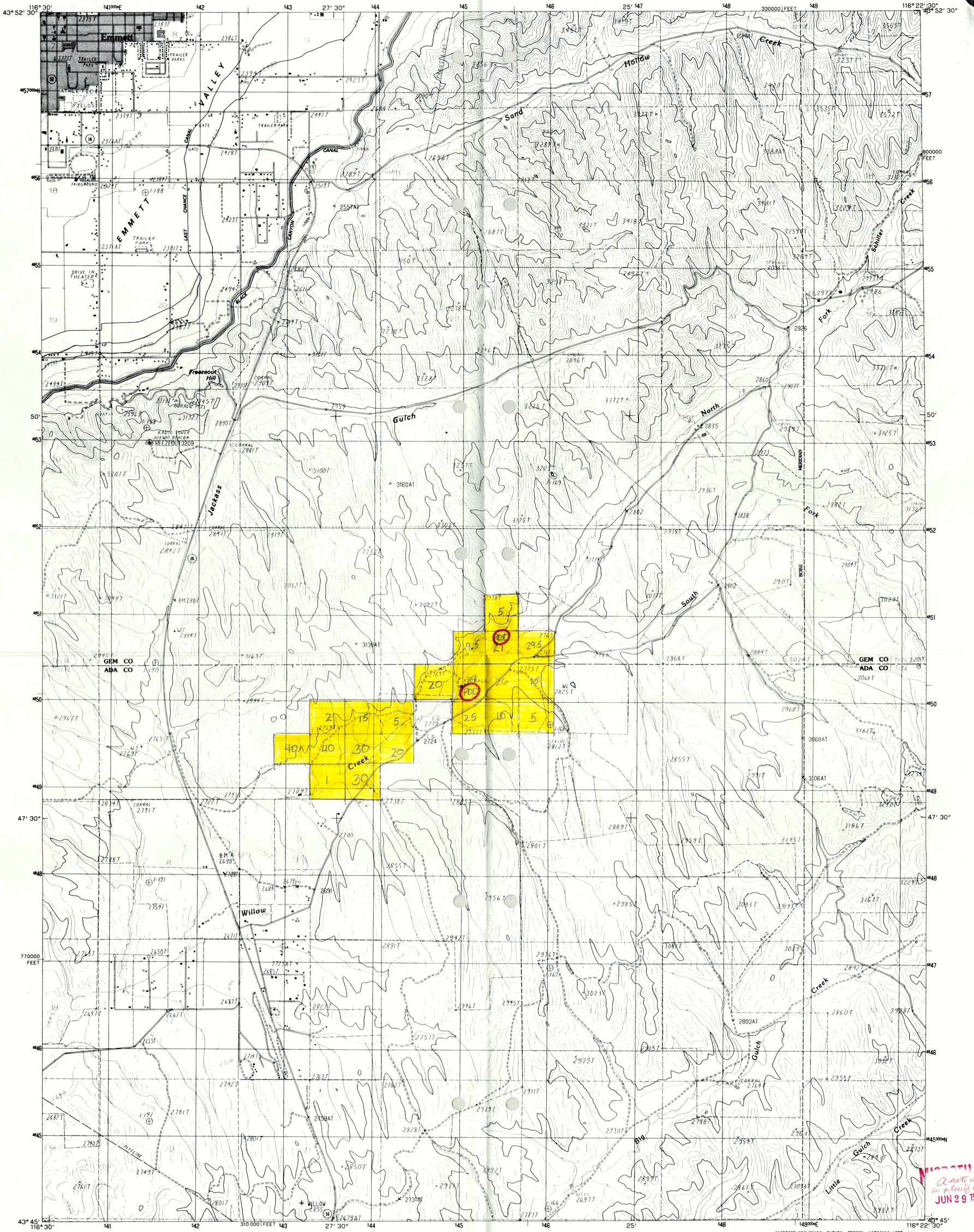
11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name BILL DOTY DRILLING CO., INC. Firm No. 42
Address 106 CALLOWAY CALDWELL, ID 83605 Date 6-17-93
Signed by Drilling Supervisor _____
and
(Operator) _____
(If different than the Drilling Supervisor)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SOUTHEAST EMMETT QUADRANGLE
IDAHO
7.5 MINUTE SERIES (TOPOGRAPHIC)



PRODUCED BY THE UNITED STATES GEOLOGICAL SURVEY
CONTROL BY . . . . . USGS, NOS/NOAA
COMPILED FROM AERIAL PHOTOGRAPHS TAKEN 1980
FIELD CHECKED . . . . . 1981 MAP EDITED 1985
PROJECTION . . . . . TRANSVER MERCATOR
GRID: 1000-METER UNIVERSAL TRANSVERSE MERCATOR . . . . . ZONE 11
10,000-FOOT STATE GRID TICKS . . . . . IDAHO, WEST ZONE
UTM GRID DECLINATION . . . . . 0°23′ EAST
1985 MAGNETIC NORTH DECLINATION . . . . . 17° EAST
VERTICAL DATUM . . . . . NATIONAL GEODETIC VERTICAL DATUM OF 1929
HORIZONTAL DATUM . . . . . 1927 NORTH AMERICAN DATUM

To place on the predicted North American Datum of 1983, move the projection lines as shown by dashed corner ticks (15 meters north and 77 meters east)
There may be private inholdings within the boundaries of any Federal and State Reservations shown on this map
Gray tint indicates area in which selected buildings are shown
All marginal data and lettering generated and positioned by automated type placement procedures

PROVISIONAL MAP
Produced from original manuscript drawings. Information shown as of date of field check. 2

SCALE 1:24 000
1 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000 FEET
1 0 1 2 KILOMETERS
1000 0 METERS 1000 2000
NORTH

CONTOUR INTERVAL 40 FEET
SUPPLEMENTAL CONTOUR INTERVAL 20 FEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225
OR RESTON, VIRGINIA 22092

IDAHO
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Northwest Emmett
2 Northeast Emmett
3 Montour
4 Southwest Emmett
5 Pearl
6 Middleton
7 Star
8 Eagle

ADJOINING 7.5' QUADRANGLE NAMES

ROAD LEGEND
Improved Road . . . . . ==========
Unimproved Road . . . . . ==========
Trail . . . . . - - - - - - - -
Interstate Route U.S. Route State R

INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA-1988

SOUTHEAST EMMETT, IDAHO
PROVISIONAL EDITION 1985

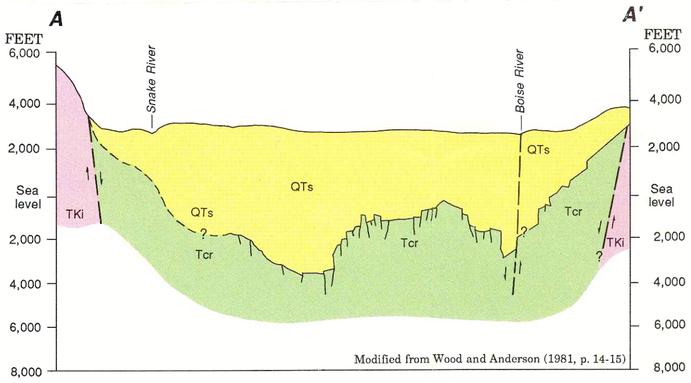
43116-G4-TF-024

REVISED
A note was found in placing overlayed map
JUN 29 1995

Admitted by CGS 12/20/94

EXHIBIT
APPLICANTS'
5

MASTER 01628



VERTICAL EXAGGERATION x 9
DATUM IS SEA LEVEL

SCALE 1:475,000
0 10 MILES
0 10 KILOMETERS

EXPLANATION

GENERALIZED DESCRIPTION OF GEOLOGIC UNITS

Age	Map symbol	Lithologic characteristics
QUATERNARY AND LATE TERTIARY	QTs	Sedimentary rock, unconsolidated to poorly consolidated; includes colluvium and flood-plain, glacial, eolian, and lake deposits. Size ranges from clay to gravel. Minor interbedded volcanics, includes Idaho Group
QUATERNARY AND LATE TERTIARY	QTb	Basaltic rock composed of olivine basalt, basaltic cinders, and minor interbedded sediments. Irregular to columnar jointing
QUATERNARY AND TERTIARY	QTsv	Rhyolitic, latitic, and andesitic rocks that occur as thick flows and blankets of welded tuff, ash, and pumice beds; includes some interbedded sediments
TERTIARY	Tcr	Basaltic rock; dense, crude columnar jointing, structurally deformed in some locations. Includes Columbia River Basalt Group and interbedded sediments
TERTIARY	Tcv	Extrusive rocks ranging in composition from rhyolite to basalt; includes welded tuff, pyroclastics, and tuffaceous sediments
TERTIARY AND CRETACEOUS	TKi	Granitic rocks of the Idaho batholith

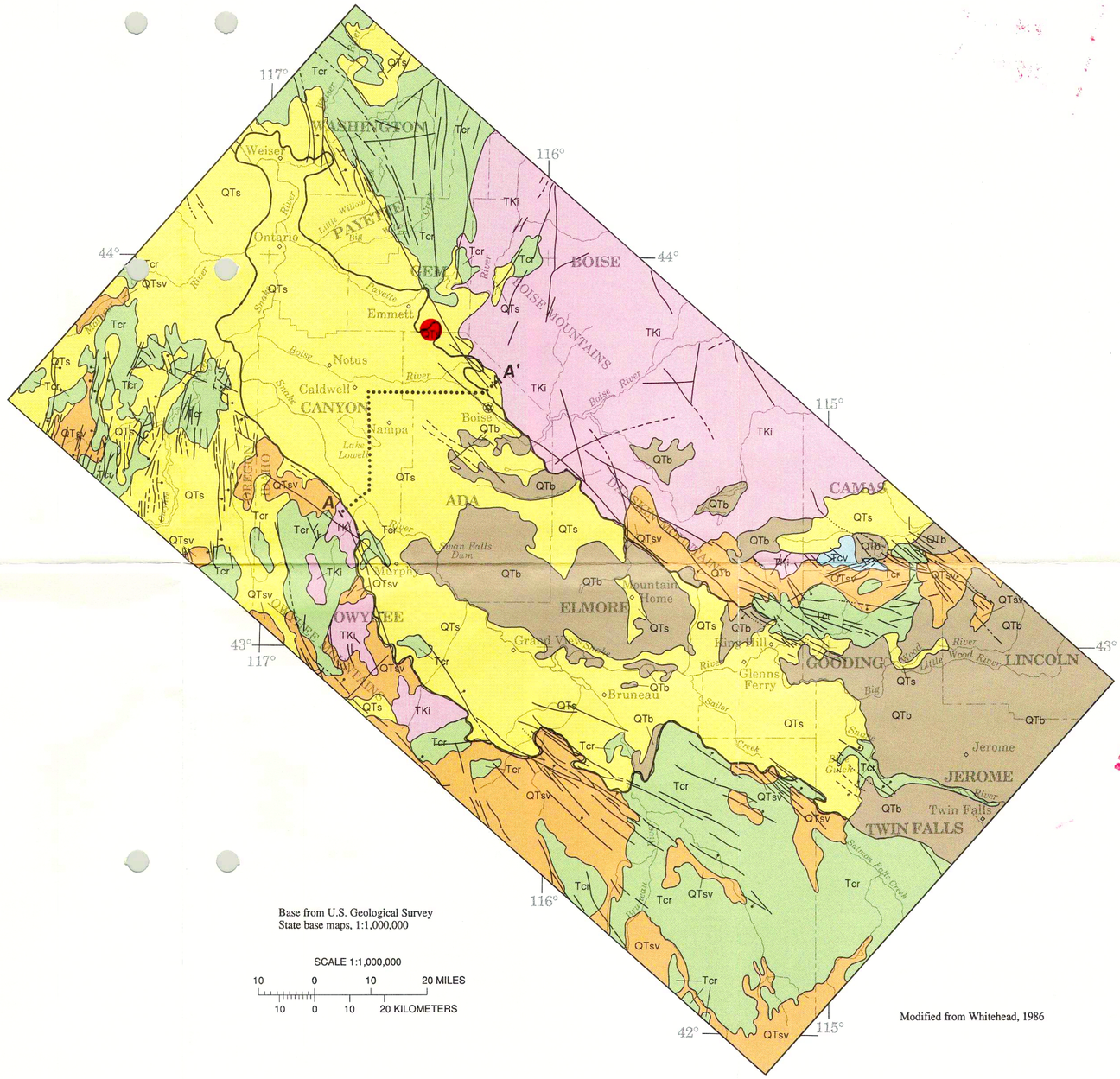
A ..... A' LINE OF SECTION--Approximately located

