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Water Resources

December 9, 2008

DM
Dr. David Tuthill, Director
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RECEIVED

DEC 10 2008

DEPARTMENT OF
WATER RESOURCES

Re: Draft Report: Big Wood River Aquifer Flow Model

Dear Dave:

Enclosed is a draft of the technical report by Brockway Engineering pertaining to the Big Wood River aquifer model from East Fork to Bellevue. The report includes documentation of the model configuration, data input, calibration, and base simulation results. Also included are the results of the proposed scenario for the Valley Club Homeowners Association mitigation by ground water recharge as outlined in the transfer application by Dry Lot LLC.

The report draft is being sent to all members of the Technical Advisory Committee for review and comment prior to preparation of the final report. We are anticipating that the final model will be deemed adequate by IDWR for the type of evaluation as outlined in the Dry Lot LLC scenario and that applications within the model domain can be processed.

Sincerely,

Charles E. Brockway, Ph.D., P.E.

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Enc. Draft report and appendices

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Project No. 128-36-2008

Development of a Groundwater Flow Model for the Big Wood River Aquifer: East Fork to Bellevue



Prepared for Harry S. Rinker and Dry Lot, LLC

December 9, 2008



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December 9, 2008

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DRAFT

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Development of a Groundwater Flow Model for the Big Wood River Aquifer: East Fork to Bellevue

Brockway Engineering, PLLC

December 9, 2008

A. Background

A.1. Purpose

A groundwater flow model has been developed to assist in evaluation of the impact of proposed water right transfers and/or permits on groundwater levels and Big Wood River flows. The aquifer system is hydraulically interconnected with the Big Wood River throughout most of the valley, and with the eminent implementation of conjunctive management of groundwater and surface water, the determination of adverse or beneficial impacts on existing water rights is required to satisfy the non-injury requirements of I.C. 42-222. Current pending or proposed transfers of water rights contemplate the use of aquifer recharge to mitigate potential or current water supply shortages. Specifically, water right transfers contemplating aquifer recharge have been submitted by Dry Lot LLC for the Valley Club Homeowners Association and The Valley Club (golf course). Applications are being proposed by the Rinker Company for Peregrine Ranch Subdivision and, potentially, the City of Hailey. The Idaho Department of Water Resources has indicated that an appropriate numerical groundwater flow model is required to evaluate the hydrologic impacts of these transfers and the Department does not now have such a model to perform the analyses and would likely not have the resources and personnel to develop a model within three to five years. In order to expedite these applications, Dry Lot LLC and Rinker Company agreed to have a suitable model developed and the Director agreed to process the pending applications utilizing the results of the groundwater model. Dry Lot LLC and Rinker Company

retained Brockway Engineering to develop an approved model to include portions of the Big Wood River Aquifer which might be affected by the pending applications.

A.2. Project Scope

The groundwater model project was developed by Brockway Engineering to include the aquifer and the Big Wood River from Greenhorn Gulch on the north to the northern boundary of the City of Bellevue on the south. Tributary valleys were not modeled in the domain but the underflow from the major tributaries was included. Guidance for the technical development of the model was solicited from recognized hydrologists and groundwater modelers and a Technical Advisory Committee formed. A recognized ground water model code (MODFLOW) was selected and the required hydrologic data was collected and analyzed to provide input to the model for calibration and impact scenario simulation. A recognized data management program (GMS) was utilized as the interface for the model and all data is maintained in ArcGIS format. Input data was based primarily on published information; however discharge measurements to provide Big Wood River reach gain data were performed by Brockway Engineering. The model was configured and calibrated utilizing groundwater level targets and reach gain targets. Initial scenarios simulating the proposed Dry Lot LLC aquifer recharge and extraction proposal were performed.

A.3. Technical Advisory Committee

An Advisory Committee to provide input on the technical development and operational use of the Big Wood River Ground Water model was formed. The Committee included the following:

Table 1. Technical advisory committee.

Name	Affiliation	Location	Representing
Dr. Charles Brendeke	AMEC	Denver, Colorado	The Valley Club
Woody Friedlander	Dry Lot LLC	Hailey, Idaho	Valley Club Homeowners Association
Dr. Gary Johnson	Idaho Water Resources Research Institute	Idaho Falls, Idaho	IWRRI
Dr. David Tuthill	Director, Idaho Department of Water Resources	Boise, Idaho	IDWR
Alan Wylie	Idaho Department of Water Resources	Boise, Idaho	IDWR
Dr. G. Erick Powell	Brockway Engineering	Twin Falls, Idaho	Rinker Company, Dry Lot LLC
Dr. Charles G. Brockway	Brockway Engineering	Twin Falls, Idaho	Rinker Company, Dry Lot LLC
Dr. Charles E. Brockway	Brockway Engineering	Twin Falls, Idaho	Rinker Company, Dry Lot LLC

B. Upper Big Wood Basin Description

B.1. Watershed Characteristics

The Big Wood River watershed above the study area lower boundary (near Broadford Bridge) encompasses 694 square miles of mostly mountainous terrain (Figure 1). The USGS Streamstats web tool was used to define the basin boundaries according to topographic divides, and to estimate various hydrologic characteristics. The basin delineation is shown in Figure 2 and the results of the Streamstats analysis are shown in Table 2.

Table 2. Drainage basin characteristics for the Big Wood River above Broadford Bridge.

Parameter	Value
Area that drains to a point on a stream	694 ft
Relief (maximum minus minimum elevation)	6700 ft
Mean Basin Elevation	7560 ft
Maximum Basin Elevation	11900 ft
Minimum Basin Elevation	5180 ft
Mean basin slope computed from 30 m DEM	42.4%
Slopes greater than 30 percent	73.4%
Percent of area covered by forest	39.5%
Mean annual precipitation in inches	28.1

B.2. Climate

The Hailey, Idaho climate is classified as a mountain desert regime, with dry sunny summers and generally mild winters. The annual precipitation is 15.5 inches per year with an annual snowfall of 80 inches (NWS, 2008). Precipitation occurs primarily during the months of November through March. The average summer temperature is 78 degrees farenheit and the average winter temperature is 23 degrees farenheit (NWS, 2008). The area is normally dry with an annual average humidity of 30%.

B.3. Land Usage

Most of the land within the Big Wood River drainage is mountainous, with the primary land uses being recreation within national forest lands, rangeland, and unirrigated pasture. The main valley floor and tributary valleys comprise about 4% of the total basin area. Current land uses within these areas consist of single-family rural residential developments, high-density residential and commercial uses within the three

municipalities of Ketchum, Hailey, and Bellevue, recreational use along the river corridor and in other areas, irrigated agriculture, and pasture.

Land usage has changed drastically over the past half-century as the area has become a prime recreational destination for both in-state and out-of-state visitors. For example, about 20,000 acres were under irrigation in the Big Wood and Silver Creek areas in the 1950s (Smith, 1959; USBR, 1956). Of this amount, Jones (1952) estimated that the irrigated area above Hailey was 9,405 acres. The vast majority of this land was irrigated with surface water. Wetzstein, et al. (2000) estimated that 6,400 acres were irrigated above Hailey as of 1996, a 32% reduction since the 1950s. The present total irrigated area calculated for the present modeling effort, is 6,637 acres above Hailey and 9,830 acres above Bellevue.

The source of water for irrigation has historically been surface water, but the past 40 years have seen a marked increase in groundwater withdrawal for irrigation, both as a supplemental source to surface water, or as a primary source. Whereas irrigation from groundwater prior to 1950 was essentially nil, the current estimate is that 3,617 acres north of Bellevue are irrigated to some extent with groundwater.

In addition to the overall decline in irrigated area and the increase of groundwater pumping for irrigation, the type of irrigation has shifted from agricultural to residential and municipal. Currently, it is estimated that 49% of the irrigation within the model domain occurs within a residential or municipal setting. See Section G.1.3 for additional details on this calculation.

These changes in land use have undoubtedly affected the groundwater and surface water balances, but only limited study of these changes has been made. Skinner et al. (2007) presents a statistical analysis of surface water and groundwater trends that may or may not be due to changes in land usage and population growth. The present modeling effort seeks to reflect current conditions to the extent possible.

B.4. Hydrogeologic Setting

Smith (1959), Luttrell and Brockway (1984), Frenzel (1989), and other have described the hydrogeology of the Big Wood River valley. The Big Wood aquifer is comprised of unconsolidated sediments of Quaternary age, situated in a narrow valley between steep hills to the west and east. Within the study area, these depositions are almost entirely alluvial in nature, but may also contain fluvioglacial sediments and localized lake-bed depositions. The sedimentary material consists mostly of gravel and cobble, with interbedded layers of sand and finer-grained depositions with embedded gravel. Consolidated rock formations underly the alluvial aquifer. This bedrock formation consists of either pre-Tertiary sedimentary units such as limestone, with igneous intrusions, or younger basalt flows present chiefly within the Silver Creek triangle. The bedrock formation is not highly fractured and is essentially non-water bearing, although isolated wells have been developed in the rock. For the purposes of analyzing the Big Wood aquifer, the bedrock may be assumed to be an impermeable bottom of the aquifer. Smith (1959) presents a typical geologic cross-section at Hailey, reproduced as Figure 3.

The characteristics of the aquifer have been investigated to a limited extent (see Section C for a complete literature review), but no full-scale evaluation of the aquifer and interrelated surface water flows has been made. Groundwater movement occurs generally from north to south, in alignment with the valley, and exists chiefly under unconfined flow conditions. Maximum depth of the alluvial material ranges from 40 feet near Ketchum to over 300 feet in the Silver Creek area. Most wells do not extend to bedrock. Depth to water in wells ranges from a few feet (usually near the Big Wood River) to over 200 feet. The groundwater has a high gradient averaging 0.008 ft/ft with reported hydraulic conductivities ranging from less than 100 ft/day to over 3,000 ft/day (see Section C). The aquifer is highly productive, and supports many irrigation wells and innumerable domestic wells. Irrigation well yields range from 100 gpm to over 3,000 gpm.

The groundwater is hydraulically connected with surface water in the Big Wood River over the entire study reach. The elevation of the river in relation to the immediately

adjacent groundwater elevation is such that the river is not perched except south of Bellevue in the Glendale area outside the model domain (Luttrell and Brockway, 1984). The magnitude of reach gain or loss and the location of gaining or losing reaches likely exhibits considerable seasonal variation as groundwater and surface water levels fluctuate (groundwater levels at a USGS observation well near Bellevue indicate an amplitude of approximately 13 feet from high to low). The reach gain characteristics of the Big Wood River have not been adequately characterized on a seasonal or year-to-year basis by previous studies. Luttrell and Brockway (1984) found that the river gains from East Fork to Hailey and loses from Hailey to Glendale bridge, a finding that is corroborated by the present effort (see Section G.4.1).

Major tributaries which normally contribute surface flow to the Big Wood River within the study area include Deer Creek and Croy Creek. Other tributary basins which normally contain little or no surface flow except during very high runoff events include Ohio Gulch, Indian Creek, and Quigley Creek. All of these tributaries support an alluvial aquifer which has been developed for domestic and other purposes to a limited extent, and it is assumed that the tributaries contribute to the main valley aquifer via underflow. Other minor watersheds exist on both sides of the valley, and likely contribute to underflow. No major investigation of underflow from tributaries is available in the literature.

There are two outlets to the aquifer, the major one being at Picabo, where the alluvial system gives way to the basalts of the Eastern Snake River Plain Aquifer and the water table drops drastically as groundwater flows from the alluvium to the basalt. A secondary outflow exists on the west side of the valley near Stanton crossing.

C. Literature Review

Previous investigators have made significant efforts to characterize both the surface water and groundwater characteristics in the upper Big Wood drainage basin, beginning with Stearns et al. (1938) and ending with the most recent effort by the USGS to quantify data trends in water resources conditions through 2006 (Skinner et al., 2007).

Jones (1952) presented one of the earliest major evaluations of water resources in the valley. This publication mainly concerns streamflow gauging station records, but also presents information regarding physical basin features, water usage, history of irrigation development, and irrigated acreage estimates.

USBR (1956) studied the feasibility of developing supplemental irrigation water sources through the use of deep irrigation wells with or without seasonal storage reservoirs. This report includes estimates of irrigated acres and irrigation water requirements, and a relatively detailed description of the valley aquifer and groundwater occurrence and movement. The report includes the earliest known map of groundwater contours, which extends from Hailey to Silver Creek.

Smith (1959) is the first investigation to provide something close to a comprehensive evaluation of hydrogeologic conditions, land usage, surface water conditions, and groundwater resources in the area. This report includes several estimated valley cross-sections, estimates of aquifer hydraulic properties, estimates of groundwater discharge, groundwater contour maps, well hydrographs, and water quality data.

Smith (1960) is generally a descriptive report, with the purpose of assessing the hydrogeologic characteristics at various streamflow gauges along the Big Wood river that might impact the ability to determine total basin yield at that point.

Castelin and Chapman (1972) studied the Big Wood River - Silver Creek area, focusing on groundwater-surface water relationships, the nature of the artesian aquifer in that vicinity, and an assessment of groundwater pumping impacts on Silver Creek. The report also includes general hydrogeologic descriptions. This report is not directly related to the present modeling effort.

Moreland (1977) reported the results of extensive field investigations directed at more accurately determining the relationship between the alluvial aquifer in the Silver Creek area and the discharge in Silver Creek. This report is not directly related to the present modeling effort.

Luttrell and Brockway (1982) and Luttrell and Brockway (1984) investigated the groundwater characteristics in the Big Wood valley, including aquifer hydraulic properties and reach gain measurements in the Big Wood River. The study also included creation of groundwater contour maps, estimation of basin yield, and estimation of groundwater underflow.

Frenzel (1989) made a significant contribution to the knowledge base with this publication. The author conducted significant data collection and analysis to characterize the aquifer flow and groundwater-surface water interactions. The study included estimation of aquifer cross-sectional area, mass-measurement of water levels in 84 wells and water table contour map construction, estimates of aquifer hydraulic conductivity and groundwater discharge, river reach gain measurements, basin yield calculations, and water quality data collection.

Brockway et al. (1995) conducted an evaluation of the Big Wood River aquifer in the vicinity of Greenhorn Gulch and Timber Gulch. The modeling effort included a characterization of the aquifer physical and hydraulic properties and development of a model which incorporated the interaction between the tributary aquifers, the main aquifer, and the Big Wood River. The location of this study is just upstream of the north boundary of the present model domain.

Brockway and Kahlown (1994); Wetzstein, et al. (2000). These publications represent Phases 1 and 2, respectively, of a groundwater model development project for the Silver Creek triangle. Phase 1 included data collection and aquifer evaluation; Phase 2 was the model development effort. The aquifer in the Silver Creek triangle was characterized in terms of aquifer hydraulic properties, and was also segregated into three layers representing unconfined flow and the confined artesian flow supply the numerous flowing wells in the area.

Skinner, et al. (2007) provides the most recent investigation into water resource conditions in the Big Wood system. The main purpose of the report is to provide updated groundwater and surface water data, and evaluate the possible presence of statistically-significant trends in both data sets. The study also included a mass-

measurement of water levels in 98 wells leading to the development of a groundwater contour map. The contour map presented in this report represents the best available data for current conditions. Reach-gain measurements in the Big Wood River were attempted but are insufficiently detailed for the present modeling effort.

Brockway Engineering (1995 – 2008) has conducted numerous small-scale investigations for private clients pertaining to aquifer properties, well development potential, interference between wells, and local river-aquifer interactions. These studies often involved testing of new or existing wells. A rudimentary numerical groundwater model was developed in 2000 for the aquifer from Ohio Gulch to Hailey. This model was used in support of two proposed water right transfers involving a conversion from surface water to groundwater.

D. Model Framework

D.1. Model Code and Interface

The Big Wood Valley Groundwater model was developed using MODFLOW, a three-dimensional, cell centered, finite-difference, saturated flow numeric model developed by the United States Geological Survey (McDonald and Harbaugh, 1988). MODFLOW incorporates a modular structure, which allows for the model to be adapted for specific applications (Harbaugh et al., 2000). The original MODFLOW model was published in 1984 with subsequent versions released with the inclusion of additional modulars. MODFLOW-2000 distinguishes the version of MODFLOW used in comparison to the original MODFLOW code. Reference to MODFLOW throughout this document refer to MODFLOW-2000 with acknowledgements that MODFLOW-2000 was based on the original published MODFLOW model. MODFLOW-2000 is currently the most widely used numerical model for groundwater flow problems (Fetter, 2001).

MODFLOW simulates steady and non-steady state flow conditions under different aquifer conditions. External sources of flow into the groundwater model can include surface recharge, well injection, river or stream flow to aquifer, and specific flux or head at a boundary location. External sinks of flow from the groundwater model can include

evapotranspiration, well extraction, river or stream flow from aquifer, aquifer flow to drains and specific flux or head at a boundary location (Harbaugh et al., 2000).

The Groundwater Modeling System (GMS) was used as the graphical user interface for MODFLOW, thus allowing for the use of existing Geographical Information System (GIS) data sets (EMRL, 2005). GMS was originally developed by the U.S. Department of Defense in partnership with the U.S. Department of Energy, the U.S. Environmental Protection Agency, the U.S. Nuclear Regulatory Commission, and 20 academic partners (ERDC, 2008). GMS is a comprehensive tool that provides a visual model interface for model construction, site characterization, calibration, and post-processing (EMRL, 2005). The Big Wood Valley Aquifer groundwater model was developed using the conceptual model approach, which utilizes GIS data sets to delineate model attributes and then converts and maps the data layers to the corresponding MODFLOW cells for model execution.

D.2. Model Domain Definition

The Big Wood Valley Aquifer boundary used throughout this model is shown in Figure 4. The northern boundary is located south of the Golden Eagle Residential development near a narrowing of the valley by bedrock intrusions on the east valley wall. The northern boundary is south of the confluence of the Big Wood River and the East Fork of the Big Wood River and south of the Greenhorn Gulch tributary to the Big Wood Valley. This boundary location was selected because of the bedrock outcropping that exists on the valley's east side significantly reducing the amount of aquifer cross section at that location.

The southern boundary is located immediately north of Bellevue, Idaho. The location of the southern boundary eliminated the need to model areas of the Bellevue triangle, where published reports indicate increasingly complicated hydrogeology moving southward, including perching of the Big Wood River, a division of the groundwater between the east and west aquifer outlets, and an artesian aquifer. The southern boundary location was also selected based on the primary areas of concern at this time involving clients of Brockway Engineering PLLC and proposed water right transfers.

The proposed water right transfers for these clients were located within the model domain.

The groundwater model's east and west boundaries are located at the natural interface between the valley alluvium material and the mountains that confine the valley as shown in Figure 4. As discussed previously, the mountain bedrock consists of either pre-Tertiary sedimentary units such as limestone with igneous intrusions or younger basalt flows. The bedrock is assumed to be an impermeable groundwater barrier.

The following tributaries join the main Big Wood Valley within the model domain: Deer Creek, Indian Creek, Croy Creek, and Quigley Creek. Estimates of underflow to the Big Wood Valley aquifer were calculated from these four tributaries. The model boundary crosses each tributary up-gradient from the tributary confluence with the Big Wood Valley. The model boundary was located perpendicular to the ground water flow from the tributary valley into the Big Wood Valley aquifer.

The MODFLOW cell size was defined to be 100 ft by 100 ft throughout the model domain. The MODFLOW grid was aligned according to the compass, i.e. model columns aligned in a north/south orientation and model rows aligned in east/west orientation. Applying the model boundary to the MODFLOW grid resulted in 467 rows and 258 columns of MODFLOW cells being activated. The model domain consists of 33,452 active MODFLOW cells.

D.3. Time Domain Definition (3 possibilities, justification for choice)

The model developers discussed three options for collecting and imputing model data and evaluating the model results. Each option was discussed in detail with considerations to the availability of data, reliability of data, and purpose of the model results. All three scenarios are shown in Figure 5.

Time option one was to develop a groundwater model under steady state conditions. All inputs would be annual averages with no seasonal variation. Inputs for this option are the most reliable as the values are averages for all available data. However, modeling

the average conditions does not capture the seasonal trends and does not address the concerns of IDWR or protestants to the proposed transfers. This option was not selected due to the coarse nature of the model results and the seasonal trends not being captured.

Time option two was to develop a fully transient groundwater model. Under this option, all variables would have unique values for every time period and would vary from year to year over some selected "calibration period." This option reflects real life conditions and could produce the most robust and meaningful model; however, data requirements for a transient model are extensive and transient data for most variables was not available. The economic cost and time requirement to collect data for a fully transient analysis was beyond the scope of the modeling project. Collection of transient data would require several years of delay. This option was not selected due to the significant data requirements, economic costs to collect data, and time delay to collect data.

Time option three was to develop a quasi-transient groundwater model. This option is a hybrid between option one and option two. Under this option, variables will change on a monthly basis to capture seasonal trends, the monthly values will remain constant throughout the month, and will repeat annually. With this approach, inputs to the model are average monthly values. This option models the transient seasonal nature of the aquifer and requires more data than option one but significantly less data than option two. Given the purpose of this model, this option was selected because it addressed the need of showing the seasonal trends and response of the aquifer, while maximizing the use of available data. Data gaps such as Big Wood River flow measurements and Big Wood River water levels were identified and collected where feasible given the time constraints.

D.4. Time step and stress period lengths

Stress periods refer to periods over which model inputs remain constant. Time steps refer to numerical computation periods. Stress periods were defined for each month, for a total of 12 stress periods per year. Each stress period was further divided into two time steps, for a total of 24 time steps per year. The time step duration was dependent

on the month length, e.g. February (28 days), was modeled with a time step of 14 days; while January (31 days), was modeled with a time step of 15.5 days. The time step graph is shown in Figure 6 illustrating the stress periods and time steps.

Model data were averaged to the defined stress periods. The most reliable and available transient data within the model domain were Big Wood River flow data at the USGS gage at Hailey. The USGS gaging station has published daily flow values in the Big Wood River. The USGS gaging station also summarizes the daily flow values into monthly averages; the monthly averages were used as model inputs rather than the more detailed daily flow values.

D.5. Vertical Discretization (layers)

The Big Wood Valley consists of alluvial material that is predominately uniform throughout the model domain according the well log reports. Although some well logs indicate layers of finer-grained material, the generally uniform nature of the aquifer did not justify the creation of more than one vertical layer in the model domain for the purposes of the present study. Therefore, the groundwater model was developed with one vertical layer.

In October 2008, the model developers met with a technical advisory committee regarding the model development. During this meeting, it was proposed that multiple vertical layers could result in a model with a better river/aquifer interaction. This suggestion was considered and evaluated. The model developers felt that the multiple layers could potentially improve the model accuracy of the river/aquifer interaction; however, creating additional layers introduced the following two difficulties: additional unknown variables were necessary to describe the multiple layer interaction and modeling of ET and recharge would have to be adjusted. After reviewing the options, it was determined to continue modeling the aquifer as a single layer MODFLOW model. Incorporating additional layers could be part of a future model refinement effort.

D.6. Model Cell Definition

Individual model cells have an approximate surface area of 100 ft by 100 ft with a variable vertical depth defined by the depth of the surface to the bedrock. Data parameters were conceptually mapped in GMS with GIS layers. GMS converted GIS data to corresponding MODFLOW cells with corresponding source/sink designation. The following MODFLOW source/sink packages used for this model: well package, evapotranspiration package, recharge package, river package, and specific head package. Underflow water movement between MODFLOW cells can occur in every direction. Section H (Water Balance) discusses the analysis of water sources and sinks within the model domain; on a smaller scale, the same water balance occurs in every MODFLOW cell. Figure 7 is a schematic of a single cell illustrating the water sources and sinks. Figure 7 will be discussed in detail in Section H.

D.7. Boundary Conditions

D.7.1. Specified Flux Boundaries

Underflow estimates for each tributary and boundary were calculated and compared to published data, if available. Variable flux was defined at the northern boundary and at the four main tributaries. No previous studies have attempted to estimate how the groundwater flow varies throughout a year. Therefore, the average annual flux was shaped to arrive at a monthly hydrograph based on the seasonal trends of calculated underflow, which was based on the static water levels measured at the USGS observation well located south of Bellevue, outside of the model domain (Figure 8). The USGS reports average monthly depths and average overall depth to groundwater surface for the observation well. Monthly ratios between the monthly static water levels and the average overall depth to groundwater were calculated. Monthly ratios of static water depths were applied to the southern underflow. Monthly cross sectional area and underflow were calculated. Ratios were developed between the average annual underflow and monthly shaped underflow. Underflow shaping is discussed in detail in Section F.3. Specific flux was defined in the conceptual model by an arc with the flux rate (ft^3/day). GMS converts the conceptual model arc to a series of extraction or injection wells.

D.7.2. Specified Head Boundaries

Transient specific head was only defined at the southern model boundary. The seasonal trends of aquifer levels at the southern model boundary were based on water level data at the USGS observation well south of Bellevue. Discussion on the seasonal trends of the southern boundary is located in Section F.3.

D.7.3. Head-dependent River Boundaries

The Big Wood River flows through the model domain from north to south and portions of the computational domain are located east and west of the river. The Big Wood River was modeled with the river package as a source or sink of water to or from the aquifer. Irrigation canals were included within the model domain; however, all canals are on upland areas, i.e. perched, and do not function as head-dependent model boundaries.

D.7.4. Initial Conditions

Aquifer elevations used for initial conditions were originally set to the groundwater contours generated by Kriging interpolation of the static water levels reported in the well drilling reports and discussed in Section E.6. After the model runs, the initial conditions were revised to be the ending conditions of the transient model and the model was re-run. All model executions used the initial conditions as the starting well elevations.

E. Aquifer Characterization

E.1. Well Identification and Mapping

Idaho Department of Water Resources maintains a database of well driller reports for wells constructed in the State of Idaho. A search of IDWR's database was performed and well driller reports within the model domain were obtained. Approximately 566 well driller reports were compiled in a spreadsheet listing the location, well use, well depth, depth to water, pumping information (if provided), completed date, driller, pertinent well construction details, and depth to bedrock (if encountered).

Well locations on the well driller reports were reported by physical address, if one existed, and by the public land survey system to the nearest quarter-quarter. Each well driller report was reviewed and plotted in ArcMap based on the address or PLSS description or both. Often the location of the well could be further refined based on personal knowledge of the area or from visually identifying the well house from the aerial photo. Field verification of wells was not done and some wells may not be located precisely. The spreadsheet containing all of the well data was imported to ArcMap to provide well information spatially. Well information is provided in Appendix A.

After the well locations were refined, ground surface elevations were obtained for each well, based on the 1/3 arc second USGS National Elevation Dataset (NED). With the surface elevations obtained, elevations for the static water level and the bedrock could be calculated. The accuracy of NED data varies spatially because of the variable quality of the source DEM. The error statistic (root mean square) of the NED versus the 13,305 reference geodetic control points is 2.44 meters.

Out of the 566 wells identified by the well drillers report, only 70 wells extended through the alluvium to bedrock. The majority of the wells that did extend to bedrock are located near Indian Creek or the valley edges. The primary reason that wells do not fully penetrate the aquifer is that adequate yield can generally be obtained without doing so. This is often true even for larger-yielding wells. For this reason, well drilling record information does not provide an accurate description of the bedrock depth throughout most of the model domain.

IDWR (2008) provides comments regarding the well driller reports on the search tool on the website. IDWR identifies that the database contains most well driller reports dating back to July 1987, and records earlier than 1987 may not be available via world-wide-web. However, personal communication with IDWR staff suggests that the electronic conversion of all well logs may be essentially complete. It is possible that older historical documents may be in paper files or a microfiche file that have not been transferred to the database. A further search of all IDWR historical records would be useful to identify any historical driller reports not included in the database. Only the current IDWR database was used to collect driller reports for the model development.

IDWR also acknowledges that some well reports were never submitted to the department. Historically, IDWR requested the well drillers submit a report of the well construction, but the report was not required by the State. Since approximately 1965 the State has required that a well driller report be submitted for every well construction project.

Brockway Engineering has extensive first-hand knowledge of the area, and it is believed that all major wells have been included in the study.

E.2. Aquifer Bottom Elevation

Several published studies have presented bedrock contours for the southern portion of the model domain. Only Frenzel (1989) provided bedrock estimates for the entire model domain. Frenzel's bedrock figure is reproduced in Figure 9. However, the present effort used substantially more data points than previous studies; therefore exact correlation between published reports and model results was not expected.

Of the 566 wells evaluated within the model domain, only 70 wells extended into bedrock (Figure 10). These 70 wells were situated throughout the model domain, but were more likely found near Indian Creek or along the valley edges. A Kriging interpolation was conducted on these 70 bedrock elevations to obtain preliminary bedrock contours. The initial interpolation results were insufficient to be used as the bedrock elevations for the model, as the bedrock elevation at the valley edges were substantially lower than anticipated.

To more accurately model the interface between the alluvium and bedrock at the valley edges, approximately 40 bedrock points were added along the valley edges. These points were distributed equally along the model boundaries where the alluvium material is minimal and the elevation is dominated by the underlying bedrock of the mountains.

Again, the bedrock elevation data set was interpolated to the model grid by the Kriging method. This interpolation resulted in bedrock ridges running perpendicular to the valley direction that resulted from insufficient data in the central valley. Bedrock ridges were

eliminated by placing intermediate elevation points within the valley; intermediate elevation points were determined by linear interpolation between bedrock elevations.

The data set was again interpolated to the model grid Kriging. This resulted in bedrock contours that were more consistent with published studies and more uniform slope through the model domain. Figure 11 contains the bedrock contours generated for the model. For comparison, Figure 9 contains the bedrock schematic from Frenzel (1989).

E.3. Hydraulic Conductivity Estimation

The hydraulic conductivity (K) of the alluvial material is of prime importance in development of the groundwater flow model. Estimates of K have been made by Smith (1959), Luttrell and Brockway (1984), Brockway, et al. (1995), Wetzstein, et al. (2000), Frenzel (1989), and Brockway Engineering (1995-2008). These studies have resulted in estimates ranging from <100 ft/day to over 3,000 ft/day. It was determined that a new, more comprehensive evaluation of hydraulic conductivity was needed for the present study utilizing available well pumping test data.

Available pumping test data takes two forms: 1) specific capacity data taken from the well drilling record, i.e. well discharge, drawdown, and time of pumping; and 2) tests conducted by Brockway Engineering for private clients, which result in a K value derived from time-drawdown data collected at the pumping well and at one or more observation wells.

There are two predominant features of wells drilled in the Big Wood valley. First, they are usually not drilled to bedrock. Second, the well casing is usually not perforated and if it is, the perforations do not extend across the entire saturated depth. Thus, nearly all wells should be characterized as partially penetrating. A well which only partially penetrates the aquifer will exhibit greater drawdown in the well bore for a given discharge, or conversely will yield a lower discharge for the same drawdown (Todd, 1980). As a result, a calculation of hydraulic conductivity which neglects partial penetration effects will tend to underestimate K. Depending on the degree of partial penetration the effect may be large or small but in any case will distort the results of an

analysis such as the classical Theis approach. Because of the high productivity of the Big Wood aquifer, even higher-yielding wells are sometimes completed with no perforations or screens. This is the limiting case of partial penetration and will induce a very large effect. Efforts in the course of the present study to analyze wells without accounting for partial penetration effects have proven fruitless and result in a range of K covering 3 orders of magnitude.

A method has been developed by Bradbury and Rothschild (1985) which allows estimation of K from specific capacity data for partially-penetrating wells. This method is based on the Theis solution as modified by Sternberg (1973), and therefore all of the assumptions incorporated in the Theis solution are applicable. A brief description of the Bradbury and Rothschild method will be provided here.

The Jacob approximation to the Theis solution for unsteady flow in confined aquifers is

$$\frac{Q}{s} = \frac{4\pi T}{\ln\left(\frac{2.25Tt}{r^2 S}\right)} \quad (1)$$

where

Q = well discharge

s = drawdown in the well at time t

T = transmissivity of the aquifer

r = radius of well casing

S = storativity of the aquifer

Q/s is defined as the specific capacity of a well, or the volume of water available per unit of drawdown. To account for partial penetration of the aquifer by the well, Sternberg (1973) defined an unsteady state drawdown as

$$s = \frac{Q}{4\pi T} \left[\ln\left(\frac{2.25Tt}{r^2 S}\right) + 2s_p \right] \quad (2)$$

where s_p is a partial penetration factor given by Brons and Marting (1961) as follows:

$$s_p = \frac{1-L/D}{L/D} \left[\ln \left(\frac{D}{R} \right) - \frac{G_L}{D} \right] \quad (3)$$

where

D = aquifer thickness

L = length of Open Interval of the Casing (sum of perforated sections)

G = a function of D and L, and is defined by

$$G_{L/D} = 2.948 - 7.3636 \frac{L}{D} + 11.447 \left(\frac{L}{D} \right)^2 - 4.675 \left(\frac{L}{D} \right)^3 \quad (4)$$

Equation (4) is a polynomial fitted to data by Brons and Marting (1961) by multiple regression with a correlation coefficient of 0.992. An iterative approach is used to solve equation (2) for T, and the hydraulic conductivity may then be calculated from $K = T / b$, where b = the saturated depth of the aquifer.

E.3.1. Specific capacity method – main valley

A subset of all available drilling records within the main Big Wood valley aquifer were selected for analysis based on the following criteria:

1. Single-family domestic wells were excluded, since the yield data reported by the driller is rarely measured and is essentially meaningless. Some larger wells for subdivisions were reported as "domestic" wells. If other criteria were met, these were included.
2. The well discharge was greater than the typical domestic well flow of 10 to 20 gpm. A minimum of 100 gpm was used as a target, but some slightly lower values were included.
3. The well was tested with a pump, not by blowing air with the drilling rig or bailing.
4. All pertinent data was reported on the log, including discharge, drawdown, and time of pumping.

5. A qualitative evaluation of the accuracy of the data was made based on the reasonableness of the driller's reported data.

A total of 22 well logs were selected for analysis. These wells are identified on Figure 12. The logs included domestic, municipal, subdivision, fire protection, and irrigation wells. At each well location, the saturated depth to the aquifer was estimated by consulting logs for surrounding wells which extended to bedrock. Storativity at each location cannot be calculated from specific capacity alone, and therefore must be assumed. Based on numerous controlled pumping tests conducted by Brockway Engineering in the valley, a storativity value of 0.15 has been found to be reasonable. This is within the range expected for unconfined alluvial aquifers.

A tabulation of the wells utilized for the hydraulic conductivity estimation is provided in Table 3, along with the calculated value for K. Table 3 includes five wells which were the subject of pumping tests and analysis by Brockway Engineering. The hydraulic conductivity for these wells was not estimated using the specific capacity method. As expected, there is considerable spread in the calculated values, but most are the same order of magnitude. A statistical summary of the results is provided in Table 4.

Table 4. Statistical summary of estimated hydraulic conductivity in main valley aquifer.

Mean	302 ft/d
Standard deviation	301 ft/d
Lower quintile	54 ft/d
Upper quintile	634 ft/d

The calculated hydraulic conductivity values are similar to those obtained by previous investigators. Estimates in Moreland (1977) ranged from 200 to 470 ft/day. Frenzel (1989) used two different methods and calculated a range of 60 to 880 ft/day, ultimately selecting 300 ft/day as a mean value for underflow calculations. Smith (1959) made an underflow calculation at Hailey but reported only a transmissivity of 133,700 ft²/day. Based on the aquifer saturated depth at Hailey, the implied hydraulic conductivity in Smith (1959) is approximately 615 ft/day. This is near the upper quintile value calculated in the present study and is not unreasonable.

