

TO: Water Rights Section 25 June 2001
FROM: Groundwater/Hydrology Section Gerald H. Grondin
SUBJECT: Application G- 15505 Reviewer's Name

GROUNDWATER/SURFACE WATER CONSIDERATIONS

1. PER THE _____ Basin rules, one or more of the proposed POA's is/is not within _____ feet/mile of a surface water source (_____) and taps a groundwater source hydraulically connected to the surface water.
(not applicable)
2. BASED UPON OAR 690-09 currently in effect, I have determined that the proposed groundwater use
a. ___ will, or _____ have the potential for substantial interference with the nearest
b. ___ will not _____ surface water source, namely _____; or
c. will if properly conditioned, adequately protect the surface water from interference:
i. The permit should contain condition #(s) 7B;
ii. The permit should contain special condition(s) as indicated in "Remarks" below;
iii. ___ The permit should be conditioned as indicated in item 4 below; or
d. ___ will, with well reconstruction, adequately protect the surface from substantial interference.

GROUNDWATER AVAILABILITY CONSIDERATIONS

3. BASED UPON available data, I have determined that groundwater for the proposed use
a. will, or _____ likely be available in the amounts requested without injury to prior rights
b. ___ will not _____ and/or within the capacity of the resource; or
c. will if properly conditioned, avoid injury to existing rights or to the groundwater resource:
i. The permit should contain condition #(s) 7B;
ii. The permit should contain special condition(s) as indicated in "Remarks" below;
iii. ___ The permit should be conditioned as indicated in item 4 below; or
4. a. ___ THE PERMIT should allow groundwater production from no deeper than _____ ft. below land surface;
b. ___ The permit should allow groundwater production from no shallower than _____ ft. below land surface;
c. ___ The permit should allow groundwater production only from the _____ groundwater reservoir between approximately _____ ft. and _____ ft. below land surface;
d. ___ Well reconstruction is necessary to accomplish one or more of the above conditions.
e. ___ One or more POA's commingle 2 or more sources of water. The applicant must select one source of water per POA and specify the proportion of water to be produced from each source.
(See remarks below)

REMARKS: • Ground Water interference condition 7B
• Bonanza area specific water level measurement and reporting condition (see attachment)
• Bonanza area specific conditions (see attachment)
• Construct the new well to tap basalt groundwater. This can include the black sandstone on top of the basalt. Construct the well so that the casing and seal extends into the basalt or to the black sandstone on top of the basalt

(Well Construction Considerations on Reverse Side)

- Note: 1) This review is valid if and only if the permit is conditioned as recommended.
2) Otherwise: (a) ask the permit applicant to request putting the permit on administrative hold until decision made regarding the 36 ADR 5-year Bonanza Gw permits, or (b) OWRD denies the permit if the permit is not conditioned as recommended and the permit applicant does not request an administrative hold according to option (a)

G-15505

G-15505

WELL CONSTRUCTION (If more than one well doesn't meet standards, attach an additional sheet.)

5. THE WELL which is the point of appropriation for this application does not meet current well construction standards based upon:
- a. ___ review of the well log;
 - b. ___ field inspection by _____;
 - c. ___ report of CWRE _____;
 - d. ___ other: (specify) _____
6. THE WELL construction deficiency:
- a. ___ constitutes a health threat under Division 200 rules;
 - b. ___ commingles water from more than one groundwater reservoir;
 - c. ___ permits the loss of artesian head;
 - d. ___ permits the de-watering of one or more groundwater reservoirs;
 - e. ___ other: (specify) _____
7. THE WELL construction deficiency is described as follows: _____
8. THE WELL a. ___ was, or constructed according to the standards; in effect at the time of
b. ___ was not original construction or most recent modification.
c. ___ I don't know if it met standards at the time of construction.
(see "remarks" under item 4)

RECOMMENDATION:

- A. ___ I recommend including the following condition in the permit:
"No water may be appropriated under terms of this permit until the well(s) has been repaired to conform to current well construction standards and proof of such repair is filed with the Enforcement Section of the Water Resources Department."
- B. ___ I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Enforcement Section of the Water Resources Department.
- C. ___ REFER this review to Enforcement Section for concurrence.

THIS SECTION TO BE COMPLETED BY ENFORCEMENT PERSONNEL

I concur in G/H's recommendation A or B above relating to conditioning or withholding the permit
_____, 199____
(Signature)

I do not concur in G/H's recommendation A or B above relating to conditioning or withholding the permit for the following reasons: _____

_____, 199____
(Signature)

Oregon Water Resources Department Memorandum

Date: 25 June 2001
To: Water Rights Section
From: Jerry Grondin, OWRD Hydrogeologist
Subject: Ground Water Permit Technical Review
 Application Number: G-15505
 Applicant: Thys DeHoop (Holland's Dairy, Inc.)

Mr. Thys DeHoop of Holland's Dairy, Inc. has applied for a ground water permit to pump ground water as supplemental water to irrigate 310.2 acres in Poe Valley. The proposed well location is about 4,800 feet from the Lost River and about 4,850 feet from the closest un-named spring.

Proposed Water Use:

Proposed Well: KLAM (not drilled)
 Well Location: T39S/R11.5E-section 29 cda
 (1,200 feet north and 3,000 feet west of SE corner of section 29)
 Proposed Pumping Rate: 3.88 cfs = 7.69 ac-ft/day = 1,740 gpm
 Pumping Period: 1 March to 31 October = 244 days
 Total Volume Allowed: 930.60 ac-ft
 Pumping Rate Allowed: 3.88 cfs = 7.69 ac-ft/day = 1,740.34 gpm
 Pro-Rated Pumping Rate: 1.92 cfs = 3.81 ac-ft/day = 863.04 gpm

Analysis: (using neighboring wells)

Wells	KLAM 13500	T39 S/R11.5E-section 29 cb
	KLAM 16807	T39 S/R11.5E-section 19 cbd
	KLAM 13498	T39 S/R11.5E-section 28 ddd
	KLAM 13478	T39 S/R11.5E-section 20 bdb
	KLAM 13491	T39 S/R11.5E-section 22 dbd

Well KLAM	Well Depth	First Basalt Fn	Aquifer	Static WL (blsd)
13500	292 feet	263 feet	Basalt	64 feet
16807	54 feet	7 feet	Basalt	12 feet
13498	460 feet	>460 feet	"chalk"	10 feet
13478	156 feet	>156 feet	sed	39 feet
13491	129 feet	119 feet	Basalt	100 feet

Distance to Lost River: 4,800 feet

Distance to closest spring: 4,850 feet (based upon USGS 7.5 minute quadrangle map)

Aquifer near Lost River: The basalt aquifer is connected to river through lower permeability sediments and possibly springs.