Map ——↑—... FAULT--Dashed where inferred; dotted where concealed; bar and ball on downthrown side

Section ——←—— FAULT--Dashed where inferred; arrows show relative direction of movement

——?—— CONTACT--Dashed where approximately located, queried where inferred

BOUNDARY OF SNAKE RIVER PLAIN



Base from U.S. Geological Survey
State base maps, 1:1,000,000

SCALE 1:1,000,000
10 0 10 20 MILES
10 0 10 20 KILOMETERS

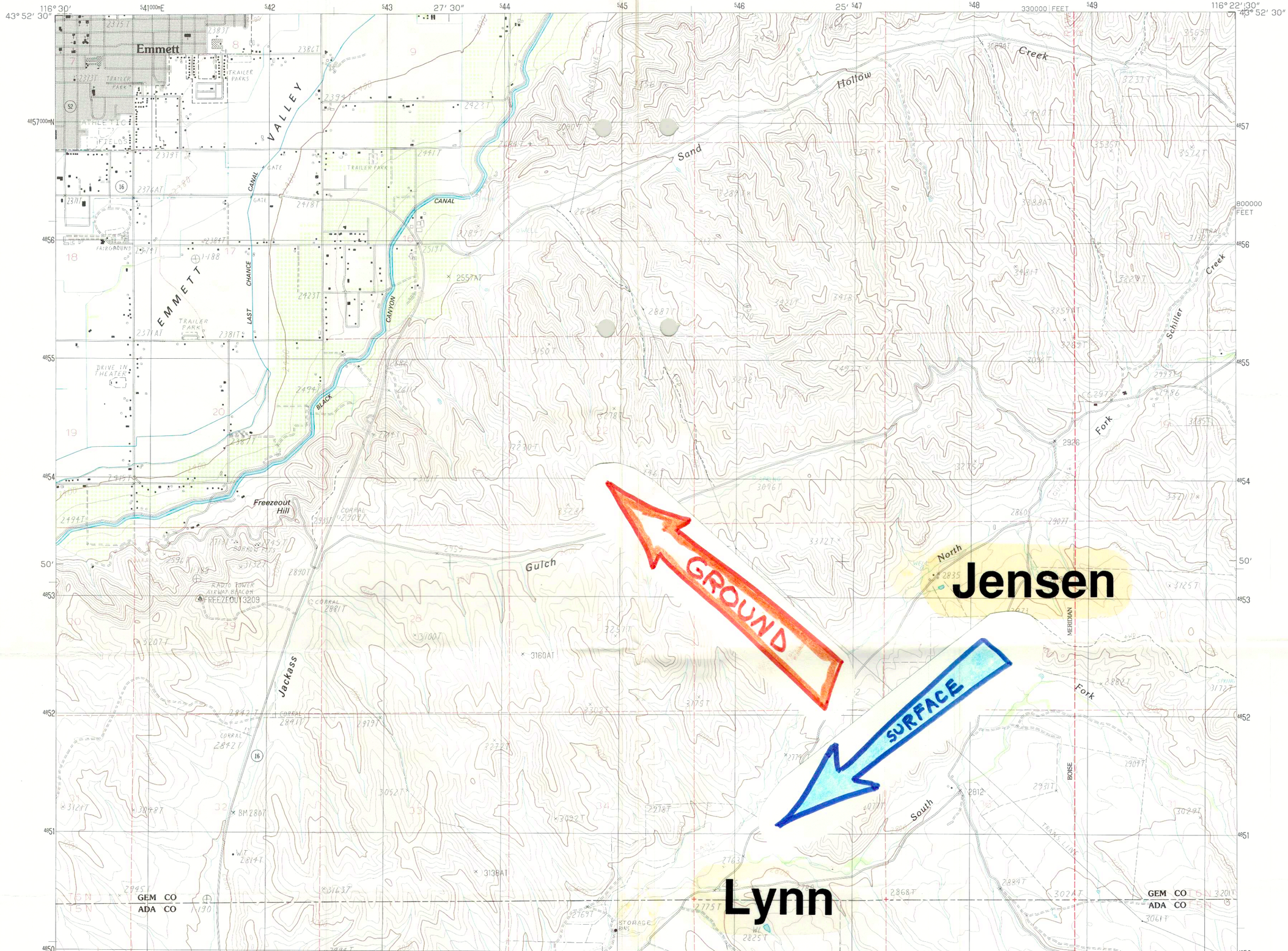
Modified from Whitehead, 1986

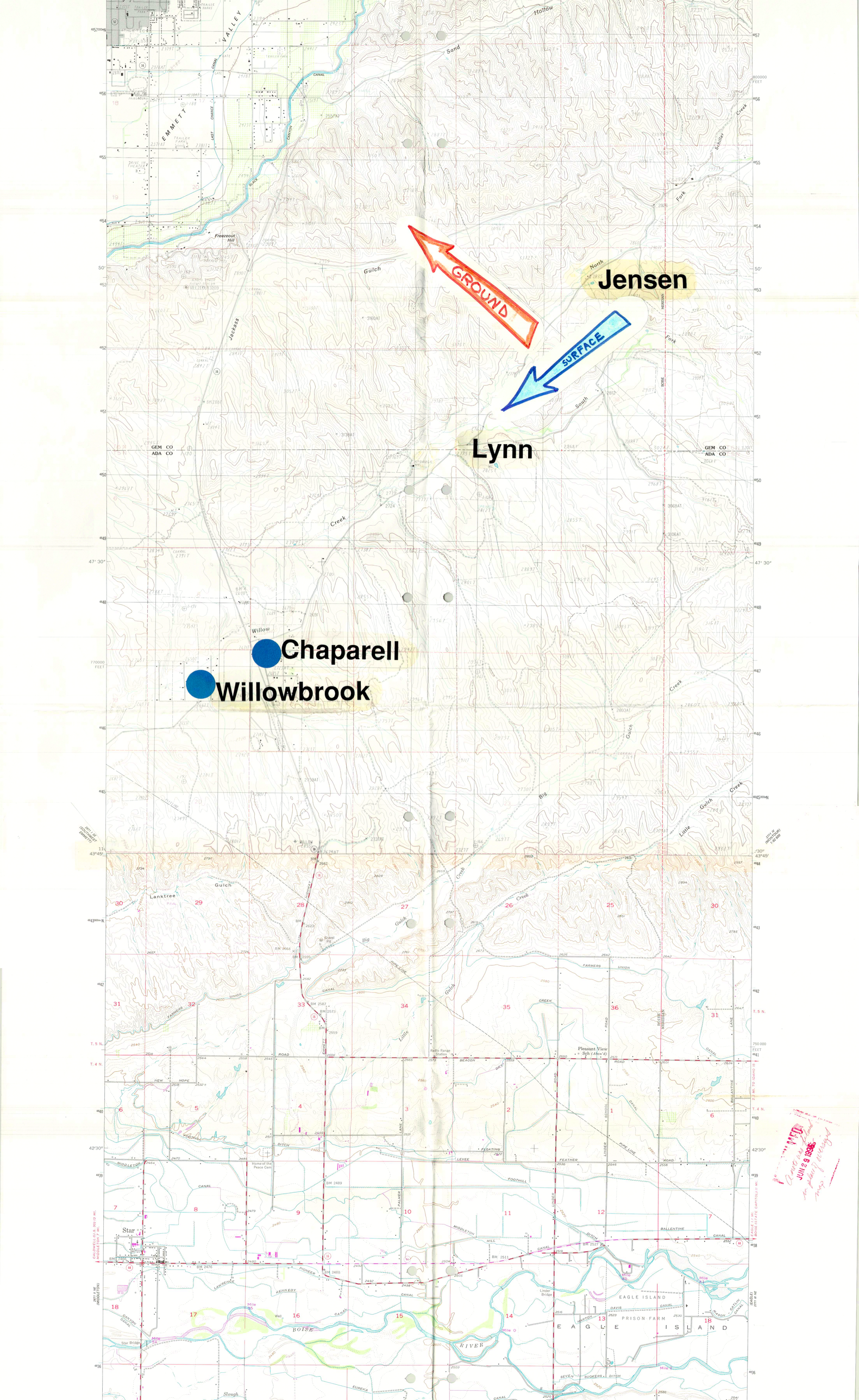
GEOLOGIC MAP AND SECTION, WESTERN SNAKE RIVER PLAIN AND SURROUNDING AREA

EXHIBIT
APPLICANTS'
6

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SOUTHEAST EMMETT QUADRANGLE
IDAHO
7.5 MINUTE SERIES (TOPOGRAPHIC)