Figure 12 shows the wells in Table 3 and the calculated hydraulic conductivity for each well. No spatial pattern is immediately evident. The apparent randomness is likely a result of natural variation in aquifer lithology, errors in reported yield and drawdown values, and inaccuracies inherent in the specific capacity method of estimating hydraulic conductivity.

Because no spatial patterns are evident, a constant average value of 300 ft/day was used for the model. Future refinement of the model may include additional controlled pumping tests, definition of hydraulic conductivity zones based on better well testing information, and/or calibration of the hydraulic conductivity within a specified range.

E.3.2. Specific capacity method – tributaries

Suitable well test information for the tributary valley aquifers is sparse. Two wells in Deer Creek and three in Croy Creek were identified. Indian Creek near its mouth contains several domestic wells which are unsuitable for this purpose. No wells are

located in Quigley Creek. For these latter two tributaries, aquifer lithologic properties were used to estimate K based on typical published values. For Deer Creek and Croy Creek, the Bradbury and Rothchild methodology was applied to these wells. Table 5 shows the best estimate of hydraulic conductivity for the tributaries.

Table 5. Estimates of hydraulic conductivity for tributary valleys.

Deer Creek	178 ft/d
Croy Creek	11.6 ft/d
Indian Creek	10 ft/d
Quigley Creek	10 ft/d

E.4. Storativity

Controlled well testing conducted by Brockway Engineering for various projects has indicated that a storativity of 0.15 is generally appropriate for fitting theoretical curves to observed data. This value is within the range typically expected for unconfined alluvial aquifers, and no other data is available that would indicate a different value. Therefore, 0.15 was used for the entire model domain.

E.5. Aquifer Cross-Sections

Smith (1960) and Frenzel (1989) both report cross sectional data at Hailey. Published cross sections of these two studies were used as guides to compare to the 2008 model data. The model cross section at Hailey after the kriging interpolation of the bedrock elevation data resulted in a cross section area just slightly larger than 690,000 ft². Frenzel (1989) reported Hailey with a cross section of 820,000 ft² and Smith (1956) reported a cross section approximately 1,025,000 ft².

It was determined that the Frenzel estimate was most plausible and that matching the cross sectional area at Hailey with Frenzel (1989) would allow for comparison of model data with published data. The bedrock contours of the model were lowered to yield a cross sectional area at Hailey of 820,500 ft² (Figure 13). The initial kriging interpolated

bedrock elevations of the model were lowered approximately 25 feet to correspond to Frenzel's published cross sectional area.

The cross sectional areas of other locations were determined after the cross sectional area at Hailey was finalized. Table 6 presents the cross sectional area, static water top width, and maximum saturated depth of the northern boundary, southern boundary, and tributaries. The sections are illustrated in Figures 13 through 19.

Table 6: Model cross sectional area summary

Location	Cross Sectional Area (ft ²)	Static Water Top Width (ft)	Maximum Saturated Depth (ft)
Northern Boundary	267,000	3,110	126
Southern Boundary	1,054,000	6,740	198
Deer Creek Tributary	185,000	2,450	114
Indian Creek Tributary	54,000	770	106
Croy Creek Tributary	60,000	1,300	76
Quigley Creek Tributary	94,000	1,500	92
Hailey	820,500	6,400	181

E.6. Groundwater Contour Development

Groundwater contours were generated from the reported static water levels in the well driller reports for 566 wells within the model domain. Static water elevations were interpolated to the model grid by using the kriging interpolation method. Several outliers were identified as causing unreasonable skew of the results and were excluded from the interpolation. The interpolation results were smoothed by visual refinement. Figure 20 illustrates the groundwater contours generated through the Kriging interpolation. The groundwater contours were used as the initial head in the MODFLOW model runs and also the observed groundwater elevations for calibrations.

Skinner et al. (2007), Frenzel (1989), and Smith (1959) published reports with groundwater contours for this portion of the Big Wood Valley. Figures 21, 22, and 23 contain the groundwater contours for these reports. The results from the kriging

interpolation yielded similar groundwater contours at Hailey, Idaho for the model in comparison to these three investigations. Groundwater contours for Skinner et al., Frenzel, Smith, and the MODFLOW model area show a ground water elevation of approximately 5300 ft at Hailey. Skinner et al. used 22 wells with water level data to generate the groundwater contours found in Figure 21. The groundwater elevation at Hailey was approximately 5290 ft. Frenzel (1989) showed a groundwater elevation at Hailey of 5300 ft (Figure 22). Smith (1959) also showed a groundwater elevation at Hailey of 5300 ft (Figure 23). This compares with the groundwater contours generated for the model in Figure 20, where the groundwater elevation is slightly less than 5300 ft.

Groundwater contours were plotted north of Hailey by Skinner et al. (2007) and Frenzel (1989). Comparison between these reports and the generated contours were similar in the elevations, however the orientations were different. Differences in orientation was attributed to the use of fixed water elevations in the river, which resulted in water elevation contours generated for the model that only were allowed to move on the eastern side of the valley. Groundwater contours plotted by Skinner et al. (2007) are perpendicular to the valley flow, which corroborates with model results.

F. External Flux Calculation Methodology

F.1. Underflow at North Boundary

The external flux at the northern boundary was calculated using Darcy's Law. The cross sectional area (Table 6) at the northern boundary was determined to be 267,000 ft².

The water table gradient from the static water levels interpolated to the model cells was 0.0055 ft/ft. The hydraulic conductivity, as discussed, was assumed to be 300 ft/day.

Darcy's law can be expressed in the following equation:

$$Q = KiA \tag{6}$$

Where:

- K = Hydraulic conductivity (ft/day)
- i = Hydraulic gradient (ft/ft)
- A = Cross Sectional Area (ft²)
- Q = Flow Rate (ft³/day)

Evaluating Equation (6) yields a flow rate of 440,550 ft³/day. Converting the rate calculated to an annual volume results in 3,700 acre-ft/year.

F.2. Tributary Underflow

Underflow entering the model domain from major tributary valleys was estimated using Darcy's Law with the flow cross-section and gradient estimated from drilling records, and the hydraulic conductivities given in Table 7. The resulting values are also shown in Table 10. These fluxes were taken to be average values; a seasonal hydrograph for tributary underflows was developed as discussed in Section F.3.

Table 7. Estimates of average annual underflow for tributary valleys.

	Cross Sectional Area (ft ²)	Hydraulic Conductivity (ft/day)	Gradient (ft/ft)	Underflow (ac-ft/yr)
Deer Creek	184,700	178	0.007	2,000
Croy Creek	60,570	11.6	0.005	30
Indian Creek	54,410	10	0.0075	35
Quigley Creek	93,860	10	0.005	40

F.3. Distributed Underflow

The seasonal variations in underflow were calculated from the reported seasonal average static water levels in the USGS observation well. The USGS observation well, located south of Bellevue City, began operation in 1954 and has been measured 870 times through the present. USGS reports the monthly average static water level as shown in Table 8. The monitoring well levels were extrapolated to the model's southern boundary. The static water level at the southern boundary was shaped so the groundwater levels changed at same rate as the observation well. The changes to the southern boundary cross sectional area are also shown in Table 8. Changes in the cross sectional areas at the southern boundary result in changes to the underflow at the southern boundary. The total underflow at the southern boundary was divided by 12 to represent the average underflow per month. Ratios were obtained between the calculated monthly underflow value with the adjusted static water level and the average monthly underflow value.

Table 8: Development of monthly flow ratio to average monthly underflow based on the USGS observation well south of Bellevue.

Month	USGS Observation well SWL Depth (ft)	Southern Boundary Cross Sectional Area (ft ²)	Southern Boundary Underflow (acre- ft/month)	Monthly Flow ÷ Average monthly Flow
January	47.41	1,045,000	1,750	1.010
February	47.54	1,044,000	1,590	0.912
March	48.23	1,043,000	1,750	1.008
April	46.22	1,048,000	1,700	0.981
May	42.89	1,057,000	1,770	1.022
June	36.69	1,073,000	1,740	1.005
July	39.28	1,067,000	1,790	1.031
August	41.08	1,062,000	1,780	1.027
September	43.34	1,056,000	1,720	0.988
October	43.51	1,055,000	1,770	1.020
November	45.49	1,050,000	1,710	0.983
December	46.37	1,048,000	1,760	1.013
	Average	1,054,000	1,740	1.000
		Total	20,830 acft/year	

The ratio of seasonal flux (Table 8) was applied to the northern boundary average monthly flux value of 308.3 acft/month. In addition, the ratios were applied to all tributary underflows within the model domain. Calculated seasonal flux for the northern boundary are shown in Table 9, and seasonal flux values for tributary underflows are shown in Table 10.

Table 9: Underflow with adjusted seasonal trend

Month	Ratio (Table 8)	Northern Boundary		Southern Boundary	
		Underflow (acft/month)	Underflow (ft ³ /day)	Underflow (acft/month)	Underflow (ft ³ /day)
January	1.010	311.5	437,700	1,750	2,459,000
February	0.912	281.3	437,600	1,590	2,474,000
March	1.008	310.9	436,800	1,750	2,459,000
April	0.981	302.4	439,100	1,700	2,468,000
May	1.022	315.1	442,800	1,770	2,487,000
June	1.005	309.8	449,800	1,740	2,526,000
July	1.031	318.0	446,900	1,790	2,515,000
August	1.027	316.6	444,800	1,780	2,501,000
September	0.988	304.6	442,300	1,720	2,497,000
October	1.020	314.6	442,100	1,770	2,487,000
November	0.983	302.9	439,900	1,710	2,483,000
December	1.013	312.3	438,900	1,760	2,473,000
Average	1.000	308.3	441,550	1,740	2,486,000
	Total (acft/year)	3,700		20,830	

Table 10: Tributary Underflow with adjusted seasonal trend

Month	Ratio	Deer Creek		Indian Creek		Croy Creek		Quigley Creek	
		Underflow (acft/month)	Underflow (ft ³ /day)	Underflow (acft/month)	Underflow (ft ³ /day)	Underflow (acft/month)	Underflow (ft ³ /day)	Underflow (acft/month)	Underflow (ft ³ /day)
January	1.010	168.4	236,600	2,947	4,141	2,526	3,549	3,368	4,732
February	0.912	152.0	236,500	2,661	4,139	2,281	3,548	3,041	4,731
March	1.008	168.0	236,100	2,941	4,132	2,520	3,542	3,361	4,722
April	0.981	163.5	237,300	2,860	4,153	2,452	3,560	3,269	4,747
May	1.022	170.3	239,400	2,981	4,189	2,555	3,590	3,407	4,787
June	1.005	167.4	243,100	2,930	4,254	2,512	3,647	3,349	4,862
July	1.031	171.9	241,500	3,008	4,227	2,578	3,623	3,438	4,831
August	1.027	171.1	240,400	2,995	4,208	2,567	3,607	3,422	4,809
September	0.988	164.7	239,100	2,881	4,184	2,470	3,586	3,293	4,782
October	1.020	170.1	239,000	2,976	4,182	2,551	3,585	3,401	4,779
November	0.983	163.8	237,800	2,866	4,161	2,456	3,567	3,275	4,755
December	1.013	168.8	237,300	2,955	4,152	2,533	3,559	3,377	4,745
Average	1.000	166.7	238,700	2,917	4,177	2,500	3,580	3,333	4,774
Total	(acft/year)	2,000		35		30		40	

F.4. Precipitation

Precipitation data used for the model were obtained from the Western Regional Climate Center for three stations located within or near the study area. The stations and the period of record are Ketchum (1973 – 2007), Hailey 3NNW (1893 – 1981; sporadic data 1982-1988), and Picabo (1958 – 2007). All stations are part of the National Weather Service cooperative network. The Hailey station is the only station physically located within the model domain and it was assumed that this station will accurately represent the precipitation over the entire domain. Figure 24 shows the mean monthly precipitation calculated from the available data for Hailey, Ketchum, and Picabo. All data is provided in Appendix B.

The period 1970-2007 was chosen as a representation of current climatic conditions. The Hailey record is essentially complete through 1981, but contains very little data thereafter. Missing monthly values at Hailey for 1982 – 2007 were estimated using the Ketchum monthly data as a proxy. For each month, the ratio of the Ketchum monthly average to the Hailey monthly average was calculated using all overlapping data. This monthly ratio was then applied to the Ketchum monthly value for those months within the Hailey record containing greater than 3 missing values. The overall monthly mean at Hailey was then recalculated including the estimated data. The missing value estimation did not significantly change the monthly mean values, indicating that the observed data for Hailey is reasonably representative of the 1970-2007 period. The final values used as input to the model are shown in Table 11, which shows both depth of precipitation and the corresponding monthly volume by applying this depth over the domain area of 7661 acres.

Table 11. Precipitation data across the model domain (Hailey station with missing data estimated from Ketchum station).

Month	Depth (in)	Volume (ac-ft/month)
January	2.27	1450
February	1.57	1000
March	1.34	860
April	1.02	650

May	1.50	960
June	1.14	730
July	0.54	340
August	0.64	410
September	0.87	560
October	0.95	610
November	1.62	1030
December	2.07	1320
Total Annual	15.50	9910

G. Recharge, ET, and Point Withdrawals

G.1. Recharge

G.1.1. Definition

The MODFLOW recharge package was utilized to simulate the precipitation, irrigation water applied to the land surface, and seepage from Indian Creek within the model domain. If the model had more than one vertical layer, it would be necessary to define recharge as the quantity of water percolating through the vadose zone and reaching the aquifer. Since the Big Wood Valley Aquifer groundwater model contains one vertical layer, then recharge can be defined as the gross water input to the system at the land surface if the model also accounts for all water sinks, specifically ET, that will occur at that specific cell. All recharge values in this model were imputed as the gross total of water applied to the surface. Actual ET on cropland, turfgrass, and within riparian areas was modeled as discussed below.

G.1.2. Agricultural Lands

Large irrigation parcels are those areas within the model domain that are primarily agricultural or large tract irrigation as shown in Figure 25. Delineations of large irrigation parcels were made by identifying irrigated area based on the 2006 aerial photography and the 2008 Blaine County GIS parcel data; in addition, Brockway Engineering has first-hand knowledge of all irrigated lands in the domain and their extent. Forty-nine

large irrigation parcels were identified within the model domain. Ownership and total gross area of parcels were determined from the Blaine County GIS parcel data.

Irrigation practices and water quantities on each parcel varied. The irrigation amount was calculated by the following process. First, the actual irrigated area was divided by gross area to obtain an irrigation percentage for each large irrigation parcel. Second, the typical crop being irrigated was identified by local knowledge of the area; in some cases more than one crop was grown. Crops being irrigated were one or more of the following: alfalfa, grain, pasture, or turf. Third, the irrigation requirement accounting for precipitation (P_{def}) near Hailey for the crop list was obtained (Allen and Robison, 2007), shown in Table 12. If more than one crop was identified on the parcel, then a weighted irrigation requirement was calculated based on area. Fourth, an irrigation efficiency of 65% was applied to all irrigation practices, which reflects the typical mix of wheel lines, hand lines, and center pivots and the generally lower efficiency in the valley due to low soil water holding capacity. Finally, the amount of irrigation water applied to each large parcel (from any source) was calculated by multiplying the irrigation percentage by the irrigation requirement divided by the irrigation efficiency, and this amount was applied to the entire parcel. The irrigation rates for all large irrigation parcels are located in Appendix C.

Table 12: Average precipitation deficit (P_{def}) values (ft/day) per month for specific vegetation for irrigation quantities to meet actual ET (Allen and Robison, 2007).

Month	Alfalfa (Frequent Cuttings)	Irrigated Winter Grain	Pasture	Turf (Irrigated)
January	0.00	0.00	0.00	0.00
February	0.00	0.00	0.00	0.00
March	0.00	0.00	0.00	0.00
April	0.00180	0.00158	0.00177	0.00154
May	0.00778	0.00591	0.00833	0.00663
June	0.0163	0.0156	0.0146	0.0133
July	0.0181	0.0231	0.0187	0.0178
August	0.0149	0.0121	0.0155	0.0147
September	0.0104	0.00105	0.00886	0.00883
October	0.00217	0.000131	0.00154	0.00197
November	0.00	0.00	0.00	0.00
December	0.00	0.00	0.00	0.00
Total (ft/season)	2.11	1.49	2.03	1.88

G.1.3. Subdivisions

Subdivision designation was applied to all residential housing and urban developments, including the City of Hailey. All existing developments were assumed to be at full buildout for considerations of the model. Developments known to be in the planning stages were not included in the model, but were modeled as the current land use.

ArcMap was used to group individual lots into a large subdivision classification based on the development information from the Blaine County Parcel map and data. A total of 130 different developments were identified, ranging in size from a few lots to several hundred lots. Each subdivision was evaluated to ascertain the percentage of irrigation through the following process: The average irrigation per lot was determined by irrigation delineation based on aerial photography. The average irrigation per lot was then multiplied by the number of lots to obtain the total irrigated area for the residential development. Finally, any irrigated common area within the development was added to the total irrigated area.

The irrigation water volumes were calculated by the following method: The irrigated area calculated as described above was divided by the total area to obtain an irrigation

percentage for each subdivision. Residential irrigation was assumed to be turf grass with irrigation demand accounting for precipitation shown in Table 12. An irrigation efficiency of 65% was applied to all subdivisions. The amount of irrigation water applied (from any source) was calculated by multiplying the irrigation percentage by the irrigation demand divided by the irrigation efficiency, and this amount was applied to the entire subdivision parcel. The treatment of subdivision irrigation was the same for all subdivisions regardless of the irrigation system, including the City of Hailey. All subdivision irrigation application rates are contained in Appendix C.

G.2. Evapotranspiration

G.2.1. Definition

The MODFLOW ET package was used to simulate the extraction of water from the aquifer due to evaporation and transpiration from growing vegetation (Jones, 2001). If the aquifer is modeled with two or more vertical layers, then the ET package will only model direct ET. Since the Big Wood Valley model has a single vertical layer, the ET package was used to model the Actual ET from all model cells.

As mentioned in the recharge section, all existing subdivisions were considered to be fully developed for the model consideration. Developments that are currently planned, but not implemented were modeled assuming the current land use.

G.2.2. Irrigated Areas

ET was defined for large irrigation parcels and subdivisions. Different ET values were calculated for each individual large irrigation parcel and subdivision, based on the irrigation percentage, type of vegetation, impervious area, and riparian area. Average ET values were applied to the entire land for each delineated parcel. Actual ET values for specific crops were obtained from Allen and Robison (2007) for the Hailey Ranger Station. These ET values were assumed to be constant throughout the model domain. Table 13 shows the actual ET values for the common land uses used in the model.

Table 13: Average Actual ET values (ft/day) per month for common land uses within the model domain (Allen and Robison, 2007).

Month	Alfalfa (Frequent Cuttings)	Irrigated Winter Grain	Pasture	Turf (Irrigated)	Bare Ground	Riparian Area	Urban Area
January	0.00108	0.00167	0.000909	0.000909	0.00172	0.00116	0.00172
February	0.00167	0.00263	0.00146	0.00146	0.00268	0.00177	0.00268
March	0.00230	0.00389	0.00222	0.00222	0.00348	0.00257	0.00348
April	0.00295	0.00717	0.00404	0.00374	0.00434	0.00424	0.00434
May	0.0111	0.0144	0.0177	0.0150	0.00480	0.00601	0.00480
June	0.0198	0.0297	0.0277	0.0258	0.00500	0.0129	0.00500
July	0.0192	0.0369	0.0305	0.0290	0.00151	0.0303	0.00151
August	0.0165	0.0206	0.0261	0.0250	0.00167	0.0299	0.001667
September	0.0122	0.00454	0.0160	0.0158	0.00222	0.0119	0.00222
October	0.00394	0.00303	0.00429	0.00449	0.00242	0.00379	0.00242
November	0.00154	0.00222	0.00126	0.00126	0.00212	0.00162	0.00212
December	0.000984	0.00141	0.000808	0.000808	0.00141	0.00106	0.00141
Total (ft/yr)	2.89	2.55	2.70	2.55	0.66	2.22	0.66

G.2.3. Non-Irrigated Areas

Included in the ET analysis are areas that were not actively irrigated, including bare ground, riparian areas, and urban areas. The ET values for these areas are included in Table 13 above. GIS delineation of the non-irrigated areas resulted in ratios, analogous to those of the irrigation percentage discussed previously.

Weighted ET values were calculated by combining the irrigated and non-irrigated percentages and multiplying the percentage by the ET values presented in Table 13. The weighted ET values for the respective area were applied to the entire area, not specifically to delineated irrigated/non-irrigated areas. Weighted ET values are found in Appendix D.

G.3. Point Groundwater Withdrawal

G.3.1. Agricultural Irrigation

The primary irrigation water source for large irrigation parcels is the Big Wood River. MODFLOW models the river/aquifer interaction through the river package, but MODFLOW is not intended to be a hydrologic model. Therefore the source of the irrigation water was not actively modeled, but the irrigation results were included, specifically using groundwater as a supplemental irrigation water source.

Surface water irrigation sources are subject to curtailment by the watermaster. The point in time at which surface water is curtailed depends on the priority date(s) of the irrigator's surface water right(s) and the natural available water supply in the river. When a surface water irrigation right is curtailed, the irrigator has two options: 1) cease irrigating, allowing the crop to be stressed and yield to be reduced, or 2) divert supplemental groundwater to the crop if an appropriate water right exists. The majority of agricultural water users have supplemental irrigation groundwater rights and continue irrigating throughout the growing season.

The large irrigation parcels were analyzed to determine if the large parcel had surface water irrigation rights based on information in the IDWR water rights database. The latest Snake River Basin adjudication recommendation was assumed to represent the best current evidence of the components of the water right. If a surface right existed, then the average curtailment date for that surface water right was determined by analyzing Water District 37 historical records from 1942 through 2008. If the large parcel also had a supplemental groundwater irrigation right, then an extraction well was included to continue irrigation throughout the irrigation season as illustrated in Figure 26, which shows the well extraction for a supplemental well. A few large parcels have only groundwater irrigation rights; in these situations the entire irrigation amount was modeled by an extraction well. Figure 27 shows well extraction for irrigation on a parcel without surface irrigation. All well extraction data for large agricultural parcels can be found in Appendix E.

G.3.2. Subdivision Irrigation

In contrast with the large irrigation parcels, most subdivisions do not have surface water irrigation rights. If the subdivision did have a surface water irrigation right, then the average curtailment date was determined from Water District 37 historical records. In most situations, the irrigation water was supplied to the subdivision from groundwater wells with authorized groundwater rights.

If the irrigation water source was from groundwater, then an extraction well was implemented to divert the irrigation amount, discussed in Section G.1.3 (Recharge – Subdivision). For simplicity within the model, a single extraction well was used for subdivision irrigation use, regardless of whether water is supplied via individual wells or a community water system.

G.3.3. City of Hailey

The City of Hailey utilizes a water source from Indian Springs, located up the Indian Creek valley northeast of Hailey. The spring source is generally sufficient to meet in-house and commercial demands. The City also has several groundwater municipal rights which are used to meet demands exceeding the spring supply which occur due to irrigation typically from May through September. The Indian Springs water used for potable water purposes is treated and the wastewater effluent injected into the Big Wood River. The potable water portion of the City of Hailey's water use was not actively modeled in the Big Wood Valley model. City areas with large scale irrigation, such as city parks and cemeteries, that use groundwater as the primary water source were modeled with diversions from individual wells located at the specific parcel. The City's residential irrigation diversions were modeled by groundwater diversions from city wells limited to the municipal groundwater rights.

G.3.4. Residential In-House Usage

Potable water use from groundwater outside of the City of Hailey was not included in the model. Nearly all water diverted from groundwater for in-house potable use is returned to the aquifer via individual septic systems. Approximately 10% or less is consumed,

and the total in-house consumptive use within the model domain relative to the magnitude of groundwater flow is insignificant ($<0.2\%$).

G.4. Big Wood River Leakage (Reach Gain)

The interaction between the Big Wood River and the valley aquifer is dynamic. The river gains water from the aquifer and loses water to the aquifer depending on the time of year and location of the river reach.

G.4.1. River Discharge and Reach Gain Data

A USGS gaging station on the Big Wood River (13139510) is located near Hailey, at the Bullion Street Bridge. The station is a rated section at a stable location in the river. The USGS began collecting stage and discharge data in 1915 and has continued through the present. The original gauge measured the flow in the Big Wood River and Big Wood Slough separately and reported a "Big Wood River and Big Wood Slough Combined Discharge at Hailey, Idaho" from July 1915 to September 1973. Beginning in October 1973, the gauge reported the total flow in the Big Wood River. The average monthly flow rate (cfs) for the period of record of the Big Wood River gage near Hailey is presented in Table 14.

Table 14: Average monthly flow data for the Big Wood River near Hailey from daily flow data collected from July 1915 through September 2007.

Month	Flow Rate (cfs)	Gage Height (ft)
January	154	1.24
February	151	1.23
March	188	1.37
April	521	2.24
May	1,280	3.46
June	1,450	3.67
July	642	2.48
August	260	1.60
September	202	1.42
October	202	1.42
November	187	1.37
December	159	1.26

No other active gauging stations are present in the Big Wood River above the Stanton Crossing gauge.

Additional discharge measurements were made by Brockway Engineering in September 2008 to quantify the flow gain and/or loss within the model domain. Discharge measurements were made in the river channel and at all known diversions, return flows, and natural inflows. Figure 28 shows the measurement locations. Measurements in the river channel were made using a pygmy current meter according to standard U.S. Bureau of Reclamation procedures. All measurements were rated "excellent" according to the USBR criteria. The numbers at the measurement locations correspond to the sites listed in Table 15.

Table 15. Big Wood River flow measurements collected in September 2008 by Brockway Engineering.

Location	Location Description	River (cfs)	Inflow (cfs)	Outflow (cfs)	Method
1	Big Wood River below Golden Eagle Pump near north model boundary	122.68			C
2	Lufkin Diversion near Starweather Bridge			0.00	V
3	Hiawatha Canal			11.70	C
4	Purdum Slough at Zinc Spur			0.00	V
5	Big Wood River below Deer Creek Bridge	123.09			C
6	Purdum Slough Return at Cloverly		0.00		V
7	Aspen Lakes Diversion			1.69	BW
8	River Grove/Aspen Lakes Return at Ferrante's		0.50		PF
9	Indian Creek at Cropper Property		0.00		V
10	Big Wood River at Hailey Gage – USGS Provisional	134.00			C
11	Croy Creek at Mouth		0.00		V
12	Cove Canal			5.85	C
13	Bend of the River Spring Pump			0.45	E
14	Kohler Ditch			0.00	V
15	Rockwell Bypass			8.26	CW
16	Big Wood River below Star Bridge	105.62			C
17	Big Wood River below Broadford Bridge near south model boundary	78.71			C

The data in Table 16 summarizes the river gain or loss by accounting for surface water diversions or returns (Table 15). The reach from the northern model boundary to the Hailey gauge is a gaining reach (24.2 cfs gain) and the reach from the Hailey gauge to the southern model boundary is a losing reach (40.7 cfs loss). This result is consistent with previous studies. The net river loss was 16.5 cfs over the entire model domain.

Table 16: Summary of river reach gain or loss through the model domain.

Big Wood River Reach	River Gain (cfs)	% Change
Golden Eagle to Deer Creek	12.10	9.9%
Deer Creek to Hailey	12.10	9.8%
Golden Eagle to Hailey	24.20	19.7%
Hailey to Star Bridge	-13.82	-10.3%
Star Bridge to Broadford Road	-26.90	-25.5%
Hailey to Broadford Road	-40.73	-30.4%

G.4.2. River Elevations

The reach gain modeled by the river package in MODFLOW is a function of the river water surface elevation and the computed adjacent aquifer elevation. Accurate elevations of the Big Wood River were not available in published studies. Brockway Engineering retained the surveying firm Alpine Enterprises to determine the Big Wood River Elevations at seven locations throughout the model domain, as shown in Table 17 and Figure 29. The water surface elevations between surveyed locations were interpolated; however, adjustments were made to assure that the river water surface elevation was not higher than the adjacent land surface at any point. This was done by comparing the linearly-interpolated water surface elevations with the land surface from the NED. If the land surface elevation was lower than the river elevation, then the river elevation was adjusted to be lower the surface elevation. The resulting set of river elevations along the length of the river was used as the elevation parameter for the river package.

Table 17: Surveyed elevations at specific points along the Big Wood River.
Elevation datum is NAVD88.

Location No.	Description	Survey Marker Elevation (ft)	Water Surface Elevation (ft)
1	Greenhorn Bridge	5547.42	5529.7
2	Starweather Bridge	5509.78	5492.2
3	Deer Creek Bridge	5425.62	5407.2
4	Flying Heart Fisherman Access	5350.61	5350.6
5	Bullion Bridge	5317.13	5299.9
6	Star Bridge	5250.80	5233.5
7	Broadford Bridge	5175.40	5159.7

G.4.3. Initial River Conductance

The initial river conductance was determined by taking the hydraulic conductivity value of 300 ft/day and multiplying by river width of 20 ft and divided by the thickness of the river bed. The initial Big Wood River conductance was calculated to be 200 ft²/day/ft. The river conductance was adjusted through the calibration process with a goal of simulating the measured loss/gain by Brockway Engineering presented in Table 16.

G.5. Canal and Ditch Seepage

G.5.1. Overview of Ditch Systems

Irrigation from the Big Wood River in the groundwater model domain has historically been performed by diversion and distribution through cooperative ditch systems rather than through irrigation districts or canal companies, with the largest system in terms of acres being the Cove Canal. Individual water rights from the river are normally diverted into each ditch by the Watermaster of District 37 according to priority based on the discharge in the river. The watermaster normally does not have jurisdiction over deliveries from the primary ditch to individual water right holders. Each ditch typically has a board of directors and a ditchrider who administers deliveries to individual farms. Irrigation has occurred since 1880 with most viable irrigation rights having priorities

through 1886. Later rights are normally considered "flood" rights and are delivered only during spring high discharge periods.

Under this administrative procedure, the discharge in each canal varies throughout the season based on the distribution of priorities of individual rights, location of the canal within the valley, and individual orders for water. A compilation of cutoff dates for water rights of different priorities was prepared to determine the average cutoff date for each year since 1942. Using this compilation, the average cutoff date for all water rights within individual canals was compiled. This allows a determination of the seasonal distribution of water deliveries or canal discharge for estimation of canal losses and irrigation deliveries throughout the average season.

Canals and ditches are not lined and contribute water to the aquifer through seepage. This flux was modeled using the MODFLOW river package to duplicate the estimated seepage described below. The river conductance values were calibrated to obtain similar river seepage within the model as calculated.

Some diversions from the river are for individual persons and consist of a single headgate or pump diversion. These diversions are normally small and adjacent to the river and, in some cases, were ignored for this project.

Each significant ditch within the model domain is shown on Figure 4 and described below, and the procedure used to estimate the seepage loss is outlined.

G.5.2. Mizer Ditch

This ditch diverts from the Big Wood River near the northern boundary of the model. The Mizer ditch serves only irrigated areas west of Highway 75 although historically it served the area now occupied by the Valley Club and the Valley Club Subdivision. The Mizer Ditch is 1.2 miles long with an average width of 7 feet. Underlying soils in the reach of the ditch were determined from USDA NRCS Soil Surveys and corresponding seepage rates were estimated using the Worstall method as outlined in the Hubble Report used by IDWR.

G.5.3. Hiawatha Canal

The Hiawatha Canal diverts from the Big Wood River about 1.5 miles south of the north model boundary. This ditch serves approximately 44 users with individual water rights which includes the area east of Highway 75 extending south through the City of Hailey. The City of Hailey cemetery pump is the last diversion from the ditch. The Hiawatha Canal historically provided irrigation water south of Hailey to the Flying Hat Ranch south of the Hailey Airport. A total of 22.7 cfs of individual water rights with early priorities of 1883 or earlier have been delivered through this canal with an average discharge of 30 cfs and peak discharges over 40 cfs, according to records of Water District 37. The Hiawatha Canal is 5.0 miles long with an average width of 13.3 feet.

An analysis of estimated seepage losses using the Worstall method and USDA NRCS Soil Surveys was performed by Allen Merritt, manager of the IDWR Southern Region office in connection with a previous transfer of water rights from the Hiawatha Canal. This analysis was adopted for use in the current project to estimate the canal loss to the aquifer.

G.5.4. Cove Canal

The Cove Canal diverts from Big Wood River 1.0 miles downstream of Bullion Street in Hailey. The ditch serves several small users adjacent to the river and the 595-acre Flying Hat Ranch which lies west and east of Highway 75 between the airport and Bellevue. The Cove Canal historically continued southward through Bellevue and provided irrigation water to areas south of Bellevue. The canal now ends just below the last pumping station on the Flying Hat Ranch. The canal is approximately 2.8 miles long and 8.6 feet wide with underlying soils consisting of primarily gravelly silt loam. The Worstall method was utilized to estimate seepage losses from the Cove Canal.

G.5.5. Rockwell Bypass

The Rockwell Bypass Canal diverts from Big Wood River just upstream of the Star Bridge. This was built in 1936 to bypass the Broadford Slough which exhibited very high

seepage loss. As a result, a saved water right was awarded by judicial decree based on the reduced seepage in the ditch compared to the slough. The Rockwell Bypass water right has been split many times and pieces of it are now spread throughout the Big Wood River. They are considered to be in priority and deliverable as long as the Rockwell Bypass channel is operable and capable of diverting some 17 cfs. This canal exits the domain of the groundwater model just west of the City of Bellevue as shown on Figure 4. The Rockwell Bypass canal within the model domain is 2.4 miles long and averages 8 feet wide. The Worstell method was utilized to estimate seepage losses from this canal.

G.6. Drains

The water table is at or near the ground surface during certain periods of the year at several locations within the riparian zone of the river. A natural or man-made channel within these zones may act as a continuous or seasonal drain, which would remove water from the aquifer system. The only known channels which operate in this manner with any regularity are the Purdum Slough and the Flying Heart pond system. The Purdum Slough was dry during the fall of 2008 and the Flying Heart pond was flowing a small amount estimated to be no more than 100 gpm. Due to lack of data and the minor effect they are anticipated to have, these features were not included in the model as drains. They are close to the river and were treated as part of the river reach gain.

G.7. Underflow at South Boundary

The underflow at the southern model boundary was determined by the water balance calculation, discussed in Section H. The underflow was seasonally shaped based on the procedure discussed in Section F.3. The monthly average underflow value presented in Table 8 (1,740 ac-ft/month) and the corresponding seasonal flow values are based on the water balance underflow value. The southern boundary also has variable head elevations defined, which correspond to the elevation associated with the depth to the static water level.

G.8. Topographic data

Surface topography was obtained from the National Elevation Dataset (NED) maintained and distributed by the USGS. The NED dataset is available in raster format based on the USGS 7.5-minute quad sheet topography and additional remote sensing data at a scale of 1/3 arc second or approximately 10 m by 10 m. The NED data was then mapped to the model grid surface at a scale of 100 ft by 100 ft, or approximately the same scale as the NED data.

A single elevation value for a grid cell 100 ft by 100 ft derived from elevations based on 1/3 arc second raster data will have vertical errors. However, the NED was the best elevation available data from the USGS for the model domain. Data were deemed adequate given the other variable uncertainties.

H. Water Balance

The first step in model calibration was to construct a water balance of the model domain. The inputs and outputs to the aquifer system were evaluated on an annual basis to determine the amount of underflow at the southern boundary. Figure 7 illustrates the water balance inflow and outflow evaluation for a specific model cell. The monthly inflows and outflows for the model are summarized in Tables 18 and 19. The outflow at the southern boundary was adjusted to match the inflow to the outflow on an annual basis. Table 18 contains the water balance inflows to the model for every month. Table 19 contains the water balance outflows from the model for every month.