Seepage Run Data:	Flow at Harpold Dam (start) =	97.630 cfs
	Flow at "Kirsch Bridge" (end) =	107.510 cfs
	unaccounted gain/loss =	3.784 cfs (3.5% of end)
	Flow at Steveson Park =	136.570 cfs
	unaccounted gain/loss =	19.685 cfs (14.4% of end)

1999 Aquifer Test: OWRD conducted a test of the basalt aquifer in north Poe Valley (24 hour pumping, 24-hour recovery) during late 1999. Basalt ground water levels at a well located about 0.75 mile east of the pumping well responded immediately to pumping and pumping fluctuations. No apparent water level response was detected at a well located about 1.25 mile south of the pumping well. This may indicate the aquifer is compartmentalized.

Drawdown calculations were conducted. The calculations used transmissivity and storage coefficient derived from a 1999 OWRD aquifer test. The calculations assumed a pro-rated pumping rate of 863.04 gpm. The calculated drawdowns at the Lost River location closest to the well were:

0.48 feet drawdown at the Lost River for 30 days constant pumping

0.62 feet drawdown at the Lost River for 244 days constant pumping

Basin Rules Consideration:

The Klamath River Compact ORS 542.610 to 542.630 is the basin rule applied to the entire Upper Klamath Basin. The compact does not address ground water. ORS 542.620, Article II, Part G states:

"Water" or "waters" shall mean waters appearing on the land surface of the ground in streams, lakes or otherwise, regardless of whether such waters at any time were or will become ground water, but shall not include water extracted from underground sources until after such water is used and becomes surface return flow or waste water.

The compact does address different water uses. It states in Sub-division B, Section 1:

"In granting permits to appropriate water; under this subdivision B, as among conflicting applications to appropriate when there is insufficient water to satisfy all such applications, each state shall give preference to applications for a higher use over applications for a lower use in accordance with the following order of uses:

- (a) Domestic use,
- (b) Irrigation use,
- (c) Recreational use, including use for fish and wildlife,
- (d) Industrial use,
- (e) Generation of hydroelectric power,
- (f) Such other uses as are recognized under the laws of the state involved

These uses are referred to in this compact as uses (a), (b), (c), (d), (e) and (f) respectively. Except as to the superiority of these rights to the use of water for use (a) or (b) over the rights to the use of water for use (c), (d), (e) or (f), as governed by subdivision C of this article, upon a permit being granted and a right becoming vested and perfected by use, priority in right to the use of water shall be governed by priority in time within the entire Upper Klamath River Basin regardless of state boundaries...”

Sub-division C states:

“1. All rights, acquired by appropriation after the effective date of this compact, to use waters originating within the Upper Klamath River Basin for use (a) or (b) in the Upper Klamath River Basin in either state shall be superior to any rights, acquired after the effective date of this compact, to use such waters (i) for any purpose outside the Klamath River Basin by diversion in California or (ii) for use (c), (d), (e) or (f) anywhere in the Klamath River Basin. Such superior rights shall exist regardless of their priority in time and may be exercised with respect to inferior rights without payment or compensation. But such superior rights to use water for use (b) in California shall be limited to the quantity of water necessary to irrigate 100,000 acres of land, and in Oregon shall be limited to the quantity of water necessary to irrigate 200,000 acres of land.

2. The provisions of paragraph 1 of this subdivision C shall not prohibit the acquisition and exercise after the effective date of this compact of rights to store waters originating within the Upper Klamath River Basin and to make later use of such stored water for any purpose, as long as the storing of waters for such later use, while being effected, does not interfere with the direct diversion or storage of such waters for use (a) or (b) in the Upper Klamath River Basin.”

OAR 690-09 Consideration:

Current review of data indicates no potential for substantial interference with the nearest surface water source as long as the permit is properly conditioned.

Ground water Availability Consideration:

Proposed ground water use is likely to be available without injury to prior rights and within the resource’s capacity as long as the permit is properly conditioned.

Well Construction Consideration:

Construct the new well to tap basalt ground water. This can include the black sandstone on top of the basalt. Construct the well so that the casing and seal extends into the basalt or to the black sandstone on top of the basalt.

Permit Condition Recommendation:

Construct the new well to tap basalt ground water. This can include the black sandstone on top of the basalt. Construct the well so that the casing and seal extends into the basalt or to the black sandstone on top of the basalt.

Ground water interference condition 7B.

Bonanza area specific water level measurement and reporting condition (see page 4 and 5)

Bonanza area specific conditions (see page 4 and 5)

**Conditions found in 36 Bonanza area ground water permits issued in 1996 under
the alternative dispute resolution (ADR) process
(modified to reflect 31 December 2002 as new decision deadline date)**

By December 31, 2002, the use of water under this permit may expire or be extended. A water right certificate shall be issued by December 31, 2002 if the Director finds:

- A. River stage or Bonanza Big Springs flows are not significantly diminished by use of water under this permit as determined by the Oregon Water Resources Department, in consultation with the Bureau of Reclamation and Oregon Department of Fish and Wildlife, using quantifiable groundwater and hydrologic science that stands up to peer review;
- B. Within two years of permit issuance for primary use, the permittee/appropriator has submitted a plan to the Department indicating potential economic sources for an alternative long-term water supply;
- C. Periodic water level reports have been submitted; and
- D. Excessively declining ground water levels have not occurred due to well use and determined by the Oregon Water Resources Department, in consultation with the Bureau of Reclamation and Oregon Department of Fish and Wildlife, using quantifiable groundwater and hydrologic science that stands up to peer review.

...Measurement, recording and reporting conditions:

- A. Before water use may begin under this permit, the permittee shall install a meter or other suitable measuring device as approved by the Director. The permittee shall maintain the meter or measuring device in good working order, shall keep a complete record of the amount of water used each month and shall submit a report which includes the recorded water use measurements to the Department annually by April 15, or more frequently as may be required by the Director. Further, the Director may require the permittee to report general water use information, including place and nature of use of water under this permit.
- B. The permittee shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the water master shall request access upon reasonable notice.

The well shall be...equipped with a usable access point, and may also include an airline and pressure gauge adequate to determine water level elevation in the well at all times.

A static water level measurement shall be made and submitted before any use of water may commence from the well.

The permittee shall obtain a static water level measurement for each well during March and October of each year and report the measurements to the Department...The water user shall report the static water level(s) in the well(s) to the Groundwater/Hydrology Section of the Water Resources Department by April 15 and November 15, respectively, of each year.

If substantial interference with a senior surface or ground water right occurs due to withdrawal of water from well(s) listed on this permit, then use of water from such well(s) shall be discontinued or reduced or the schedule of withdrawal shall be regulated until the Department approves or implements an alternative administrative action to mitigate such interference.

Failure to comply with any of the provisions of the permit may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the permit.