GROUND
SURFACE
Jensen
Lynn
Chaparell
Willowbrook
Star
EAGLE ISLAND
PRISON FARM
BOISE RIVER
GEM CO
ADA CO
Gulch
Creek
Lanktree
Willow
Pleasant View Sch (Abnd)
Home of the Peace Cem
Radio Range Station
Freezeout Hill
EMMETT VALLEY
CANAL
HIGHWAY
ROAD
FOOTHILL
MIDDLETON
BALLENTINE
PIPE LINE
LEVEE
FEATHER
FARMERS UNION
BEACON
NEW HOPE
PIONEER
LAWRENCE
KENNEDY
DAVIS
BARKER
SEVEN BUCKERS DITCH
EUREKA
Slough
Mile 0
Mile 1
Mile 2
Mile 3
Mile 4
Mile 5
Mile 6
Mile 7
Mile 8
Mile 9
Mile 10
Mile 11
Mile 12
Mile 13
Mile 14
Mile 15
Mile 16
Mile 17
Mile 18
Mile Q
Well
Star Bridge
Linder Bridge
BM 2661
BM 2623
BM 2587
BM 2573
BM 2559
BM 2511
BM 2489
BM 2476
BM 2527
T. 5 N.
T. 4 N.
R. 1 E.
R. 1 W.
BOISE MERIDIAN
43°45'
43°30'
42°30'
47° 30'
50'
11
30
29
28
27
26
25
31
32
33
34
35
36
6
5
4
3
2
1
7
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18
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16
15
14
13

RECEIVED
JUN 29 1995
DEPT OF WATER RESOURCES

Don Jensen

Corbett Lynn
(Mark Lynn log)

Mark Lynn Irrigation
(no log)

Mark Lynn Mobile Home
(Albert Helmick log)

Section 9 Wells
(composit of 6 domestic well logs)

Mark Lynn (Bill Leach log)

Chaparell Water Users

Darrell Fisher
(former USGS monitor well, no log)

Willowbrook Water Corporation
(composite from four well logs)

SCANLAN ENGINEERING

Groundwater and Environmental Engineering

By T. Scanlan Date 12/15/94 Client Mark Lynn Page 1 of 1

Description Willow Creek Area Hydrogeologic Cross Section Job No. 111.0010

Horizontal Scale 1 inch = 1,000 feet

Vertical Scale 1 inch = 50 feet

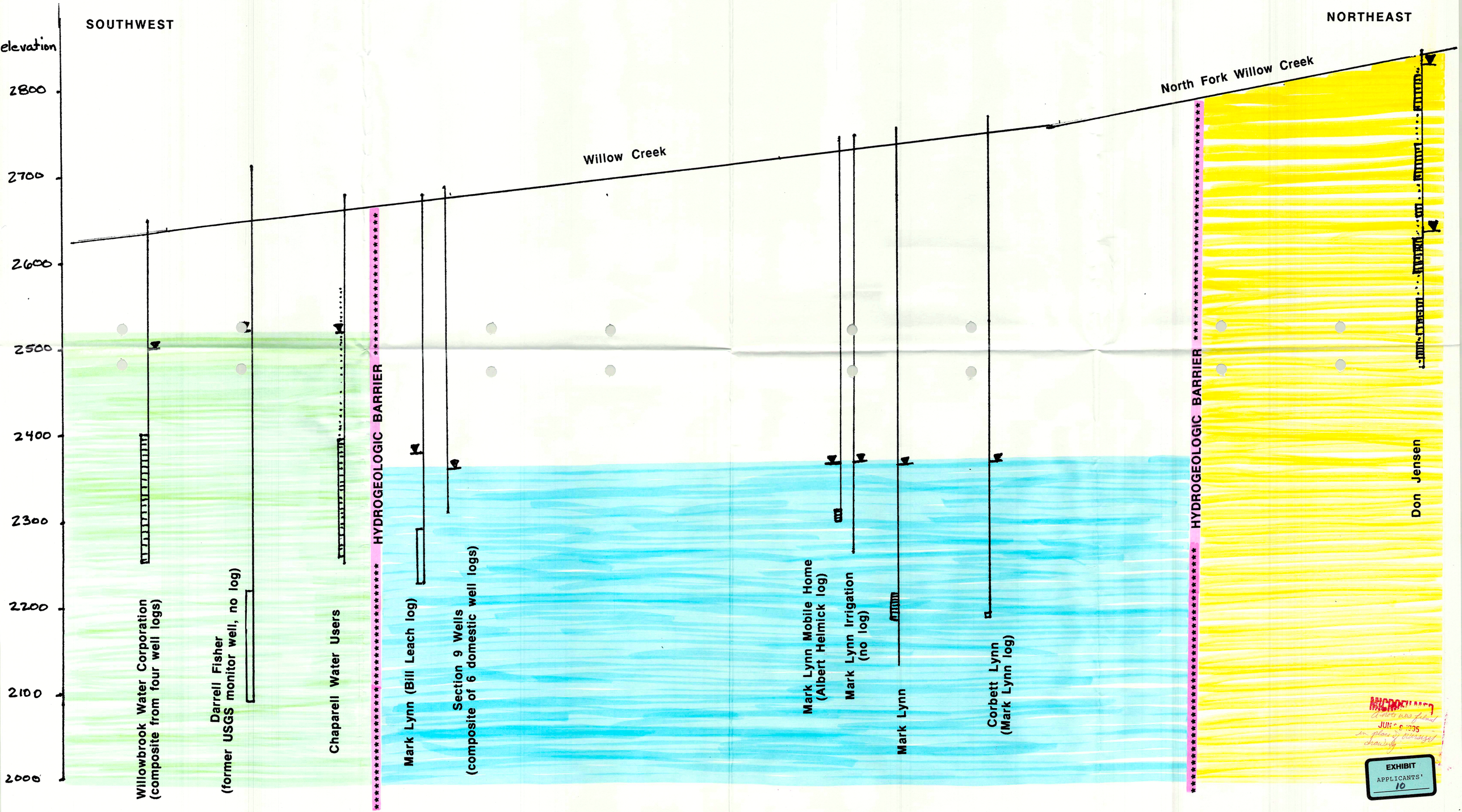
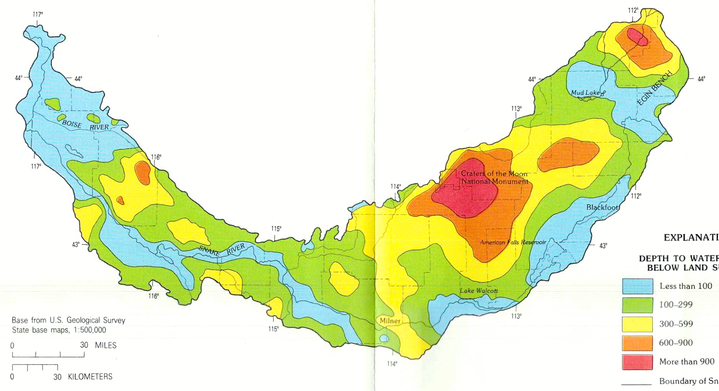


EXHIBIT
APPLICANTS'
10

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

HYDROLOGIC INVESTIGATIONS
ATLAS HA-703



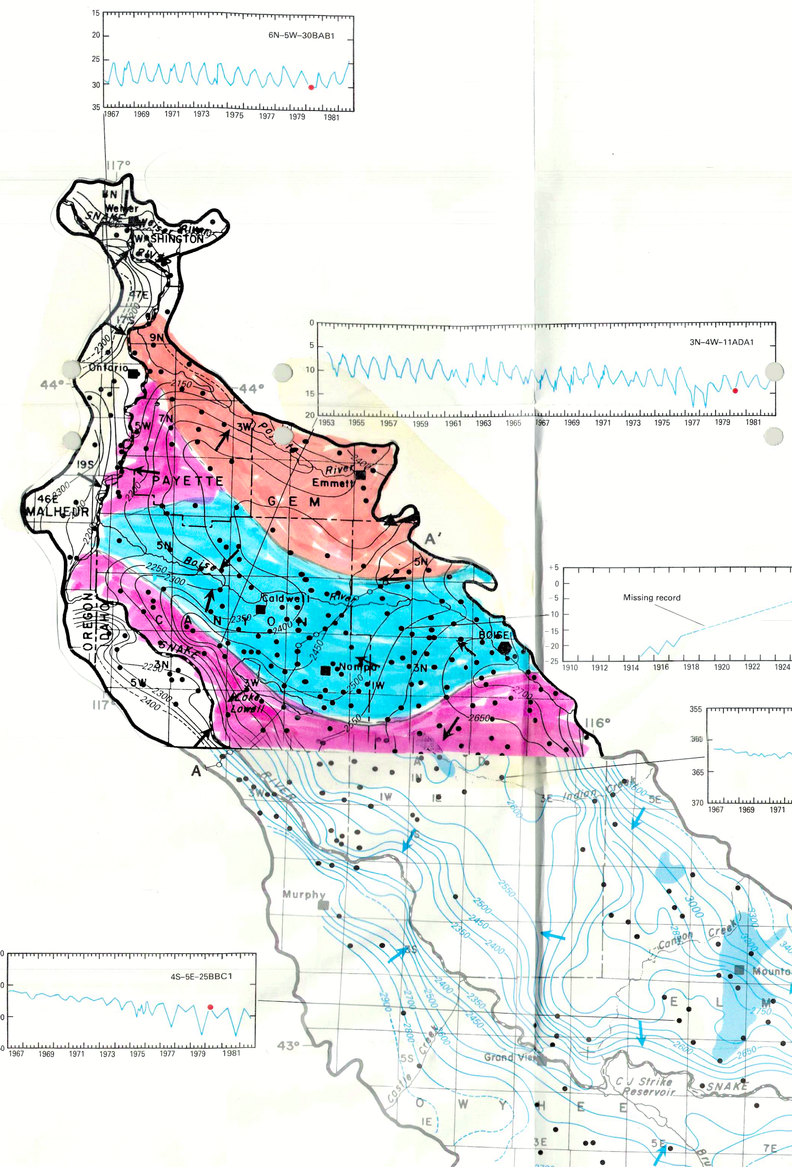
EXPLANATION

DEPTH TO WATER, IN FEET BELOW LAND SURFACE

- Less than 100
- 100–299
- 300–599
- 600–900
- More than 900
- Boundary of Snake River Plain

DEPTH TO THE REGIONAL WATER TABLE IN THE SPRING OF 1980 RANGED FROM LESS THAN 10 TO 1,000 FEET BELOW LAND SURFACE

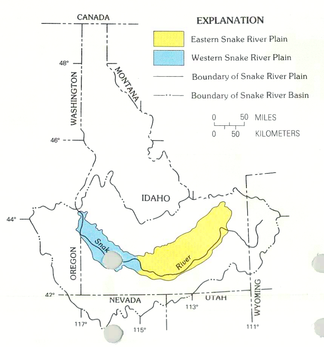
Greatest depths to water are in the area of Craters of the Moon National Monument; depths are least in the Boise River valley, the Snake River flood plain northeast of American Falls Reservoir, and in the Mud Lake–Egin Bench area. Locally, depths to water may be less as a result of either natural perching above a zone of low hydraulic conductivity (commonly fine-grained sediment) or artificial development of a saturated zone above fine-grained sediments beneath surface-water-irrigated areas. The channel of the Snake River is the topographic low along the length of the plain and, accordingly, is the major control on depth to water along most of its reach. Exceptions are the reaches above Blackfoot and from Lake Walcott to Milner where, for all or part of the year, the river is perched above the regional water table. In general, depth to water increases with increasing distance from the Snake River.



