

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date September 4, 2013
 FROM: Groundwater Section Mike Zwart
 SUBJECT: Application G- 17709 Reviewer's Name
 Supersedes review of _____ Date of Review(s) _____

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525. Department staff review ground water applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. This review is based upon available information and agency policies in place at the time of evaluation.*

A. GENERAL INFORMATION: Applicant's Name: Dunlap and Sons Ranch County: Baker

A1. Applicant(s) seek(s) 5.0 cfs from four well(s) in the Powder Basin,
 _____ subbasin Quad Map: Virtue Flat

A2. Proposed use Irrigation, 305 acres Seasonality: March 1 to October 31

A3. Well and aquifer data (attach and number logs for existing wells; mark proposed wells as such under logid):

Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	Proposed	1	Volcanic Seds*	5.0	8S/41E-24 NE-NE	90' S, 1070' W fr NE cor S 24
2	Proposed	2	Volcanic Seds*	5.0	8S/41E-24 NW-NE	611' S, 1460' W fr NE cor S 24
3	Proposed	3	Volcanic Seds*	5.0	8S/41E-13 NW-NE	1151' S, 2407' W fr NE cor S 13
4	Proposed	4	Volcanic Seds*	5.0	8S/41E-13 SW-NE	1428' S, 2360' W fr NE cor S 13
5						

* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	2795				450	0-20	0-450		200-450			
2	2800				450	0-20	0-450		200-450			
3	2755				450	0-20	0-450		200-450			
4	2755				450	0-20	0-450		200-450			

Use data from application for proposed wells.

A4. **Comments: *The application proposes to develop alluvium, but both the location and proposed construction of the wells make this unlikely. Based on regional geologic mapping and review of local well logs, tuffaceous sedimentary rocks (Tst) or possibly underlying Tertiary basalt (Tb) will be developed (see attached well logs). Alluvium is mapped as either very thin or absent at the proposed well locations.**

A5. **Provisions of the Powder** _____ Basin rules relative to the development, classification and/or management of ground water hydraulically connected to surface water are, or are not, activated by this application. (Not all basin rules contain such provisions.)
 Comments: _____

A6. **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
 Name of administrative area: _____
 Comments: _____

B. GROUND WATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that ground water* for the proposed use:

- a. is over appropriated, is not over appropriated, or **cannot be determined to be** over appropriated during any period of the proposed use. * This finding is limited to the ground water portion of the over-appropriation determination as prescribed in OAR 690-310-130;
- b. **will not** or **will** likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the ground water portion of the injury determination as prescribed in OAR 690-310-130;
- c. **will not** or **will** likely to be available within the capacity of the ground water resource; or
- d. **will, if properly conditioned**, avoid injury to existing ground water rights or to the ground water resource:
 - i. The permit should contain condition #(s) 7N_____;
 - ii. The permit should be conditioned as indicated in item 2 below.
 - iii. The permit should contain special condition(s) as indicated in item 3 below;

- B2. a. **Condition** to allow ground water production from no deeper than _____ ft. below land surface;
- b. **Condition** to allow ground water production from no shallower than 60 ft. below land surface;
- c. **Condition** to allow ground water production only from the _____ ground water reservoir between approximately _____ ft. and _____ ft. below land surface;
- d. **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Ground Water Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

B3. **Ground water availability remarks:** There are no observation wells in the Lower Powder Valley area. The adjacent properties with groundwater rights are lacking well logs on file. The permit abstracts for those rights (two wells are authorized) provided minimal well construction information except for depths (reportedly 350' and 670') and production rates. It appears likely that properly constructed deep wells, as are proposed here, can produce moderate to large quantities of water. The recommended well construction condition above is intended to prohibit groundwater production from the shallow alluvial aquifer (Qal), if available, at any of the proposed wells.

C. GROUND WATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
All	Tuffaceous sedimentary rocks (Tst) or basalt (Tb)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: The local well logs have static water levels above the depths that groundwater was first encountered. There are no well logs on file for wells that may be developing the deeper basalt aquifer, but I believe that it is very likely to be also confined, as are most basalt aquifers.