Note:

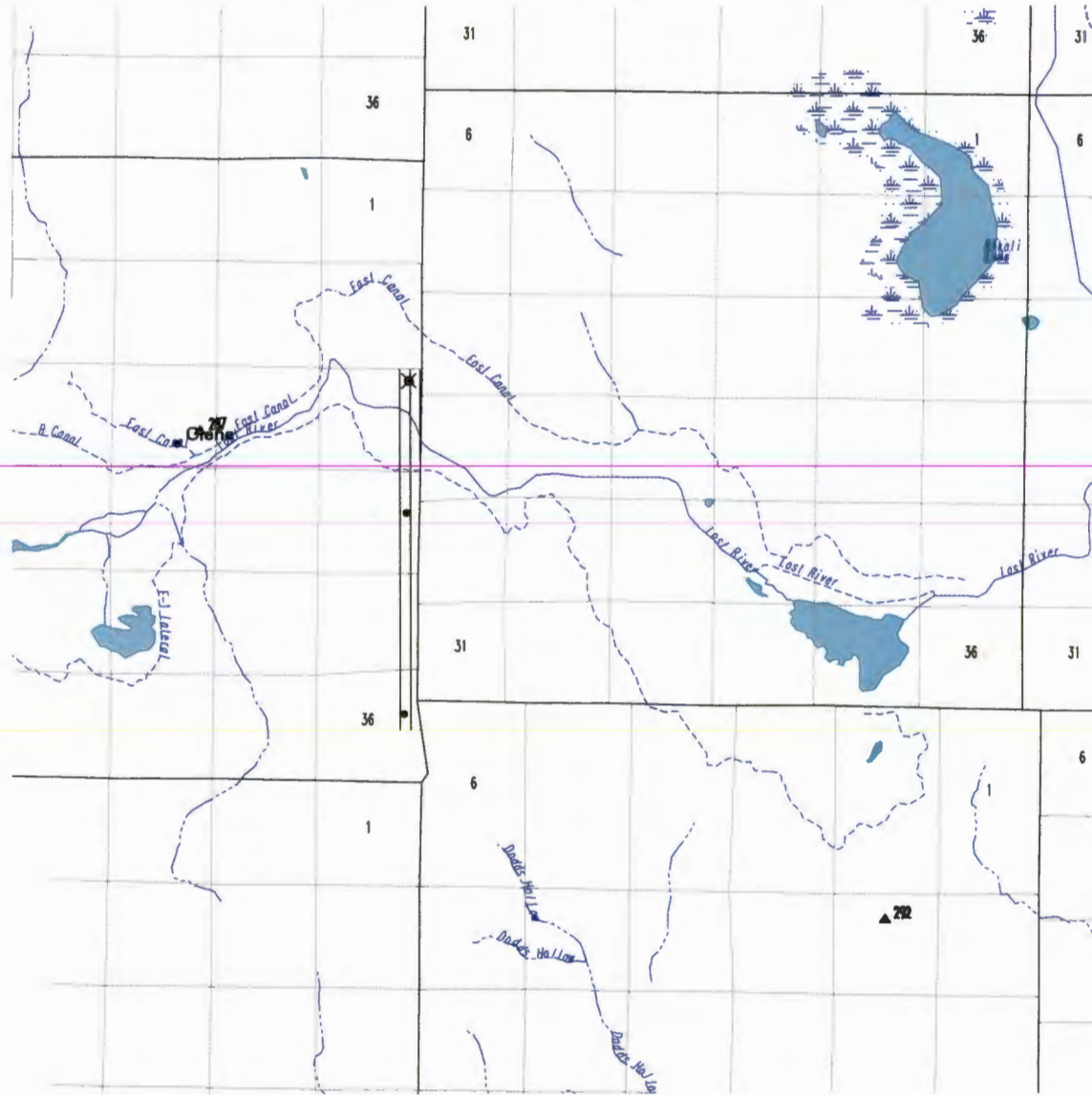
Will recommend to Mr. Taylor High that he monitor the level and flow of his springs to the west.

This review is valid **if and only if** the permit is conditioned as recommended.

Otherwise, recommend (1) asking the permit applicant to request putting the permit on administrative hold until the fate of the 36 ADR 5-year Bonanza ground water permits is determined or (2) OWRD denies the permit if the permit is not conditioned as recommended and the permit applicant does not request putting the permit on administrative hold until the fate of the 36 ADR 5-year Bonanza ground water permits is determined.

Wells in the vicinity of application G 15505

- Application well(s) in this 1/4-1/4 section
- Well(s) identified in this section from OWRD's well log database within 1 mi. radius of application well(s)
- Well(s) identified in this 1/4-1/4 section from OWRD's well log database within 1 mi. radius of application well(s)
- ✕ Permitted well(s) in this 1/4-1/4 section within 1 mi. radius of application well(s)
- Conditioned, permitted well(s) in this 1/4-1/4 section within 5 mi. radius of application well(s)
- ▲ OWRD Observation well and well-id within 5 mi. radius of application well(s)
- Critical GW Area
- - - Regulated GW Area



WELLS WITHIN 1 MILE OF G 15505
 DO 6
 ID 6

Find Water Rights

Basin
Klamath

Township
Township: S
Range: W
Section: SEARCH

Application Number
G SEARCH

Permit Number
G SEARCH

Cert Number
SEARCH

Tools

OWRD Web Mapping (beta)

Last Update

39S/11.5 E - Sec 29

PERMITTED WELLS WITHIN 1 MILE OF APPLICATION G 15505

\$RECNO	APPLICATION	PERMIT	LOC-QQ	USE	RATE	DIV-UNITS
1	G	7645	G 7147	40.00S14.00W13NENE IR	0.0200	C
1	G	9406	G 8878	40.00S14.00W13NENE IR	0.0200	C
1	G	9406	G 8878	40.00S14.00W13NENE IS	0.0200	C
1	G	9389	G 8934	40.00S14.00W13NENE IR	0.0050	C

NO CONDITIONED WELLS WITHIN 1 MILE OF APPLICATION G 15505

STATE OF OREGON
WATER WELL REPORT
 (as required by ORS 537.765)

NOV 30 1993
 WATER RESOURCES DEPT.
 SALEM, OREGON

KLAMATH
16807
39S/11 1/2 E/19c
 (START CARD) # 60004

(1) OWNER: Well Number _____
 Name Taylor E. High
 Address 17301 S. Poe Valley Rd.
 City Klamath Falls, State OR Zip 97603

(2) TYPE OF WORK:
 New Well Deepen Recondition Abandon

(3) DRILL METHOD:
 Rotary Air Rotary Mud Cable
 Other _____

(4) PROPOSED USE:
 Domestic Community Industrial Irrigation
 Thermal Injection Other _____

(5) BORE HOLE CONSTRUCTION:
 Special Construction approval Yes No Depth of Completed Well 54 ft.
 Explosives used Yes No Type _____ Amount _____

HOLE			SEAL			Amount sacks or pounds
Diameter	From	To	Material	From	To	
10	0	35	cement	0	35	23
6	35	54				

How was seal placed: Method A B C D E
 Other _____

Backfill placed from _____ ft. to _____ ft. Material _____
 Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 6	4 1/2	35	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner:				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) 35'

(7) PERFORATIONS/SCREENS:

Perforations Method _____
 Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

Pump Bailer Air Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
50		53	1 hr.