INTRODUCTION

The aquifer system underlying the Snake River Plain is one of the regional aquifer systems being studied by the U.S. Geological Survey in its RASA (Regional Aquifer-System Analysis) program to develop a better understanding of the Nation's ground-water resources. One of the purposes of this study, which began in 1979, was to increase understanding of the ground-water flow system underlying the Snake River Plain. In much of the Snake River Plain, the regional aquifer system is unconfined. Confined aquifers have been penetrated at various depths in the extreme western part of the plain and along the plain's boundaries. Locally, aquifers were not explicitly defined in this study. Objectives, approach, and plan of study were presented in an earlier report (Lindholm, 1981).

The purpose of this report is to (1) present results of ground-water level measurements made in the spring of 1980, (2) discuss historical water-level changes, and (3) describe ground-water movement. Configuration of the water table in the spring of 1980 and depth to water were defined by water-level measurements made in about 1,200 wells. Direction of ground-water movement is shown on the water-table map and hydraulic flow sections. Historical water-level data were collected by the U.S. Geological Survey in cooperation with other Federal, State, and local agencies.



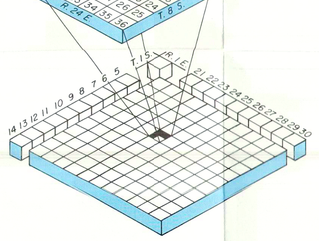
THE TOPOGRAPHY OF THE SNAKE RIVER PLAIN CONTRASTS SHARPLY WITH THE SURROUNDING MOUNTAINS

The Snake River Plain is an arcuate area of about 15,600 mi² that extends across southern Idaho into eastern Oregon. For this study, the extent of the plain was defined on the basis of geology, topography, and hydrology. Along its axis, the plain is about 370 mi long and ranges in width from 30 to 70 mi. The plain's surface altitude rises gradually from about 2,100 ft above sea level at Hagerman in southwestern Idaho to 6,000 ft in the northeast near Dubois. Mountains surrounding the plain rise sharply from 7,000 to 12,000 ft.

For study purposes, the plain was divided into eastern and western parts on the basis of geology and hydrology. Quaternary volcanic rocks, chiefly basalt with minor amounts of intercalated sediments, predominate in the eastern plain; Quaternary and Tertiary sedimentary rocks with minor amounts of volcanic rocks predominate in the western plain. A structural feature transverse to the axis of the plain is discussed in a companion report (Whitehead, 1984). The hydrologic dividing line between eastern and western parts of the plain is largely the Snake River and one of its tributaries, Salmon Falls Creek (map at center). The Snake River from Milner to King Hill receives about two-thirds of the eastern plain's ground-water discharge, largely as spring flow. Thousand Springs, just below the mouth of Salmon Falls Creek, is the largest group of springs. Flow characteristics of the Snake River and the water budget for the Snake River Plain are discussed in another companion report (Kjelstrom, 1984).

CONVERSION FACTORS

Multiply	By	To obtain
acre	4,047	square meter
cubic foot per second (ft³/s)	0.02832	cubic meter per second
foot (ft)	0.3048	meter
foot per mile (ft/mi)	0.1894	meter per kilometer
mile (mi)	1.609	kilometer
square mile (mi²)	2.590	square kilometer



WELLS AND TEST HOLES ARE REFERENCED BY A WELL-NUMBERING SYSTEM

The well-numbering system used by the U.S. Geological Survey in Idaho indicates the location of wells within the rectangular subdivision of the public lands, with reference to the Boise base line and meridian. The first two segments of the number designate the township and range. The third segment gives the section number; three letters, which indicate the ¼ section (160-acre tract), ¼–¼ section (40-acre tract), and ¼–¼–¼ section (10-acre tract) and serial number of the well within the tract. Quarter sections are lettered A, B, C, and D in counterclockwise order from the northeast quarter of each section. Within quarter sections, 40-acre and 10-acre tracts are lettered in the same manner. For example, well 8S–24E–31DAC1 is in the SW¼NE¼SE¼, sec. 31, T. 8 S., R. 24 E., and is the first well inventoried in that tract. The well-numbering system in Oregon is referenced to the Willamette base line and meridian.

In addition, a unique identification number is assigned to each well. This number is based on the well's location with respect to latitude and longitude. For example, the number 424053134112601 indicates well 8S–24E–31DAC1 is at latitude 42°40'53" and longitude 113°41'28". The sequential ending number (01, etc.) allows for additional wells at the same general location.

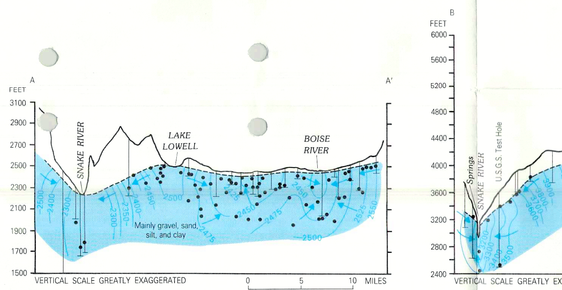
GROUND WATER MOVES VERTICALLY AND HORIZONTALLY TO THE SNAKE AND BOISE RIVERS

Within the geohydrologic framework defined by Whitehead (1984), water moves vertically then horizontally from areas of recharge to areas of discharge. Movement is approximately perpendicular to lines of equal hydraulic head, as shown on the sections above and map at center. Complexities of flow, owing to local lithologic differences and geologic structure, are poorly defined and are not shown.

In the western part of the Snake River Plain, ground water discharges as seepage to the Snake and Boise Rivers. West of the Snake River and in the vicinity of Lake Lowell, hydraulic heads decrease with depth. In those areas, water moves downward and recharges the ground-water system. East of Lake Lowell, hydraulic heads increase with depth and ground water discharges mainly to the Boise River as shown in section A-A'. In the Boise River valley, a well-developed network of surface drains (ditches) intercepts ground water that otherwise would be discharged to the river. The water table in much of the Boise River valley is shallow (several feet to several tens of feet below land surface) and the upward component of hydraulic head causes many wells to flow. Although head data demonstrate upward movement of water in the Boise River valley, use of surface water for irrigation adds temporary recharge to the system.

Section B-B' approximates a regional ground-water flowpath along the longitudinal axis of the eastern plain. Near the boundaries of the plain, as shown on the northeastern end of the section, hydraulic head decreases with depth and recharge occurs. Upward flow, about 25 mi from the northeastern end of the section, is probably due to the confining effect of sediments that locally are intercalated with basalt.

Two-thirds of total ground-water discharge from the eastern plain is spring flow and seepage to the Snake River between Milner and King Hill. Included in that reach are 11 of the 65 known springs in the United States that discharge an average of more than 100 ft³/s (Mariner, 1927, p. 44). Piezometers in a U.S. Geological Survey test hole, about 12 mi northeast of the springs, verify upward, as well as horizontal, flow in the vicinity of the Snake River. Additional evidence of upward water movement to the Snake River is springs that discharge directly into the river.

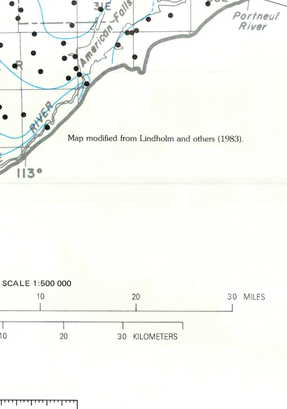


EXPLANATION

- Water table
- 2400 — Line of equal hydraulic potential—Intervals 25 and 100 feet
- General direction of ground-water movement
- Well
- Point of known hydraulic potential—Projected where no well shown
- A ——— A' Lines of section shown on map at center

In the central part of the eastern plain, most ground water flows horizontally, no significant upward or downward movement is evident.

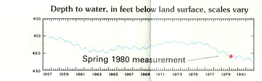
The north wall of the Snake River canyon from Milner to King Hill was mapped during the study (H.R. Covington, U.S. Geological Survey, written commun., 1983) to determine spring altitudes, geologic controls on spring locations, and relative amounts of discharge from individual springs or groups of springs.

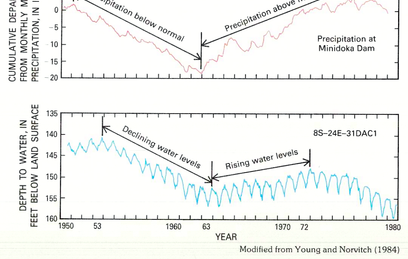


EXPLANATION

- Area in which known local aquifer overlies the regional aquifer
- 4000 — Water-table contour—Shows altitude of the regional water table, spring 1980. Dashed where inferred. Contour intervals 50, 100, and 200 feet. Datum is sea level. Contours are broken at the Snake River canyon between Milner and King Hill to indicate the discontinuity of the regional water table
- General direction of ground-water flow
- A ——— A' Line of section
- Control point
  Note: In places, water is under semiconfined to confined conditions; however, variations in head with depth in wells used to construct this map are small, within the range of the contour interval
- Control point for hydraulic flow section only
- Boundary of Snake River Plain

Depth to water, in feet below land surface, scales vary





LONG-TERM CHANGES IN GROUND-WATER LEVELS REFLECT PRECIPITATION TRENDS, CHANGES IN IRRIGATION PRACTICES, AND GROUND-WATER PUMPING

Hydrographs at left illustrate long-term water-level changes across the Snake River Plain. Hydrographs for other wells on the plain are included in reports by Sisco (1974, 1925, 1976), Young (1983), and Young and Norvitch (1984).

Ground-water levels change in response to long-term changes in precipitation. An example of the relation between long-term precipitation trends and ground-water level trends was given by Young and Norvitch (1984, p. 8) and was modified above.

Water-level highs in 1953 and 1972 and the intervening low in 1963 are related to precipitation trends. The length and points of inflection of precipitation and ground-water level trends do not directly correlate for several probable reasons. Recharge to the ground-water system underlying the eastern part of the Snake River Plain was determined to be about 60 percent from surface-water irrigation, 25 percent from drainage basins tributary to the plain, 10 percent from direct precipitation, and 5 percent from Snake River losses (L.C. Kjelstrom, U.S. Geological Survey, written commun., 1984). Consequently, direct correlation between precipitation at a single station and water levels in a single well is not necessarily expected. However, total quantity of water available over a period of years is reflected by ground-water levels and accounts for the correlation of trends shown. The ground-water low in late 1963 appears to lag the inflection point in precipitation trends by about 1 year. The lag may reflect the length of time necessary for differences in the amount of precipitation to be realized as regional ground-water level changes. Young and Norvitch (1984, p. 9) explained that in the example above, trends on the precipitation cumulative departure from monthly mean precipitation curve and trends on the hydrograph deviate after 1973. The deviation is attributed to decreased surface-water diversions for irrigation, more efficient use of water, and increased ground-water withdrawals.