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	Powder River	2650±	2700	7050	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Powder River	2650±	2700	7700	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	1	Powder River	2650±	2705	4900	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	1	Powder River	2650±	2705	5050	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: The thin sand and gravel layers within the tuffaceous sediments are likely below significant thickness of relatively low permeability material, reported as clay on the few local well logs. These water-bearing zones are not likely in efficient hydraulic connection with the younger alluvial deposits that are in direct connection with the river. If a basalt aquifer is developed, hydraulic connection with the river will be very poor. Water Availability Basin the well(s) are located within: Powder R > Snake R above Goose Cr (72192).

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be hydraulically connected and less than 1 mile from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% natural flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells.** Otherwise same evaluation and limitations apply as in C3a above.

	SW #		Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: This section does not apply.

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													
(D) = (A) > (C)													
(E) = (A / B) x 100		%	%	%	%	%	%	%	%	%	%	%	%

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation: _____

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

- C5. **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or ground water use under this permit can be regulated if it is found to substantially interfere with surface water:
 - i. The permit should contain condition #(s) _____;
 - ii. The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions** _____

References Used: Geology of the Oregon Part of the Baker 1° by 2° Quad, Brooks, McIntyre and Walker, 1976; OWRD Ground Water Report #6; Ground Water Resources of Baker Valley, Baker County, Oregon, by Frederick D. Trauger; Ground Water of Baker Valley, Baker County, Oregon, by Lystrom, Nees and Hampton, 1967; Nearby well logs and application reviews. _____

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

D2. **THE WELL does not appear to meet current well construction standards based upon:**

- a. review of the well log;
- b. field inspection by _____;
- c. report of CWRE _____;
- d. other: (specify) _____

D3. **THE WELL construction deficiency or other comment is described as follows:** _____

D4. **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Water Availability Tables

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.

WATER WELL REPORT

STATE OF OREGON

RECEIVED

(Please type or print)
(Do not write above this line)

*Baker
683*

State Well No. 83/41E-23ad
State Permit No. _____

APR 8 1979

(1) OWNER:

Name JAMES CARTER WATER RESOURCES DEPT.
Address SALEM, OREGON
140ATING, ORE

(2) TYPE OF WORK (check):

New Well Deepening Reconditioning Abandon
If abandonment, describe material and procedure in Item 13.

(3) TYPE OF WELL:

Rotary Driven
Cable Jetted
Dug Bored

(4) PROPOSED USE (check):

Domestic Industrial Municipal
Irrigation Test Well Other

CASING INSTALLED:

Threaded Welded
6" Diam. from +1 ft. to 129 ft. Gage 1250
" Diam. from _____ ft. to _____ ft. Gage _____
" Diam. from _____ ft. to _____ ft. Gage _____

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

Was a pump test made? Yes No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " " " "
" " " " " "
Bailer test 15 gal./min. with 60 ft. drawdown after 1 hrs.
Artesian flow g.p.m.

Temperature of water 57 Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:

Well seal—Material used CEMENT
Well sealed from land surface to 14 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 10 sacks
How was cement grout placed? DRIFT PUMP

Was a drive shoe used? Yes No Plugs _____ Size: location _____ ft.
Did any strata contain unusable water? Yes No
Type of water? _____ depth of strata _____
Method of sealing strata off _____
Was well gravel packed? Yes No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

(10) LOCATION OF WELL:

County BAISER Driller's well number _____
SE 1/4 NE 1/4 Section 23 T. 9 S R. 41 E W.M.
Bearing and distance from section or subdivision corner _____

(11) WATER LEVEL: Completed well.

Depth at which water was first found 20 ft.
Static level 9 ft. below land surface. Date 1-30-79
Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing 6
Depth drilled 186 ft. Depth of completed well 185 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
TOP SOIL	0	4	
CLAY BROWN	4	30	
CLAY BLUE	30	140	
CLAY BROWN	140	157	
CLAY BLUE	157	165	
CLAY BROWN	165	170	
CLAY GRAY	170	180	
SAND FINE M-B	180	194	9
CLAY BLUE	194	186	

Work started 12-6 1978 Completed 1-30 1979
Date well drilling machine moved off of well 1-30 1979

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 Dennis Date 2-24, 1979
(Drilling Machine Operator)

Drilling Machine Operator's License No. 950

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.