The southern boundary underflow initial estimate calculated using Darcy's Law was 15,050 ac-ft/year with an average cross sectional area of 1,054,000 square feet, a hydraulic gradient of 0.00568 ft/ft, and a hydraulic conductivity of 300 ft/day. Comparing the water balance in Tables 18 and 19, the underflow at the southern boundary was calculated to be 20,830 acft/year. The change in underflow was deemed reasonable, could easily be due to a higher value of hydraulic conductivity at the southern boundary (increase from 300 ft/day to 415 ft/day). A value of 415 ft/day is well within the range of uncertainty for this parameter. As a result, the model hydraulic conductivity at the southern portion of the model was raised to 415 ft/day, as shown in Figure 30.

Table 18: Water balance: Inflows (all values in acre-feet).

Month	Underflow					Precip	Irrigation		Seepage			Total
	Northern	Deer Creek	Indian Creek	Croy Creek	Quigley Creek		Subdivisions	Large Parcels	Canal	BWR	Indian Creek	
January	312	168	2.95	2.53	3.37	1,450	0.0	0.0	0.0	2,460	154	4,550
February	281	152	2.66	2.28	3.04	1,000	0.0	0.0	0.0	2,220	139	3,800
March	311	168	2.94	2.52	3.36	860	0.0	0.0	0.0	2,460	154	3,960
April	302	164	2.86	2.45	3.27	650	119	141	135	2,380	149	4,050
May	315	170	2.98	2.56	3.41	960	513	633	139	2,460	154	5,350
June	310	167	2.93	2.51	3.35	730	1,026	1,244	135	2,380	149	6,150
July	318	172	3.01	2.58	3.44	340	1,392	1,533	139	2,460	154	6,520
August	317	171	3.00	2.57	3.42	410	1,140	1,238	139	2,460	154	6,040
September	305	165	2.88	2.47	3.29	560	683	763	135	2,380	149	5,150
October	315	170	2.98	2.55	3.40	610	152	162	139	2,460	154	4,170
November	303	164	2.87	2.46	3.28	1,030	0.0	0.0	0.0	2,380	149	4,030
December	312	169	2.96	2.53	3.38	1,320	0.0	0.0	0.0	2,460	154	4,420
Average	308	167	2.92	2.50	3.33	827	419	476	80	2,410	151	4,850
Total	3,700	2,000	35	30	40	9,920	5,030	5,710	960	28,960	1,810	58,200

Table 19: Water balance: Outflows (all values in acre-feet).

Month	ET		Seepage		Well		Underflow		Total
	Subdivision	Large Parcels	BWR	Subdivision	Large Parcel	Southern			
January	117	107	1,490	0	0	1,750	3,460		
February	166	150	1,340	0	0	1,590	3,250		
March	249	234	1,490	0	0	1,750	3,720		
April	331	336	1,440	116	2	1,700	3,930		
May	738	902	1,490	513	10	1,770	5,420		
June	1,070	1,530	1,440	993	19	1,740	6,790		
July	1,030	2,030	1,490	1,390	26	1,790	7,760		
August	910	1,830	1,490	1,140	102	1,780	7,250		
September	614	990	1,440	661	174	1,720	5,600		
October	271	341	1,490	152	130	1,770	4,150		
November	144	141	1,440	0	0	1,710	3,440		
December	98	95	1,490	0	0	1,760	3,440		
Average	478	724	1,460	414	39	1,740	4,850		
Total	5,740	8,690	17,500	4,970	463	20,830	58,200		

I. Modeling Results

I.1. Model Calibration

I.1.1. Hydraulic Conductivity

The hydraulic conductivity throughout the model was fixed at a uniform 300 ft/day, as described in Section E.3, except for the very southern portion of the model where the hydraulic conductivity was raised to 415 ft/day based on the results from the water balance, as discussed in Section H.

I.1.2. River Conductance

The river conductance was adjusted through the calibration process to more accurately reproduce the river/aquifer interaction based on the September 2008 flow measurements. An initial river conductance value of 200 ft²/day/ft was used throughout the model domain. Measured flow data on the Big Wood River in September 2008 concluded that the aquifer was losing water to the river north of the USGS gage at Hailey and the aquifer was gaining water from the river south of the gage.

MODFLOW executions resulted in insufficient water lost from the aquifer to the river and an abundance of water seeping to the aquifer from the river. To more accurately reflect the measured conditions, the river conductance was doubled north of Hailey to result in more water leaving the aquifer to the river. The reverse approach was applied to the river conductance south of Hailey, where it was halved.

Figure 31 illustrates the areas of water loss from the aquifer to the river, shown in red, and water gain to the aquifer from the river, shown in blue.

I.1.3. Observed vs Computed Head

Static water levels reported on well drilling records were used to generate the observed water elevations throughout the model. The static water levels reported varied in time, season, and year. As a result, a single observed groundwater contour map was

created, as discussed in Section E.6. The steady state groundwater contour map was used to compare the calculated water head from the transient model.

Figure 32 presents the observed versus calculated plot, with reasonable fit for the model throughout the domain. Statistically comparing the observed and computed head allows the calculation of a root-mean-square error

Figure 33 contains whisker plots at observed water elevation. The calibration target for each observed water elevation was ± 5 ft. Observed targets shown in green indicate that the calculated head at this location is within 5.0 ft of the observed water elevation. Yellow targets indicate that the calculated water head is between 5.0 and 10.0 ft of the observed water elevation. Red targets indicate that the calculated water elevation is greater than 10.0 ft of the observed water elevation.

1.1.4. Error Summary

The root mean square error of the calculated head compared to the observed heads for all time steps was 5.65 ft. Additional statistics of model error for all time steps include the mean error of -2.233 ft and the mean absolute error of 4.071 ft. Errors for individual time steps vary slightly, plus or minus 0.2 ft.

J. Data Deficiencies and Recommended Future Refinements

The best available data was utilized as the basis for the present groundwater modeling study and it is believed that a reasonably accurate model has resulted. This model could serve as the starting point for an eventual basin-wide model extending from Silver Creek to North Fork. However, significant data deficiencies remain and it is recommended that a data collection effort be instigated to improve the accuracy of the model inputs and provide a basis for calibration of the model.

Big Wood River discharge. At present, a single gauge at Hailey is the sole source of systematic discharge readings above Stanton Crossing. Additional measurements are needed to quantify the reach gain magnitude and seasonal variability in order to provide

calibration targets. It has been shown that the location and magnitude of gain or loss is nonuniform, and therefore a dense network of measurements is needed to accurately capture these patterns. At a minimum, additional data is needed at Bellevue, Star Bridge, Deer Creek, Golden Eagle, McCanville, Ketchum, Eagle Creek, and North Fork. This data would be best collected at rated stream sections with continuous recorders; alternatively, current meter measurements could be made at least monthly. At least two years of reach gain data should be collected during years with water supply close to normal.

Big Wood River water elevation. The elevation profile of the river is critical to accurate modeling of the aquifer-river interaction. One surveyed profile was completed in October 2008 with the river near its seasonal low. Additional profiles are needed over a range of discharges. The surveyed benchmarks on the bridge crossings can be used for this purpose.

Tributary surface flow. No stream gauges are currently active on any tributary. At a minimum, quarterly current meter measurements are needed on Croy Creek, Deer Creek, Greenhorn Creek, East Fork, Trail Creek, Warm Springs Creek, Adams Gulch, Lake Creek, and Eagle Creek.

Groundwater levels. Mass measurements should be made on a network of wells on quarterly basis for at least two years in order to quantify the seasonal fluctuation at various points in the aquifer and provide calibration targets. The wells should include major tributary valleys, in which data is extremely sparse. The wells should be surveyed to obtain a casing elevation.

Bedrock depth. An accurate determination of the aquifer bottom elevation and cross-section is difficult due to few wells extending to bedrock. This deficiency is especially problematic for calculation of underflow. It is recommended that a network of observation wells be drilled to bedrock to remedy this deficiency and use of geophysical methods should be considered.

Drain flows and artesian wells. This deficiency pertains to the Silver Creek and Black Slough areas, which will eventually be included within the basin-wide model. Discharge data are needed on the various spring-fed drains feeding Silver Creek and the Big Wood River. Current flow and pressure data are also needed on the numerous artesian wells which have been developed in the area.

With additional data as described above, the model can be refined and expanded. The most important refinements would be a more accurate bedrock map, and a calibrated non-uniform hydraulic conductivity and river conductance to better match observed water level and reach gain targets. Even with the additional data, the "quasi-transient" approach will still be the only feasible approach. Eventually, a fully-transient model may be possible, but this would require many years of systematic data collection to develop a calibration data set.

K. Preliminary Scenarios

K.1. Dry Lot, LLC Scenario

K.1.1. Overview and Objective

The Dry Lot LLC group has submitted a water right transfer application and water right permit application to the Idaho Department of Water Resources to provide additional groundwater supply for the Valley Club Owners Association. The proposed new water right permit is for irrigation of residential land owned by members of the owners association. The water right transfer proposes to recharge surface irrigation rights from the Big Wood River to the aquifer for mitigation of the new groundwater irrigation permit.

The objective of the model scenario is to quantify the relative impact of the proposed water right permit and water right transfer on concerned neighboring groundwater right holders and the associated impacts to the Big Wood River.

Figure 34 shows the location of the proposed recharge mitigation well and the irrigation well for the owners association. Points A, B, C, D, and E indicate model nodes used to

evaluate the changes of groundwater surface elevations from the baseline model data and the Dry Lot, LLC scenario.

K.1.2. Scenario Inputs

The Dry Lot, LLC scenario inputs consists of the proposed irrigation water extraction under the new permit and the proposed mitigation by infiltration of water to the aquifer. Data for irrigation pumping and mitigation are graphed in Figure 35. Table 20 contains the associated data.

Table 20: Monthly volumes of irrigation extraction and recharge for the Dry Lot LLC scenario.

	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Extraction (acft)	1.7	14.7	28.5	39.4	32.7	18.9	2.2	138.1
Recharge Mitigation (acft)	13.6	28.0	27.1	28.0	28.0	13.6	0.0	138.3

K.1.3. Scenario Results

The groundwater model was run with the addition of the proposed extraction and mitigation. The baseline model results were compared with the results from this scenario to quantify the impacts of the proposed project.

Figures 36 through 40 show the groundwater elevations of the baseline data and the model scenario data. The largest decrease in water surface elevation is 0.5 feet at point B, located immediately north of the Valley Club Homeowners Association wells near Ohio Gulch road. The model node at the mouth of Indian Creek showed no detectible change in the water surface elevations under the proposed scenario.

Six Big Wood River reaches were evaluated to quantify the change in the river/aquifer exchange based on the proposed scenario. Figure 41 illustrates the location of the river reaches. Figure 42 is a graph of the changes of river reach gain/loss based on the proposed scenario. The zero line in Figure 42 represents the baseline model data. If

the scenario reach data were different than baseline data then it was plotted relative to the river reach (positive = river gain; negative = river loss). Reach 1 (Northern Boundary to Starweather Bridge) showed an annual river loss of 4 acre-ft/year. Reach 2 (Starweather Bridge to Deer Creek Bridge) showed a river annual gain of 20 acre-ft/year. All other reaches showed no detectible reach gain/loss.

K.1.4. Discussion

The largest impact on groundwater levels at the observed node near the Heatherlands (Point A, Figure 34) is 0.06 ft in September. The baseline model shows an annual natural variation of the groundwater levels at this location of 1 ft. The impact of the proposed project on nearby wells is not discernable in comparison to the annual changes in the groundwater levels.

The annual discharge volume in the Big Wood River is 302,300 acre-feet/year using USGS gage data at Hailey. The changes in river reaches of 4 acft/year loss or 20 acft/year gain represent a fraction of a percent of total stream volume, 0.001% and 0.007%, respectively. Similar to the groundwater levels, the impact to the respective river reach is not significant on an annual basis.

K.1.5. Summary

- A new water right permit and water right transfer have been submitted to IDWR by Dry Lot, LLC.
- IDWR cannot evaluate the impact of these applications without a groundwater model.
- Brockway Engineering, PLLC developed a groundwater model of the Big Wood Aquifer.
- A Dry Lot, LLC recharge and extraction scenario was evaluated and compared with the baseline model data.
- Groundwater level changes associated with the proposed project will not adversely affect neighboring groundwater rights.

- The maximum decrease of groundwater levels at the Heatherlands Development is 0.06 ft lower than the baseline model data.
- The model node at the mouth of Indian Creek showed no detectible change in the water surface elevations under the proposed scenario.
- Six Big Wood River Reaches were evaluated.
 - One reach (northern boundary to Starweather Bridge) showed a 4 acre-ft/year decrease in river flow.
 - One reach (Starweather Bridge to Deer Creek Bridge) showed a 20 acre-ft/year increase in river flow.
 - The remaining four reaches showed no change in the annual reach volume.

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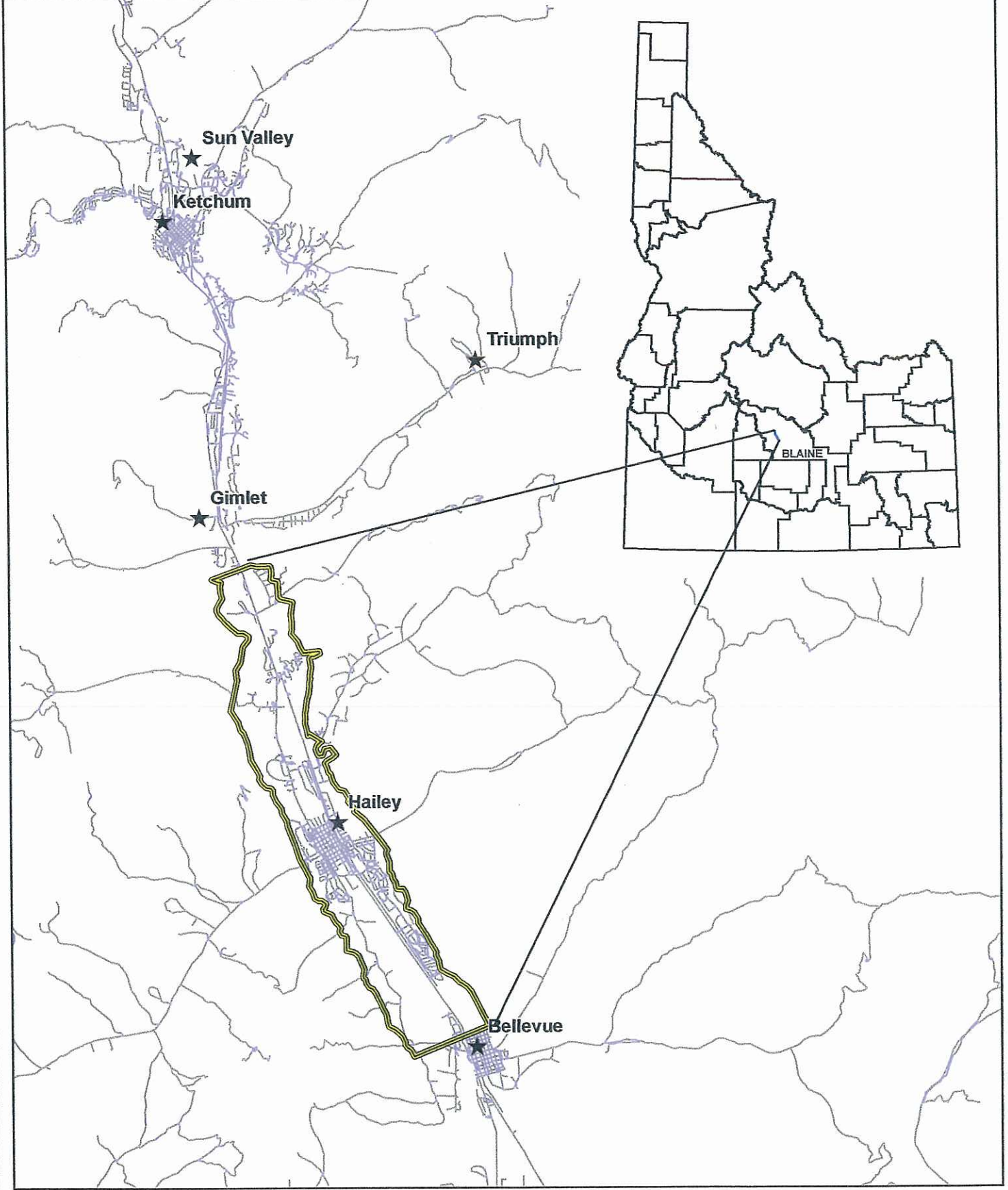
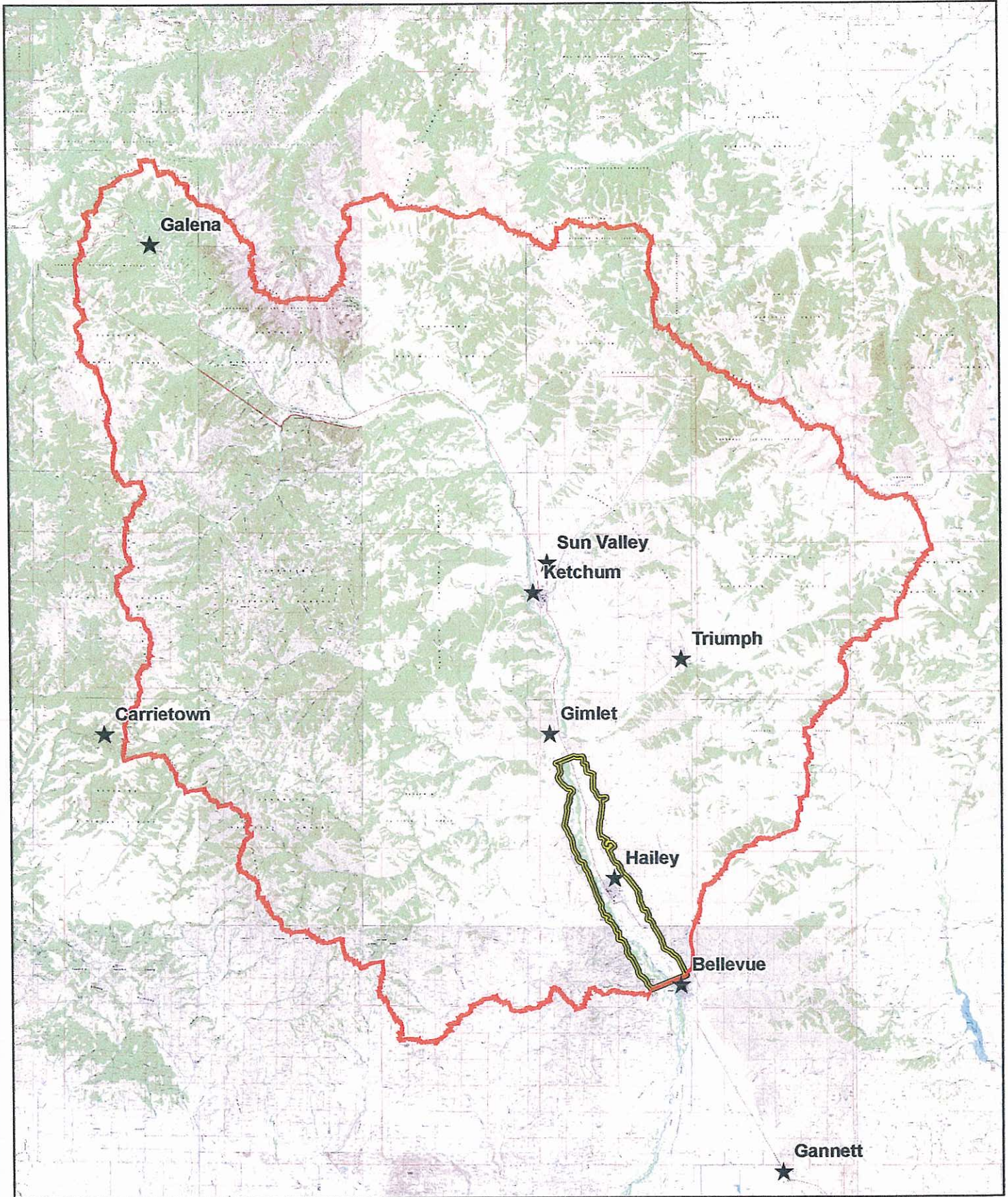


**FIGURE # 1 - VICINITY MAP
BIG WOOD GROUNDWATER MODEL**

 MODEL BOUNDARY



1 inch equals 5 miles

**FIGURE # 2 - WATERSHED
BIG WOOD GROUNDWATER MODEL
Topographical 7.5 min. Quad**

 MODEL BOUNDARY
 Global Watershed



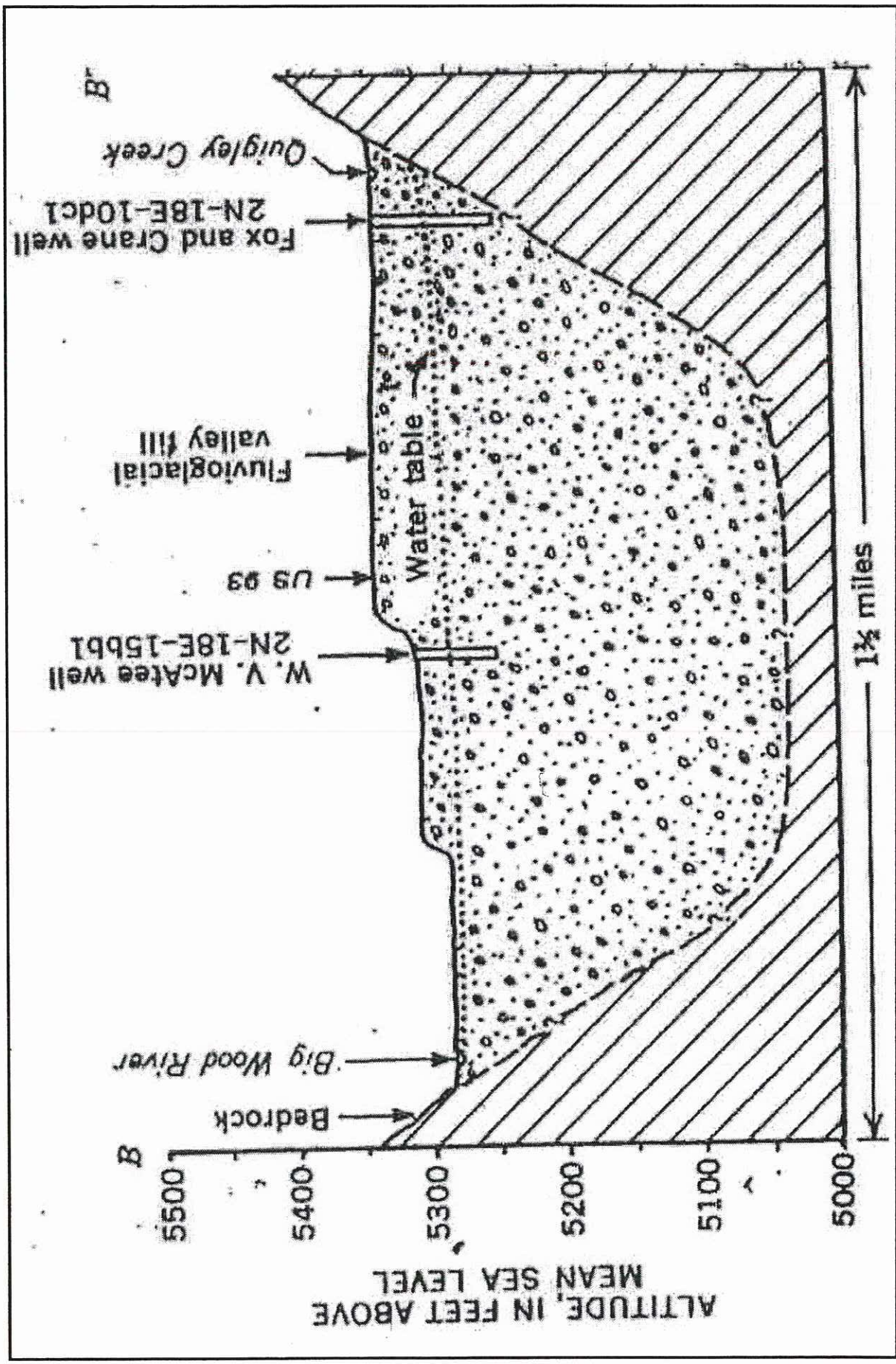


FIGURE 3: SMITH (1956) AQUIFER CROSS-SECTION AT HAILEY
 MODFLOW GROUNDWATER MODEL
 BIG WOOD VALLEY AQUIFER

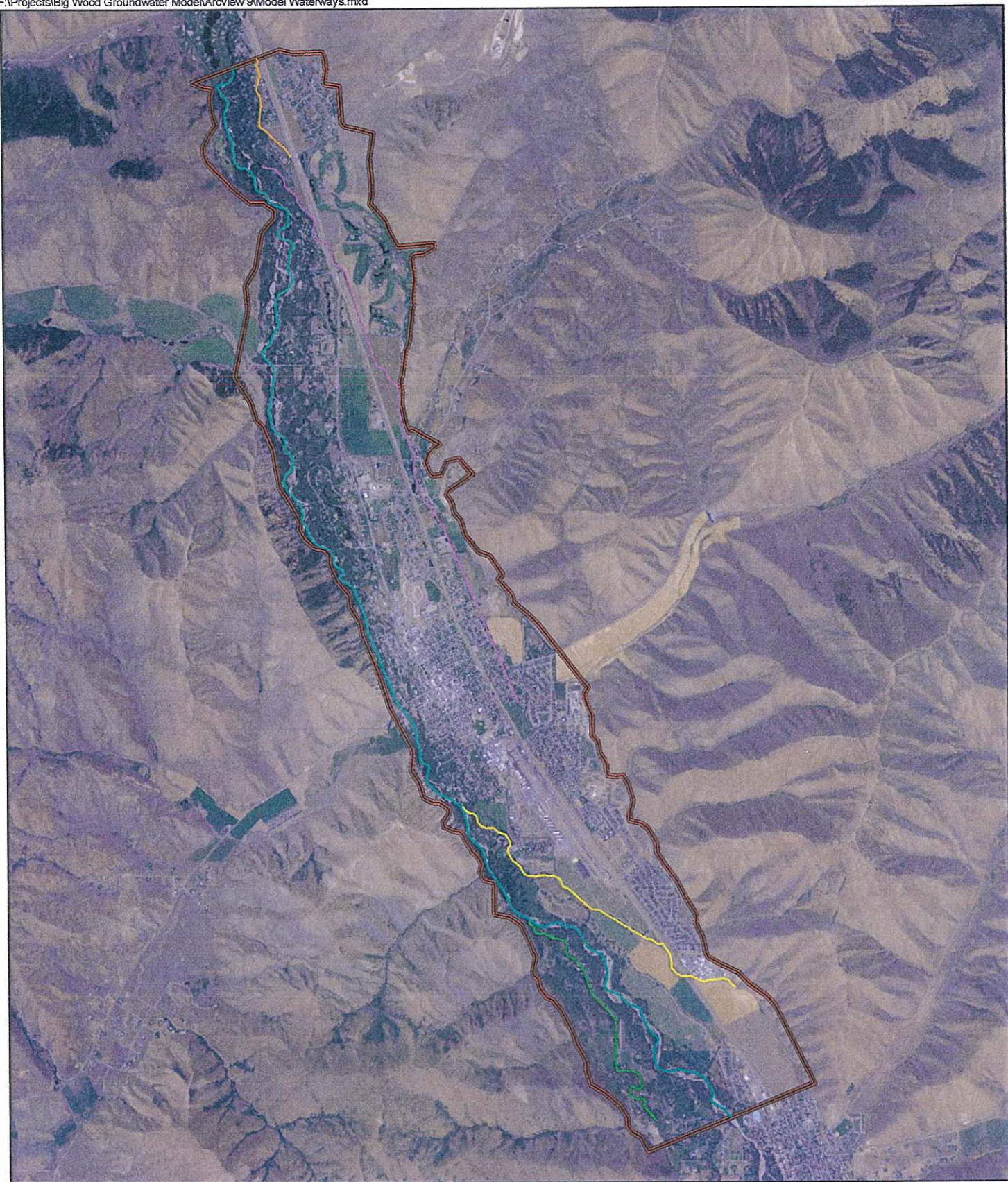


**FIGURE #4 - Model Waterways
BIG WOOD GROUNDWATER MODEL
NAIP 2004 AERIAL**

Legend

-  MODEL BOUNDARY
-  Hydrogrl_Hiawatha_Canal
-  Cove_Canal
-  Mizer_Ditch
-  Rockwell_Bypass
-  Big_Wood_River



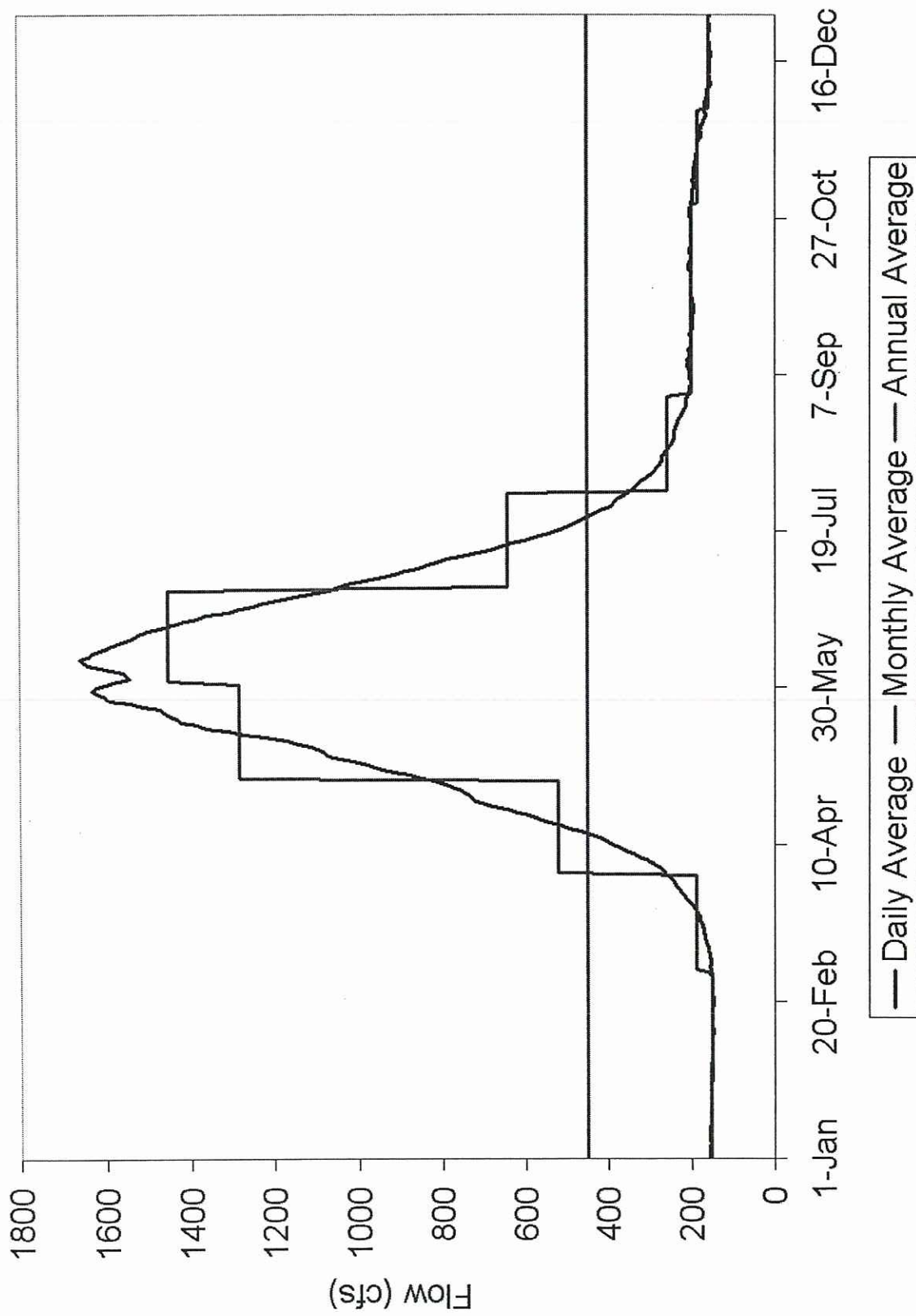


FIGURE 5: COMPARISON OF BIG WOOD RIVER FLOW DATA FOR POTENTIAL TIME DOMAIN
 MODFLOW GROUNDWATER MODEL
 BIG WOOD VALLEY AQUIFER

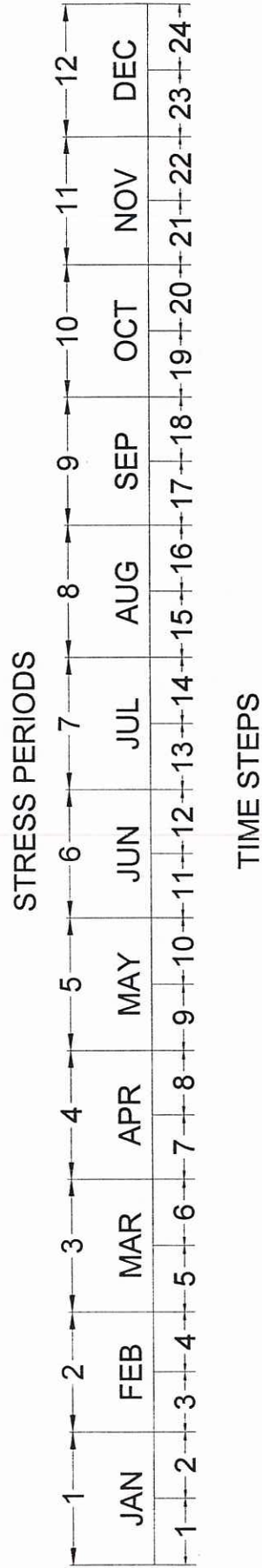


FIGURE 6: STRESS PERIODS AND TIME STEPS
 MODFLOW GROUNDWATER MODEL
 BIG WOOD VALLEY AQUIFER

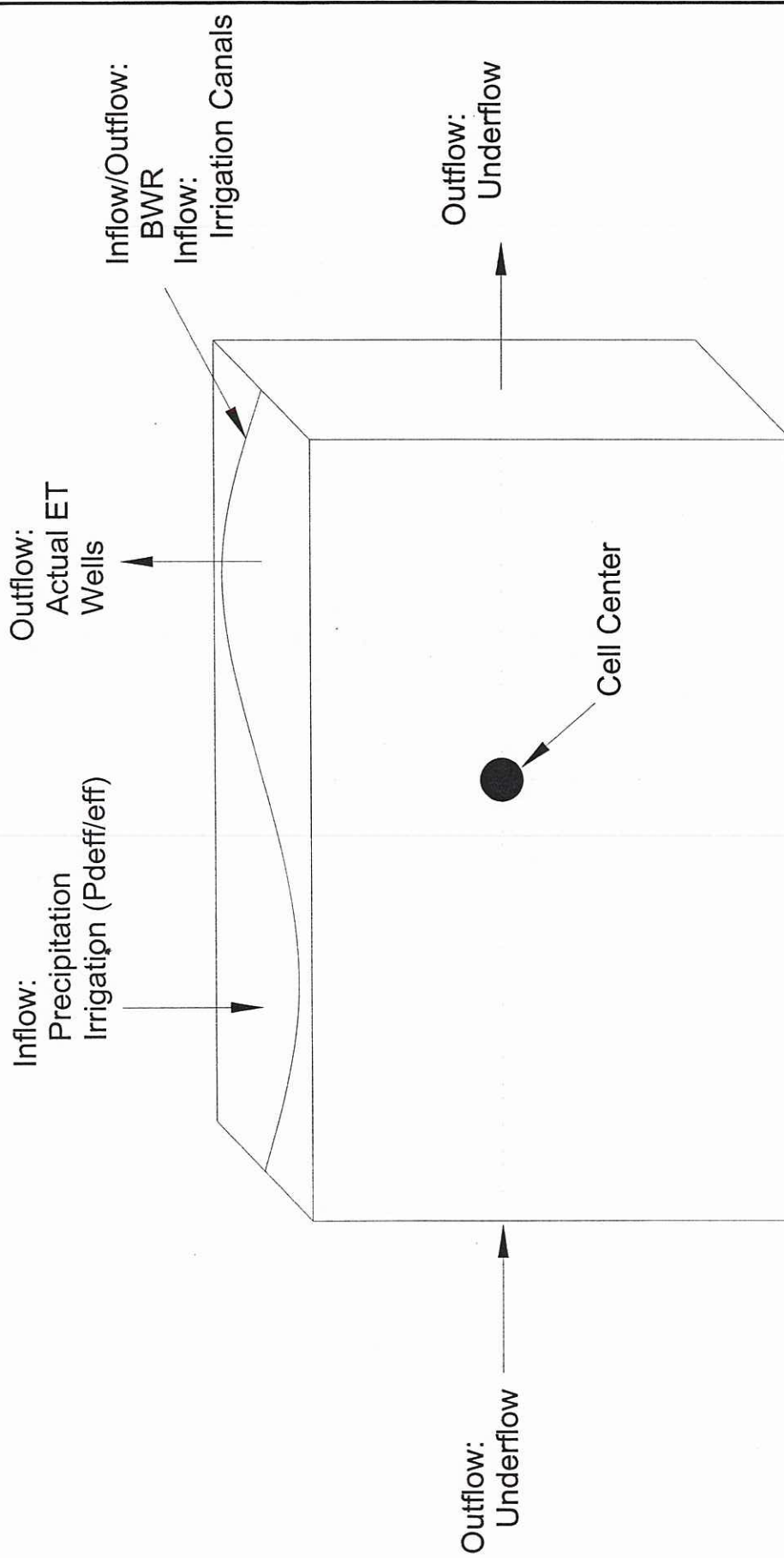


FIGURE 7: WATER BALANCE
MODFLOW GROUNDWATER MODEL
 BIG WOOD VALLEY AQUIFER



LEGEND
— MODFLOW BOUNDARY
○ USGS OBSERVATION WELL

FIGURE 8: USGS OBSERVATION WELL
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER



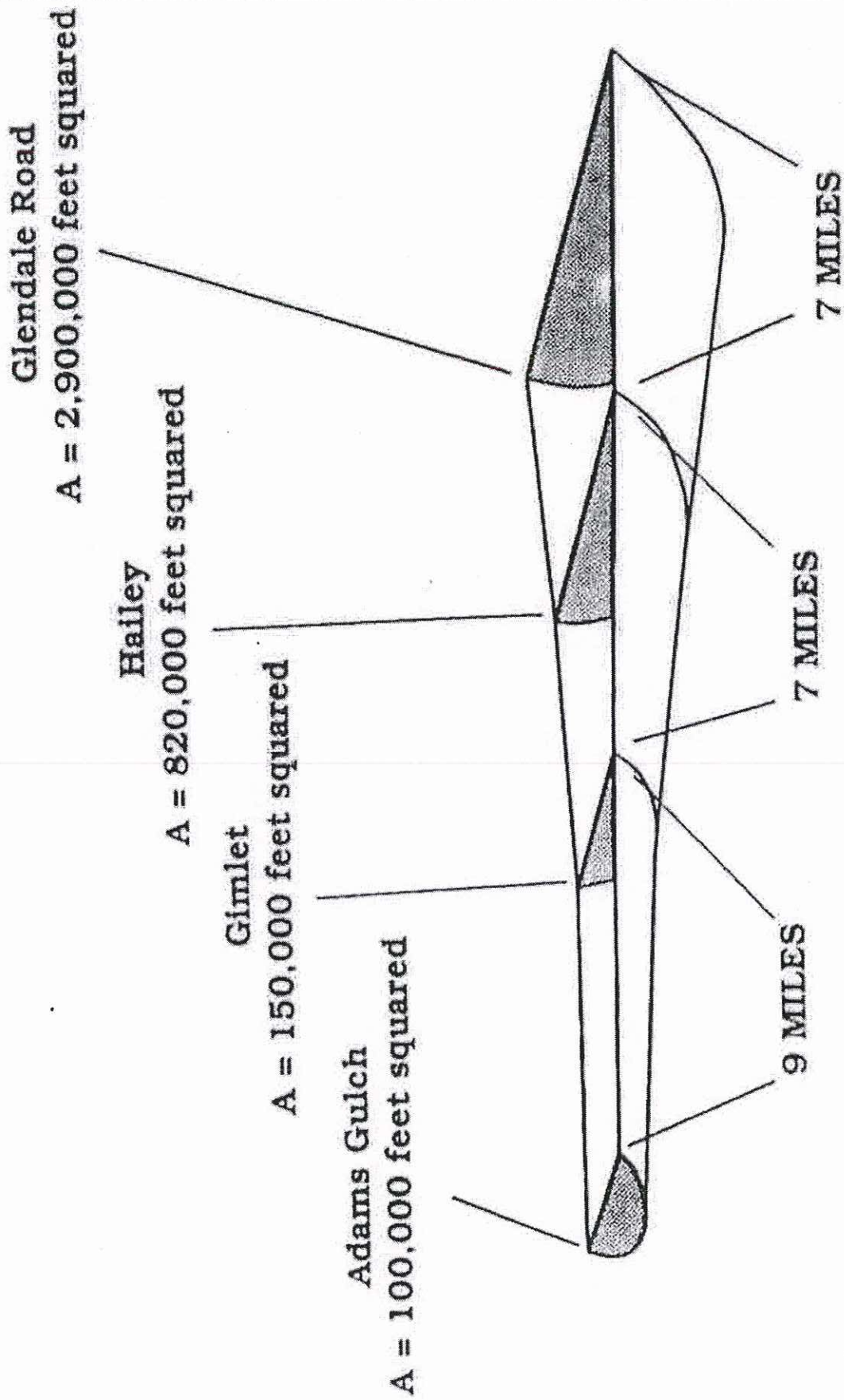


FIGURE 9: FRENZEL (1989) AQUIFER CROSS-SECTION AT HAILEY
MODFLOW GROUNDWATER MODEL
 BIG WOOD VALLEY AQUIFER

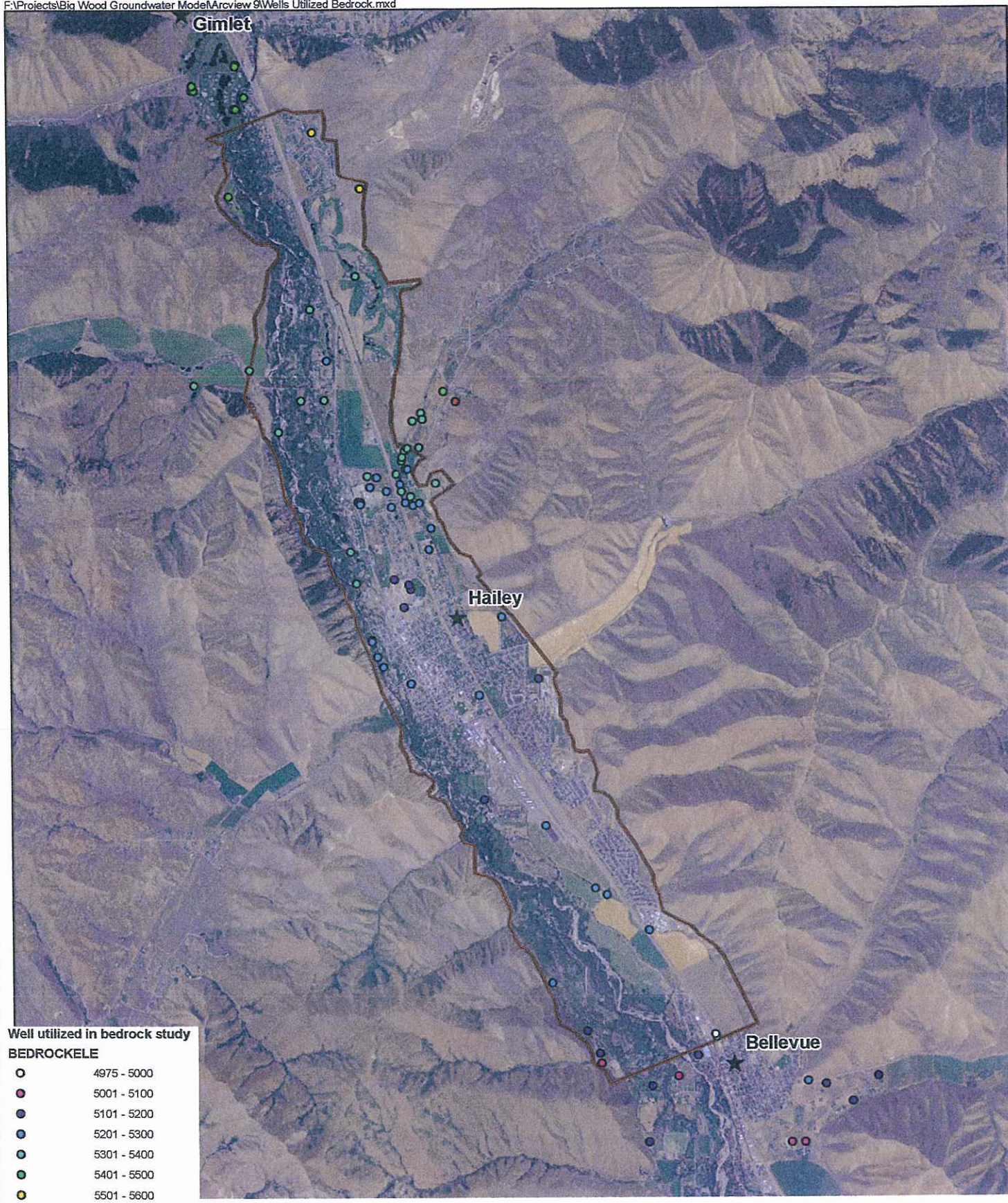


**FIGURE # 10 - Wells, Bedrock
BIG WOOD GROUNDWATER MODEL
NAIP 2004 AERIAL**



FIGURE 11: GENERATED BEDROCK CONTOURS
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER

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GEP - DEC. 5, 2008



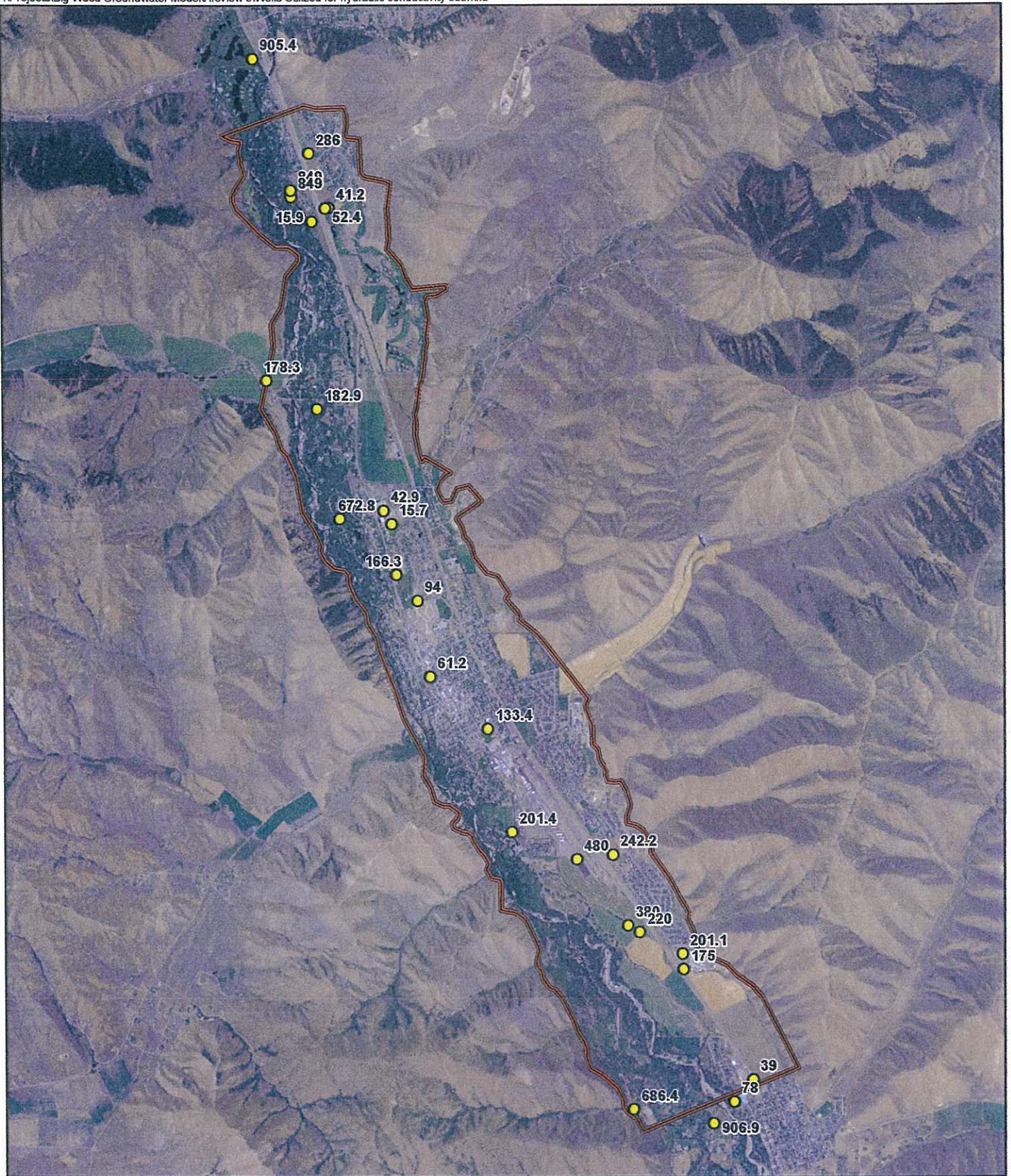


FIGURE # 12 - Wells use for Hydrologic Conductivity Est.
BIG WOOD GROUNDWATER MODEL
NAIP 2004 AERIAL

Legend

- Wells Utilized in Hydraulic Conductivity Est
- MODEL BOUNDARY



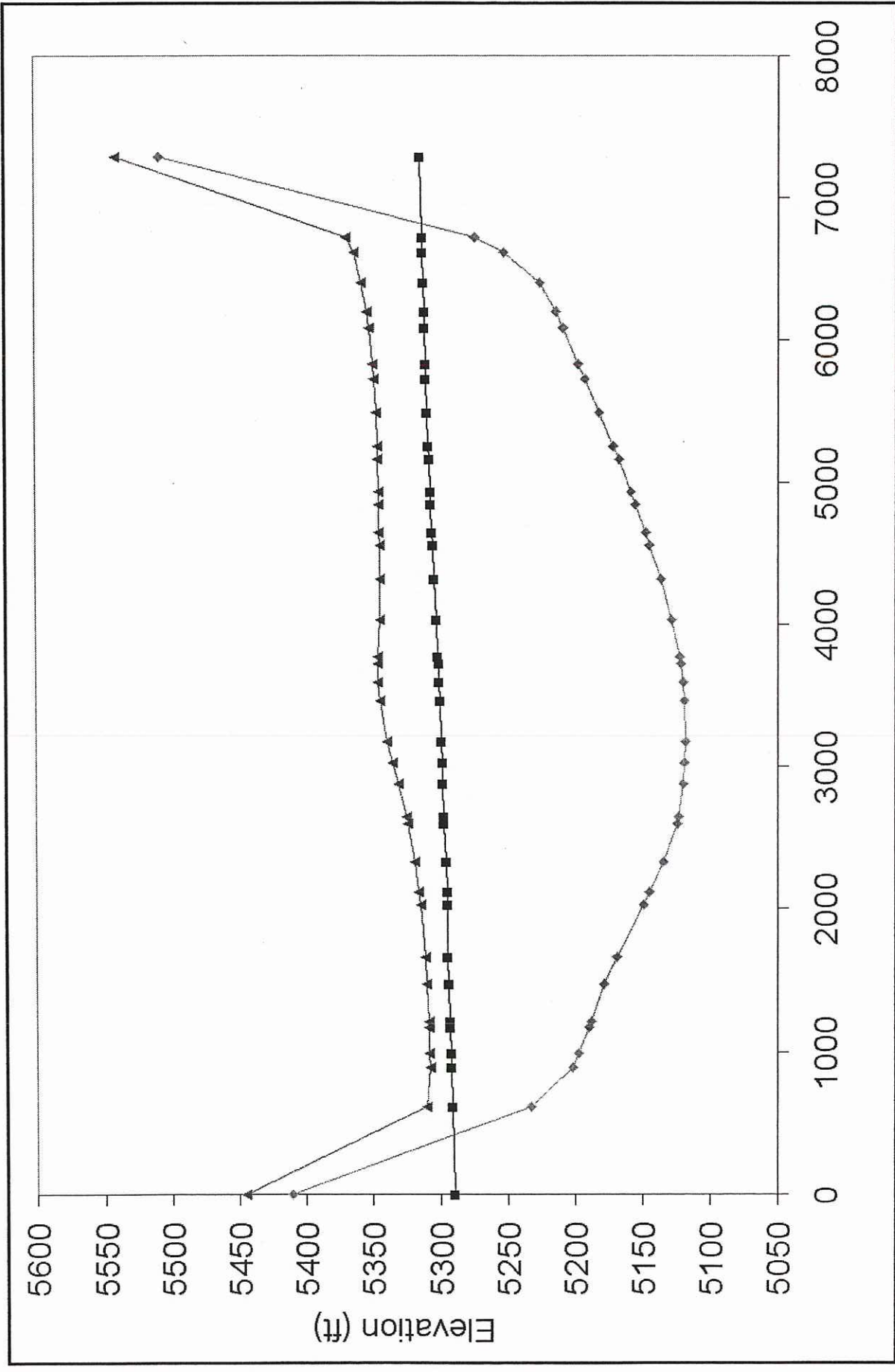


FIGURE 13: MODEL CROSS SECTION AT HAILEY
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER

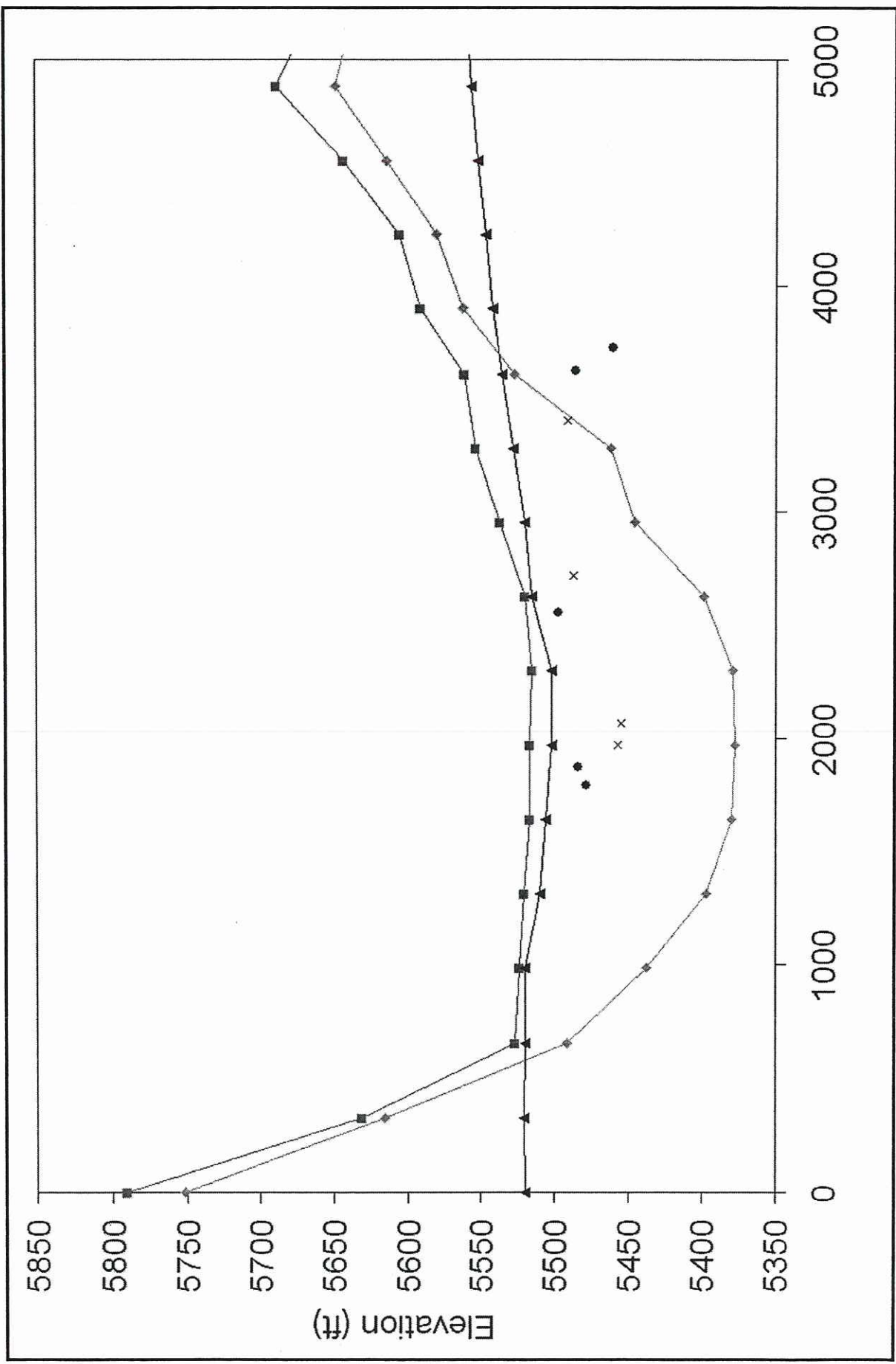


FIGURE 14: MODEL CROSS SECTION AT NORTHERN BOUNDARY
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER

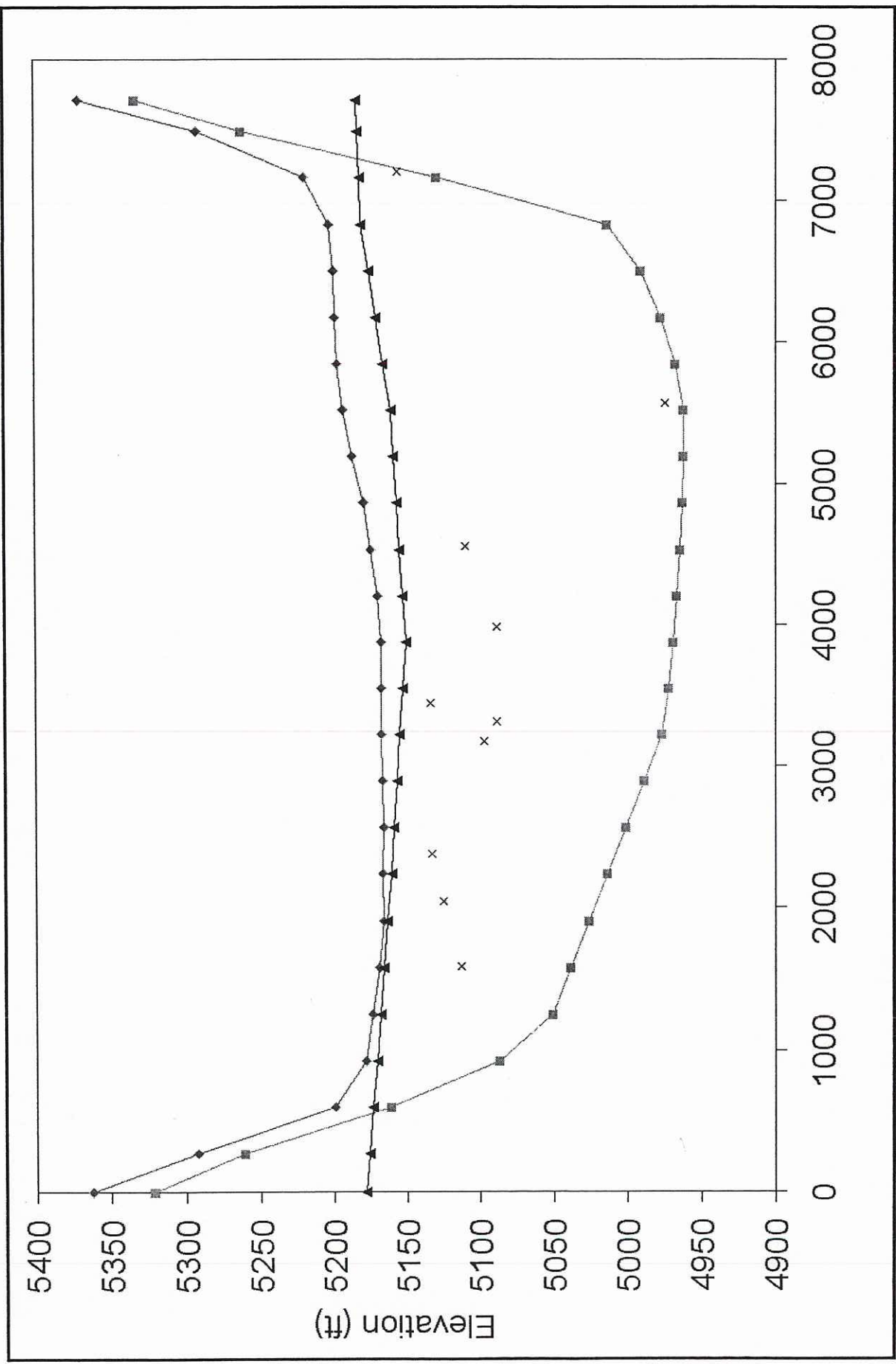


FIGURE 15: MODEL CROSS SECTION AT SOUTHERN BOUNDARY
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER

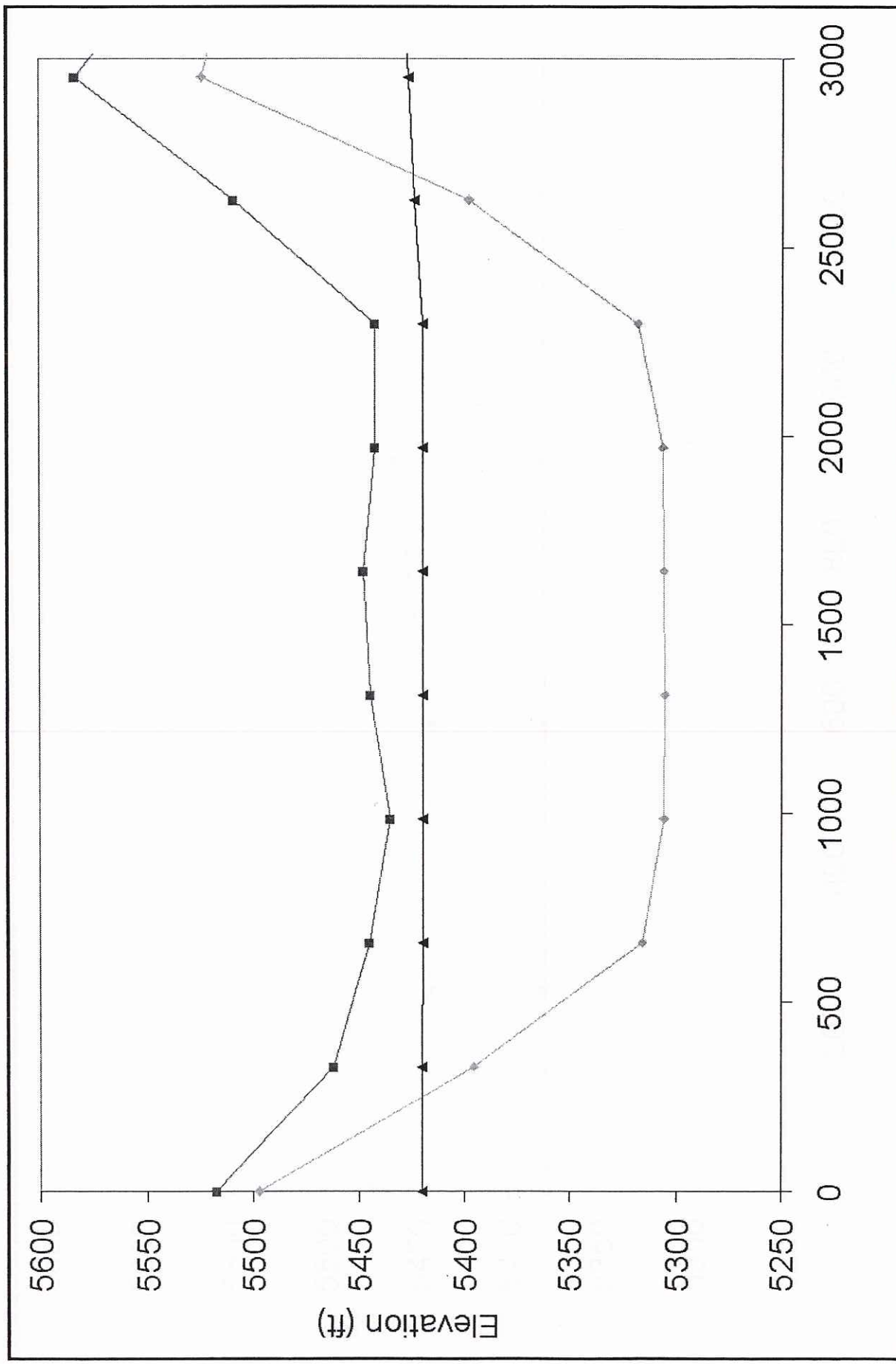


FIGURE 16: MODEL CROSS SECTION AT DEER CREEK
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER

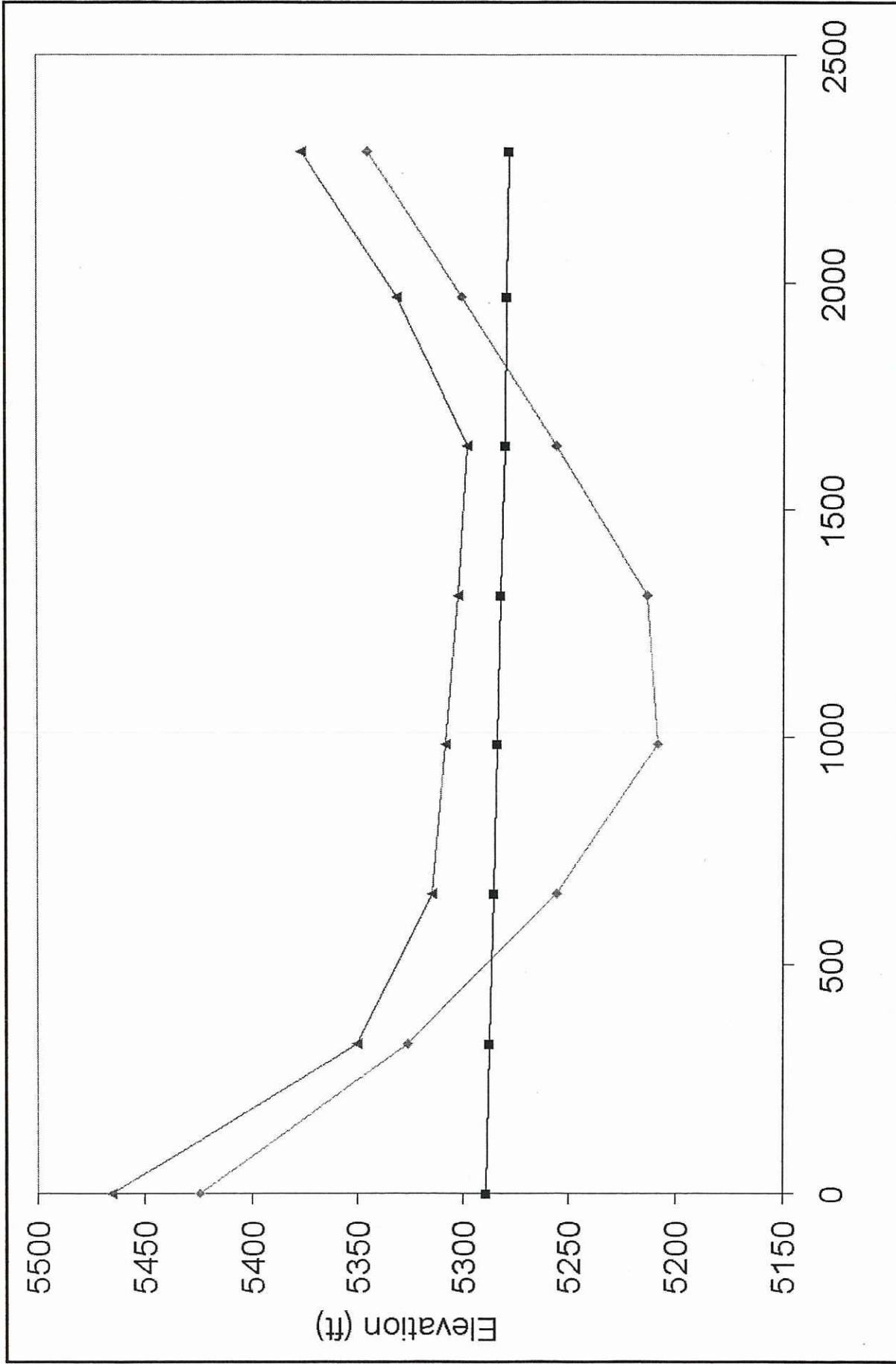


FIGURE 18: MODEL CROSS SECTION AT CROY CREEK
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER

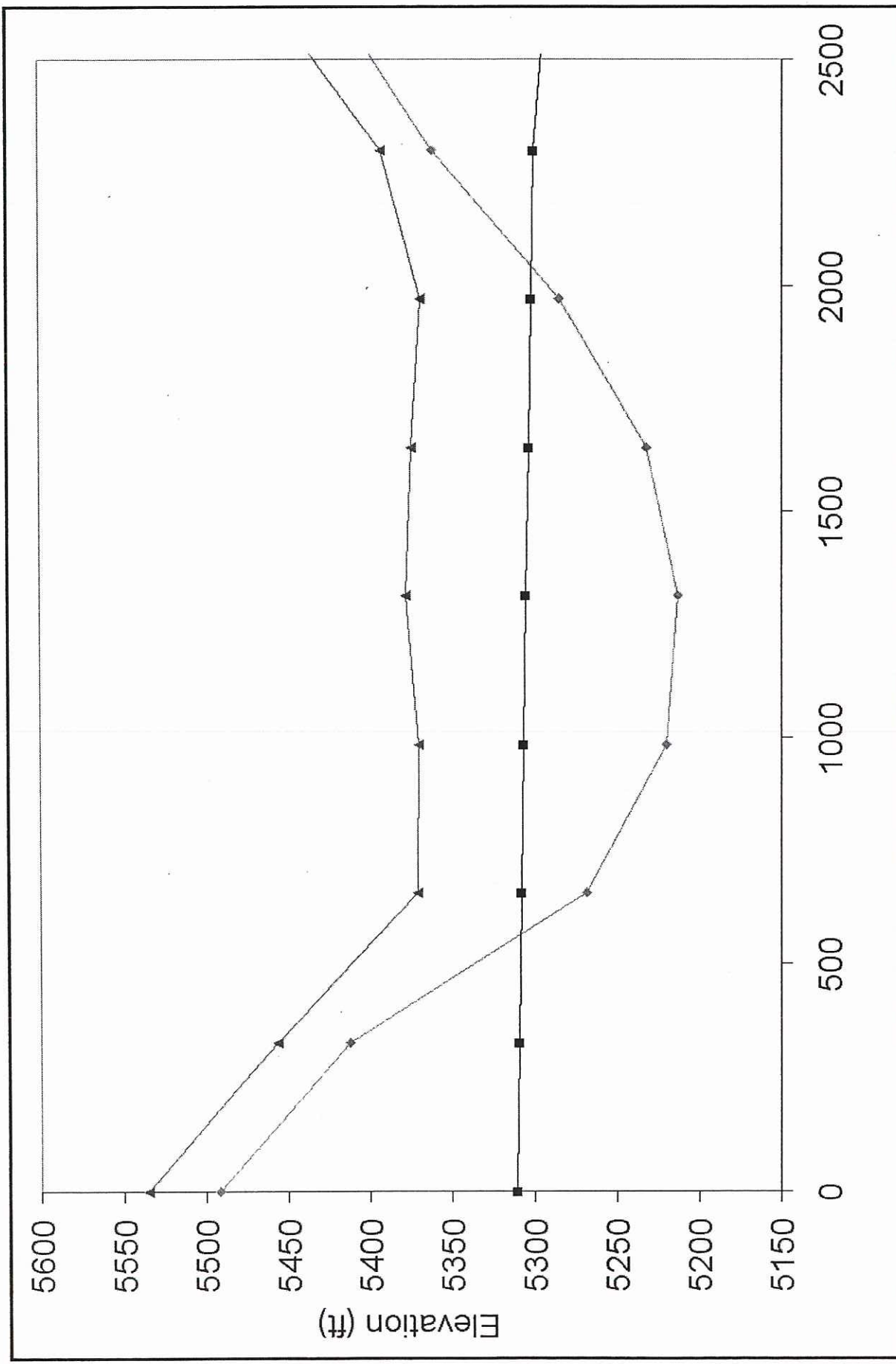


FIGURE 19: MODEL CROSS SECTION AT QUIGLEY CREEK
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER

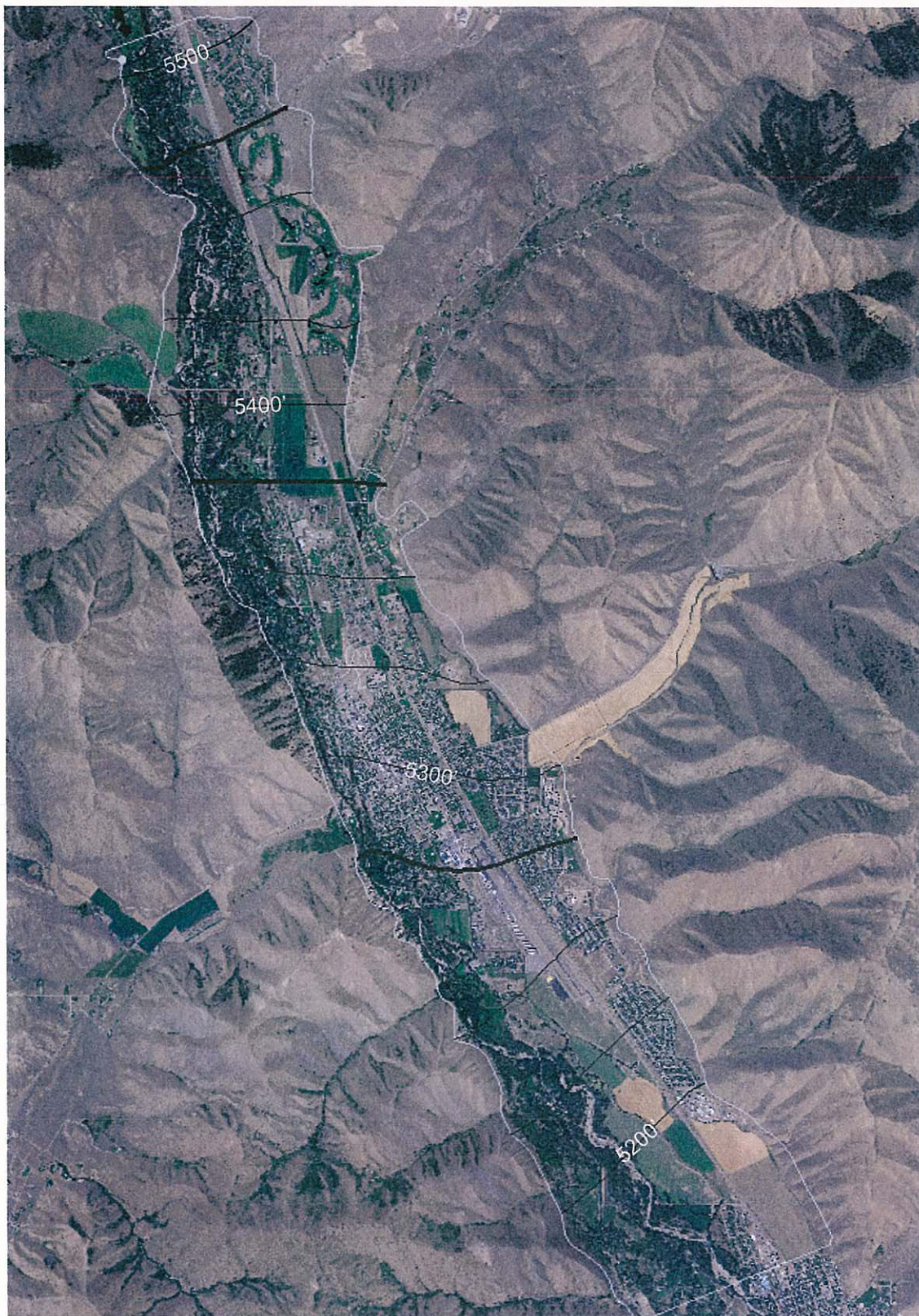


FIGURE 20: GENERATED GROUNDWATER CONTOURS
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER

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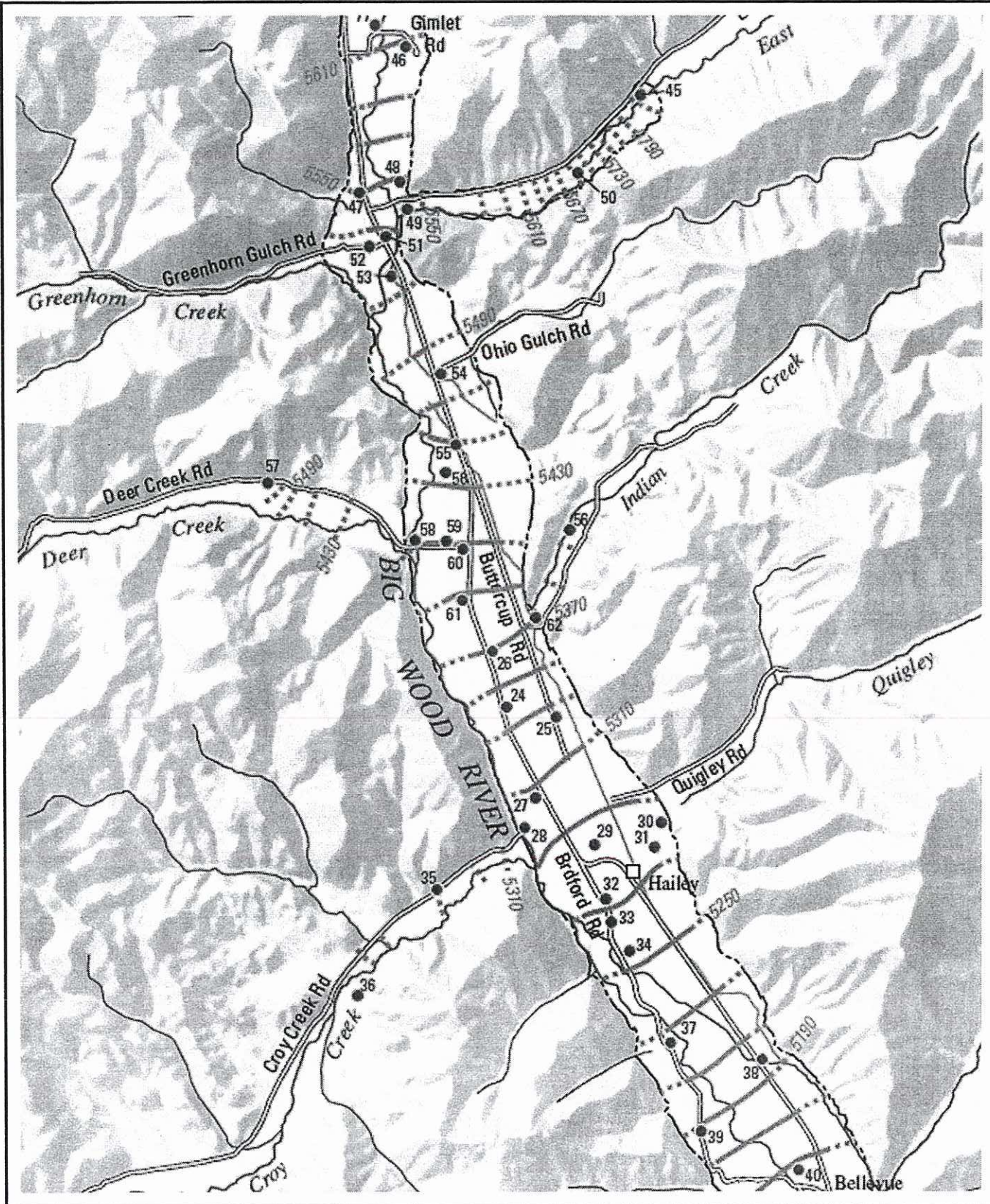


**FIGURE 21: SKINNER ET AL. (2007) GROUNDWATER CONTOURS
MODFLOW GROUNDWATER MODEL**

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BIG WOOD VALLEY AQUIFER



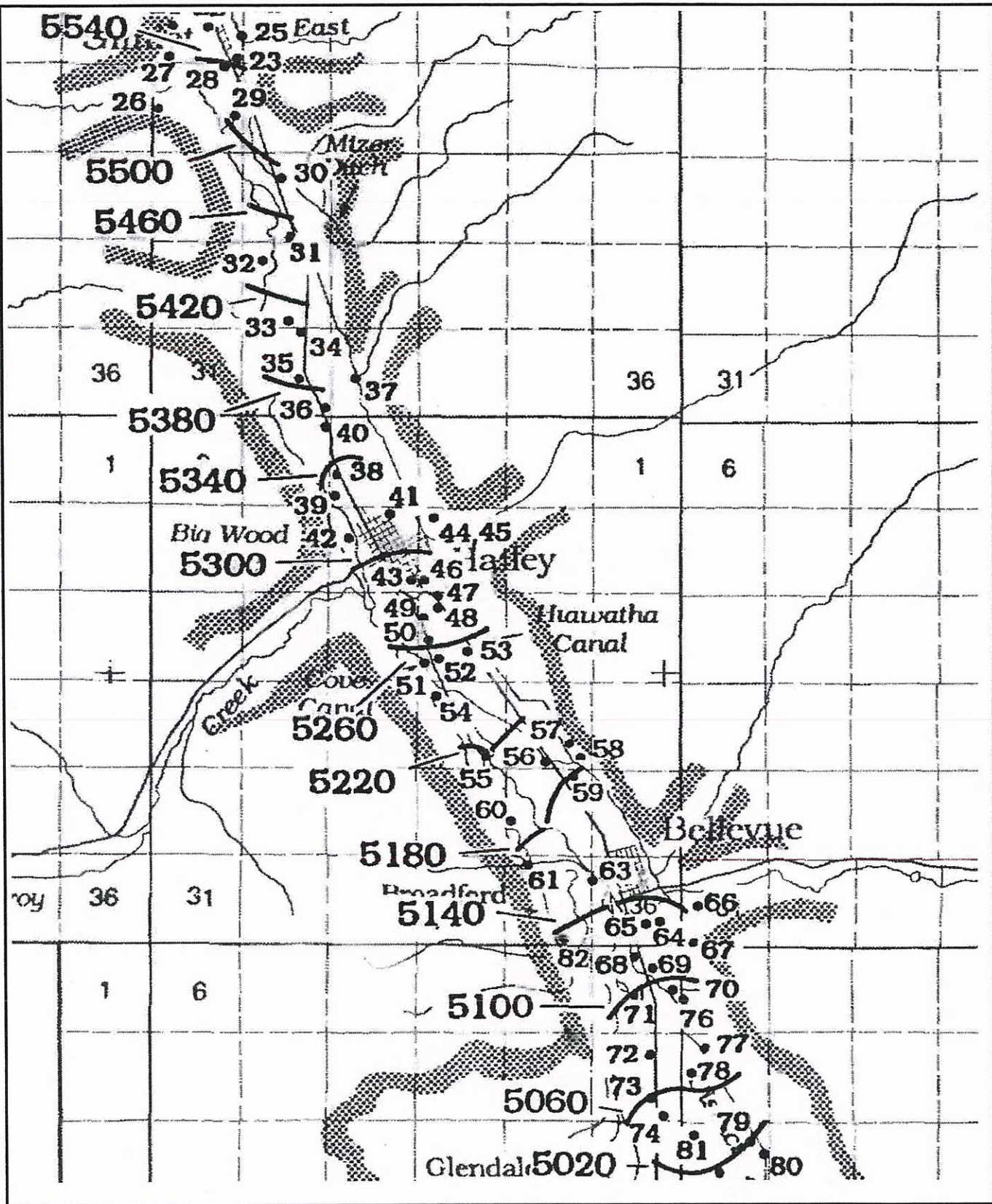


**FIGURE 22: FRENZEL (1989) GROUNDWATER CONTOURS
MODFLOW GROUNDWATER MODEL**

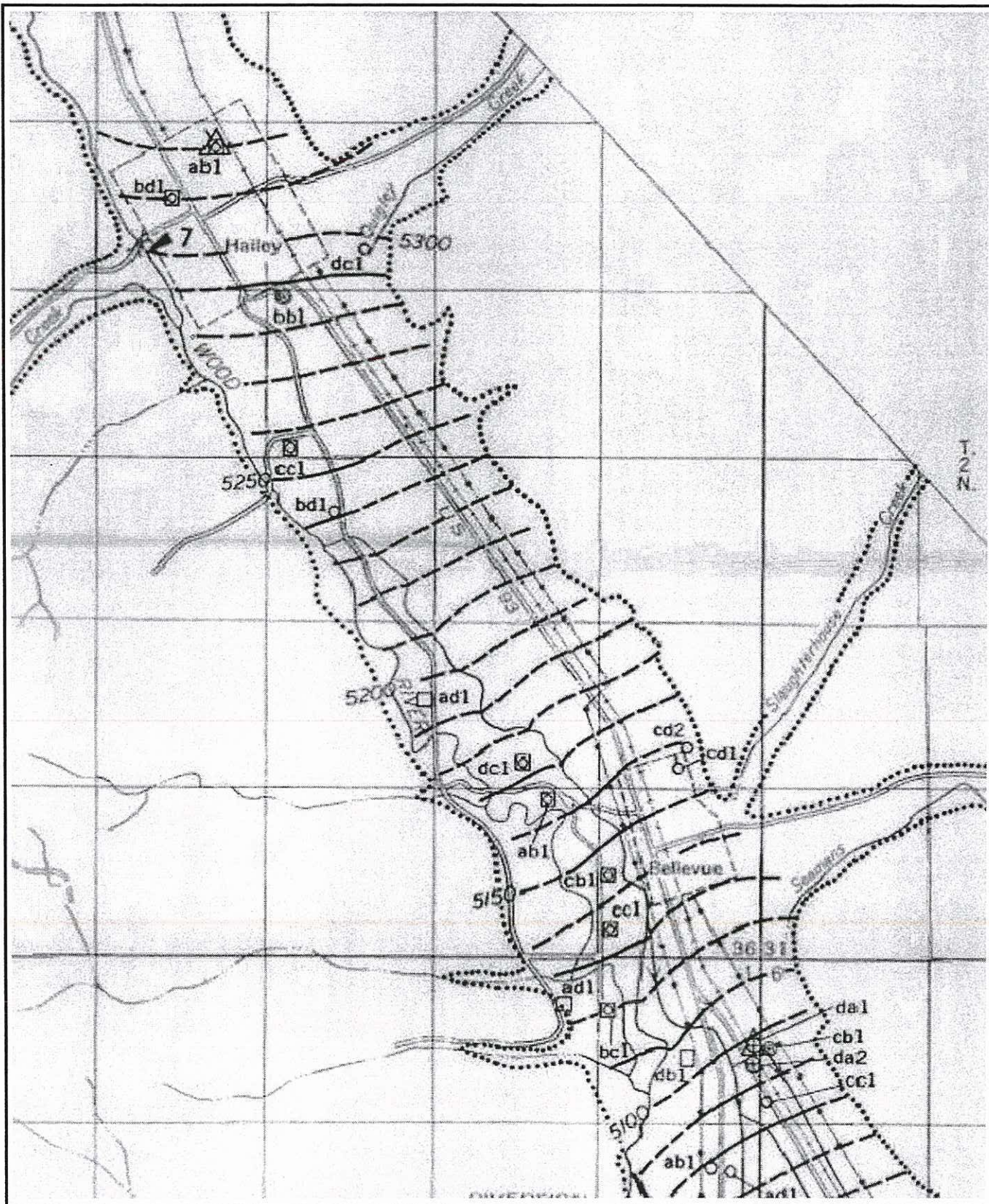


FIGURE 23: SMITH (1956) GROUNDWATER CONTOURS
MODFLOW GROUNDWATER MODEL

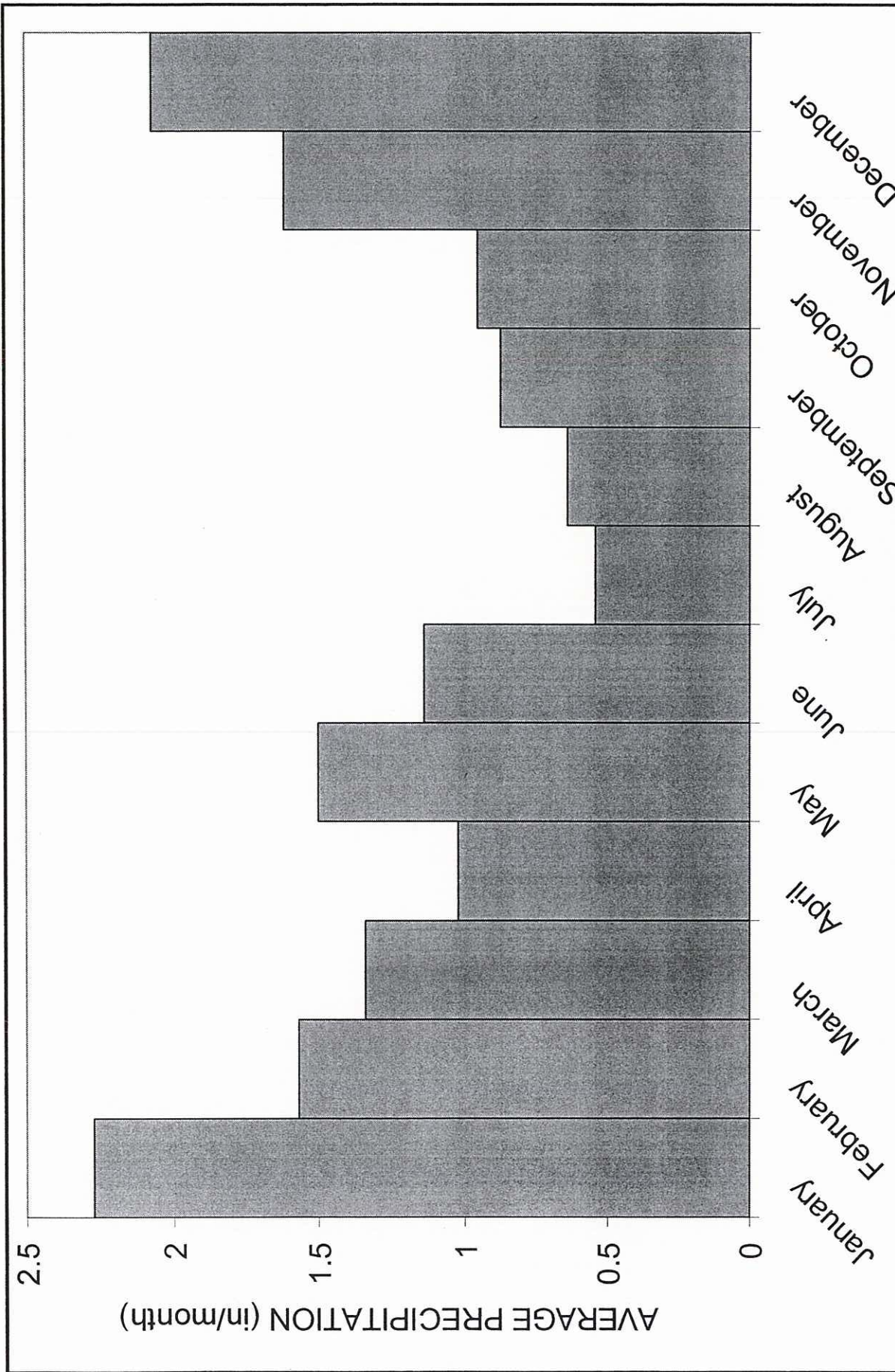


FIGURE 24: PRECIPITATION (IN/MONTH)
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER

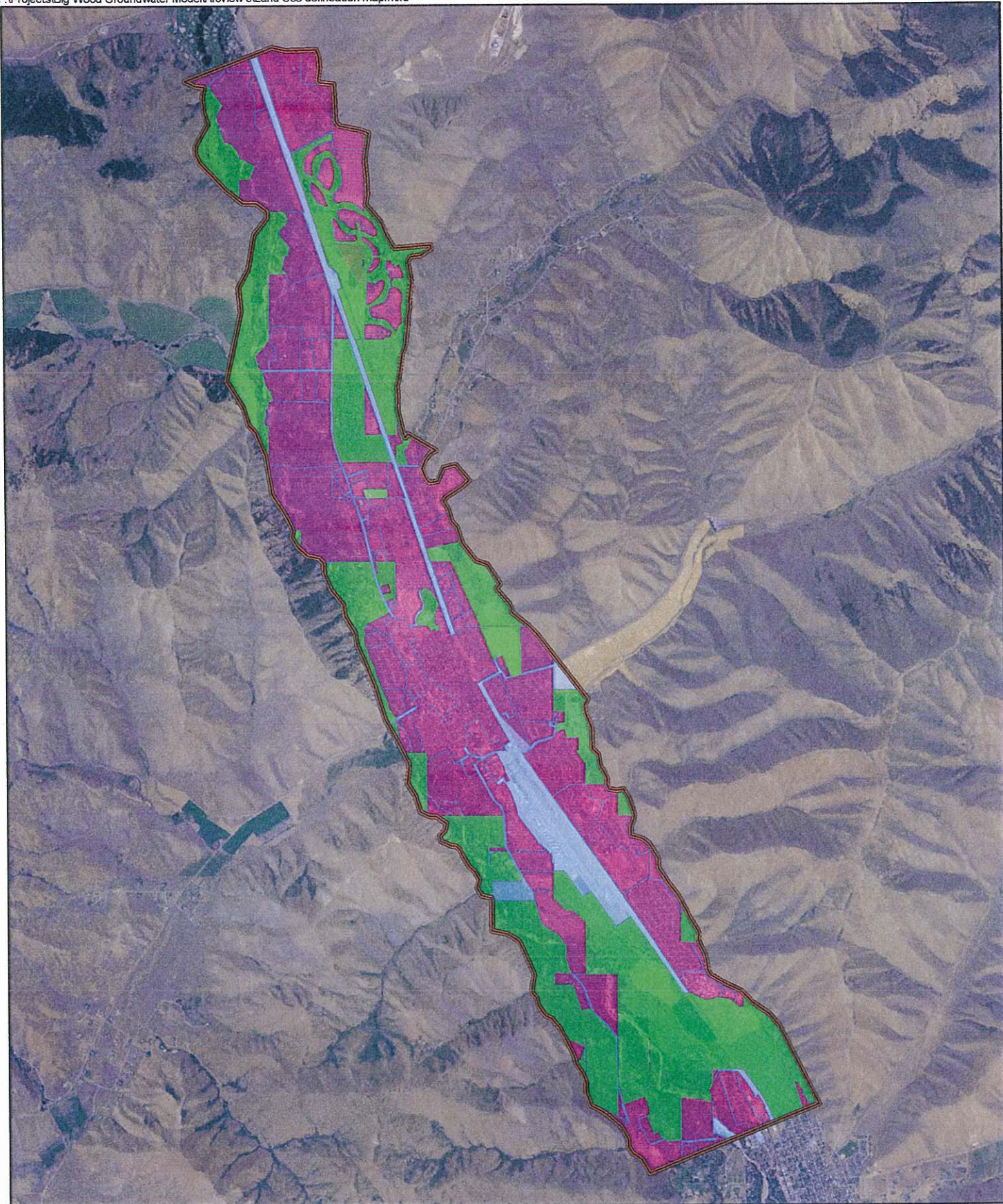


**FIGURE # 25 - Land Use Delineation
BIG WOOD GROUNDWATER MODEL
NAIP 2004 AERIAL**

- Legend**
- MODEL BOUNDARY
 - Open Land
 - Large Parcel Owners
 - Subdivisions



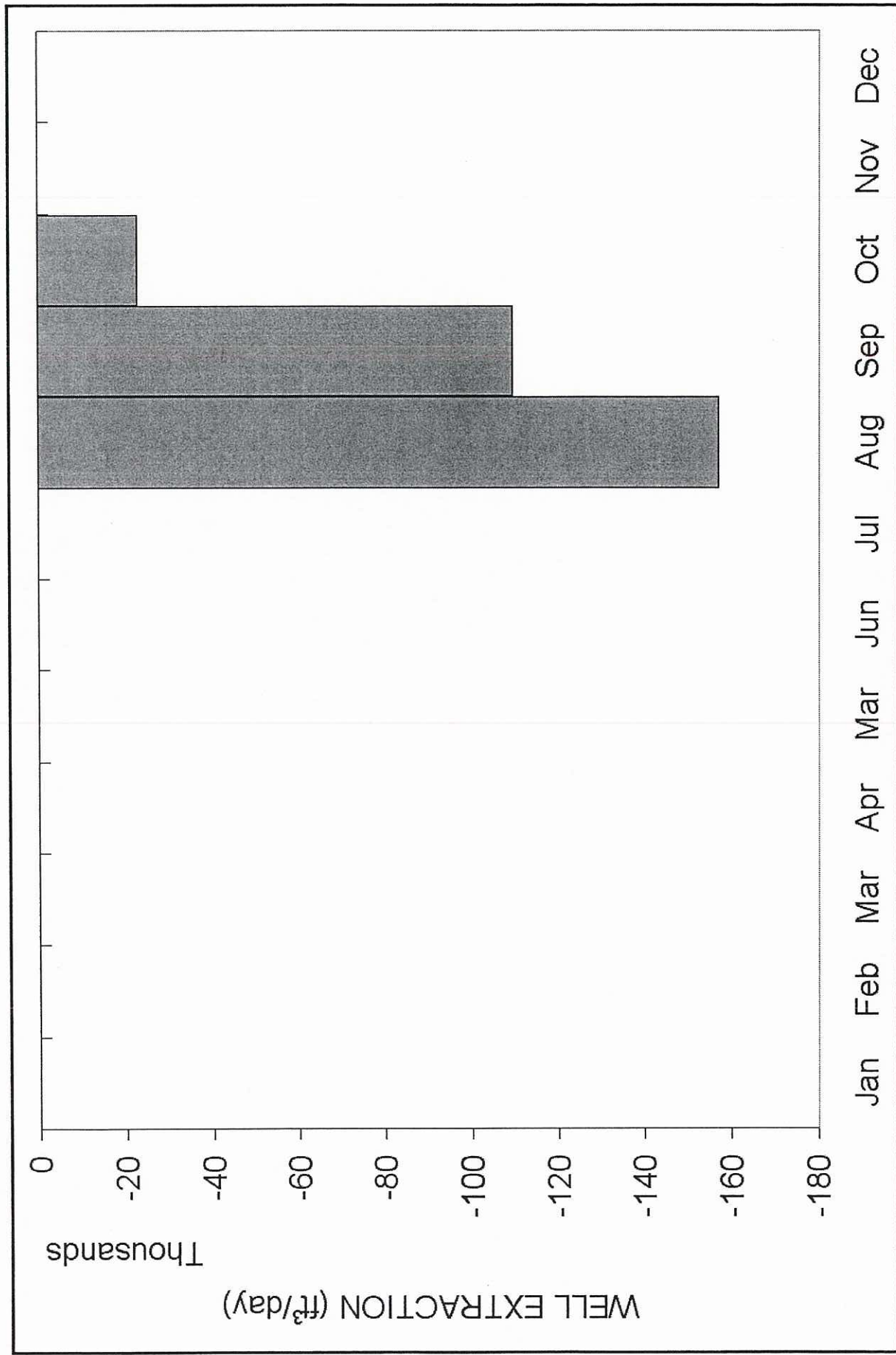


FIGURE 26: EXAMPLE OF SUPPLEMENTAL IRRIGATION WELL EXTRACTION
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER

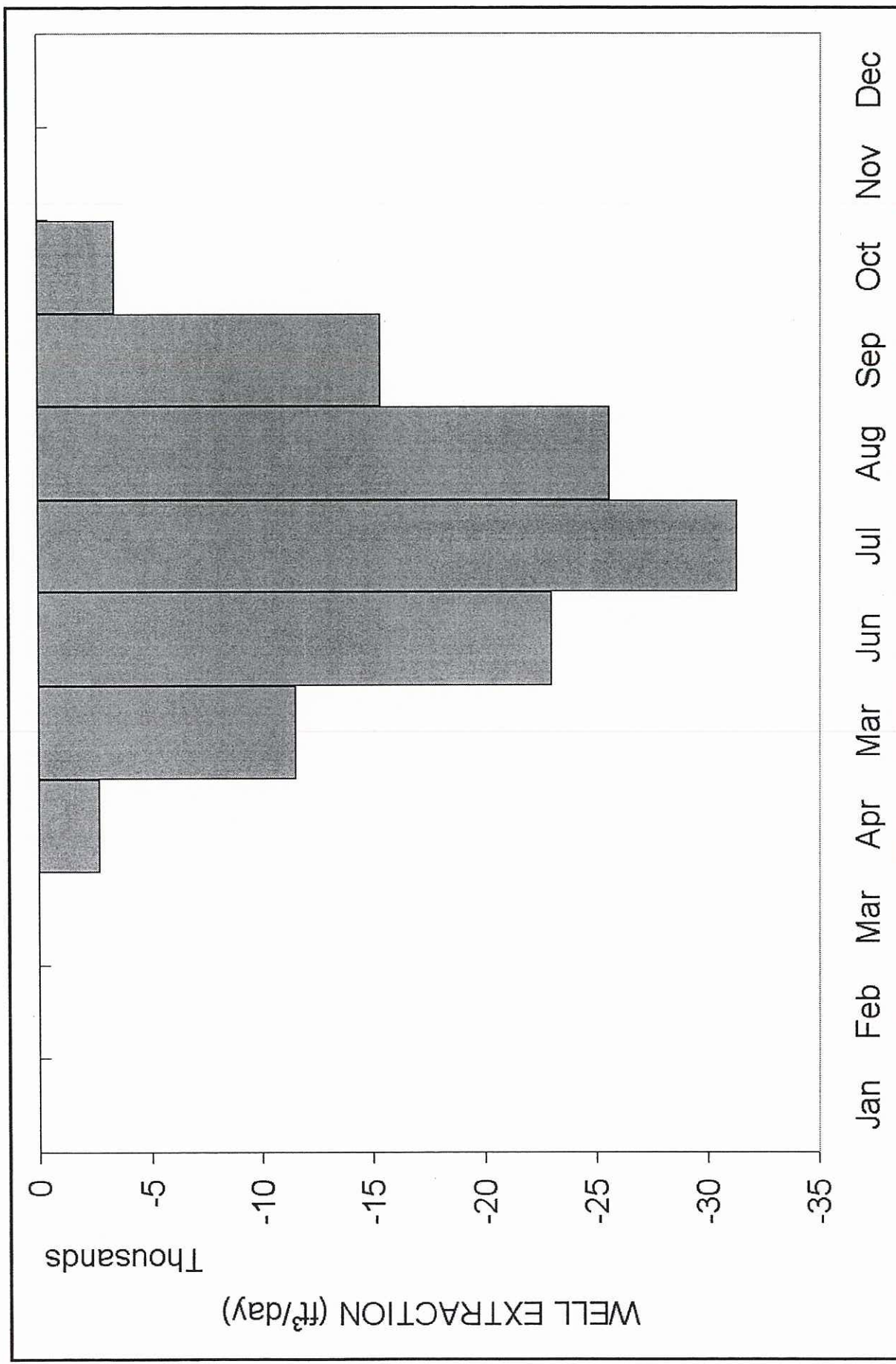


FIGURE 27: EXAMPLE OF PRIMARY IRRIGATION WELL EXTRACTION
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER



FIGURE 28: BIG WOOD RIVER FLOW MEASUREMENT SITES
MODFLOW GROUNDWATER MODEL

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BIG WOOD VALLEY AQUIFER





FIGURE 29: BIG WOOD RIVER SURVEY ELEVATION SITES
MODFLOW GROUNDWATER MODEL

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BIG WOOD VALLEY AQUIFER



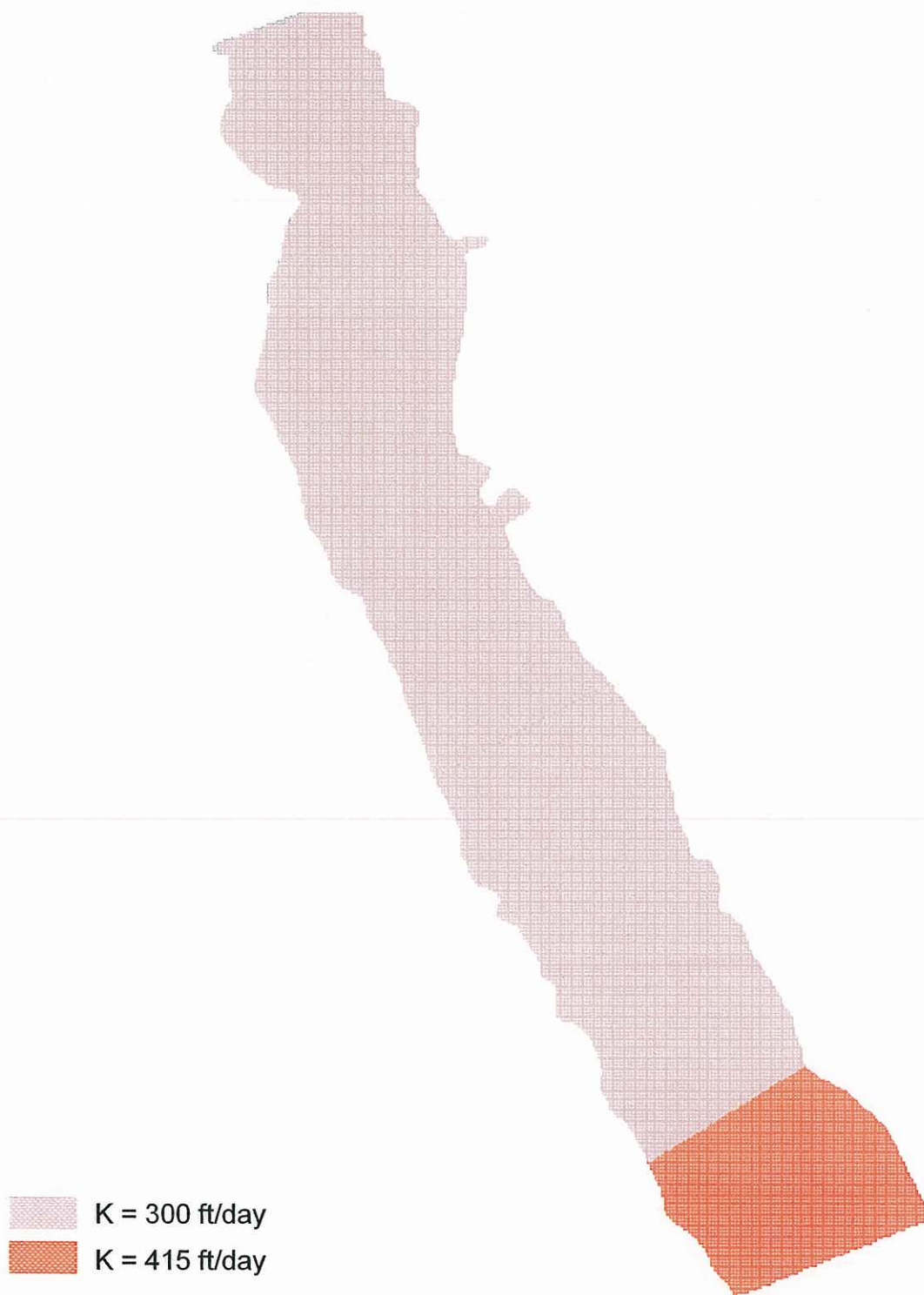


**FIGURE 30: HYDRAULIC CONDUCTIVITY
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER**

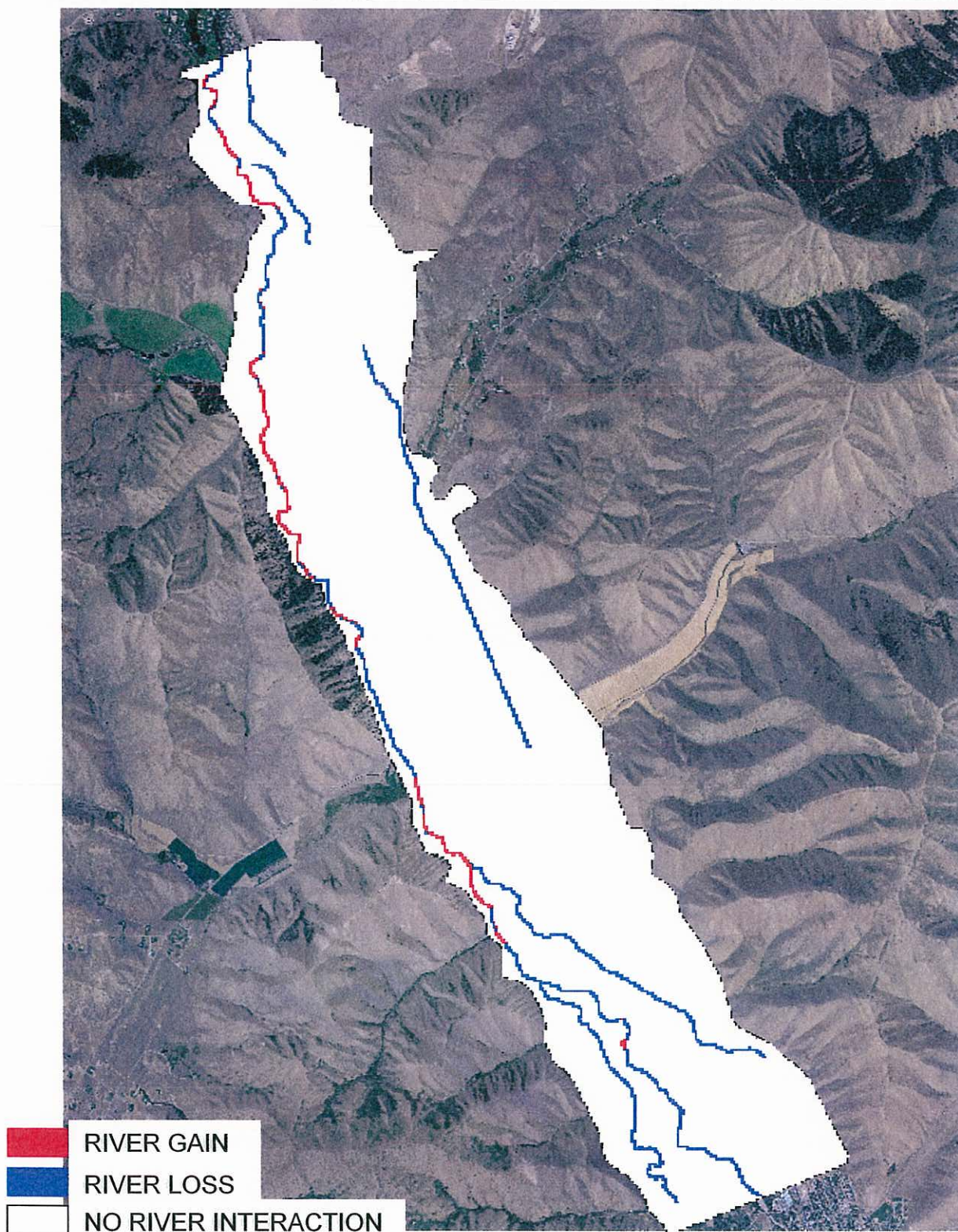


**FIGURE 31: BIG WOOD RIVER AND CANAL LOSS/GAIN
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER**

Computed vs. Observed Values Trans. Head

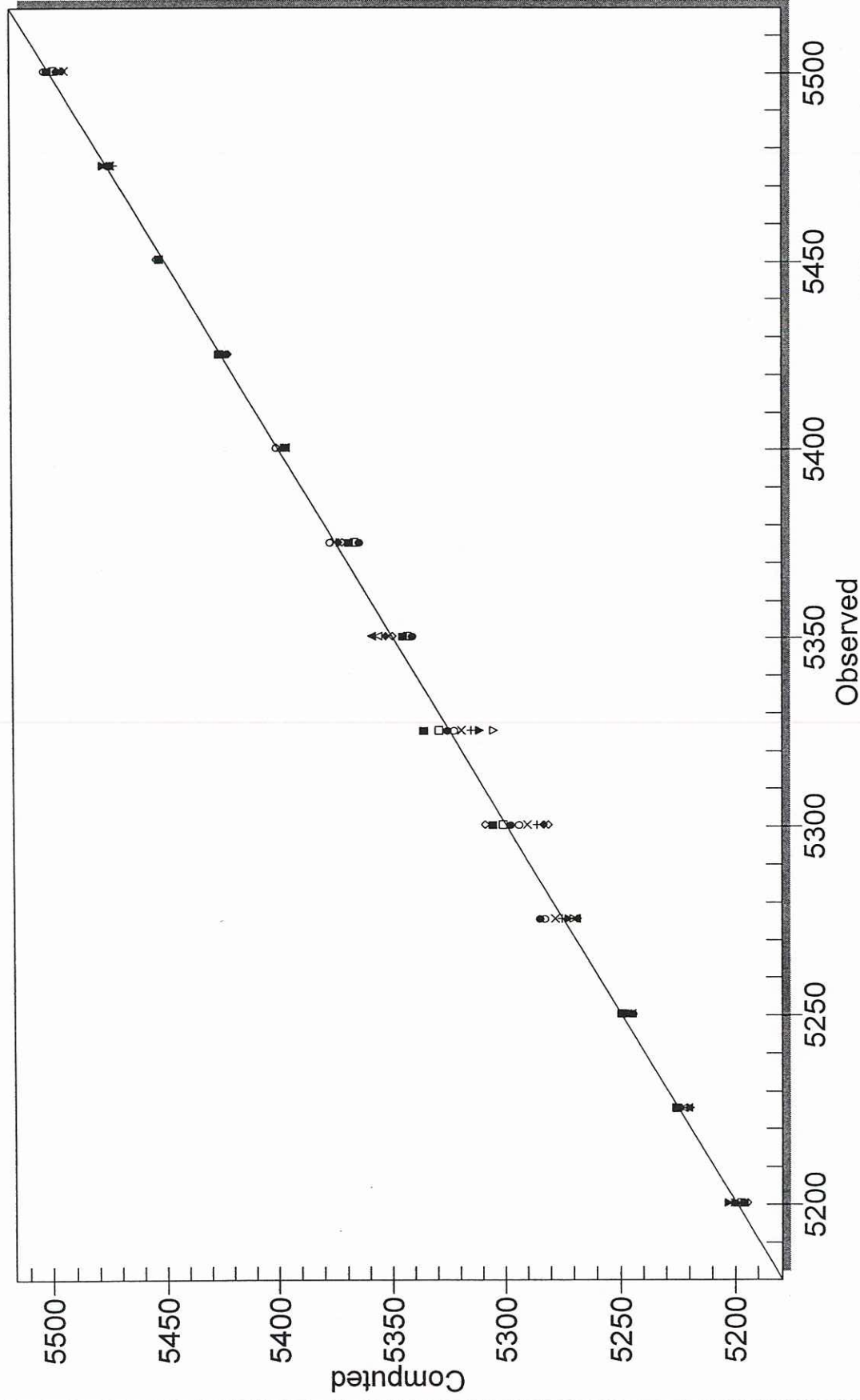


**FIGURE 32: TIMESTEP 16 COMPUTED VERSUS OBSERVED
KRIGING INTERPOLATION OF WATER LEVELS FROM WELL DRILLER REPORTS
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER**

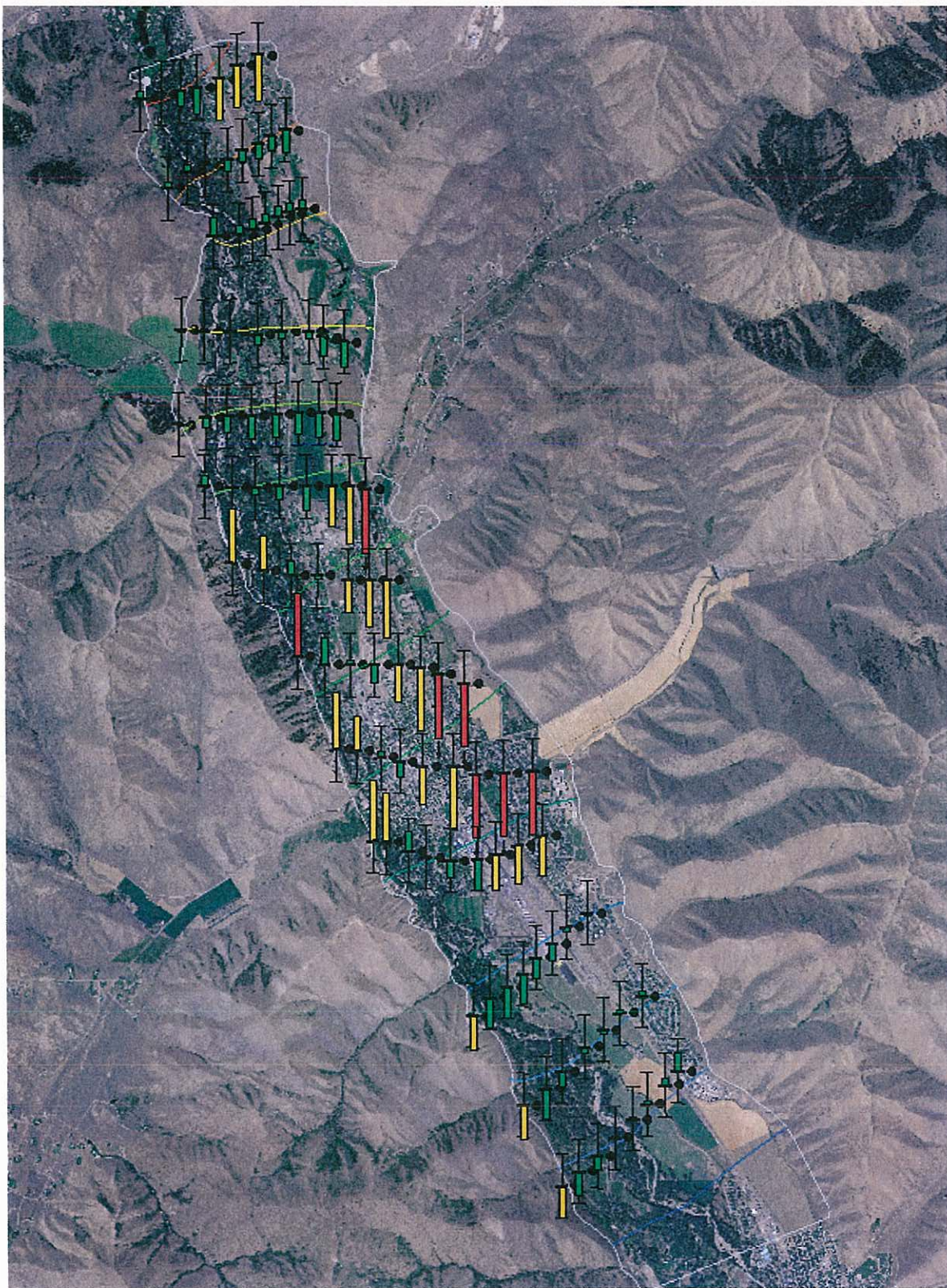


FIGURE 33: WISKER PLOT OF OBSERVED WATER LEVELS
KRIGING INTERPOLATION OF WATER LEVELS – WELL DRILLER REPORTS
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER

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FIGURE 34: DRY LOT, LLC
IRRIGATION EXTRACTON AND
MITIGATION WELLS
 NAIP 2006 AERIAL PHOTO

LEGEND

Valley Club OA Wells

MODFLOW Obs Nodes

MODFLOW Boundary

Valley Club Homeowners Mitigation Plan
Additional Irrigation and Extended Season Full Buildout