Although details vary, long-term water-level trends in many wells on the eastern plain appear to have a similar relation to precipitation. On the western part of the Snake River Plain, the relation is less apparent and other factors predominate.

Prior to the start of intensive irrigation in the early 1900's, ground-water levels changed only in response to precipitation, both on the plain and on tributary areas. As use of surface water for irrigation increased, more water became available for recharge. Transmission losses from a network of canals and deep percolation from irrigated fields raised ground-water levels in large parts of the plain.

Although preirrigation water-level data are largely unavailable, Mundorff and others (1964, p. 162) reported that from about 1907 to 1959 as a result of irrigation, the water table north of the Snake River between Minidoka and Blss rose 25–100 ft, and the average rise may have been 60–70 ft. Water-level rises owing to irrigation south of the Snake River were greatest in the Twin Falls area. Within 5 years after the start of surface-water irrigation in 1908, a water-level rise of 186 ft was measured in well 10S–17E–20AD1; the total rise owing to surface-water irrigation may have been nearly 300 ft (Stearns and others, 1938, p. 129). Continued use of surface water for irrigation for more than 100 years in the Boise River valley has raised ground-water levels as much as 140 ft (Nace and others, 1957, p. 1). In much of the Boise River valley, water levels have been fairly stable for a number of years. On the basis of these examples, it is apparent that use of surface water for irrigation has greatly affected ground-water levels in the Snake River Plain.

Changes in irrigation practices also affect ground-water levels. The most obvious is lower water levels resulting from ground-water withdrawals. Since the late 1940's, use of ground water for irrigation has increased steadily. Removal of water from storage lowers ground-water levels within the cone of influence of a well or well field. Given enough properly spaced wells, continued pumping can result in lowering of water levels regionally. Young and Norvitch (1984) analyzed water-level data from several hundred wells in Idaho to determine probable causes of water-level fluctuations from 1971 to 1982. Included were those wells whose hydrographs are shown at left.

On the eastern part of the Snake River Plain, ground-water withdrawals were identified as the probable cause of declining water levels from the early 1970's to the early 1980's in wells 9N–36E–33CBB1, 5N–34E–9BDA1, 1N–29E–30BBD1, 4S–24E–6BBC1, 8S–24E–31DAC1, and 11S–19E–17AAB1.

Water-level declines observed in wells 7N–38E–23DBA1, 1N–36E–1CCB1, and 5S–17E–26ACA1 probably were due to reduced recharge from surface-water irrigation. Well 7N–38E–23DBA1 is on the Egin Bench where, for a number of years, irrigation with surface water has raised ground-water levels to root depths. Since the early 1970's, some irrigators have changed from flood and furrow irrigation to sprinklers, a more efficient use of water. Consequently, recharge from surface water has decreased and ground-water levels have declined.

On the western part of the Snake River Plain, ground-water withdrawals, primarily for irrigation, have caused water levels to decline in wells near Mountain Home (1N–2E–15DCA1 and 4S–5E–25BBC1). In the Boise River valley, the water level in well 4N–1W–36DAD1 rose rapidly from 1915 to about 1925, then rose gradually for many years owing to increased recharge from surface-water irrigation. Nearly all hydrographs show a rapid decline in water levels following the drought of 1976–77, owing to decreased recharge.

In general, since the start of irrigation, ground-water levels have changed more in response to irrigation practices than to precipitation.

A brief history of irrigation on the Snake River Plain was written by Lindholm and Goodell (1984), and ground- and surface-water pumpage for irrigation in 1980 was estimated by Bigelow and others (1984). Young and Norvitch (1984) analyzed seasonal water-level changes (see hydrographs) and showed how water levels differ under natural recharge conditions and in surface- and ground-water-irrigated areas.

WATER-TABLE GRADIENTS RANGE FROM 3 TO 200 FEET PER MILE AND INDICATE THE RELATIVE ABILITY OF AQUIFERS TO TRANSMIT WATER

Regionally, ground water moves at approximately right angles to lines of equal hydraulic potential or head, as shown on the map above. Locally, variations in flow direction can be expected because of the anisotropy of basaltic rocks that underlie much of the Snake River Plain. The water-level altitude map is based on water levels in wells completed in the regional aquifer system and measured in the spring of 1980. A companion report (Bassick, 1985) includes site-specific data on depth to water, water-level altitude, geohydrologic unit, and well construction.

Ground-water movement in the western part of the Snake River Plain is mainly toward the Snake and Boise Rivers. Water-table gradients range from 100 to 200 ft/mi along the northeastern boundary of the plain from King Hill to near Boise. In that area, the regional aquifer system is thin and consists largely of fine-grained Quaternary and Tertiary sedimentary rocks. Water-table gradients are commonly 50–100 ft/mi within 5 mi of the Snake River. In much of the Boise River valley, water-table gradients are 10–20 ft/mi toward the river. The unconfined aquifer in the Boise River valley consists largely of coarse-grained alluvium. South of the Snake River from Salmon Falls Creek to Murphy, water-table gradients are generally 50–100 ft/mi but are poorly defined. Most wells in that area are completed in confined silicic volcanic-rock aquifers and yield thermal water with hydraulic heads that average about 100 ft higher than heads in the overlying cold-water system.

Ground-water movement in the eastern part of the Snake River Plain is generally from northeast to southwest. Deviations are apparent near the margins of the plain, owing to underflow from tributary drainage basins, and along gaining reaches of the Snake River. Water-table gradients range from about 3 to 100 ft/mi and average about 12 ft/mi. Gradients are lowest in the central part of the eastern plain, which is underlain by thick highly transmissive basalt. Horizontal movement of water in basalt is primarily through rubbly tops of flows where hydraulic conductivities are high. Consequently, if the basalt sequence is thick and consists of numerous flows, aquifer transmissivities are extremely high. Areal variations in transmissivity in the eastern plain were determined by Mundorff and others (1964, pl. 6), who used flow-net analysis; by Norvitch and others (1969, p. 37) and Mantei (1974, fig. 3), who used electric-analog models; and by deSonneville (1974, p. 203–206), Newton (1978, p. 67–71), and Garabedian (1984, p. 48), who used digital ground-water flow models.

The water-table gradient in nearly half of the eastern plain is less than 5 ft/mi. Steepest gradients are in recharge areas in the northeastern part of the plain, along the northwestern boundary, and upgradient from springs discharging to the Snake River in Gooding and Jerome Counties. Steep gradients in Gooding and Jerome Counties are due largely to damming of the basalt aquifer. Zones of steep gradient (25–30 ft/mi) that cross the plain are coincident with or near zones of rapid transmissivity change, perpendicular to the general direction of flow. Most notable are steep gradient zones in the vicinity of Mud Lake and the Great Rift zone. The steep gradient in the vicinity of Mud Lake approximately coincides with an area in which highly transmissive basalts interfinger with relatively poorly transmissive fine-grained sediments. The steep gradient in the vicinity of the Great Rift zone is immediately upgradient from and generally parallel to a zone of decreased transmissivity that may be attributable to healing of fractures or the presence of dikes that impede water movement.

In some areas, particularly near the boundaries of the plain, sedimentary rocks are interealated with the basalt. Where fine grained, they impede the vertical movement of water and perched aquifers have formed. Under surface-water-irrigated areas, perched water is common and local flow systems, independent of the regional system, have developed. Some water in perched aquifers is withdrawn for various uses; the remaining water eventually percolates to the regional system. Areas of perched aquifers, usually shallow, are shown on the map above. Effects of leakage from these aquifers to the regional aquifer system are not apparent at the scale shown. Irrigated acreage and other land uses on the Snake River Plain in 1980 were delineated from Landsat data (Lindholm and Goodell, 1984).

SUMMARY

Long-term changes in ground-water levels on the Snake River Plain are due more to irrigation practices than to climatological changes. The extensive use of surface water for irrigation made more water available for ground-water recharge. Consequently, after the start of irrigation, ground-water levels began to rise, rapidly in places. Water levels rose several tens of feet in large areas and several hundred feet in places. In the early 1950's, water-level trends reversed owing to increased use of ground water, decreased surface-water diversions, and more efficient use of water.

Ground-water levels also change in response to cyclical variations in the amount of precipitation. Periods of below-normal precipitation correlate with periods of several years' duration when water levels declined, and periods of above-normal precipitation correlate with periods of rising water levels.

Regional ground-water movement is to the Snake River. In the eastern part of the plain, water movement is generally southwestward, except near the Snake River and the margins of the plain. Water-table gradients range from about 3 to 100 ft/mi and average about 12 ft/mi. Gradients are least in the central part of the plain, which is underlain by thick, highly transmissive Quaternary basalt. Water movement in the central part of the plain is largely horizontal. Along the margins of the plain and near the Snake River, water moves vertically as well as horizontally. Where basalt is intercalated with low-transmissivity sediments, vertical movement is impeded and, in surface-water-irrigated and recharge areas, perched aquifers have developed above the regional aquifer system.

Ground-water movement in the western part of the Snake River Plain is to the Snake and Boise Rivers. Hydraulic gradients are steep: 100–200 ft/mi along the northeastern boundary and 50–100 ft/mi along the Snake River. Hydraulic head increases with depth in the Boise River valley, resulting in upward ground-water movement.

Depth to water is greatest in the central part of the eastern Snake River Plain where the regional water table is as much as 1,000 ft below land surface. In the Boise River valley, in the Mud Lake–Egin Bench area, and northeast of American Falls Reservoir, water levels are less than 50 ft below land surface.