Temperature of Water 70° Depth Artesian Flow Found _____
 Was a water analysis done? Yes By whom _____
 Did any strata contain water not suitable for intended use? Too little
 Salty Muddy Odor Colored Other surface
 Depth of strata: 11

(9) LOCATION OF WELL by legal description:
 County Klamath Latitude _____ Longitude _____
 Township 39S N or S. Range 11 1/2 E E or W. WM. _____
 Section 19 NW 1/4 SW 1/4
 Tax Lot _____ Lot _____ Block _____ Subdivision _____
 Street Address of Well (or nearest address) 17301 S. Poe Valley Rd.

(10) STATIC WATER LEVEL:
12 ft. below land surface. Date 11/6/93
 Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:
 Depth at which water was first found 11'

From	To	Estimated Flow Rate	SWL
11	14	4	11
42	54	50	12

(12) WELL LOG: Ground elevation _____

Material	From	To	SWL
Topsoil	0	5	
Brn clay	5	6 1/2	
Gray basalt	6 1/2	9 1/2	
Brn lava	9 1/2	14	11
Gray basalt	14	24	
Brn lava	24	30	
Gray basalt	30	42	
Brn & gray lava	42	54	12

Date started 11/3/93 Completed 11/6/93

(unbonded) Water Well Constructor Certification:
 I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
 WWC Number _____
 Signed _____ Date _____

(bonded) Water Well Constructor Certification:
 I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
 WWC Number 1228
 Signed Larry H. Delpam Date 11/8/93

STATE ENGINEER
Salem, Oregon

Klamath
13498

OBSERVATION WELL
Well Record

STATE WELL NO. *39/11 1/2-28R(1)*
COUNTY *Klamath*
APPLICATION NO. _____

LOST RIVER RANCH

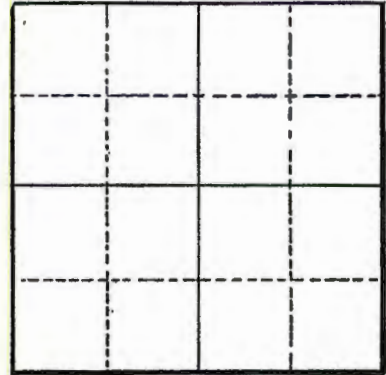
OWNER: *W. Tuback*

MAILING ADDRESS: _____
CITY AND STATE: _____

LOCATION OF WELL: Owner's No. _____

SE 1/4 SE 1/4 Sec. 28 T. 39 N. S. R. 11 1/2 W., W.M.

Bearing and distance from section or subdivision corner _____



Section *28*

Altitude at well *4105'*

TYPE OF WELL: *Dr* Date Constructed _____

Depth drilled *460* Depth cased *60*

CASING RECORD:

6 inch

FINISH:

AQUIFERS:

Chalk rock

WATER LEVEL:

10.06 (8-27-54)

PUMPING EQUIPMENT: Type *Jet* H.P. _____

Capacity *15* G.P.M.

WELL TESTS:

Drawdown _____ ft. after _____ hours _____ G.P.M.

Drawdown _____ ft. after _____ hours _____ G.P.M.

USE OF WATER *Domestic & stock* Temp. _____ °F. _____, 19____

SOURCE OF INFORMATION *USGS*

DRILLER or DIGGER _____

ADDITIONAL DATA:

Log _____ Water Level Measurements Chemical Analysis _____ Aquifer Test _____

REMARKS:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

39/113-28R(1)

WATER RESOURCES DIVISION

Report Page No. _____
GROUND WATER BRANCH

COUNTY Klamath

STATE Oregon

WATER LEVELS AND ARTESIAN PRESSURES IN OBSERVATION WELLS

39/113-28R1. W. Tuback. Drilled domestic and stock water-table well in diatomite, diameter 6 inches, depth 460 feet, cased with steel to 60 feet. Land-surface datum is 4,105 feet above msl. MP is top of concrete curb south side, 0.3 feet above lsd.

Highest water level 6.50 below lsd Aug. 25 19 55; lowest 13.90 below lsd Sept. 17 19 61
Records available 1954- Water level Feet below lsd

Date	Water level	Date	Water level	Date	Water level	Date	Water level
1954	—	1959	—				
Aug 27	10.06	June 10 ^{a)}	29.36				
Oct 28	9.80	Sept 2	13.35				
Dec. 17	9.46	1960	—				
1955	—	Jan 17	12.73				
Feb. 18	9.05	June 11	12.05				
June 28	8.95	Oct 3	12.25				
Aug. 25	6.50	1961	—				
1956	—	Jan 14	9.78				
APR. 7	8.43	May 3 ^{a)}	21.40				
Oct 10	11.88	Sept 17	13.90				
Dec 20	8.64						
1957	—						
July 24	11.48						
1958	—						
APR. 16	8.77						
Aug 5 ^{a)}	32.19						
Dec 4	9.10						

a) pumping

STATE ENGINEER
Salem, Oregon

State Well No. 39/11 1/2 - 28 R(1)

County KLAMATH

Application No. _____

Water Level Record

OWNER: W. TUBACK OWNER'S NO. _____

Description of measuring point: TOP OF CONC. CURB, S. SIDE, 0.3' ABOVE L. S. D.

Date	Water Level Feet (above) Land Surface	Remarks	Date	Water Level Feet (below) Land Surface	Remarks
8-27-54	10.06		1-14-61	9.78	
10-28	9.80		5-3-61	21.40	65 PUMPING
12-17	9.46		9-17	13.90	65
2-18-55	9.05		1-9-62	11.17	AD & DP
6-28	8.95				
8-25	6.50				
4-7-56	8.43				
12-11-	11.88				
12-20	8.64				
7-24-57	11.48				
4-16-58	8.77				
8-5-	32.19	PUMPING			
12-4	9.10				
6-10-59	29.36	PUMPING			
9-2	13.35				
1-17-60	12.73				
6-11	12.05				
10-3	12.25				

REMARKS: _____

WATER WELL REPORT
STATE OF OREGON

Klam
13478

RECEIVED

State Well No.

39511 1/2 E-20
bd

MAR 16 1982

State Permit No.