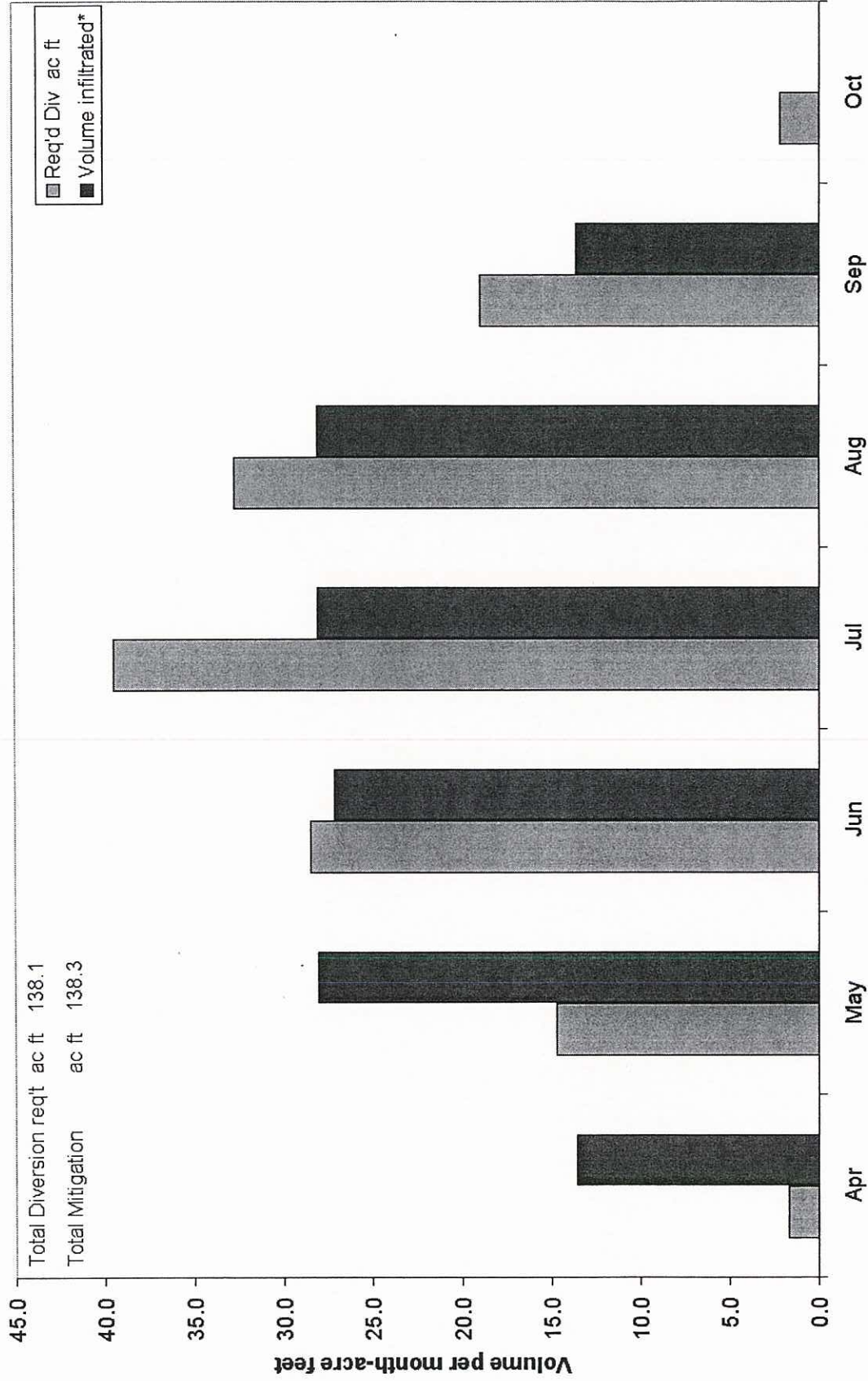


FIGURE 35: DRY LOT, LLC PUMPING AND MITIGATION
MODFLOW GROUNDWATER MODEL
 BIG WOOD VALLEY AQUIFER

Point A: Heatherlands

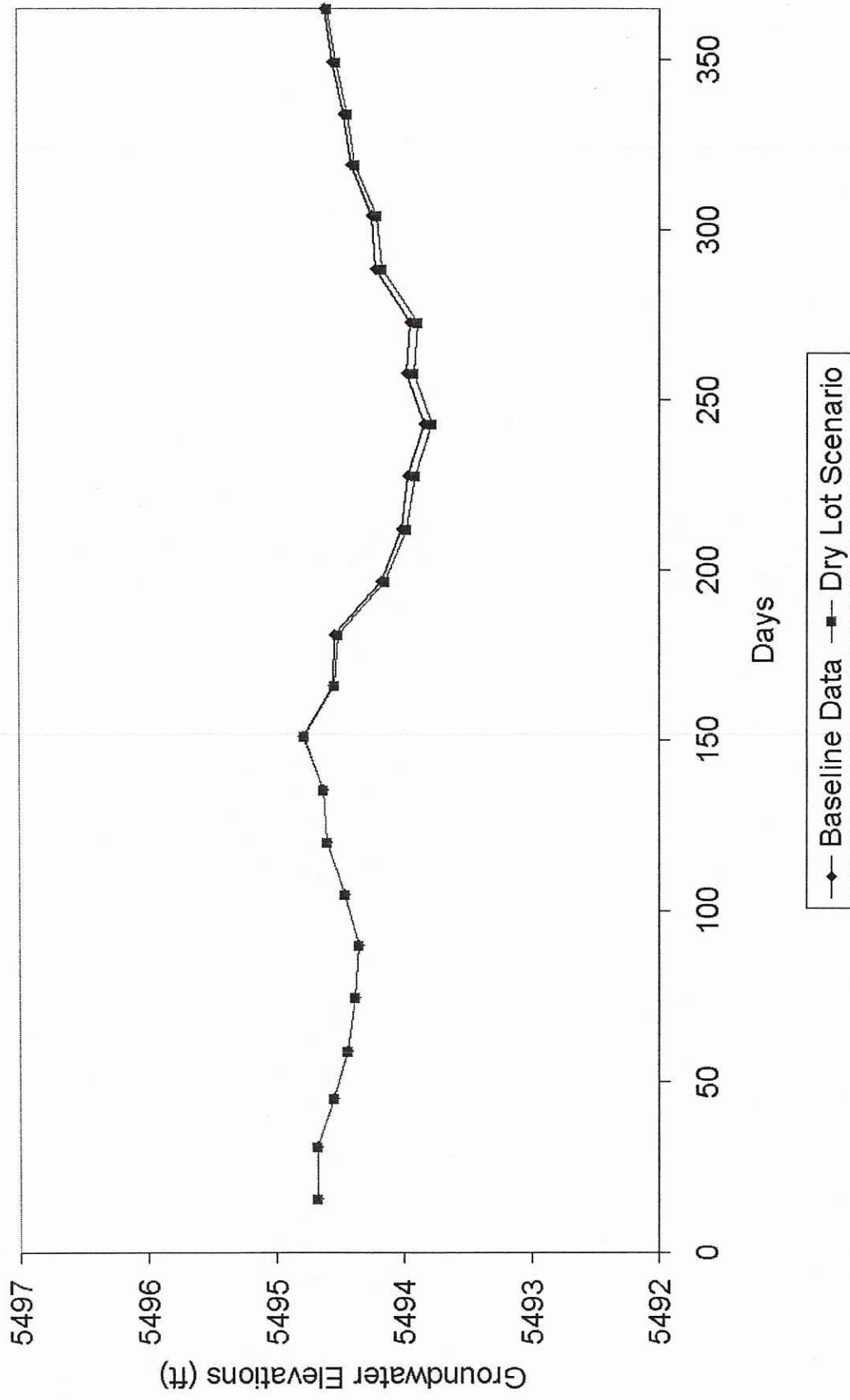


FIGURE 36: GROUNDWATER ELEVATIONS AT POINT A: HEATHERLANDS
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER

Point B: North of Valley Club

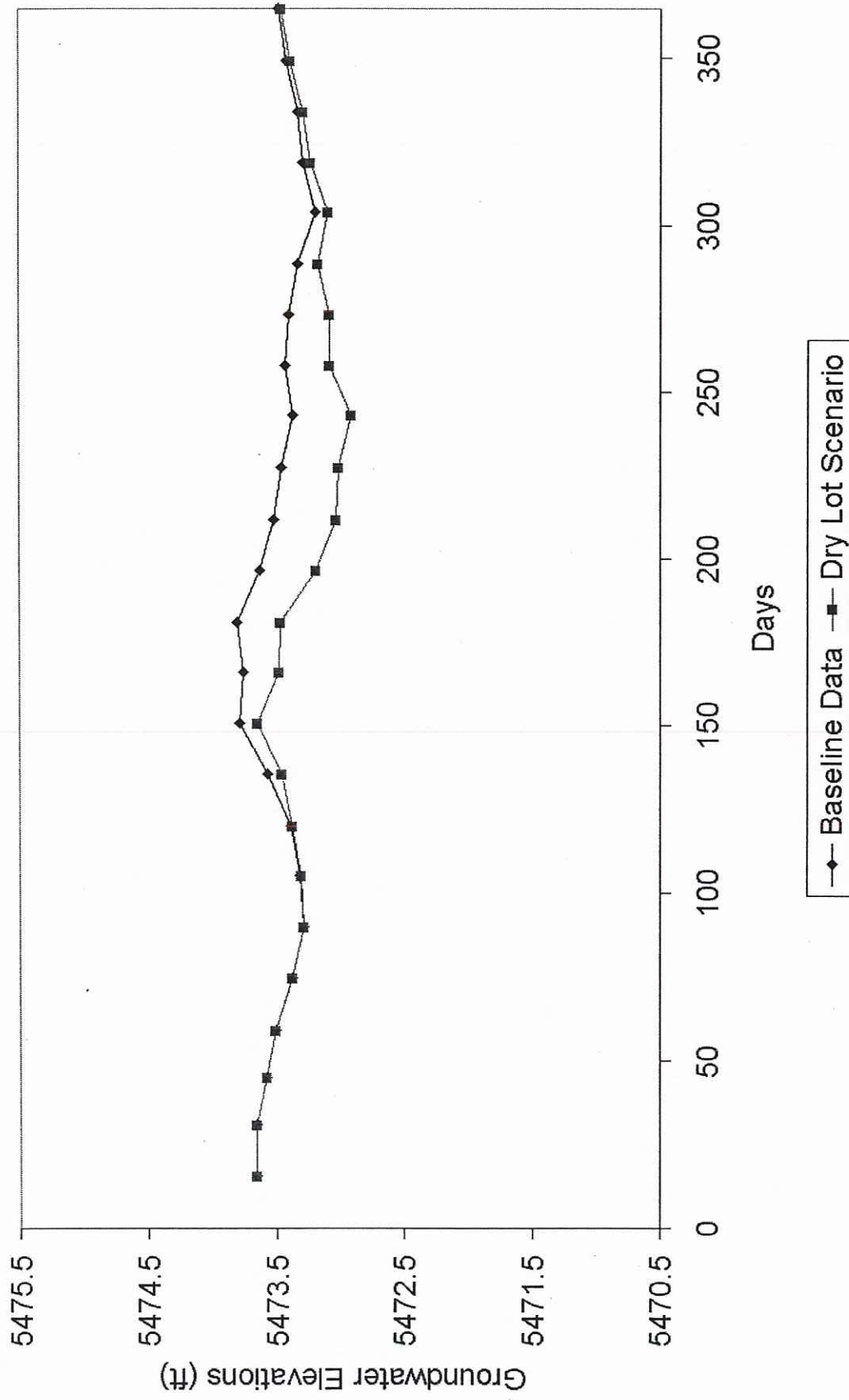


FIGURE 37: GROUNDWATER ELEVATIONS AT POINT B: NORTH OF VALLEY CLUB
 MODFLOW GROUNDWATER MODEL
 BIG WOOD VALLEY AQUIFER

Point C: South of Valley Club

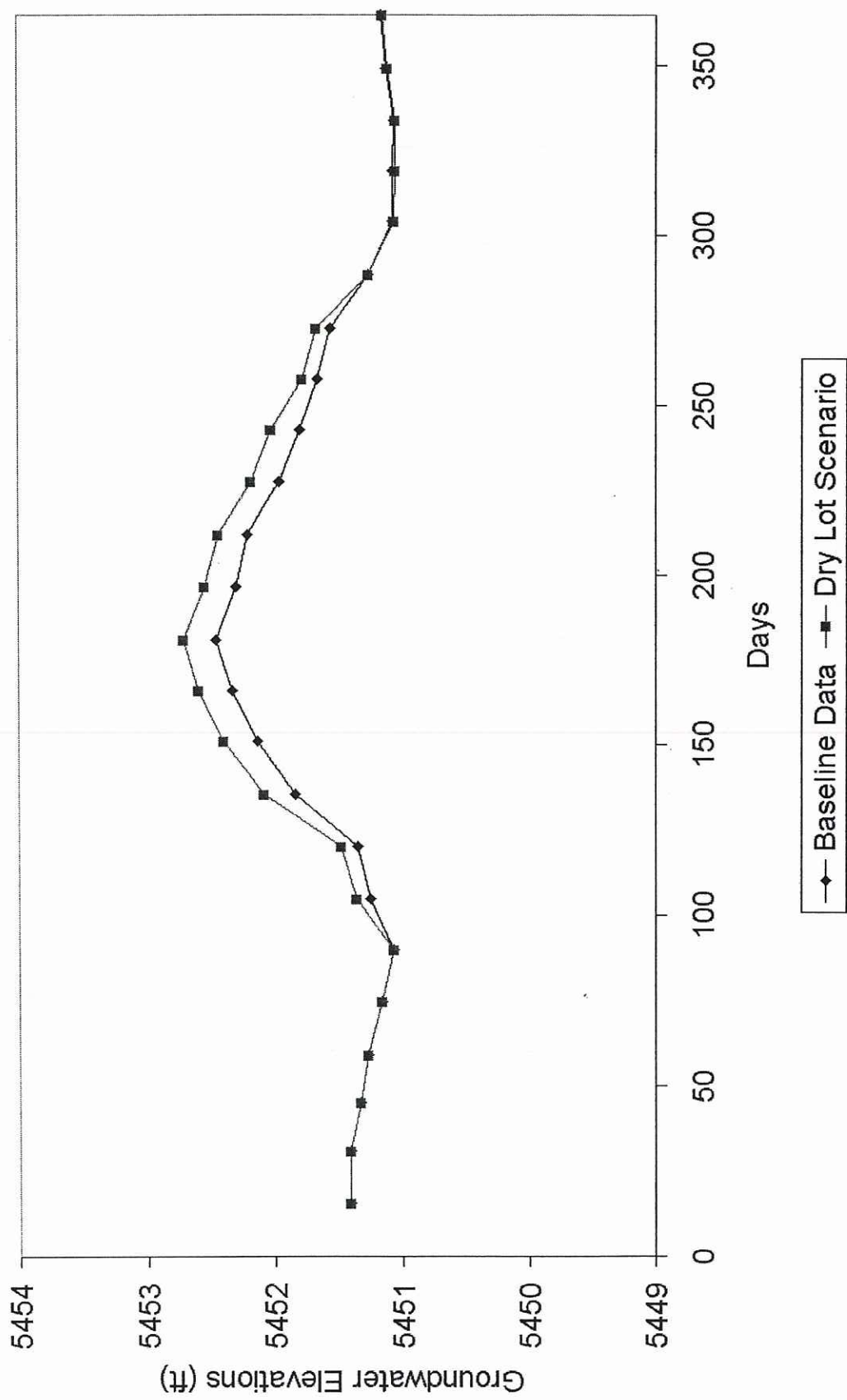


FIGURE 38: GROUNDWATER ELEVATIONS POINT C: SOUTH OF VALLEY CLUB
 MODFLOW GROUNDWATER MODEL
 BIG WOOD VALLEY AQUIFER

Point D: North of KSKI

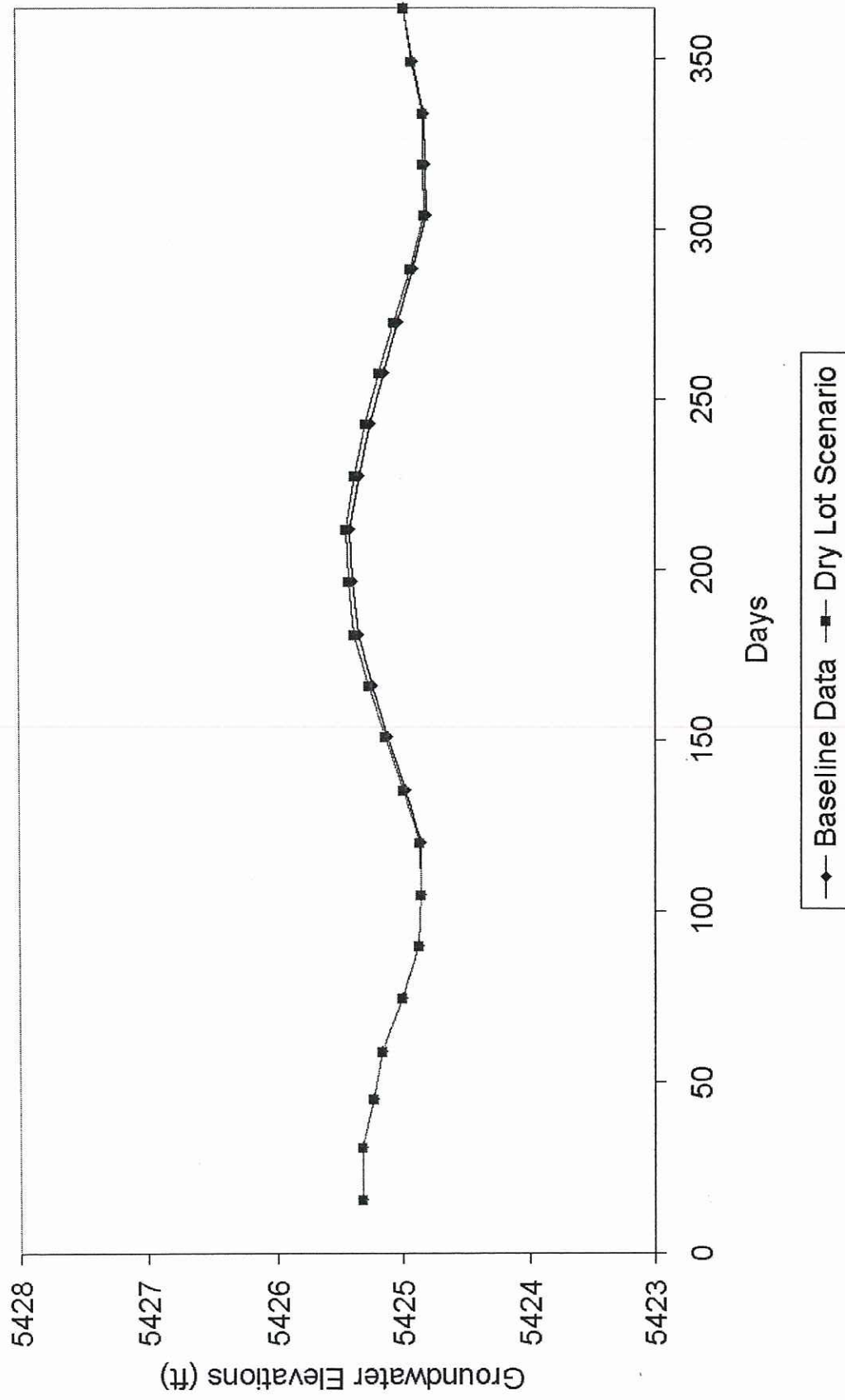


FIGURE 39: GROUNDWATER ELEVATIONS AT POINT D: NORTH OF KSKI PROPERTY
 MODFLOW GROUNDWATER MODEL
 BIG WOOD VALLEY AQUIFER

Point E: Indian Creek

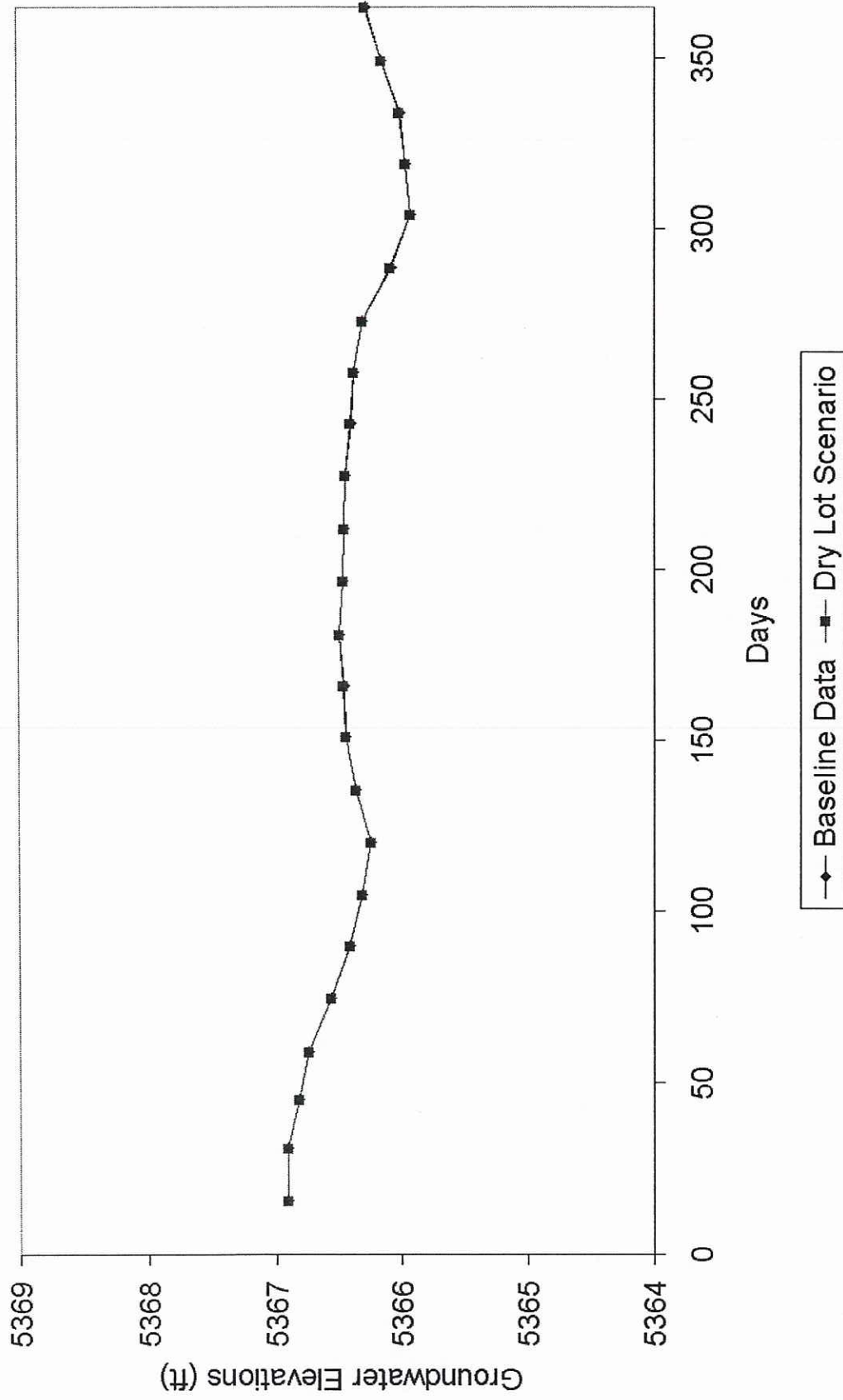


FIGURE 40: GROUNDWATER ELEVATIONS AT POINT E: INDIAN CREEK
MODFLOW GROUNDWATER MODEL
BIG WOOD VALLEY AQUIFER



LEGEND

- MODFLOW Boundary
- Big Wood River
- River Reach

FIGURE 41: DRY LOT, LLC
Big Wood River Reach
 NAIP 2006 AERIAL PHOTO

Big Wood River Reach Gain/Loss

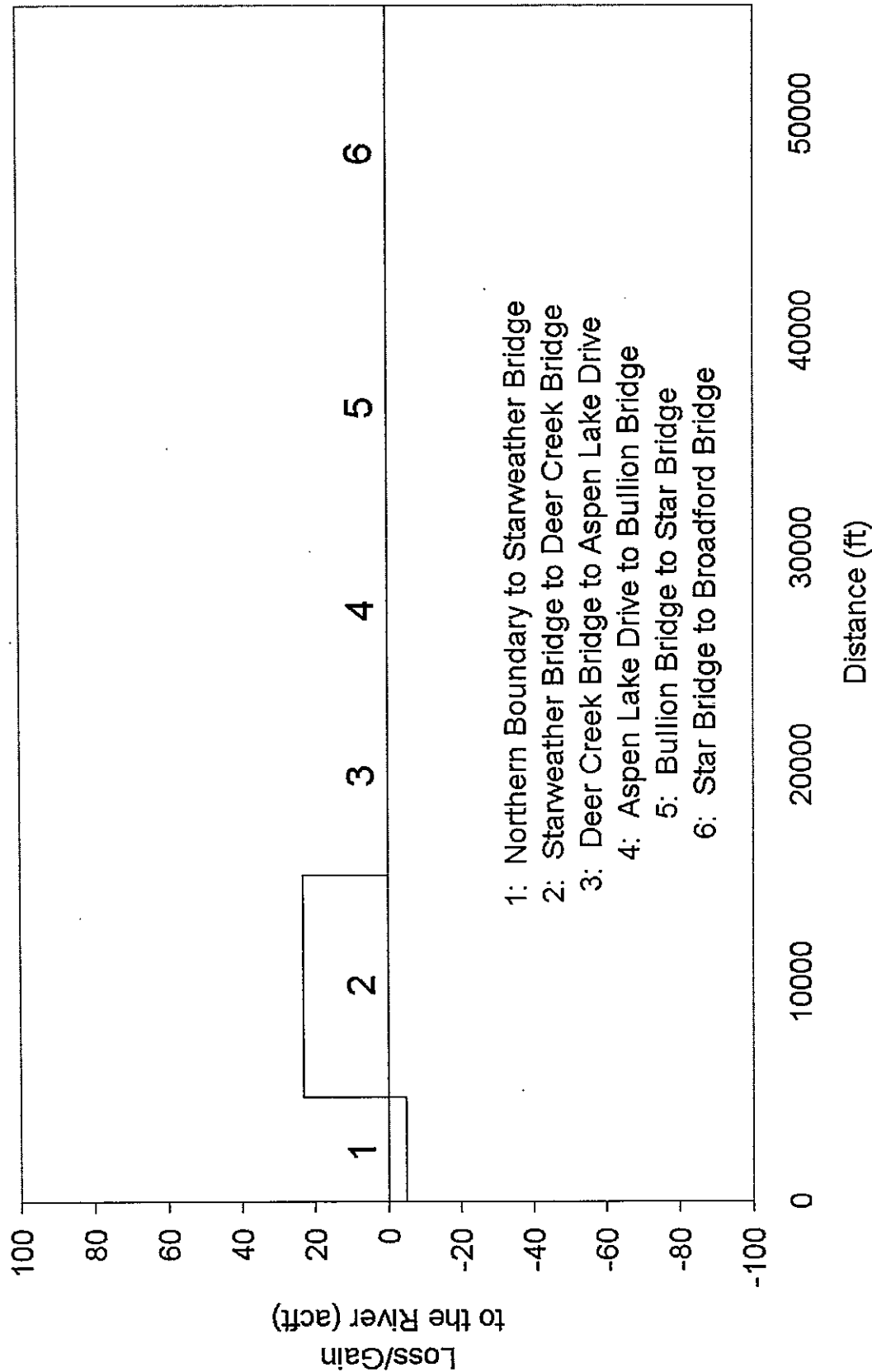


FIGURE 42: DRY LOT, LLC SCENARIO BIG WOOD RIVER REACH GAIN/LOSS
 MODFLOW GROUNDWATER MODEL
 BIG WOOD VALLEY AQUIFER

Appendix A
Well Database

WELL OWNER	TOWNSHIP	RANGE	SECTION	QQ	QQ	USE	DEPTH	STATICLEVEL	STATICELEV	PUMPINGLEVEL	DRAWDOWN	COMPLETED	DRILLER
1 Ned Hamlin	3N	18E	18	NE	SE	Domestic	48	10	5511.3			5/30/1989	Walker Water Systems, Inc. Firm No. 15
2 Bill Hoffman c/o Tom Held	3N	18E	18	NE	NW	Domestic	125	70	5515.5	120		6/6/1989	Wood River Drilling and Pump Firm No. 265
3 Henry Whiting c/o McNamara Construction	3N	18E	18	SE	NW	Domestic	130	35	5535.3			5/31/1989	Walker Water Systems, Inc. Firm No. 15
4 Jim Bishop/Gelchen Guard	3N	18E	18	SE	NE	Domestic	38	12	5531.2	35		9/24/1989	Wood River Drilling and Pump Firm No. 265
5 Bill Richardson	3N	18E	18	SE	SE	Domestic	51	8.667	5494.6			5/24/1990	Walker Water Systems, Inc. Firm No. 15
6 Ned Hamlin	3N	18E	18	NE	SE	Domestic	49	5.917	5516.1			6/20/1990	Walker Water Systems, Inc. Firm No. 15
7 Bob Hursinger	3N	18E	18	NE	SE	Domestic	44	17	5497.0			9/14/1990	Walker Water Systems, Inc. Firm No. 15
8 Henry Whiting c/o McNamara Construction	3N	18E	18	SE	NW	Domestic	175	68.417	5501.4			10/11/1990	Walker Water Systems, Inc. Firm No. 15
9 Karsten A Fostvedt	3N	18E	18	NE	NW	Domestic	125	75	5498.2	120	0	5/31/1994	Scott Drilling & Pump Co. Firm No. 327
10 Chris Singleton	3N	18E	18	NE	NW	Domestic	140	65	5507.0	115	0	6/7/1994	Scott Drilling & Pump Co. Firm No. 327
11 Mike Nichols	3N	18E	18	SE	NE	Domestic	60	9	5535.7	50		5/23/1995	Wood River Drilling and Pump Firm No. 265
12 Pat Cunningham	3N	18E	18	NE	SE	Domestic	60	13	5504.5	50		5/23/1995	Wood River Drilling and Pump Firm No. 265
13 Rinker Company	3N	18E	18	SW	NE	Domestic	105	10	5553.7			6/2/1996	Eaton Drilling Firm No. 26
14 Rinker Company	3N	18E	18	NE	SE	Domestic	103	11	5505.5			6/10/1996	Eaton Drilling Firm No. 26
15 Kirk & Jan Mason	3N	18E	18	SE	NE	Domestic	46	12	5514.3			4/21/2001	Walker Water Systems, Inc. Firm No. 15
16 Kirkman Construction	3N	18E	18	SE	NE	Domestic	48	18	5521.3	28		5/8/1978	Ken Smith Well Drilling Firm No. 265
17 Lloyd Cox	3N	18E	18	SE	NE	Domestic	48	5	5521.1		8	6/4/1971	Roessler Well Drilling Firm No. 19
18 Les Outz Jr.	3N	18E	18	NE	SE	Domestic	38	5	5509.5		5	4/25/1971	Roessler Well Drilling Firm No. 19
19 Moulton & Rixon	3N	18E	18	SE	NE	Domestic	40	6	5527.2		12	5/12/1971	Roessler Well Drilling Firm No. 19
20 Lloyd Cox	3N	18E	18	SE	NE	Domestic	43	5	5519.1		10	6/9/1971	Roessler Well Drilling Firm No. 19
21 Sher Mar Modular Inc.	3N	18E	18	SE	NE	Domestic	46	3	5524.6		23	7/26/1971	Roessler Well Drilling Firm No. 19
22 Michael Randles	3N	18E	18	SE	NE	Domestic	35	7.5	5522.1		6	9/15/1970	Roessler Well Drilling Firm No. 19
23 Jay & Linda Cooper	3N	18E	18	SE	NE	Domestic	63	17	5507.2			7/9/2004	Wood River Drilling and Pump Firm No. 265
24 Smokey Mountain Associates	3N	18E	18	NE	NE	Subdivision	68	26	5529.9	58		12/29/1981	Walker Water Systems, Inc. Firm No. 15
25 Elmar Grabber	3N	18E	18	SE	NE	Domestic	73	12	5523.6		0	8/7/1973	Harry Morre Well Drilling Firm No. 8
26 Thomas Mallane	3N	18E	18	SE	NE	Domestic	65	17.25	5510.8	25		11/12/1986	Ray Roessler Well Drilling Firm No. 262
27 Steve King	3N	18E	18	NE	SE	Domestic	34	8	5506.3	9		9/14/1982	Wood River Drilling and Pump Firm No. 265
28 John D. Bernhard	3N	18E	18	SE	NE	Irrigation	39	5	5532.1	21		7/19/1982	Ray Roessler Well Drilling Firm No. 262
29 Gordon Bob	3N	18E	18	NE	SE	Domestic	63	16	5502.2			9/5/2006	Wood River Drilling and Pump Firm No. 265
30 Smokey Mountain Associates Well # 2	3N	18E	18	NE	NE	Subdivision	113	21.583	5544.0	34.417		9/23/1982	Walker Water Systems, Inc. Firm No. 15
31 Smokey Mountain Associates Well # 1	3N	18E	18	NE	NE	Subdivision	86	20.708	5542.9	40.125		7/23/1982	Walker Water Systems, Inc. Firm No. 15
32 Cole Ericson	3N	18E	17	SW	SW	Domestic	64	31	5510.1	41		6/2/1979	Ken Smith Well Drilling Firm No. 265
33 Penny Sierra	3N	18E	17	SW	SW	Domestic	90	44	5487.7	64		6/16/1978	Ken Smith Well Drilling Firm No. 265
34 Bill Higdon	3N	18E	17	SW	SW	Domestic	67	31	5481.4	41		6/8/1979	Ken Smith Well Drilling Firm No. 265
35 George Kean	3N	18E	17	NW	SW	Domestic	35	8	5513.8	5		4/29/1979	Ken Smith Well Drilling Firm No. 265
36 Darrel Grey	3N	18E	17	SW	SW	Domestic	66	32	5497.9	54		4/28/1986	Wood River Drilling and Pump Firm No. 265
37 Lew Wilcher	3N	18E	17	SW	SW	Domestic	57	40	5499.9	55		5/18/1987	Wood River Drilling and Pump Firm No. 265
38 Carla Lancaster	3N	18E	17	SW	SW	Domestic	92	30	5512.0	40		12/12/1980	Ken Smith Well Drilling Firm No. 265
39 Richmond Construction	3N	18E	17	SW	SW	Domestic	62	43	5469.0		0	11/14/1977	Ken Smith Well Drilling Firm No. 265
40 Don Harkins	3N	18E	17	SW	SW	Domestic	77	38	5479.3		0	5/13/1971	Harry Morre Well Drilling Firm No. 8
41 Gordon Paving Co.	3N	18E	17	SW	NW	Domestic	60	15	5535.9	20		12/31/1972	Roessler Well Drilling Firm No. 19
42 Don Harkins	3N	18E	17	SW	NW	Domestic	71	36	5485.5	0		6/27/1972	Roessler Well Drilling Firm No. 19
43 Consolidated Agency	3N	18E	17	NW	SW	Domestic	76		0	0		12/18/1978	Norm Ridinger Well Drilling Firm No. 283
44 Rex Gomer	3N	18E	17	SW	SW	Domestic	38	12	5521.5	12		8/21/1981	Walker Water Systems, Inc. Firm No. 15
45 Bill Whitehead	3N	18E	17	SW	SW	Domestic	61	36	5472.0	46		10/15/1982	Ken Smith Well Drilling Firm No. 265
46 Ken Hawkins	3N	18E	17	SW	SW	Domestic	63	38	5503.7	35		12/11/1981	Ken Smith Well Drilling Firm No. 265
47 Sadie Hopkins	3N	18E	17	SW	SW	Domestic	63	40	5494.5			5/10/2006	Wood River Drilling and Pump Firm No. 265
48 Jim Luckman	3N	18E	17	NW	SW	Domestic	63	10	5515.7			5/15/2006	Wood River Drilling and Pump Firm No. 265

WELL OWNER	TOWNSHIP	RANGE	SECTION	QQ	QQ	USE	DEPTH	STATICLEVEL	STATICLEV	PUMPINGLEVEL	DRAWDOWN	COMPLETED	DRILLER
49 Brent Brinker	3N	18E	17	SW	SW	Domestic	61	37	5465.4	35		6/9/1982	Ken Smith Well Drilling Firm No. 265
50 Ann Williams	3N	18E	17	SW	SW	Domestic	64	37	5480.3	41		11/07/1982	Ken Smith Well Drilling Firm No. 265
51 Thomas Mallane	3N	18E	17	SW	SW	Domestic	60	33	5484.9	33		7/24/1978	Ken Smith Well Drilling Firm No. 265
52 Dave Rau	3N	18E	17	SW	SW	Domestic	80	50	5493.8			11/11/1995	Wood River Drilling and Pump Firm No. 265
53 Larry Tucker	3N	18E	17	SW	SW	Domestic	63	40	5478.3			4/19/1989	Wood River Drilling and Pump Firm No. 265
54 Richard Dewitt	3N	18E	17	SW	NW	Domestic	40	6	5517.6	16		7/6/1984	Wood River Drilling and Pump Firm No. 265
55 Stephen Phipps	3N	18E	17	SW	SW	Domestic	65	40.917	5497.0			9/29/1993	Walker Water Systems, Inc. Firm No. 15
56 Thomas Telge	3N	18E	17	SW	SW	Domestic	77	45	5494.0			3/30/1994	Wood River Drilling and Pump Firm No. 265
57 David McCormike	3N	18E	17	SW	SW	Domestic	62	38	5503.0	47		8/12/1983	Ken Smith Well Drilling Firm No. 265
58 Ken Ward	3N	18E	17	SW	SW	Domestic	61	32	5513.0	38		4/25/1984	Ken Smith Well Drilling Firm No. 265
59 Jerry & Kathy Roth	3N	18E	17	SW	SW	Domestic	72	39	5504.7	39		7/18/1985	Ray Roessler Well Drilling Firm No. 262
60 Heatherlands Subdivision c/o Chuck Katterm	3N	18E	17	SE	SW	Municipal	100	40	5508.8	50		8/12/1985	Walker Water Systems, Inc. Firm No. 15
61 Dana Moore	3N	18E	17	NW	SW	Domestic	80	60	5494.9	75		4/13/1989	Wood River Drilling and Pump Firm No. 265
62 D. W. Pulliam	3N	18E	17	SW	SW	Domestic	64	40.75	5500.3			7/20/1989	Walker Water Systems, Inc. Firm No. 15
63 Paul & Fred Blechmann/Bob Glenn	3N	18E	17	NW	SE	Domestic	200	40	5557.1	100		4/20/1990	Wood River Drilling and Pump Firm No. 265
64 Doug Roberts	3N	18E	17	SW	SW	Domestic	63	39.833	5495.5			6/14/1990	Walker Water Systems, Inc. Firm No. 15
65 Cal T. Wagstaff	3N	18E	17	SW	SW	Domestic	97	63	5473.6	90		11/3/1990	Wood River Drilling and Pump Firm No. 265
66 Mark Kralley	3N	18E	17	SW	SW	Domestic	64	40	5499.6			11/12/1990	Walker Water Systems, Inc. Firm No. 15
67 Geoff Parker	3N	18E	17	SW	SW	Domestic	67	35	5506.3	55		7/17/1991	Wood River Drilling and Pump Firm No. 265
68 Gary Hadden	3N	18E	17	NW	SW	Domestic	104	60	5489.6	100		10/11/1991	Wood River Drilling and Pump Firm No. 265
69 Anne M. Morgan	3N	18E	17	SW	SW	Domestic	80	43	5498.9	70		4/8/1992	Wood River Drilling and Pump Firm No. 265
70 Matt Jeffries	3N	18E	17	SW	NW	Domestic	80	21	5504.1	75		11/10/1992	Wood River Drilling and Pump Firm No. 265
71 Engelmann Design Lufkin	3N	18E	19	NE	NE	Domestic	220	7	5491.5	120		8/3/1989	Wood River Drilling and Pump Firm No. 265
72 Elise Lufkin Engelmann Design	3N	18E	19	NE	NE	Domestic	200	12	5487.0			8/23/1990	Wood River Drilling and Pump Firm No. 265
75 Seaboard Inc.	3N	18E	20	NE	NE	Monitor	120	55	5593.7			3/13/1994	Wood River Drilling and Pump Firm No. 265
76 Bob Brennan	3N	18E	20	SW	NW	Domestic	60	9	5495.0	55		5/14/1990	Wood River Drilling and Pump Firm No. 265
77 Mizer Brothers	3N	18E	20	SE	NW	Irrigation	180	41.5	5458.9			9/3/1959	Walker Water Systems, Inc. Firm No. 15
78 Albert M. Murphy	3N	18E	20	SW	NW	Domestic	60	37	5454.0			11/17/1965	Walker Water Systems, Inc. Firm No. 15
79 Seaboard Corporation	3N	18E	20	NE	NE	Monitor	148	74	5496.9			12/31/2003	Wood River Drilling and Pump Firm No. 265
80 Preston Ziegler	3N	18E	20	SE	SW	Domestic	63	8	5461.8			6/17/2004	Wood River Drilling and Pump Firm No. 265
81 Seaboard Properties Inc.	3N	18E	20	NE	NE	Municipal	120	59	5586.9			11/21/2005	Walker Water Systems, Inc. Firm No. 15
82 George Cook	3N	18E	20	SW	NW	Domestic	59	32.5	5463.7			6/15/1982	Walker Water Systems, Inc. Firm No. 15
83 Gann Investments Well #1	3N	18E	20	NW	NW -mesic/Irrigation/Municipal	61	6	5499.6	20	20		10/5/1981	Ken Smith Well Drilling Firm No. 265
84 Gann Investments Well #2	3N	18E	20	NW	NW -mesic/Irrigation/Municipal	61	6	5508.9	20	20		10/14/1981	Ken Smith Well Drilling Firm No. 265
85 Stephen D. Pruitt	3N	18E	20	SE	SW	Domestic	45		0			7/11/1993	Walker Water Systems, Inc. Firm No. 15
86 Valley Ranch Partners	3N	18E	20	SW	NE	Domestic	140	71	5439.6	84		7/8/1994	Walker Water Systems, Inc. Firm No. 15
87 Valley Ranch Partners	3N	18E	20	SE	NW	Domestic	140	64	5448.6	79		7/20/1994	Walker Water Systems, Inc. Firm No. 15
88 Roger Brown	3N	18E	20	SE	SW	Domestic	49	6	5461.1			5/22/2000	Walker Water Systems, Inc. Firm No. 15
89 Ed Lynt	3N	18E	20	SW	SE	Domestic	115	55	5425.4			5/7/2001	Walker Water Systems, Inc. Firm No. 15
90 James Moore	3N	18E	20	SE	SW	Domestic	61	9	5463.3			8/16/2001	Wood River Drilling and Pump Firm No. 265
91 John Campbell	3N	18E	20	SE	NW	Domestic	45	15	5501.0			11/13/2001	Walker Water Systems, Inc. Firm No. 15
92 Dr. Alban	3N	18E	20	SE	SW	Domestic	60	11	5461.5	31		1/6/1978	Ken Smith Well Drilling Firm No. 265
93 Frank Bramon	3N	18E	20	SE	SW	Domestic	40.5	9	5446.8	16		4/3/1981	Walker Water Systems, Inc. Firm No. 15
94 Ralph Thornton	3N	18E	20	SE	NW	Domestic	63	38	5478.3			4/30/1969	Claude Nicholson Well Drilling Firm No. 159
95 John Jonas	3N	18E	20	SE	SW	Domestic	63	10	5451.9		38	8/2/1977	Norm Ridinger Well Drilling Firm No. 283
96 Mike Susak	3N	18E	20	SW	NW	Domestic	63	10	5480.5		0	6/10/1976	Ken Smith Well Drilling Firm No. 265
97 Jessie Cox	3N	18E	30	NE	SE	Domestic	36	5	5443.2	20		3/30/1988	Wood River Drilling and Pump Firm No. 265
98 New Dear Creek Ranch, Inc.	3N	18E	30	SE	SE	Test	128	47.333	5396.6	52		1/27/1990	Walker Water Systems, Inc. Firm No. 15

WELL OWNER	TOWNSHIP	RANGE	SECTION	QQ	QQ	USE	DEPTH	STATICLEVEL	STATICELEV	PUMPINGLEVEL	DRAWDOWN	COMPLETED	DRILLER
99 New Dear Creek Ranch, Inc.	3N	18E	30	SE	SW	Domestic	250	35	5457.4	120		5/5/1994	Wood River Drilling and Pump Firm No. 265
100 Wes Nash	3N	18E	30	SE	SE	Domestic	60	9	5425.4		45	6/27/1976	Ken Smith Well Drilling Firm No. 265
101 Bob Jonas	3N	18E	29	NW	NE	Domestic	42	5	5471.9		10	6/30/1973	Claude Nicholson Well Drilling Firm No. 159
102 Rusty Lyons	3N	18E	29	SW	SE	Domestic	69	8.25	5420.7		15	7/11/1976	Ray Roessler Well Drilling Firm No. 262
103 Maurice Pyne	3N	18E	29	SW	SE	Domestic	60	20	5405.2	40		9/10/1982	Ken Smith Well Drilling Firm No. 265
104 Rusty Lyons	3N	18E	29	SW	SE	Domestic	69	9	5417.2		15	8/3/1975	Ray Roessler Well Drilling Firm No. 262
105 John Sherer	3N	18E	29	SW	SE	Domestic	83	18	5419.0			6/16/2004	Wood River Drilling and Pump Firm No. 265
106 Prosperous Path LLC	3N	18E	29	SW	SE	Domestic	83	18	5415.7			6/17/2004	Wood River Drilling and Pump Firm No. 265
107 Dee Swartz	3N	18E	29	NE	SE	Domestic	138	45	5409.7	45		5/10/1986	Wood River Drilling and Pump Firm No. 265
108 MacIntire Construction	3N	18E	29	NW	NE	Domestic/Irrigation	72	11	5456.0	30		5/23/1983	Ken Smith Well Drilling Firm No. 265
109 Gus Verg	3N	18E	29	NE	NW	Domestic	52	7	5460.8	27		8/15/1981	Ken Smith Well Drilling Firm No. 265
110 Chuck Grub	3N	18E	29	NW	NE	Domestic	71	10	5454.0	14		8/20/1981	Ken Smith Well Drilling Firm No. 265
111 Peter & Diane Cetera	3N	18E	29	SE	SW	Domestic	68		0			11/2/1982	Walker Water Systems, Inc. Firm No. 15
112 James H. Poppy	3N	18E	20	SE	SE	Domestic/Irrigation	157	20	5463.0			12/16/1982	Walker Water Systems, Inc. Firm No. 15
113 Bob Jonas	3N	18E	29	NW	NE	Domestic	58	11	5445.4	19		10/25/1978	Ken Smith Well Drilling Firm No. 265
114 Dick Fairfield	3N	18E	29	NE	NW	Domestic	60	10	5433.7	30		7/20/1986	Wood River Drilling and Pump Firm No. 265
115 Ike Thomas	3N	18E	29	NW	NE	Domestic	61	8	5450.8	23		6/13/1977	Ken Smith Well Drilling Firm No. 265
116 Joe Clement	3N	18E	29	NW	NE	Domestic	71	12	5439.3			4/17/1972	Smith Drilling & Pump Co., Inc. Firm No. 11
117 Lloyd Curtis	3N	18E	29	SW	NE	Domestic	58	6	5439.4		25	12/3/1971	Roessler Well Drilling Firm No. 19
118 Marion Batis	3N	18E	29	SW	SE	Domestic	67	12	5424.7		6	10/11/1971	Roessler Well Drilling Firm No. 19
119 Mid Valley Ventures LLC	3N	18E	29	SW	SE	Domestic	60	23	5402.8			4/16/2003	Wood River Drilling and Pump Firm No. 265
120 Leslie Tidwell	3N	18E	29	NE	SE	Domestic	120	50	5400.8			4/16/2003	Wood River Drilling and Pump Firm No. 265
121 Orville Jo Harris	3N	18E	29	SE	SW	Domestic	46	8	5413.2			5/23/1972	Claude Nicholson Well Drilling Firm No. 159
122 Charles Thomas	3N	18E	29	NE	NW	Domestic	72	12	5440.2		3	9/3/1973	Claude Nicholson Well Drilling Firm No. 159
123 Richard Castle	3N	18E	29	NE	SW	Domestic	64	9	5427.0			8/10/1972	Claude Nicholson Well Drilling Firm No. 159
124 Ray Kirkade	3N	18E	29	NE	SW	Domestic	62	10	5430.1			8/12/1972	Claude Nicholson Well Drilling Firm No. 159
125 Tom Richmond	3N	18E	29	NW	NE	Domestic	62	30	5427.7		0	6/22/1972	Roessler Well Drilling Firm No. 19
126 Anseon & Jean Beard	3N	18E	29	SE	NW	Domestic	67	9.083	5429.7			6/3/1992	Walker Water Systems, Inc. Firm No. 15
127 Bob Brennen	3N	18E	29	NW	SE	Domestic	75	18	5422.1	65		7/22/1992	Scott Drilling & Pump Co. Firm No. 327
128 Mike & Sandy Killian	3N	18E	29	NE	NW	Domestic	60	19	5431.3	48		4/29/1993	Wood River Drilling and Pump Firm No. 265
129 Tim Gardner	3N	18E	29	SW	SE	Domestic	60	10	5408.2	55		5/18/1993	Wood River Drilling and Pump Firm No. 265
130 Brian E. Elkins	3N	18E	29	NW	NE	Domestic	100	10	5441.6	80		6/11/1993	Wood River Drilling and Pump Firm No. 265
131 J. Liesenfeld/C. Crain	3N	18E	29	SW	SE	Domestic	69.5	14.5	5408.6			4/25/1996	Walker Water Systems, Inc. Firm No. 15
132 John Whitlier	3N	18E	29	SE	NW	Domestic	83	14	5428.4			9/28/1999	Wood River Drilling and Pump Firm No. 265
133 Kiki Tidwell	3N	18E	29	NW	SE	Domestic	160	45	5394.1	155		10/2/1999	Scott Drilling & Pump Co. Firm No. 327
134 Eddie Fields	3N	18E	29	NE	NW	Domestic	59	12	5435.0			5/11/2000	Wood River Drilling and Pump Firm No. 265
135 Paul Petit	3N	18E	29	NE	NW	Domestic	98	23	5421.8			10/12/2001	Wood River Drilling and Pump Firm No. 265
136 Thomas B. Campion	3N	18E	29	SE	SW	Domestic/Fire Protection	50	4.667	5414.0			5/3/1985	Walker Water Systems, Inc. Firm No. 15
137 Vance Hanawalt	3N	18E	29	SE	SE	Domestic	57	9	5428.4	30		9/23/1978	Ken Smith Well Drilling Firm No. 265
138 Scott Edwards	3N	18E	29	NW	NE	Domestic	59	12	5448.4	17		9/11/1978	Ken Smith Well Drilling Firm No. 265
139 Dr. Alban	3N	18E	29	NE	NW	Domestic	54	12	5433.2	22		9/5/1978	Ken Smith Well Drilling Firm No. 265
140 Harold Schmidt	3N	18E	29	SW	SW	Domestic	49	10.583	5394.3			3/14/1988	Walker Water Systems, Inc. Firm No. 15
141 Carol Shepard/Bob Allen Contracting	3N	18E	29	NW	NE	Domestic	60	14	5449.2	42		9/8/1989	Wood River Drilling and Pump Firm No. 265
142 Dr. Richard Fairfield	3N	18E	29	NE	NW	Domestic	92	15	5428.0	24		3/7/1990	Wood River Drilling and Pump Firm No. 265
143 Fred Lema	3N	18E	29	SE	SE	Domestic	38	20	5406.8	35		3/6/1990	Wood River Drilling and Pump Firm No. 265
144 David Rogniten	3N	18E	29	SW	NE	Domestic	67	14	5436.6	65		8/14/1990	Wood River Drilling and Pump Firm No. 265
145 Tim Cole	3N	18E	29	NE	SE	Domestic	108	42	5410.0	100		8/21/1990	Scott Drilling & Pump Co. Firm No. 327
146 Dr. & Mrs. W. E. Andrews	3N	18E	29	NW	NE	Domestic	44	12.167	5442.5			10/3/1990	Walker Water Systems, Inc. Firm No. 15