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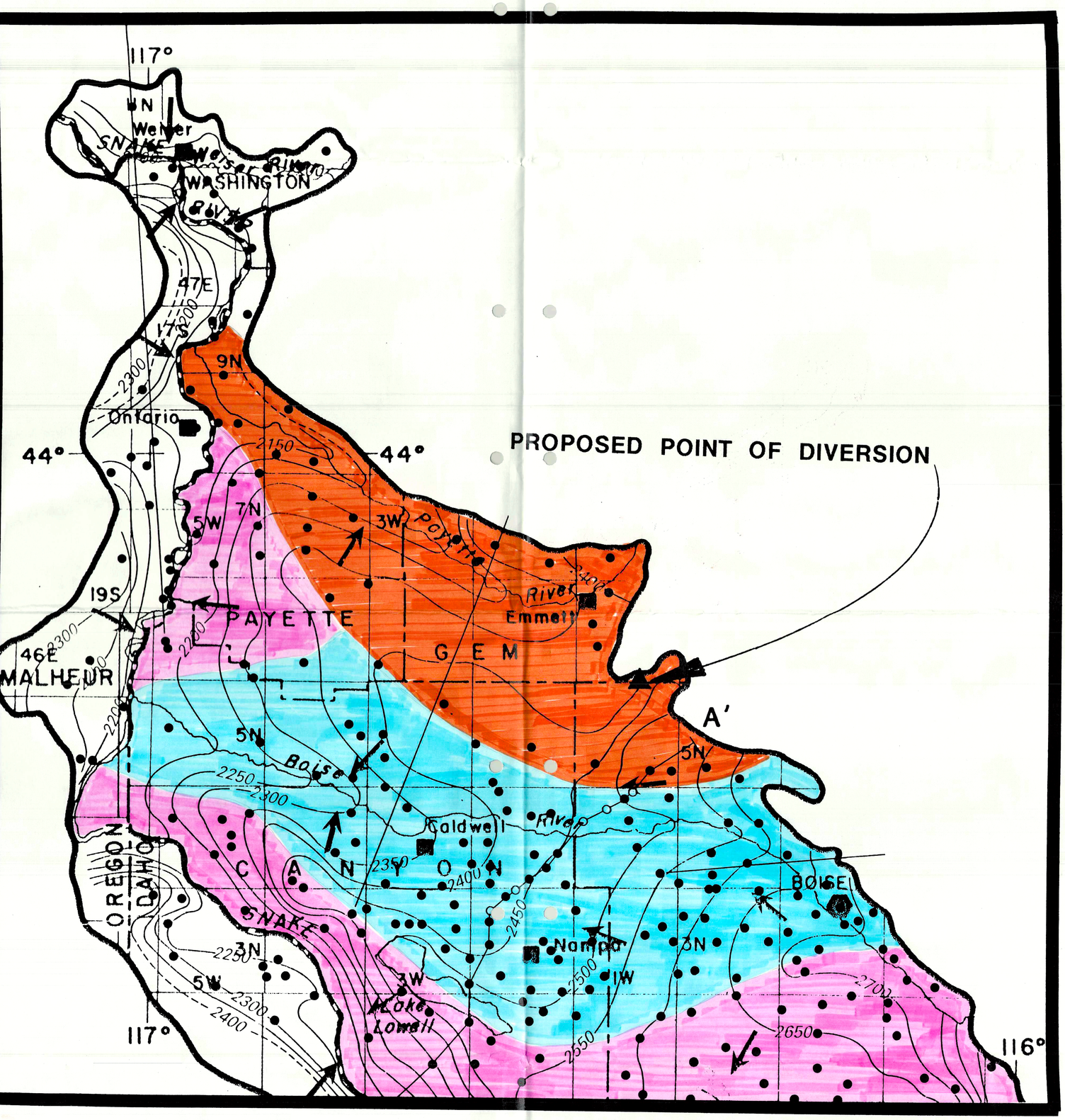
CONFIGURATION OF THE WATER TABLE AND DEPTH TO WATER, SPRING 1980, WATER-LEVEL FLUCTUATIONS, AND WATER MOVEMENT IN THE SNAKE RIVER PLAIN REGIONAL AQUIFER SYSTEM, IDAHO AND EASTERN OREGON

By
G.F. Lindholm, S.P. Garabedian, G.D. Newton, and R.L. Whitehead

1988

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA.—1988—11180220

EXHIBIT
APPLICANTS'
Admitted by CGS 12/20/95
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JUN 2 9 1995
for sale by U.S. Geological Survey, Map Distribution
Box 25286, Federal Center, Denver, CO 80225



WATER-TABLE CONTOUR MAP FOR THE WESTERN SNAKE RIVER PLAIN

(source: USGS Hydrologic Investigations Atlas HA-703, 1988)

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JUN 29 1995
Admitted by IDWR
12/20/94
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APPLICANTS'
12

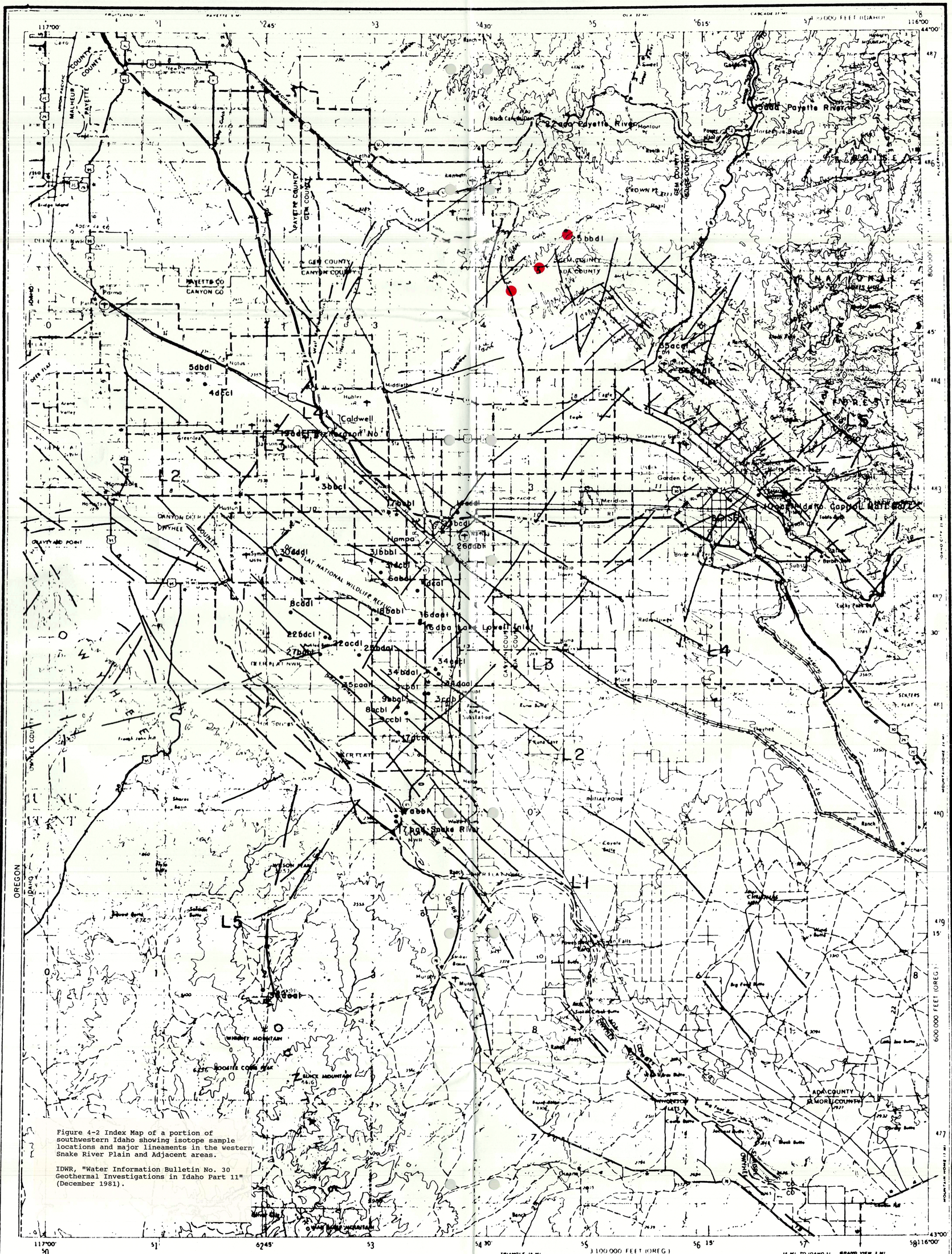


Figure 4-2 Index Map of a portion of southwestern Idaho showing isotope sample locations and major lineaments in the western Snake River Plain and Adjacent areas.

IDWR, "Water Information Bulletin No. 30 Geothermal Investigations in Idaho Part 11" (December 1981).

20 Statute Miles
30 Kilometers
Nautical Miles

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS

TRANSVERSE MERCATOR PROJECTION

BLACK NUMBERED LINES INDICATE THE 10 000 METER UNIVERSAL TRANSVERSE MERCATOR GRID ZONE 11

LOCATION DIAGRAM

WASHINGTON · THE DALLES NL 10-9	NL 11-7	· PENDLETON NL 11-8	· ELK CITY NL 11-9	MONTANA · NL 12-7 DILLON ·
NL 10-12 · BEND	NL 11-10 · CANYON CITY	· BAKER NL 11-11	NL 11-12 · CHALLIS · IDAHO	NL 12-10 · DUBOIS ·
NK 10-3 · CRESCENT	OREGON · BURNS NK 11-1	NK 11-2	· BOISE · HAILEY	NK 12-1 · IDAHO FALLS
NK 10-6 · KLAMATH FALLS	JORDAN VALLEY · NK 11-4 · ADEL	NK 11-5	TWIN FALLS · NK 11-6	POCATELLO · NK 12-4
CALIFORNIA · ALTURAS · NK 10-9	· SYA NK 11-7	· MCDERMITT NK 11-8 NEVADA	NK 11-9 · WELLS	UTAH · BRIGHAM CITY NK 12-7

IDENTIFIED
Applicants' exhibit number placed for purposes of identification only
JUN 29 1995
Admitted by CGS 12/20/94
EXHIBIT
APPLICANTS'
7

HOLLAND & HART
ATTORNEYS AT LAW

DENVER
DENVER TECH CENTER
COLORADO SPRINGS
ASPEN
BILLINGS
BOISE
CHEYENNE
JACKSON
SALT LAKE CITY
WASHINGTON, D.C.

SUITE 1400
WEST ONE PLAZA
BOISE, IDAHO 83702-7714
MAILING ADDRESS
P.O. BOX 2527
BOISE, IDAHO 83701-2527

TELEPHONE (208) 342-5000
FACSIMILE (208) 343-8869

Dana L. Hofstetter

December 19, 1994

Ada County Commissioners
Attn: Dave Abo
Development Services
650 Main Street
Boise, ID 83702

Re: Water Right Applications for Permit Nos. 63-11995 and 63-11996

Gentlemen:

Idaho Department of Water Resources ("IDWR") regulations provide for water right applicants to seek comment from the governing county concerning the local public interest related to the proposed project. IDAPA 37.03.08040.05.g. Mark and Joy Lynn have made application to divert water under the above-referenced application numbers and request your comments concerning the local public interest related to the effect and operation of the proposed project.

Mark and Joy Lynn own approximately 2,200 acres in the foothills between Emmett and Eagle near Highway 16. Their property straddles the county line, with a portion of the property located in Ada County and a portion located in Gem County. They have made two applications to irrigate 387 acres from two new wells. One well is located in Gem County; one well is located in Ada County. Copies of IDWR's published notices concerning the applications are enclosed and provide information about the locations of the lands and wells. A portion of application no. 63-11995 covers Gem County lands.