WATER RESOURCES DEPT

SALEM OREGON

(1) OWNER:

Name *DENNIS ROACH*
Address *1133 MAPLE ST*
City *KLAMATH FALLS* State *ORE*

(2) TYPE OF WORK (check):

New Well Deepening Reconditioning Abandon

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Air Driven
Rotary Mud Dug
 Bored

(4) PROPOSED USE (check):

Domestic Industrial Municipal
Irrigation Test Well Other
Thermal: Withdrawal ReInjection

(5) CASING INSTALLED:

Steel Plastic
Threaded Welded
6 5/8" Diam. from *+1* ft. to *11.9* ft. Gauge *250*
" Diam. from ft. to ft. Gauge

LINER INSTALLED:

" Diam. from ft. to ft. Gauge

(6) PERFORATIONS:

Perforated? Yes No

Type of perforator used

Size of perforations in by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Well screen installed? Yes No

Manufacturer's Name
Type Model No.
Diam. Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

Is a pump test made? Yes No If yes, by whom?
Id: gal/min. with ft. drawdown after hrs.
Air test *17* gal/min. with drill stem at *155* ft. *1* hrs.
Bailer test gal/min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water *52* Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Special standards: Yes No

Well seal—Material used *Cement*
Well sealed from land surface to *6 1/2* ft.
Diameter of well bore to bottom of seal *6 1/2* in.
Diameter of well bore below seal *6* in.
Number of sacks of cement used in well seal sacks
How was cement grout placed? *Pumped*
Was pump installed? *NO* Type HP Depth ft.
Was a drive shoe used? Yes No Plugs Size: location ft.
Did any strata contain unusable water? Yes No
Type of Water? *IRON* depth of strata *106*
Method of sealing strata off *CASING*
Was well gravel packed? Yes No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County *KLAMATH* Driller's well number
Tax Lot # Lot Blk Subdivision
Address at well location: *North pac Valley Rd*

(11) WATER LEVEL: Completed well.

Depth at which water was first found *106* ft.
Static level *39* ft. below land surface. Date *3/10/82*
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing *6*
Depth drilled *156* ft. Depth of completed well *156* ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
SANDY BROWN SOIL	0	8	
YELLOW SHALE	8	34	
GREEN SHALE	34	96	
GREY SHALE	96	106	
GREY SHALE & STREAKS SAND	106	112	
GREY SHALE	112	128	
GREY SHALE & SAND	128	134	
BROWN SANDSTONE	134	138	
GREY SHALE & STREAKS SAND	138	156	

Work started *3/9* 19 *82* Completed *3/10* 19 *82*
Date well drilling machine moved off of well *3/10* 19 *82*

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] *Walter A. Obermeyer* Date *March 1982*
(Drilling Machine Operator)
Drilling Machine Operator's License No. *710*

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name *F.E. STOREY & SON DRILLING INC.*
(Person, firm or corporation) (Type or print)
Address *3847 Hope K Falls, ORE*
[Signed] *E. E. Storey*
Water Well Contractor
Contractor's License No. *74* Date *3/12/82*, 19

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP*12658-690

KLAM 13491

File Original and First Copy with the STATE ENGINEER, SALEM, OREGON

WATER WELL REPORT STATE OF OREGON

State Well No. 39/112-22K State Permit No.

SEP 1964

(1) OWNER:

Name Gerald Longhofer Address 4342 Winter Ave. Klamath Falls, Oregon

(2) LOCATION OF WELL:

County Klamath Owner's number, if any-- NW 1/4 SE 1/4 Section 22 T. 39S R. 11E E.W.M. Bearing and distance from section or subdivision corner As Described in Klamath County Deed Records Vol. 349 Page 3

(3) TYPE OF WORK (check):

Well Deepening Reconditioning Abandon abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic Industrial Municipal Irrigation Test Well Other

(5) TYPE OF WELL:

Rotary Driven Cable Jetted Dug Bored

(6) CASING INSTALLED:

Threaded Welded 66" Diam. from 1 ft. to 76 ft. Gage

(7) PERFORATIONS:

Perforated? Yes No Type of perforator used SIZE of perforations in. by in. perforations from ft. to ft.

(8) SCREENS:

Well screen installed Yes No Manufacturer's Name Model No. Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Was well gravel packed? Yes No Size of gravel: Gravel placed from ft. to ft. Was a surface seal provided? Yes No To what depth? 76 ft. Material used in seal- bentonite clay

(10) WATER LEVELS:

Static level 100 ft. below land surface Date Artesian pressure lbs. per square inch Date

Log Accepted by:

[Signed] Gerald Longhofer Date Aug 13 1964 (Owner)

(11) WELL TESTS:

Drawdown is amount water level is lowered below static level Was a pump test made? Yes No If yes, by whom? Yield: gal./min. with ft. drawdown after hrs.

(12) WELL LOG:

Diameter of well 6 inches, Depth drilled 129 ft. Depth of completed well 129 ft. Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

Table with columns MATERIAL, FROM, TO. Rows include: 0 ft. to 2 ft. Top soil (brown clay), Yellow Clay (2 ft to 16 ft), Lava Boulders (16 to 18), Yellow Clay (18 to 37), Lava Boulders (hard) (37 to 41), Yellow Clay (41 to 60), Blue Clay (60 to 119), Brown Lava (hard) (119 to 129).

Work started Aug 3 1964 Completed Aug 10 1964

(13) PUMP:

Manufacturer's Name Type: H.P.

Well Driller's Statement:

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

NAME Charles E. Hartley Welldrilling (Person, firm, or corporation) (Type or print) Address 4779 1/2 South Sixth St.

Driller's well number [Signed] Charles E. Hartley (Well Driller) License No. 145 Date Aug 13 1964

Bonanza					
Water Rights: Ground Water Permit Application Review					
Ground Water Permit Application = G-15505					
Applicant = Thys DeHoop					
Activity = Potential Drawdown Calculation (potential drawdown at Lost River)					
Note: Well = not drilled					
Note: hydraulic distances from well to Lost River = 4,800 feet					
Parameters Used for Calculations (derived from area aquifer tests and pump test data)					
Transmissivity (T):					
T(1) = 280,000 ft ² /day = 2,094,546 gpd/ft					
T(2) = 200,000 ft ² /day = 1,496,104 gpd/ft					
T(3) = 120,000 ft ² /day = 897,662 gpd/ft					
Storage Coefficient:					
S(1) = 0.0004					
S(2) = 0.00004					
Total Volume Allowed = 930.60 ac-ft					
Pumping Period = 1 March to 31 October (244 days)					
Pro-Pumping Rate:					
	ac-ft/day	cfs	gpm		
	3.81	1.92	863.04		
Actual Pumping Rate = 1,740 gpm requested (2,000 gpm capable)					
Distance to River= 4,800 feet					
Calculation Results					
	30 Days Pumping			244 Days Pumping	
	drawdown	time		930.60 ac-ft Total	
				drawdown	time
	T(1)S(1)	0.36 feet 30 day		T(1)S(1)	0.46 feet 244 day
	T(2)S(1)	0.48 feet 30 day	<---best---	T(2)S(1)	0.62 feet 244 day
	T(3)S(1)	0.75 feet 30 day		T(3)S(1)	0.98 feet 244 day
	T(1)S(2)	0.47 feet 30 day		T(1)S(2)	0.57 feet 244 day
	T(2)S(2)	0.63 feet 30 day		T(2)S(2)	0.77 feet 244 day
	T(3)S(2)	1.00 feet 30 day		T(3)S(2)	1.23 feet 244 day

Theis Time-Drawdown Worksheet

Written by Karl C. Wozniak September 1992. Last modified November 8, 1998

References: Theis (1935), Freeze and Cherry (1979)

See bottom of worksheet for detailed references and model assumptions.