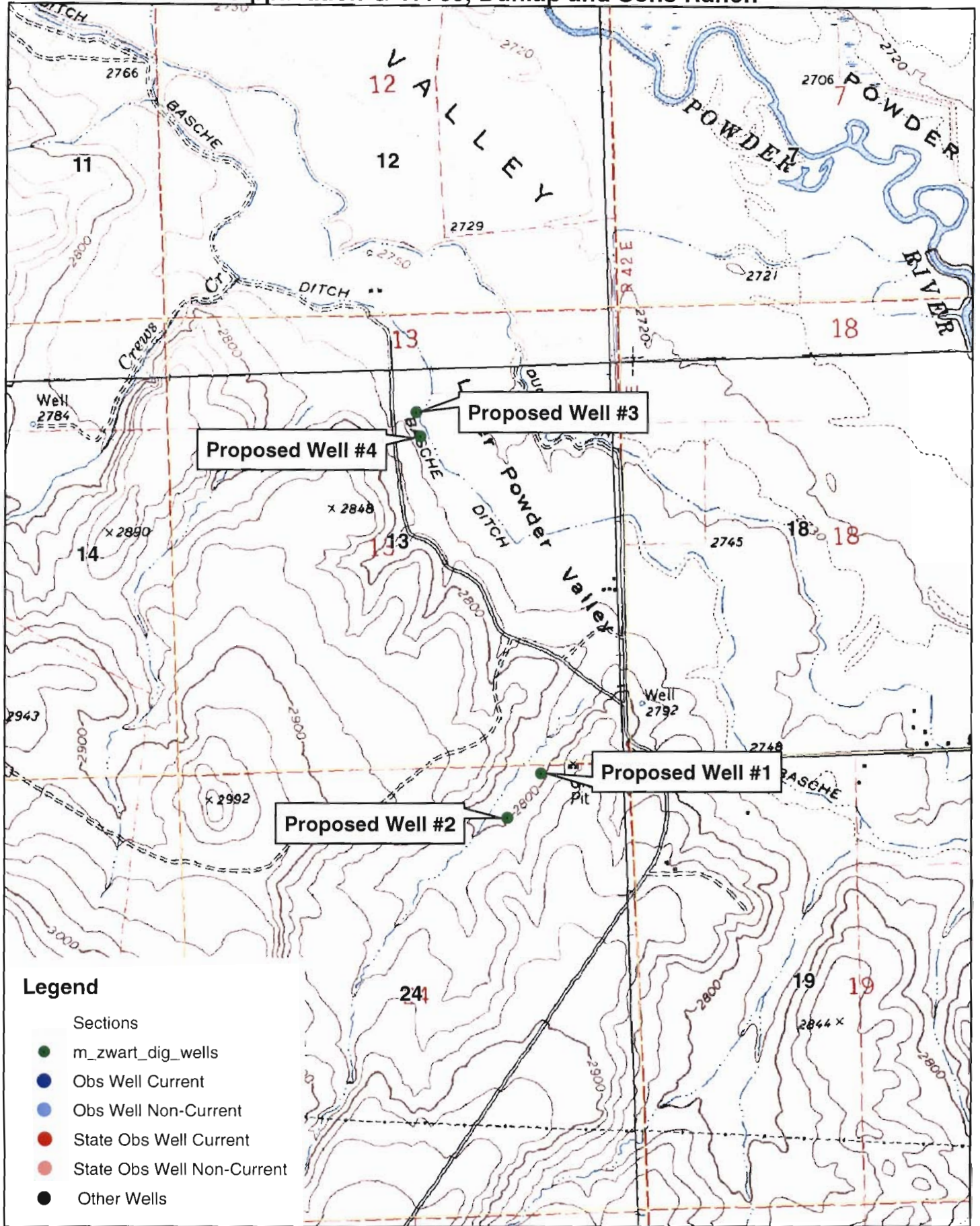
Name W. DENNIS
(Person, firm or corporation) (Type or print)

Address SUMPTER STAGE BAISER ORE

[Signed] Walter Dennis
(Water Well Contractor)

Contractor's License No. 591 Date 2-24, 1979

Application G-17709, Dunlap and Sons Ranch



Legend

Sections

- m_zwart_dig_wells
- Obs Well Current
- Obs Well Non-Current
- State Obs Well Current
- State Obs Well Non-Current
- Other Wells