As part of its review, IDWR must determine whether the project conflicts with the local public interest. I.C. § 42-203A. IDWR regulations indicate that the following criteria are pertinent in assessing whether the project conflicts with the local public interest:

> i. The effect the project will have on the economy of the local area affected by the proposed use as determined by the employment opportunities, both short and long term,

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APPLICANTS'
14

revenue changes to various sectors of the economy, short and long term, and the stability of revenue and employment gains;

ii. The effect the project will have on recreation, fish and wildlife resources in the local area affected by the proposed use; and

iii. Compliance with applicable air, water and hazardous substance standards, and compliance with planning and zoning ordinances of local or state government jurisdictions.

IDAPA 37.03.08045.01.e.

Please send any comments you have regarding this project's effect on the local public interest in Ada County to: Dave Tuthill, Idaho Department of Water Resources, 2735 Airport Way, Boise, Idaho 83705. These applications have been pending a while and a decision may occur shortly. Therefore, please notify Mr. Tuthill if you believe you will submit comments after January 10, 1995.

I would appreciate receiving a copy of any comments as well. Please call me if you have any questions concerning this project.

Sincerely,

HOLLAND & HART

Dana L. Hofstetter

DLH:cd
Enclosures
cc: David Tuthill
47563/34168.3002

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JUN 29 1995

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SEP 23 1994
WATER RESOURCES
WESTERN REGION

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO,
ss.
COUNTY OF GEM,

Ginger Johnson being first duly sworn, on her oath deposes and says that she is the clerk of the Messenger Index, a legal weekly newspaper published at Emmett, in Gem County, Idaho; that said newspaper is in general circulation in said county and has been published uninterruptedly and continuously for more than 78 weeks prior to the first publication of the annexed document; and that the document notice, process, or advertisement hereunto annexed was published in the regular edition of Messenger Index for two consecutive weekly issues thereof, beginning with the issue of 9-14, 1994, and ending with the issue of 9-21, 1994

Ginger Johnson

Subscribed and sworn to me this 21st day of September 1994

Notary Public
Residing at Emmett, Idaho

My Commission Expires MY COMMISSION EXPIRES JUNE 21st, 1997

NOTICE OF APPLICATION FOR WATER RIGHT

The Following application(s) have been filed to appropriate the public waters of the State of Idaho:

63-11995
LYNN, D MARK
LYNN, JOY
4831 SKYLINE DR
EAGLE, ID 83616
Source: GROUNDWATER
Diversion Pt: SESE Sec 34 T 06N R 01W In GEM County
Use: IRRIGATION (2.000 CFS)
Total Diversion: (2.000 CFS)
Date Filed: 2/25/1993
In: ADA County
T05N R01W S02 NWNW SWNW S03 NENE NWNE SWNE SENE
In: GEM County NENW T06N R01W S34 NESE SWSE SESE S35 SWSW
(95.0 ACRES TOTAL)
Application appears to be exempted from drought moratorium due to ground water that is most likely tributary to Payette River Basin instead of Boise River Basin. Permits will be subject to all prior water rights. Protests may be submitted based on the criteria of Sec. 42-203A, Idaho Code. Any protest against the approval of this application must be filed with the Director, Department of Water Resources, Western Region, 2735 Airport Way, Boise, Idaho 83705 together with a protest fee of $25.00 on or before OCTOBER 3, 1994. The protestant must also send a copy of the protest to the applicant.

R. KEITH HIGGINSON,
Director

Pub.: 9-14, 21, 1994
Legal Notice No. 2008
Published in the Messenger Index

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JUN 29 1995

Western Region
2735 Airport Way
Boise, Idaho 83705

= Affidavits	Legal
1	

LEGAL NOTICE

NOTICE OF APPLICATION FOR WATER RIGHT

The Following application(s) have been filed to appropriate the public waters of the State of Idaho:

63-11996 Vat

LYNN, D MARK
LYNN, JOY
4831 SKYLINE DR
EAGLE, ID 83616

Source: GROUNDWATER
Diversion Pt: LOT 2 (NWNE) Sec 3 T05N R01W in ADA County.
Use: IRRIGATION (2.000 CFS)
Total Diversion: (2.000 CFS)
Date Filed: 2/25/1993
In: ADA County
T05N R01W S03 SWNW NWSW
S04 SWNE SENE NESW NESE
NWSE SWSE SESE
183.0 ACRES TOTAL

Application appears to be exempted from drought moratorium due to ground water that is most likely tributary to Payette River Basin instead of Boise River Basin.

63-12141

SKYLINE CORP
PO BOX 4576
BOISE, ID 83711

Source: GROUNDWATER
Diversion Pt: NENESW Sec 13 T03N R01W in ADA County.
Use: IRRIGATION (1.700 CFS)
Total Diversion: (1.700 CFS)
Date Filed: 8/18/1994
In: ADA County
T03N R01W S13 NENW NWNW SWNW SENW
NESW
85.0 ACRES TOTAL

63-12142

SPURWING LIMITED PARTNERSHIP
3278 SHAMROCK LN
BOISE, ID 83704

Source: GROUNDWATER
Diversion Pt: SENESW Sec 23 T04N R01W in ADA County.
SWNWSW Sec 23 T04N R01W in ADA County.
SESW Sec 23 T04N R01W in ADA County.
Use: IRRIGATION (1.700 CFS)
DOMESTIC (1.520 CFS)
FIRE PROTECTION (3.350 CFS)
Total Diversion: (4.870 CFS)
Date Filed: 8/2/1994
In: ADA County
T04N R01W S23 SWNW SENW NESW NWSW
SWSW SESW
35.0 ACRES TOTAL

63-12143

BOISE WATER CORPORATION
PO BOX 7488
BOISE, ID 83707

Source: GROUNDWATER
Diversion Pt: NWSE Sec 24 T04N R01E in ADA County.
Use: MUNICIPAL (3.000 CFS)
Total Diversion: (3.000 CFS)
Date Filed: 9/2/1994
The domestic use authorized under this permit shall not exceed 13,000 gallons per day per dwelling in accordance with Section 42-111, Idaho Code, and is thus exempted from Snake River Moratorium.
Municipal use is within the city limits of Boise.

Permits will be subject to all prior water rights. Protests may be submitted based on the criteria of Sec. 42-203A, Idaho Code. Any protest against the approval of this application must be filed with the Director, Dept. of Water Resources, Western Region, 2735 Airport Way, Boise, Idaho 83705 together with a protest fee of $25.00 on or before OCTOBER 3, 1994. The protestant must also send a copy of the protest to the applicant.

R. KEITH HIGGINSON, Director

Pub. Sept. 15, 22, 1994 8474

LINDA PORTER

sworn, deposes and says: That she is the Principal Clerk o Idaho Statesman, a daily newspaper printed and publishec Ada County, State of Idaho, and having a general circulatic and which said newspaper has been continuously and uni published in said County during a period of twelve consec months prior to the first publication of the notice, a copy o attached hereto; that said notice was published in The Idar Statesman in conformity with Section 60-108, Idaho Code amended, for TWO

☒ consecutive weekly ☐ consecutive daily ☐ single ☐

insertion(s) beginning with the issue of SEPTEMBER 15

and ending with the issue of SEPTEMBER 22

Linda Porter

STATE OF IDAHO)
ss.
COUNTY OF ADA)

On this 22nd day of SEPTEMBER in t 1994 before me, a Notary Public, personall LINDA PORTER known or i me to be the person whose name subscribed to the within and being by me first duly sworn, declared that the statem are true, and acknowledged to me that she executed the s

Notary Public for Idaho
Residing at Boise, Idaho
My commission expires: 11-27

APPROVED
JUN 29 1995

HOLLAND & HART
ATTORNEYS AT LAW

DENVER
DENVER TECH CENTER
COLORADO SPRINGS
ASPEN
BILLINGS
BOISE
CHEYENNE
JACKSON
SALT LAKE CITY
WASHINGTON, D.C.

SUITE 1400
WEST ONE PLAZA
BOISE, IDAHO 83702-7714
MAILING ADDRESS
P.O. BOX 2527
BOISE, IDAHO 83701-2527

TELEPHONE (208) 342-5000
FACSIMILE (208) 343-8869

Dana L. Hofstetter

December 19, 1994

Gem County Commissioners
Attn: Rick Welch
Chairman of the Commissioners
415 East Main
Emmett, ID 83617

Re: Water Right Application for Permit Nos. 63-11995 and 63-11996

Dear Commissioners:

Idaho Department of Water Resources ("IDWR") regulations provide for water right applicants to seek comment from the governing county concerning the local public interest related to the proposed project. IDAPA 37.03.08040.05.g. Mark and Joy Lynn have made application to divert water under the above-referenced application numbers and request your comments concerning the local public interest related to the effect and operation of the proposed project.

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As part of its review, IDWR must determine whether the project conflicts with the local public interest. I.C. § 42-203A. IDWR regulations indicate that the following criteria are pertinent in assessing whether the project conflicts with the local public interest:

> i. The effect the project will have on the economy of the local area affected by the proposed use as determined by the employment opportunities, both short and long term,

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12/20/1994
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revenue changes to various sectors of the economy, short and long term, and the stability of revenue and employment gains;

ii. The effect the project will have on recreation, fish and wildlife resources in the local area affected by the proposed use; and

iii. Compliance with applicable air, water and hazardous substance standards, and compliance with planning and zoning ordinances of local or state government jurisdictions.

IDAPA 37.03.08045.01.e.

Please send any comments you have regarding this project's effect on the local public interest in Gem County to: Dave Tuthill, Idaho Department of Water Resources, 2735 Airport Way, Boise, Idaho 83705. These applications have been pending a while and a decision may occur shortly. Therefore, please notify Mr. Tuthill if you believe you will submit comments after January 10, 1995.

I would appreciate receiving a copy of any comments as well. Please call me if you have any questions concerning this project.