Calculates Theis nonequilibrium drawdown and recovery at any arbitrary radial distance, r, from a pumping well for 3 different T values and 2 different S values.

Input Data:

Total Pumping Time, t:	30	d		
Radial Distance, r, From Pumping Well:	4800	[ft]		
Pumping Rate, Q:	863	[gpm]	115.38 [ft ³ /min]	1.92 [ft ³ /s]
Transmissivity	T1 (high)	2,094,546	[gpd/ft]	1454.55 [gal/min/ft]
	T2 (med)	1,496,104	[gpd/ft]	1038.96 [gal/min/ft]
	T3 (low)	897,662	[gpd/ft]	623.38 [gal/min/ft]
Storativity	S1 (high)	0.000400		194.46 [ft ² /min]
	S2 (low)	0.000040		138.90 [ft ² /min]
				83.34 [ft ² /min]

Use the Recalculate button if you have calculation set to manual.

Output Data:

Total Pumping Time, t: 43200 [minutes] 30.00 [days]
 radius = 4800 ft
 Q = 863 gpm = 115.38 ft³/min = 1.92 ft³/sec
 Total pumping time = 43200 minutes = 30.00 days
 T1 = 2,094,546 gpd/ft
 T2 = 1,496,104 gpd/ft
 T3 = 897,662 gpd/ft
 S1 = 0.00040
 S2 = 0.00004

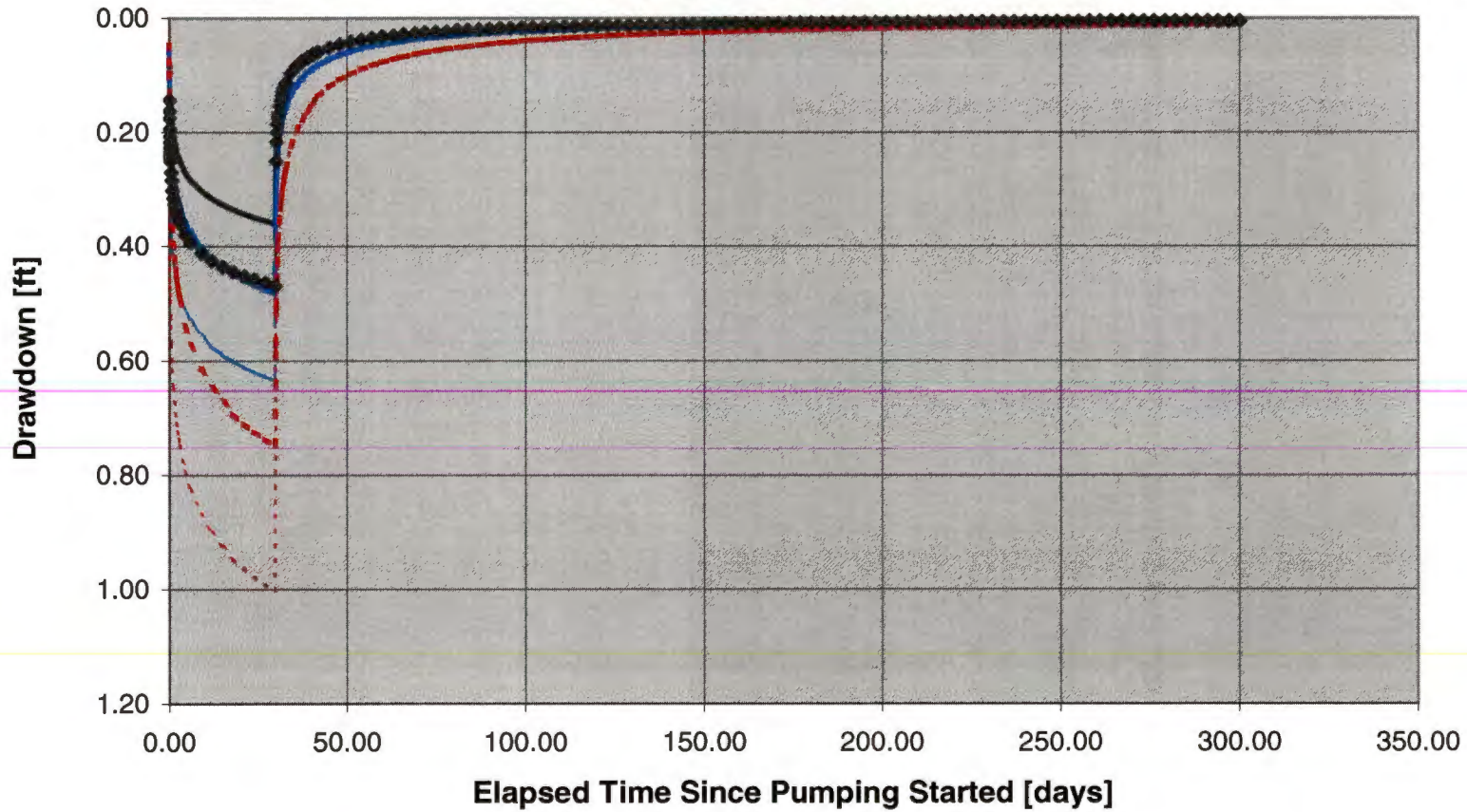
Theis Drawdown and Recovery at r = 4800 ft From Pumping Well

Theis Drawdown and Recovery at r = 4800 ft From Pumping Well

Q = 863 gpm

Total pumping time = 43200 minutes = 30.00 days

radius = 4800



— T1S1 —◆— T1S2 — T2S1 - - - T2S2 - - - T3S1 ····· T3S2

T1 = 2,094,546

T2 = 1,496,104

T3 = 897,662

S1 = 0.00040

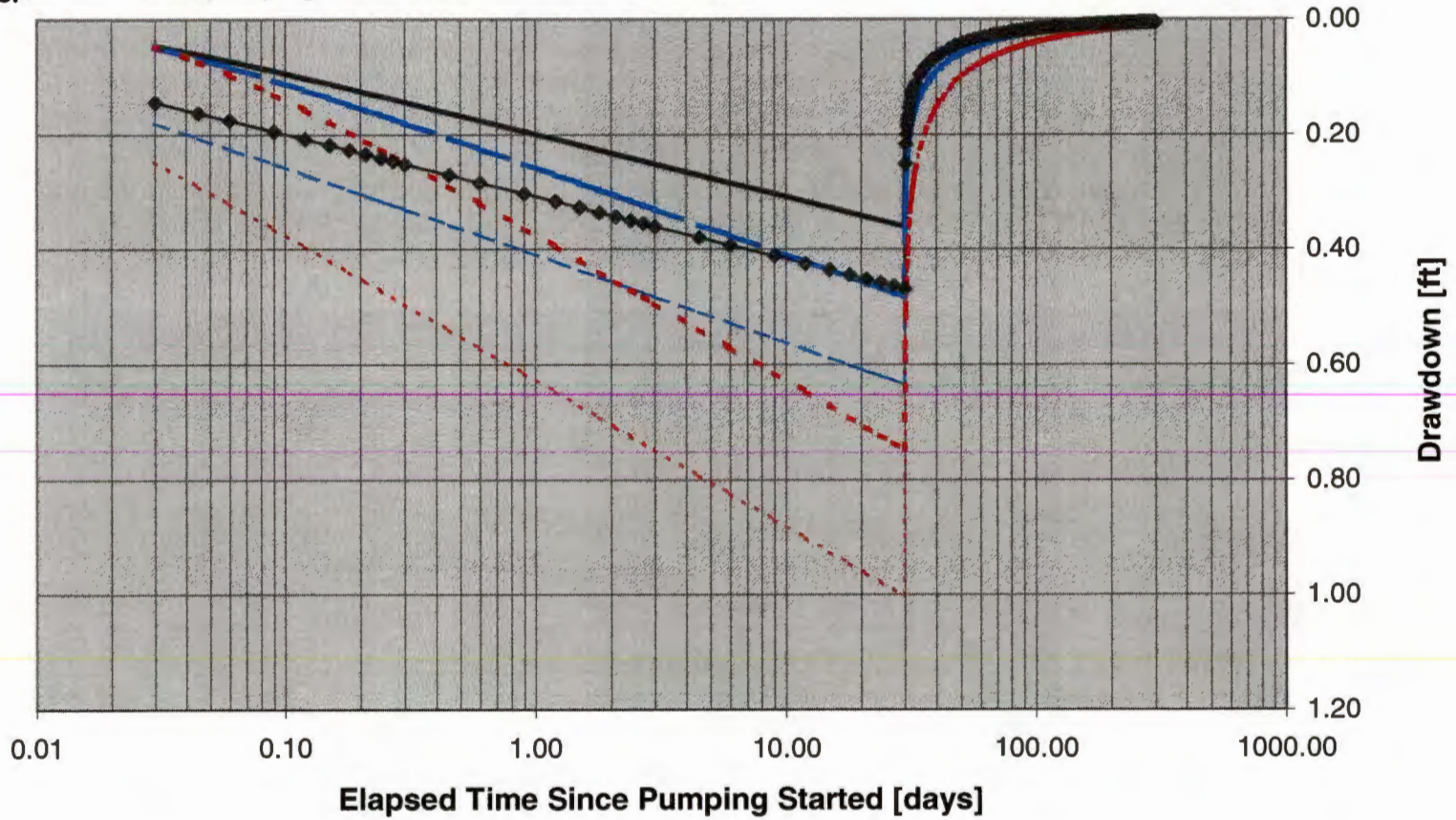
S2 = 0.00004

Theis Drawdown and Recovery at $r = 4800$ ft From Pumping Well

$Q = 863$ gpm

Total pumping time = 43200 minutes = 30.00 days

radius = 4800



— T1S1
—◆— T1S2
— T2S1
- - - T2S2
- - - T3S1
... T3S2

$T1 = 2,094,546$

$T2 = 1,496,104$

$T3 = 897,662$

$S1 = 0.00040$

$S2 = 0.00004$

Thisis Time-Drawdown Worksheet

Written by Karl C. Wozniak September 1992. Last modified November 8, 1998

References: Theis (1935), Freeze and Cherry (1979)

See bottom of worksheet for detailed references and model assumptions.

Calculates Thisis nonequilibrium drawdown and recovery at any arbitrary radial distance, r, from a pumping well for 3 different T values and 2 different S values.

Input Data:

Total Pumping Time, t:	244	d		
Radial Distance, r, From Pumping Well:	4800	[ft]		
Pumping Rate, Q:	863	[gpm]	115.38 [ft ³ /min]	1.92 [ft ³ /s]
Transmissivity	T1 (high)	2,094,546	[gpd/ft]	1454.55 [gal/min/ft]
	T2 (med)	1,496,104	[gpd/ft]	1038.96 [gal/min/ft]
	T3 (low)	897,662	[gpd/ft]	623.38 [gal/min/ft]
Storativity	S1 (high)	0.000400		194.46 [ft ² /min]
	S2 (low)	0.000040		138.90 [ft ² /min]
				83.34 [ft ² /min]

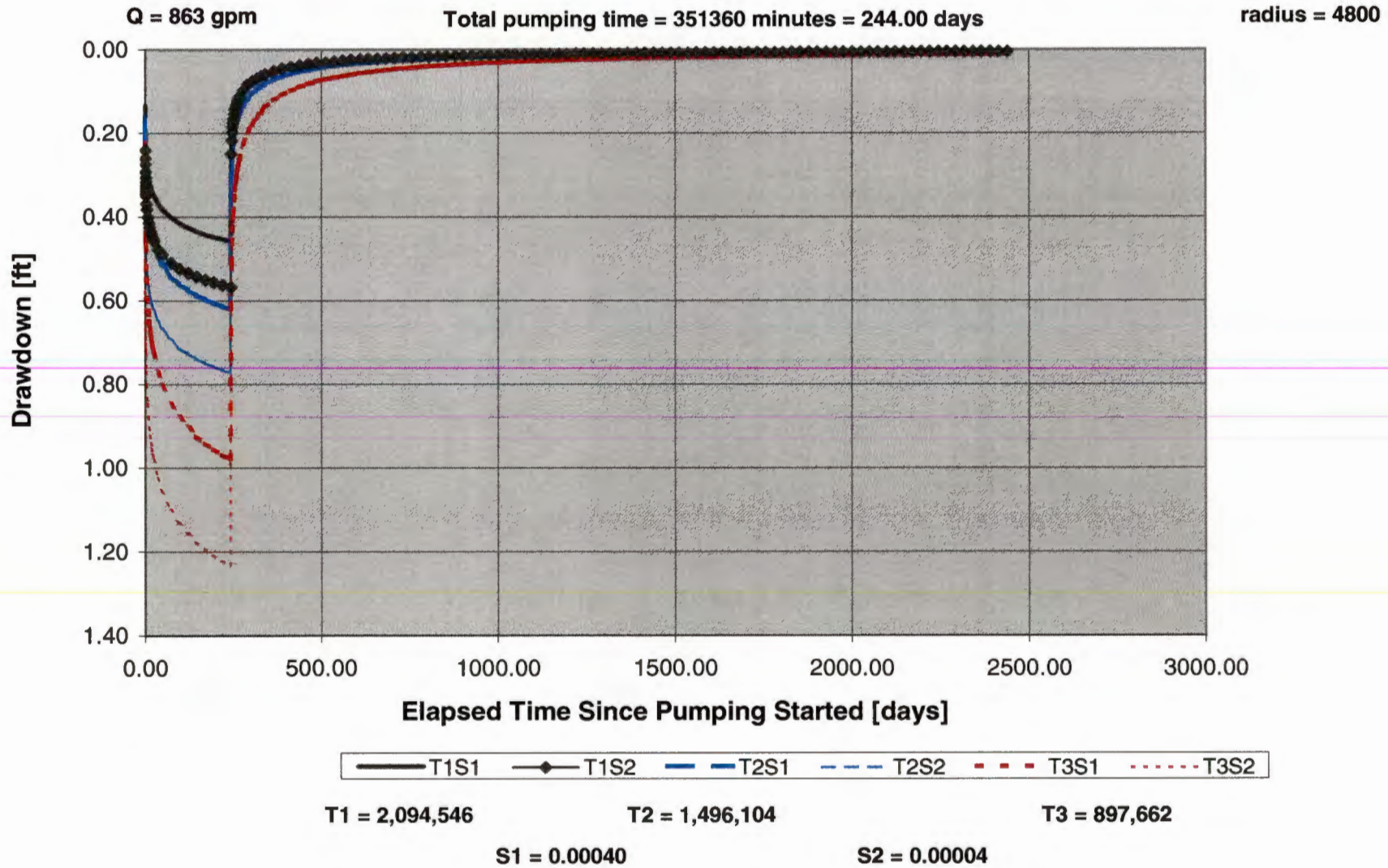
Use the Recalculate button if you have calculation set to manual.