Sincerely,

HOLLAND & HART

Dana L. Hofstetter

DLH:cd
Enclosures
cc: David Tuthill
47564/34168.3002

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DEC 9 1994

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SEP 23 1994
WATER RESOURCES
WESTERN REGION

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO,
ss.
COUNTY OF GEM,

Ginger Johnson being first duly sworn, on her oath deposes and says that she is the clerk of the Messenger Index, a legal weekly newspaper published at Emmett, in Gem County, Idaho; that said newspaper is in general circulation in said county and has been published uninterruptedly and continuously for more than 78 weeks prior to the first publication of the annexed document; and that the document notice, process, or advertisement hereunto annexed was published in the regular edition of Messenger Index for two consecutive weekly issues thereof, beginning with the issue of 9-14, 1994, and ending with the issue of 9-21, 1994

Ginger Johnson

Subscribed and sworn to me this 21st day of September 1994

Notary Public
Residing at Emmett, Idaho

My Commission Expires MY COMMISSION EXPIRES JUNE 21st, 1997

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LYNN, JOY
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EAGLE, ID 83616
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Use: IRRIGATION (2.000 CFS)
Total Diversion: (2.000 CFS)
Date Filed: 2/25/1993
In: ADA County
T05N R01W S02 NWNW SWNW S03 NENE NWNE SWNE SENE
In: GEM County NENW T06N R01W S34 NESE SWSE SESE S35 SWSW
(85.0 ACRES TOTAL)
Application appears to be exempted from drought moratorium due to ground water that is most likely tributary to Payette River Basin instead of Boise River Basin. Permits will be subject to all prior water rights. Protests may be submitted based on the criteria of Sec. 42-203A, Idaho Code. Any protest against the approval of this application must be filed with the Director, Department of Water Resources, Western Region, 2735 Airport Way, Boise, Idaho 83705 together with a protest fee of $25.00 on or before OCTOBER 3, 1994. The protestant must also send a copy of the protest to the applicant.

R. KEITH HIGGINSON,
Director

Pub.: 9-14, 21, 1994
Legal Notice No. 2008
Published in the Messenger Index

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JUN 29 1995

Western Region
2735 Airport Way
Boise, Idaho 83705

= Affidavits	Legal
1	

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T05N R01W S03	SWNW	NWSW			
S04	SWNE	SENE	NESW	NESE	
	NWSE	SWSE	SESE		

183.0 ACRES TOTAL

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PO BOX 4576
BOISE, ID 83711

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Use: IRRIGATION (1.700 CFS)
Total Diversion: (1.700 CFS)
Date Filed: 8/18/1994
In: ADA County

T03N R01W S13	NENW	NWNW	SWNW	SENW
	NESW			

85.0 ACRES TOTAL

63-12142

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3278 SHAMROCK LN
BOISE, ID 83704

Source: GROUNDWATER
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SWNWSW Sec 23 T04N R01W in ADA County.
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Use: IRRIGATION (1.700 CFS)
DOMESTIC (1.520 CFS)
FIRE PROTECTION (3.350 CFS)
Total Diversion: (4.870 CFS)
Date Filed: 8/2/1994
In: ADA County

T04N R01W S23	SWNW	SENW	NESW	NWSW
	SWSW	SESW		

35.0 ACRES TOTAL

63-12143

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PO BOX 7488
BOISE, ID 83707

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R. KEITH HIGGINSON, Director

Pub. Sept. 15, 22, 1994 8474

LINDA PORTER

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☒ consecutive weekly ☐ consecutive daily ☐ single ☐

insertion(s) beginning with the issue of SEPTEMBER 15

and ending with the issue of SEPTEMBER 22

Linda Porter

STATE OF IDAHO)
ss.
COUNTY OF ADA)

On this 22nd day of SEPTEMBER in t 1994 before me, a Notary Public, personall LINDA PORTER known or i me to be the person whose name subscribed to the within and being by me first duly sworn, declared that the statem are true, and acknowledged to me that she executed the s

Notary Public for Idaho
Residing at Boise, Idaho
My commission expires: 11-27-

MICROFILMED
JUN 29 1995

08-02-94 lgs

HEARING PROCEDURE - APP FOR PERMIT
(For Section 42-203A, I.C. considerations)

Preliminary Matters

- Send roster of attendance. Review roster to determine if all parties are present. Make sure all parties know the other parties, especially attorneys.

- Introduction

  - State name - hearing officer in this matter.
  - Introduce other dept staff attending

- Acknowledge that a prior conference was conducted but apparently did not resolve the matter.

- I would like to have a brief conference before the hearing is started to:

  a) Discuss procedure
  b) Identify issues and
  c) Answer any preliminary questions

- Define and limit the issues where possible. - 42-203A, I.C.

  Potential issues are:

  1. That the proposed appropriation will reduce the quantity of water under existing rights.

  2. That the water supply is insufficient for the purpose intended.

  3. That the application is not made in good faith but for delay or speculative purposes.

  4. That the applicant does not have sufficient financial resources with which to complete the project.

  5. That the application will conflict with the local public interest.

  6. That the application is contrary to conservation of water resources within the state of Idaho.

- General Procedure

  a) Make a tape recording of testimony under oath.

  b) Exhibits may be introduced and offered for admission.

  c) The dept will issue a recommended order to which any party may file exceptions and briefs in support of the

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exceptions.

d) The department will issue a final order which may be appealed to district court by any party.

- Specific Procedure

a) The applicant has the burden of proof and will proceed first.

b) The protestant is next to proceed.

c) Direct testimony must be under oath and may be cross examined by opposing parties. Then redirect and re-cross will be allowed.

- Determine parties who will testify and on whose behalf.

- If a group, determine the spokesman.

- I will **officially notice** certain information such as the application, past decisions of the department, water right records, reports, water measurements and flow records and well driller reports.

- This notice will eliminate the necessity to have such information introduced as exhibits and hopefully will provide for a more efficient hearing.

- Ask if there will be exhibits and how many. Premark and exchange exhibits.

- Stipulation to admission of exhibits?

- Ask that counsel (the parties) remain seated when questioning witnesses or conducting cross examination unless it is necessary to approach a witness in connection with an exhibit. Reason - microphones may not pick up testimony.

- Determine any other preliminary matters to be addressed before the start of the hearing.

- Typical motions involve intervention, delay hearing, dismiss protests or the application. Response is that the motion is taken under consideration if it can't be ruled upon.

HEARING (With tape recorder on)

- Good morning (afternoon).

- "I am _____ from the state office of the Department of Water Resources in Boise. I will be the hearing officer in this matter on behalf of the Director of the department, R. Keith Higginson.

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- Other department staff present is/are _____.

- "The purpose of this hearing is to receive evidence and testimony in connection with protested Application for Permit No. S 63-11995 & 63-11996 which was submitted in the name of D. Zuarke or Joy Lynn."

- "This hearing will be conducted in compliance with applicable provisions of:

  - Chapters 2 and 17, Title 42, Idaho Code.
  - Chapter 52, Title 67, Idaho Code.
  - Water Appropriation Rules 40 and 45 (old rule nos. 4. and 5.).
  - The Rules of Procedure.

- Date, time and place.

  Date - Dec 20, 1994

  Time - 10:30 a

  Place - IDWR Conf Rm. Board

- Ask parties to make their appearance starting with the applicant. i.e. name and whom they represent.

  If not represented ask for name, address and interest in the matter.

- "Issues as determined in a conference immediately preceeding this hearing include the following:

  1. .....

  2. .....

- Seek concurrence from the protestants of the issues.

- Read in all stipulations and record counsel's acknowledgment thereof.

APPLICANT

- Turn matter over to applicant's counsel, if represented, otherwise, swear in the applicant.

  "Do you solemnly affirm that the testimony you are about to present in this matter is the truth, the whole truth and nothing but the truth?"

  "Thank you. You may be seated. State your name and address for the record.

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- Receive direct testimony.

- Exhibit sequence:

1. MARK exhibits as received and return.
2. IDENTIFY or EXPLAIN the exhibit.
3. OFFER exhibit.
4. EXAMINATION of exhibit by other parties.
5. ADMIT or REJECT an exhibit on the record.
6. TESTIFY from exhibit, if admitted.

Notes:

(Admitted exhibits should be initialed and dated).

(Exhibits which are not admitted must be retained as part of the record).

- Allow cross examination.

- Go thru all of applicant's witnesses in the same manner. i.e. Swear in, receive direct testimony, allow cross-examination, re-direct and re-cross.

PROTESTANT

- Swear in, receive direct testimony, allow x-examination.

- Go thru all of protestant's witnesses in the same manner.

- I believe this concludes all direct presentation.

(If rebuttal testimony is requested, it will be at this point).

- IDWR will take **official notice** of:

1. The application for permit file including the application, the advertisement, the protest and correspondence related to the application and the other information typically included in the water right file which is and has been available for review by any of the parties.

2. Applicable water right records in department files.

3. Applicable water district records, if any.

4. Past decisions of the department as the decisions may relate to the matter at hand.

5. Reports, water measurements and flow records in dept files which are and have been available for review throughout the pendancy of this matter.

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6. Well Driller Reports.

- Is there anything further before I conclude this hearing and close the record?

  Options:
  - Closing arguments or summary?
  - Submittal of briefs summarizing the law or respective positions?
  - Allow the record to be sufficient?

- In closing then,

  - "The department will issue a recommended order in the matter which we will mail to the parties. This hearing is now concluded and the record is closed."

  or

  - "This hearing is now concluded but the record will remain open for _____ days for the submittal of _____. Please note that any information submitted for the record after this hearing must be provided to all parties to this matter.

  - Time schedule for the exchange of documents and responses.

    - 21 days to file exceptions or briefs in support of exceptions (Procedure Rule 720.02.b.)

    - 21 days to file response briefs (Procedure Rule 720.02.c.)

  - The department will issue a final order within 56 days of receipt of the written briefs or oral argument.

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ROSTER OF ATTENDANCE
Administrative Hearing

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES



Applicant: D. Mark &/or Joy Lynn

Water Right Nos. : 63-11995 & 63-11996

Location: IDWR State Office - 1301 N. Orchard, Boise ID.
2nd Floor Conference Room

Date and Time: Tuesday, December 20, 1994 - 10:30 a.m.

Hearing Officer: L. Glen Saxton

●● ***PLEASE PRINT*** ●●

NAME:	ADDRESS:
Melvin E. Gabby	Willowbrook water Asso. 8831 Hawley Pl. Eagle Id 83616
Terry Scanlan	600 East River Park Lane, Boise 06
MARK Lynn	4050 Chaparral EAGLE Id
[illegible]	8968 Duchess Eagle ID
Ronald Jensen	8661 W Beacon St Star
Jim Beary	Canal St Eagle Id
Dana Hofstetter	Holland & Hart P.O. Box 2527, Boise 83701
Newal Squyres	Holland & Hart P.O. Box 2527, Boise 83701

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MEMORANDUM

To: L. Glen Saxton

From: R. Keith Higginson

RE: APPOINTMENT AS HEARING OFFICER - PROCEDURE RULE 410

Date: December 16, 1994

I, R. Keith Higginson, Director of the Idaho Department of Water Resources (department) hereby appoint **L. GLEN SAXTON** in compliance with department Procedure Rule 410 to act as Hearing Officer on behalf of the department in the following contested matter:

In the Matter of Application for Permit Nos. 63-11995 and 63-11996 in the name of D. Mark Lynn or Joy Lynn

The department has scheduled a hearing in the matter as follows:

Date: December 20, 1994

Time: 10:30 a.m.

Place: IDWR Conference Room
1301 N. Orchard St.
Boise, ID

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