Output Data:

Total Pumping Time, t: 351360 [minutes] 244.00 [days]
 radius = 4800 ft
 Q = 863 gpm = 115.38 ft³/min = 1.92 ft³/sec
 Total pumping time = 351360 minutes = 244.00 days
 T1 = 2,094,546 gpd/ft
 T2 = 1,496,104 gpd/ft
 T3 = 897,662 gpd/ft
 S1 = 0.00040
 S2 = 0.00004

Thisis Drawdown and Recovery at r = 4800 ft From Pumping Well

Theis Drawdown and Recovery at $r = 4800$ ft From Pumping Well

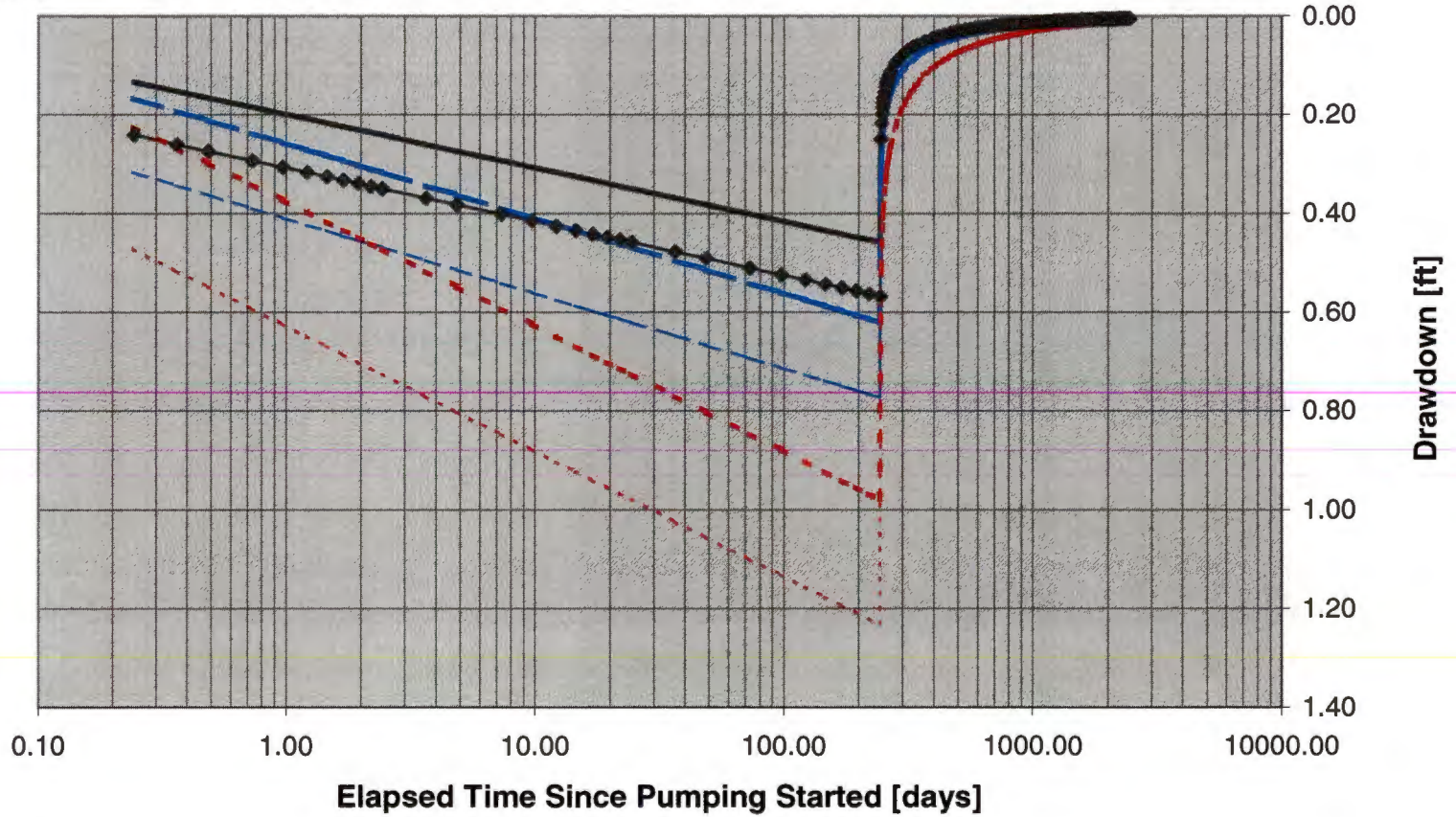


Theis Drawdown and Recovery at r = 4800 ft From Pumping Well

Q = 863 gpm

Total pumping time = 351360 minutes = 244.00 days

radius = 4800



— T1S1
—◆— T1S2
— T2S1
- - - T2S2
- - - T3S1
... T3S2

T1 = 2,094,546

T2 = 1,496,104

T3 = 897,662

S1 = 0.00040

S2 = 0.00004