WELL OWNER	TOWNSHIP	RANGE	SECTION	QQ	QQ	USE	DEPTH	STATIC LEVEL	STATIC ELEV	PUMPING LEVEL	DRAWDOWN	COMPLETED	DRILLER
147 Dr. Donald M. Levin	3N	18E	29	SW	SW	Domestic	49	8.583	5395.1			11/9/1990	Walker Water Systems, Inc. Firm No. 15
148 Steve Greer	3N	18E	29	NW	NE	Domestic	45	9	5441.5	35		8/19/1991	Scott Drilling & Pump Co. Firm No. 327
149 Anson & Jean Beard	3N	18E	29	SE	NW	Domestic	67	11.917	5426.2			6/2/1992	Walker Water Systems, Inc. Firm No. 15
155 Rod Overfield	3N	18E	32	NW	SE	Subdivision	100	12	5381.0		7	9/14/1973	Walker Water Systems, Inc. Firm No. 15
156 Mrs. Dorothy Hollingsworth	3N	18E	32	SE	NE	Irrigation	201	7	5423.4			8/23/1955	Smith Drilling & Pump Co., Inc. Firm No. 11
157 Idaho Power Co.	3N	18E	32	SE	SE	asitic/Irrigation/Fire Prot	141	17	5362.8		40	6/24/1975	Walker Water Systems, Inc. Firm No. 15
159 Pat Bauman	3N	18E	32	NW	NE	Domestic	63	11	5396.2			8/10/2006	Wood River Drilling and Pump Firm No. 265
160 Bob Decanufel	3N	18E	32	NW	NE	Domestic	63	11	5397.2			8/9/2006	Wood River Drilling and Pump Firm No. 265
161 Mike Smith	3N	18E	32	NW	NE	Domestic	63	11	5400.2			8/10/2006	Wood River Drilling and Pump Firm No. 265
162 Bruce Butler	3N	18E	32	NW	NE	Domestic	61	8	5397.3	23		8/10/1981	Ken Smith Well Drilling Firm No. 265
163 Dave Wendland	3N	18E	32	NW	NE	Domestic	41	7	5406.9	15		8/11/1981	Ken Smith Well Drilling Firm No. 265
164 Olynpus Environmental, Inc.	3N	18E	32	SE	SE	Monitor	23	15.5	5362.9			2/25/1994	Hiddleston & Son, Inc. Firm No. 35
165 Ray Jefferson	3N	18E	32	SE	SE	Domestic	43	14	5370.6	35		8/28/1994	Scott Drilling & Pump Co. Firm No. 327
166 Tom Perakos c/o Kavanaugh Construction	3N	18E	32	SW	SE	Domestic	80	5	5384.9	45		10/30/1995	Wood River Drilling and Pump Firm No. 265
167 Tony Jefferson	3N	18E	32	SE	SE	Domestic	50	7	5371.8			7/2/1996	Walker Water Systems, Inc. Firm No. 15
168 Alan Welch	3N	18E	32	SW	SE	Domestic	43	6	5370.0	40		8/13/1998	Scott Drilling & Pump Co. Firm No. 327
169 Robert Monahan	3N	18E	32	NW	NE	Domestic	80	18	5404.8	70		12/4/1998	Wood River Drilling and Pump Firm No. 265
170 Bill Phillips	3N	18E	32	SW	SE	Domestic	63	4	5386.8			5/11/2000	Wood River Drilling and Pump Firm No. 265
171 Tom Perakos	3N	18E	32	SW	SE	Domestic	46	6	5364.7			7/12/2000	Walker Water Systems, Inc. Firm No. 15
172 Eric Remais	3N	18E	32	SE	NW	Domestic	81	11	5379.5			8/30/2000	Wood River Drilling and Pump Firm No. 265
173 Joyce Gordon & Eric Reamls	3N	18E	32	SE	NW	Domestic	61	7	5397.6			10/2/2001	Wood River Drilling and Pump Firm No. 265
174 Gary Hardman	3N	18E	32	NW	NE	Domestic	71	9.75	5397.9			6/4/1985	Walker Water Systems, Inc. Firm No. 15
175 Eric & Barbara Hall	3N	18E	32	NW	NE	Domestic	83	20	5397.5			5/3/2002	Wood River Drilling and Pump Firm No. 265
176 Bill Genhke	3N	18E	32	NE	NW	Domestic	70	20	5384.4	30		11/28/1980	Ken Smith Well Drilling Firm No. 265
177 Flying Heart Ranch Owners Association	3N	18E	32	SW	SE	Fire Protection	120	6	5380.9			10/14/2002	Wood River Drilling and Pump Firm No. 265
178 Beck Construction	3N	18E	32	NE	NW	Domestic	130	11.583	5393.5		67	10/25/1977	Bob Roessler Drilling Firm No. 6
179 Jack Smith	3N	18E	32	NW	NE	Domestic	141	17	5395.8		94	10/25/1977	Bob Roessler Drilling Firm No. 6
180 Bill Genhke	3N	18E	32	NE	NW	Municipal	100	10	5395.0		20	5/22/1977	Ken Smith Well Drilling Firm No. 265
181 Laton McCortney	3N	18E	32	NE	NW	Domestic	45	6	5403.7		2	10/6/1967	Roessler Well Drilling Firm No. 19
182 Blif S. Butler	3N	18E	32	NW	NE	Municipal	77	19	5387.3			4/7/1971	Roessler Well Drilling Firm No. 19
183 Robert S. Giddings	3N	18E	32	NW	NE	Domestic	45	7	5409.6		4	5/23/1970	Roessler Well Drilling Firm No. 19
184 Whitney Meyers	3N	18E	32	NW	NE	Domestic	40	8	5405.2			9/25/1968	Harry A. Moore Firm No. 8
185 Glen Withers	3N	18E	32	SE	SE	Domestic	42	6	5369.1		9	6/9/1972	Roessler Well Drilling Firm No. 19
186 Idaho Power Substation Hailey	3N	18E	32	SE	SE	Irrigation	101	2	5376.9		12	7/26/1972	Walker Water Systems, Inc. Firm No. 15
187 Don Martin	3N	18E	32	NW	NW	Domestic	63	16	5417.5		23	7/8/1972	Roessler Well Drilling Firm No. 19
188 Ken Grayson	3N	18E	32	SW	NE	Domestic	65	12.167	5392.0			9/11/1992	Walker Water Systems, Inc. Firm No. 15
189 Greg Jefferson	3N	18E	32	SE	SE	Domestic	45	8	5387.2	35		10/24/1992	Scott Drilling & Pump Co. Firm No. 327
190 Flying Heart Ranch Subdivision	3N	18E	32	SE	SE	Fire Protection	45	4	5364.4	35		9/22/1993	Scott Drilling & Pump Co. Firm No. 327
191 Pat Bauman	3N	18E	32	NW	NE	Domestic	55	15	5392.8	50		10/12/1993	Wood River Drilling and Pump Firm No. 265
192 Lynn Cunningham	3N	18E	32	NW	NE	Domestic	45	8	5403.2	35		8/6/1991	Scott Drilling & Pump Co. Firm No. 327
193 Virginia Hall	3N	18E	32	SE	SW	Domestic	45	8	5359.7	35		9/6/1991	Scott Drilling & Pump Co. Firm No. 327
194 Mark A. Deffe	3N	18E	32	NW	NE	Domestic	80	7	5407.0	60		5/18/1992	Wood River Drilling and Pump Firm No. 265
195 Harry Rinker	3N	18E	32	SE	SE	Domestic	45	8	5370.5	25		7/21/1992	Scott Drilling & Pump Co. Firm No. 327
196 William Norris	3N	18E	32	NE	NW	Domestic/Irrigation	46	7	5404.1	30		4/28/1988	Wood River Drilling and Pump Firm No. 265
197 Calvary Church Comp.	3N	18E	32	SE	SE	Domestic	72	30	5348.7	65		4/2/1988	Wood River Drilling and Pump Firm No. 265
198 Roger Shelton	3N	18E	32	NW	NE	Domestic	35	6	5403.8	30		11/5/1988	Wood River Drilling and Pump Firm No. 265
199 Ray Jefferson	3N	18E	32	SW	SE	Domestic	56	15	5371.1	50		5/3/1988	Wood River Drilling and Pump Firm No. 265
200 Jim Sutton	3N	18E	32	SE	SW	Domestic	67	3	5367.8	15		6/27/1989	Wood River Drilling and Pump Firm No. 265

WELL OWNER	TOWNSHIP	RANGE	SECTION	QQ	QQ	USE	DEPTH	STATICLEVEL	STATICELEV	PUMPINGLEVEL	DRAWDOWN	COMPLETED	DRILLER
201 Ward W. Woods, Jr.	3N	18E	32	SW	NE	Domestic	51	7.667	5396.7			8/14/1990	Walker Water Systems, Inc. Firm No. 15
202 James Freshline	3N	18E	32	SW	SE	Domestic/Irrigation	72	8	5359.7	55		10/16/1990	Scott Drilling & Pump Co. Firm No. 327
203 Cloverly Farms John Chapman	3N	18E	32	SW	NE	Irrigation	100	12	5382.8	60		3/15/1991	Wood River Drilling and Pump Firm No. 265
204 Wood River Properties	3N	18E	32	SW	NE	Domestic	45	8	5388.2	35		8/7/1991	Scott Drilling & Pump Co. Firm No. 327
205 Richard Hesse	3N	18E	33	NE	SW	Domestic	260	104.417	5327.7			10/29/1986	Walker Water Systems, Inc. Firm No. 15
206 Dane Urbany	3N	18E	33	SW	SW	Domestic	123	27	5380.7			8/31/2004	Wood River Drilling and Pump Firm No. 265
207 Jean Piere Chesnel	3N	18E	33	SE	SW	Domestic	128	60	5362.7			12/19/2004	Walker Water Systems, Inc. Firm No. 15
208 KSKI Radio	3N	18E	33	SW	SW	Domestic	37		0	2		8/19/1981	Walker Water Systems, Inc. Firm No. 15
209 Jim McClatchy	3N	18E	33	NW	NE	Domestic	231	115	5366.4	135		1/9/1982	Ray Roessler Well Drilling Firm No. 262
210 Blair & Gina Clark	3N	18E	33	SE	SW	Domestic	120	51	5363.1			8/30/2006	Walker Water Systems, Inc. Firm No. 15
211 Jim & Janet Freeman	3N	18E	33	NW	SW	Domestic	123	60	5351.6			10/12/2006	Wood River Drilling and Pump Firm No. 265
212 Bing Copland	3N	18E	33	NE	SW	Domestic/Industrial	127	70	5351.8	100		4/25/1987	Wood River Drilling and Pump Firm No. 265
213 Mark & Mary Ann Fisher	3N	18E	33	SW	SW	Domestic	180	44	5362.0			9/16/2002	Wood River Drilling and Pump Firm No. 265
214 Mr. Reeder	3N	18E	33	NE	SW	Domestic	113	82	5353.1			10/18/1978	Ken Smith Well Drilling Firm No. 265
215 State Department of Highways	3N	18E	33	SW	SW	Domestic	100	20	5364.7		12	4/17/1988	Harvey E. (Pete) Austin Firm No. 73
216 Rick Filkins	3N	18E	33	SW	SW	Domestic	120	48	5363.3			4/18/2003	Wood River Drilling and Pump Firm No. 265
217 Kris Webster	3N	18E	33	SW	SW	Domestic	120	40	5365.2			6/4/2003	Wood River Drilling and Pump Firm No. 265
218 Mike Chapman	3N	18E	33	SW	SW	Domestic	120	41	5367.9			6/30/2003	Wood River Drilling and Pump Firm No. 265
219 Cory Lyttan	3N	18E	33	SW	SW	Domestic	120	41	5365.5			7/1/2003	Wood River Drilling and Pump Firm No. 265
220 Rob & Dina Beck	3N	18E	33	SW	SW	Domestic	128	37	5366.7			7/2/2003	Wood River Drilling and Pump Firm No. 265
221 Dwight Smith	3N	18E	33	NE	SW	Domestic	122	50	5389.4	97		9/26/1985	Wood River Drilling and Pump Firm No. 265
222 Jim Curran (Craig Johnston Construction)	3N	18E	33	NE	SW	Domestic	140	70	5355.7			5/18/1989	Wood River Drilling and Pump Firm No. 265
223 James A. Evans	3N	18E	33	SW	SW	Domestic	135	40	5373.1	120		7/4/1999	Scott Drilling & Pump Co. Firm No. 327
224 John Galgano	3N	18E	33	NW	SW	Domestic	121	45	5359.0			5/9/2000	Wood River Drilling and Pump Firm No. 265
225 John Drake	3N	18E	33	SW	SW	Domestic	107	50	5352.3			7/17/2000	Walker Water Systems, Inc. Firm No. 15
226 Matthew Barrie	3N	18E	33	NE	SW	Domestic	160	74	5367.8			9/27/2000	Wood River Drilling and Pump Firm No. 265
227 Brian Rozyla	3N	18E	33	SE	SW	Domestic	130	40	5362.6			10/31/2000	Wood River Drilling and Pump Firm No. 265
228 Mike Goliandia	3N	18E	33	SE	SW	Domestic	123	42	5359.6			4/4/2001	Wood River Drilling and Pump Firm No. 265
229 Karin Martin	3N	18E	33	SE	SW	Domestic	101	48	5374.0			5/30/2001	Wood River Drilling and Pump Firm No. 265
230 Rob Rheinschild	3N	18E	33	SW	SW	Domestic	140	47	5361.7			8/15/2001	Wood River Drilling and Pump Firm No. 265
231 Rod Kegley	3N	18E	33	NW	SW	Domestic	123	47	5361.2			4/16/2002	Wood River Drilling and Pump Firm No. 265
232 Richard Vanderpool	3N	18E	33	SE	SW	Domestic	134	40	5361.5			7/16/2002	Wood River Drilling and Pump Firm No. 265
233 Chun Chinn	3N	18E	33	SW	SW	Domestic	123	44	5371.4			7/15/2002	Wood River Drilling and Pump Firm No. 265
234 Richard Hess	3N	18E	33	NW	SE	Domestic	200	120	5317.8			8/8/1979	Smith Drilling & Pump Co., Inc. Firm No. 11
235 Eva & James Hague	3N	18E	33	NW	SW	Domestic	123	48	5360.7			8/9/2002	Wood River Drilling and Pump Firm No. 265
236 Pete Miller	3N	18E	33	SE	SW	Domestic	80	47	5387.5	70		5/31/1990	Scott Drilling & Pump Co. Firm No. 327
238 Kristy Piegeon	3N	18E	33	SW	NW	Domestic	129	35	5395.2	110		4/24/1991	Wood River Drilling and Pump Firm No. 265
239 Kris Halle	3N	18E	33	NE	SW	Domestic	156	91	5353.8	120		6/12/1993	Wood River Drilling and Pump Firm No. 265
240 Art Thelde	3N	18E	33	NW	SE	Domestic	220	68	5395.0	195		6/30/1993	Scott Drilling & Pump Co. Firm No. 327
241 Ron Carnington	3N	18E	33	SW	NE	Domestic	160	75	5413.2	140		10/21/1993	Scott Drilling & Pump Co. Firm No. 327
242 Mike Farniller	3N	18E	33	NW	SE	Domestic	112	75	5413.9	85		4/2/1994	Scott Drilling & Pump Co. Firm No. 327
243 Rob Reed	3N	18E	33	SW	SE	Domestic	260	130	5372.9			7/19/1995	Wood River Drilling and Pump Firm No. 265
244 Bill Fruhling	3N	18E	33	NW	NE	Domestic	311	100.333	5427.0			7/7/1997	Walker Water Systems, Inc. Firm No. 15
245 Michel Martel	3N	18E	33	SE	NW	Domestic	200	90	5383.5	180		7/14/1997	Wood River Drilling and Pump Firm No. 265
246 Jim Bishop	3N	18E	33	NE	SW	Domestic	151	76	5399.9	76		9/12/1983	Ray Roessler Well Drilling Firm No. 262
247 Rod Thornton	3N	18E	33	SE	SW	Domestic	140	30	5403.0	120		12/10/1987	Wood River Drilling and Pump Firm No. 265
248 Bruce Medilea	3N	18E	33	NE	SW	Domestic	140	70	5372.0	120		4/18/1989	Wood River Drilling and Pump Firm No. 265
249 John Chapman	3N	18E	32	SW	NE	Irrigation	126	60	5338.2	120		4/11/1989	Wood River Drilling and Pump Firm No. 265

WELL OWNER	TOWNSHIP	RANGE	SECTION	QQ	QQ	USE	DEPTH	STATIC LEVEL	STATION LEVEL	PUMPING LEVEL	DRAWDOWN	COMPLETED	DRILLER
250 Doug Roberts	3N	18E	33	SE	SW	Domestic	88.5	50.75	5409.3			6/5/1989	Walker Water Systems, Inc. Firm No. 15
251 Kenneth Bultram	3N	18E	33	SE	SW	Domestic/Irrigation	205	46	5372.0	60		8/22/1989	Wood River Drilling and Pump Firm No. 265
252 Jim & Barbara Hobbs	3N	18E	33	SE	SW	Domestic	103	39.833	5374.7			6/19/1990	Walker Water Systems, Inc. Firm No. 15
254 Robert Malberg	2N	18E	5	NE	NE	Domestic	50	18	5346.0		5	11/21/1965	Walker Water Systems, Inc. Firm No. 15
255 Fred Haring	2N	18E	5	NE	SE	Domestic	82	10	5342.0	30		11/29/1985	Wood River Drilling and Pump Firm No. 265
256 Dene Oliver	2N	18E	5	SE	SE	Domestic	67	17	5327.7			12/1/2003	Walker Water Systems, Inc. Firm No. 15
257 Kim Seegmiller	2N	18E	5	NW	NE	Domestic	50	5	5399.9	7		11/4/1982	Ken Smith Well Drilling Firm No. 265
258 Perry Thomas	2N	18E	5	NE	SE	Domestic	102	15	5334.4	18		12/10/1981	Ken Smith Well Drilling Firm No. 265
259 Tom Swenson	2N	18E	5	SW	NE	Domestic	38	4	5352.9	30		6/22/1987	Wood River Drilling and Pump Firm No. 265
260 Flying Heart Ranch	2N	18E	5	SW	NW	Municipal	80	10	5355.0	15		9/5/1980	Ken Smith Well Drilling Firm No. 265
261 Dale Donnelly	2N	18E	5	SE	SE	Domestic	50	7	5338.0	32		9/8/1980	Ken Smith Well Drilling Firm No. 265
262 Bud Teasley	2N	18E	5	SE	SE	Domestic	47	7.5	5336.7		20.5	8/25/1977	Bob Roessler Drilling Firm No. 6
263 Doug Walton	2N	18E	5	NE	SE	Domestic	53	9	5340.4		20	11/10/1977	Ken Smith Well Drilling Firm No. 265
264 Bob Reesa	2N	18E	5	NE	SE	Domestic	53	6	5339.6		20	9/22/1977	Norm Ridinger Well Drilling Firm No. 283
265 Dale Donnelly	2N	18E	5	NE	SE	Domestic	76	12	5332.2		0	3/28/1977	Ken Smith Well Drilling Firm No. 265
266 Van & Vicki Williams	2N	18E	5	NE	NE	Domestic	45	10	5359.0	43		8/30/1999	Scott Drilling & Pump Co. Firm No. 327
267 WGW LLC	2N	18E	5	NE	NE	Other	132	14.5	5360.0			6/15/2000	Walker Water Systems, Inc. Firm No. 15
268 WGW LLC	2N	18E	5	NE	NE	Other	132	14	5363.6			6/25/2000	Walker Water Systems, Inc. Firm No. 15
269 WGW LLC	2N	18E	5	NE	NE	Domestic	137	25	5350.6			8/23/2000	Walker Water Systems, Inc. Firm No. 15
270 Bruce Willis	2N	18E	5	NW	NE	Domestic	63	8	5357.6			8/12/2002	Wood River Drilling and Pump Firm No. 265
271 Peter Ahrene	2N	18E	5	NE	SE	Domestic	52	7	5336.8	9		6/21/1979	Ken Smith Well Drilling Firm No. 265
272 Bruce Willis	2N	18E	5	NW	NE	Domestic	62	5	5354.1	55		7/15/1991	Wood River Drilling and Pump Firm No. 265
273 Pat Hansing	2N	18E	5	SW	NE	Domestic	140	53	5299.2	135		7/27/1992	Wood River Drilling and Pump Firm No. 265
274 Walter King	2N	18E	5	SW	NE	Domestic	58	6	5351.7	45		8/6/1993	Wood River Drilling and Pump Firm No. 265
275 Flying Heart Ranch Subdivision	2N	18E	5	NE	NE	Fire Protection	45	4	5361.4	40		9/20/1993	Scott Drilling & Pump Co. Firm No. 327
276 Flying Heart Ranch Subdivision	2N	18E	5	NE	NE	Fire Protection	45	4	5361.9	35		9/21/1993	Scott Drilling & Pump Co. Firm No. 327
277 Harry Hagey	2N	18E	5	NW	NE	Domestic	60	8	5355.9			12/9/1993	Wood River Drilling and Pump Firm No. 265
278 Pete Sturivant	2N	18E	5	NE	SE	Domestic	120	6	5339.6	100		8/21/1995	Wood River Drilling and Pump Firm No. 265
279 Edward & Vickie O'Gara	2N	18E	5	NW	NE	Domestic	80	6	5357.3	60		9/15/1995	Wood River Drilling and Pump Firm No. 265
280 John Goodmanson	2N	18E	5	SW	NE	Domestic	53	7	5349.4	12		8/20/1983	Ken Smith Well Drilling Firm No. 265
281 John Biggs	2N	18E	5	SW	NE	Domestic	50	5	5350.8	15		6/10/1984	Ken Smith Well Drilling Firm No. 265
282 Orlando Ferrante	2N	18E	5	SW	NE	Domestic	79	10	5345.2	10		5/27/1988	Wood River Drilling and Pump Firm No. 265
283 Don Brandenburg	2N	18E	5	NW	NE	Domestic	51	5.75	5357.5			8/1/1989	Walker Water Systems, Inc. Firm No. 15
284 Chris Palmer c/o Housel Construction	2N	18E	5	NW	NE	Domestic	60	9	5349.8	55		5/25/1990	Wood River Drilling and Pump Firm No. 265
285 Bruce Willis	2N	18E	5	SW	NE	Domestic/Irrigation	63	3	5351.0	60		7/20/1990	Wood River Drilling and Pump Firm No. 265
286 Peter Trust (Perry Thomas)	2N	18E	5	SE	NE	Domestic/Irrigation	85	7	5352.9	75		3/21/1991	Scott Drilling & Pump Co. Firm No. 327
287 Bruce Willis	2N	18E	5	NE	NE	Domestic	64	5	5359.3	55		6/10/1991	Wood River Drilling and Pump Firm No. 265
288 Wayne McKenzie	2N	18E	4	NW	SW	Domestic	49	7	5351.8		0	5/11/1972	Roessler Well Drilling Firm No. 19
289 Earl McCoy	2N	18E	4	NW	NW	Domestic	52	12	5372.8		0	6/4/1973	Claude Nicholson Well Drilling Firm No. 159
290 Melvin A. Drexler	2N	18E	4	SE	SW	Domestic	47	18	5323.9		2	6/9/1961	Billy G. Martin
291 E. Perry Thomas	2N	18E	4	NW	SW	Irrigation/Stock	91	5.542	5347.6			8/8/1986	Walker Water Systems, Inc. Firm No. 15
292 Peter Koss	2N	18E	4	SW	NE	Domestic	141	68	5330.8			8/26/2003	Wood River Drilling and Pump Firm No. 265
293 Kimberly Richmond	2N	18E	4	NW	NW	Domestic	103	16	5354.8			6/14/2004	Wood River Drilling and Pump Firm No. 265
294 Garth Callaghan Construction	2N	18E	4	NW	SE	Domestic	103	64	5316.9			11/11/2004	Wood River Drilling and Pump Firm No. 265
295 Douglas & Nancy Fenn	2N	18E	4	SW	SW	Domestic	63	12	5316.9			11/12/2004	Wood River Drilling and Pump Firm No. 265
296 Ralph P. Davidson	2N	18E	4	SE	SE	Domestic	52	5	5364.8	20		5/29/1980	Ray Roessler Well Drilling Firm No. 262
297 William Sullivan	2N	18E	4	NW	SE	Domestic	103	65	5318.2			7/19/2005	Wood River Drilling and Pump Firm No. 265
298 McSlay Construction for Bob McDonald	2N	18E	4	NW	SW	Domestic	87	4.583	5350.3			7/6/1983	Walker Water Systems, Inc. Firm No. 15

WELL OWNER	TOWNSHIP	RANGE	SECTION	QQ	QQ	USE	DEPTH	STATIC LEVEL	STATIC LEVEL	PUMPING LEVEL	DRAWDOWN	COMPLETED	DRILLER
299 Gary Marcroft	2N	18E	9	NW	NE	Domestic	143	60	5298.6			10/25/2007	Wood River Drilling and Pump Firm No. 265
300 Randall Acker	2N	18E	4	SW	SE	Domestic	121	52	5313.4			11/10/2000	Wood River Drilling and Pump Firm No. 265
301 Pat Savaria	2N	18E	4	NW	SE	Domestic	123	60	5313.3			5/17/2001	Wood River Drilling and Pump Firm No. 265
302 Jim & Shirley Savaria	2N	18E	4	SW	SE	Domestic	105	59	5314.9			11/8/2001	Walker Water Systems, Inc. Firm No. 15
303 Thad Farnham	2N	18E	4	SW	SE	Domestic	140	65	5311.6			11/12/2001	Wood River Drilling and Pump Firm No. 265
304 Norman H. Malone	2N	18E	4	SW	NE	Domestic	109	50.333	5344.5			5/28/1995	Walker Water Systems, Inc. Firm No. 15
305 Garth Callaghan	2N	18E	4	SW	SE	Domestic	101	67	5314.1			4/12/2002	Wood River Drilling and Pump Firm No. 265
306 Tom Richmond	2N	18E	4	NW	NW	Fire Protection	135	17	5365.2	90	73	9/21/2002	Couch Well Drilling, Inc. Firm No. 161
307 Ron Wilcox	2N	18E	4	SW	NE	Domestic	143	51	5342.1			7/11/2002	Wood River Drilling and Pump Firm No. 265
308 John Bogovski	2N	18E	4	NE	NW	Domestic	110	30	5378.0	90		6/21/1987	Wood River Drilling and Pump Firm No. 265
309 Tom Richmond	2N	18E	4	NW	NW	Domestic	52	16	5367.2	26		11/29/1980	Ken Smith Well Drilling Firm No. 265
310 Art Booser	2N	18E	4	SW	SE	Domestic	98	42	5320.5	49		6/17/1977	Ken Smith Well Drilling Firm No. 265
311 Owen Stepleton	2N	18E	4	SE	SW	Domestic	72.5	14	5328.9		10	6/20/1977	Roesler Well & Pump Service Firm No. 22
312 Rex Bralithwaite	2N	18E	4	NW	SW	Domestic	36	14	5342.2		3	9/29/1966	Roesler Well Drilling Firm No. 19
313 Clyde Green	2N	18E	4	NW	SW	Domestic	37	13	5342.8		8	8/6/1966	Roesler Well Drilling Firm No. 19
314 W. R. Hafer	2N	18E	4	NW	SW	Domestic	35	14	5340.3		8	8/23/1966	Roesler Well Drilling Firm No. 19
315 Jim Savaria	2N	18E	4	SW	SE	Domestic	63	42	5333.3		0	5/13/1968	Roesler Well Drilling Firm No. 19
316 Hans Beekwider	2N	18E	4	SW	NW	Domestic	80	20	5346.0			4/15/2003	Wood River Drilling and Pump Firm No. 265
317 Gene Healy	2N	18E	4	SW	SW	Domestic	46	15	5323.0		10	6/10/1977	Ken Smith Well Drilling Firm No. 265
318 David Quinney	2N	18E	4	SW	SW	Domestic	64	12	5326.5	60		8/10/1998	Wood River Drilling and Pump Firm No. 265
319 Steve Thompson	2N	18E	4	SW	SE	Domestic	88	48	5315.7			12/8/1998	Walker Water Systems, Inc. Firm No. 15
321 Jim Woodyard	2N	18E	4	NE	NW	Domestic	160	43	5368.4	155		8/7/1999	Scott Drilling & Pump Co. Firm No. 327
322 Jim Kukuth	2N	18E	4	NE	NW	Domestic	160	55	5340.2	155		9/8/1999	Scott Drilling & Pump Co. Firm No. 327
323 Thad Blanton	2N	18E	4	NW	SE	Domestic	130	57	5327.5			7/12/2000	Wood River Drilling and Pump Firm No. 265
324 Ada VanDorren	2N	18E	4	SW	SE	Domestic	89	5	5360.6			7/19/2000	Walker Water Systems, Inc. Firm No. 15
325 Jeff Rice	2N	18E	4	SW	SE	Domestic	89	55	5318.1			11/2/2000	Walker Water Systems, Inc. Firm No. 15
326 Brad Bjorness/Carol Mor	2N	18E	4	SE	SE	Domestic	100	50	5320.7	90		9/27/1996	Wood River Drilling and Pump Firm No. 265
327 Leslie Conner	2N	18E	4	NW	NE	Domestic	160	60	5360.6	140		10/22/1996	Wood River Drilling and Pump Firm No. 265
328 Idaho Transportation Department	2N	18E	4	NW	NW	Domestic	128	48	5319.1	51	3	5/15/1997	Walker Water Systems, Inc. Firm No. 15
329 Ron & Lorraine Wilcox	2N	18E	4	SW	NE	Domestic	130	69	5323.4			1/20/1998	Wood River Drilling and Pump Firm No. 265
330 Ted Higginbotham	2N	18E	4	SW	SE	Domestic	82	46	5326.5			4/18/1998	Walker Water Systems, Inc. Firm No. 15
331 Jeff Rice	2N	18E	4	NE	NW	Domestic	150	45	5363.4	150		6/27/1998	Scott Drilling & Pump Co. Firm No. 327
332 EMB Halley	2N	18E	4	NE	SW	Municipal	190	25	5330.2	133		10/19/1995	Walker Water Systems, Inc. Firm No. 15
333 E. Perry Thomas	2N	18E	4	NW	SW	Domestic	117	6	5340.6	110		7/25/1995	Wood River Drilling and Pump Firm No. 265
334 City of Halley	2N	18E	4	SE	SW	Municipal/Exploratory	220	16	5328.6			5/30/1996	Wood River Drilling and Pump Firm No. 265
335 City of Halley	2N	18E	4	SE	SW	Municipal	201	13.083	5335.0			4/25/1997	Volmer Well Drilling Firm No. 383
336 City of Halley	2N	18E	4	SE	SW	Municipal	205	13.25	5338.9			6/19/1997	Volmer Well Drilling Firm No. 383
337 Ron & Lorraine Wilcox	2N	18E	4	SW	SE	Domestic	85	45	5349.0	75		9/13/1991	Scott Drilling & Pump Co. Firm No. 327
338 Stephen L. Dick	2N	18E	4	SW	SE	Domestic	108	40	5337.1			6/10/1991	Walker Water Systems, Inc. Firm No. 15
339 Ron & Lorraine Wilcox	2N	18E	4	SE	SE	Domestic	130	58	5333.4	100		5/5/1992	Scott Drilling & Pump Co. Firm No. 327
340 Randy Coriell	2N	18E	4	NW	NE	Domestic	110	47	5375.2	75		7/14/1992	Scott Drilling & Pump Co. Firm No. 327
341 Jim Savaria	2N	18E	4	SW	SE	Domestic	120	52	5317.6	100		11/3/1992	Wood River Drilling and Pump Firm No. 265
342 Thad Blanton	2N	18E	4	NW	SE	Domestic	100	60	5324.6	90		5/27/1993	Wood River Drilling and Pump Firm No. 265
343 Morgan Thomas	2N	18E	4	NW	SE	Domestic	100	49	5330.3	95		5/19/1994	Wood River Drilling and Pump Firm No. 265
344 Guy Bonriver	2N	18E	4	NW	SW	Domestic	40	11	5344.2	14		8/29/1983	Ken Smith Well Drilling Firm No. 265
345 River Grove Farm/E. Perry Thomas	2N	18E	4	NW	SW Jagation/Sandby Fire F		89	9	5344.2			8/13/1985	Walker Water Systems, Inc. Firm No. 15
346 Cal Gas	2N	18E	4	SW	SW	Domestic	57	30	5313.5	50		8/5/1988	Wood River Drilling and Pump Firm No. 265
347 Jim W. Koonce	2N	18E	4	NE	NW	Domestic	120	59	5336.6			12/19/1989	Wood River Drilling and Pump Firm No. 265

WELL OWNER	TOWNSHIP	RANGE	SECTION	QQ	QQ	USE	DEPTH	STATIC LEVEL	STATIC LEV	PUMPING LEVEL	DRAWDOWN	COMPLETED	DRILLER
348 Idaho Ranch Estates	2N	18E	3	SW	SW	Domestic/Stock/Commercial	156	50	5312.5	50		5/26/1989	Wood River Drilling and Pump Firm No. 265
349 Chevron, USA Inc.	2N	18E	9	NW	SE	Monitoring	38	22.8	5295.4			8/8/1988	Northern Engineering & Testing Firm No. 459
350 Chevron, USA Inc.	2N	18E	9	NW	SE	Monitoring	38	23.2	5292.9			8/9/1988	Northern Engineering & Testing Firm No. 459
351 Chevron, USA Inc.	2N	18E	9	NW	SE	Monitoring	38	22.2	5292.5			8/10/1988	Northern Engineering & Testing Firm No. 459
352 United Oil	2N	18E	9	NW	SE	Monitoring	38	24	5293.4			9/15/1993	Wood River Drilling and Pump Firm No. 265
353 KleinFelder, Inc. (Alan's Market)	2N	18E	9	NW	NW	Monitoring	25	15	5308.4			5/4/1998	Hiddleston & Son, Inc. Firm No. 35
354 KleinFelder, Inc. (Alan's Market)	2N	18E	9	NW	NW	Monitoring	25	15	5311.3			5/4/1998	Hiddleston & Son, Inc. Firm No. 35
355 KleinFelder, Inc. (Alan's Market)	2N	18E	9	NW	NW	Monitoring	25	15	5309.5			5/5/1998	Hiddleston & Son, Inc. Firm No. 35
356 Million File	2N	18E	9	NE	NW	Industrial	49	15	5320.3			7/28/1970	Walker Water Systems, Inc. Firm No. 15
357 Rene Ben	2N	18E	9	NW	SE	Monitoring	32	24	5294.2			1/14/2004	Haz-Tech Drilling, Inc. Firm No. 470
358 Rene Ben	2N	18E	9	NW	SE	Monitoring	34.5	26.5	5288.9			1/14/2004	Haz-Tech Drilling, Inc. Firm No. 470
359 Rene Ben	2N	18E	9	NW	SE	Monitoring	33	24.35	5292.4			1/15/2004	Haz-Tech Drilling, Inc. Firm No. 470
360 City of Hailey	2N	18E	9	NW	SE	Monitoring	35	23.5	5292.2			3/25/2004	Haz-Tech Drilling, Inc. Firm No. 470
361 Sutton and Sons GTO Dealership	2N	18E	9	NE	NW	Monitoring	25	19	5314.3			4/26/2004	Hiddleston & Son, Inc. Firm No. 35
362 Hailey Chevron	2N	18E	9	NW	SE	Monitoring	32	22	5300.0			7/21/2004	Haz-Tech Drilling, Inc. Firm No. 470
363 Hailey Chevron	2N	18E	9	NW	SE	Monitoring	32	23	5300.5			7/21/2004	Haz-Tech Drilling, Inc. Firm No. 470
364 Hailey Chevron	2N	18E	9	NW	SE	Monitoring	32	22.19	5301.3			7/21/2004	Haz-Tech Drilling, Inc. Firm No. 470
365 Daniel L. Parke (leased by Intermountain Ga:	2N	18E	9	NW	SE	Water Samples	25	20.5	5288.1			1/30/2006	Haz-Tech Drilling, Inc. Firm No. 470
366 Daniel L. Parke (leased by Intermountain Ga:	2N	18E	9	NW	SE	Water Samples	25	22	5286.9			1/31/2006	Haz-Tech Drilling, Inc. Firm No. 470
368 David & Debra Town	2N	18E	10	NE	NW	Domestic	76	60	5308.2	75		5/1/1989	Wood River Drilling and Pump Firm No. 265
369 Leslie Conner	2N	18E	10	NE	NW	Domestic/Irrigation	85	50	5313.4	76		5/29/1989	Wood River Drilling and Pump Firm No. 265
370 Charles M. Johnson	2N	18E	10	NE	NW	Irrigation	127	55	5319.7	85		7/27/1990	Wood River Drilling and Pump Firm No. 265
371 John & Alma Mills	2N	18E	10	SE	NW	Domestic	90	53	5301.0	75		4/11/1991	Scott Drilling & Pump Co. Firm No. 327
372 John Fox	2N	18E	10	NW	SE	Irrigation	133	55	5286.1			9/17/1966	Smith Drilling & Pump Co., Inc. Firm No. 11
373 Wesley Prouty	2N	18E	10	NE	SW	Domestic/Stock	106	59	5282.9		10	6/26/1973	Walker Water Systems, Inc. Firm No. 15
374 McCullach Properties, Inc.	2N	18E	10	SW	SE	Municipal	104	61	5262.7		0	12/4/1974	Roesler Well Drilling Firm No. 19
375 Howard Knight	2N	18E	10	SE	NW	Domestic	61	18	5343.3		6	5/30/1973	Claude Nicholson Well Drilling Firm No. 159
376 Blaine County School District # 61	2N	18E	10	NW	SE	Irrigation	174	65	5289.1			8/15/2003	Hiddleston & Son, Inc. Firm No. 35
377 Jim Phillips	2N	18E	10	SE	NW	Domestic	77	35	5347.6	45		6/18/1981	Ken Smith Well Drilling Firm No. 265
378 Howard Knight	2N	18E	10	NE	NW	Domestic	90	33	5329.7	37		3/28/1982	Ken Smith Well Drilling Firm No. 265
379 Don Justus	2N	18E	16	NE	NE	Irrigation	70	29	5274.6		5	5/11/1976	Ken Smith Well Drilling Firm No. 265
380 John Campagna	2N	18E	15	SW	SW	Domestic	41	7	5266.4	9		6/30/1983	Ken Smith Well Drilling Firm No. 265
381 Carl Prence	2N	18E	15	SW	NW	Domestic	53	30	5266.1	50		4/26/1988	Wood River Drilling and Pump Firm No. 265
382 North Star Funding	2N	18E	15	SW	NW	Domestic	60	18	5281.4	40		9/19/1988	Wood River Drilling and Pump Firm No. 265
383 Robin Tracy	2N	18E	15	SE	SW	Domestic	49	21.75	5249.3			10/24/1988	Walker Water Systems, Inc. Firm No. 15
384 Robin Tracy	2N	18E	15	SE	SW	Domestic	44	14.667	5257.3			9/27/1989	Walker Water Systems, Inc. Firm No. 15
385 Ole Skinner	2N	18E	15	SE	SW	Domestic	65	25	5246.8	50		10/15/1990	Scott Drilling & Pump Co. Firm No. 327
386 Robin Tracy	2N	18E	15	SE	SW	Domestic	45	22	5251.7	35		6/19/1991	Scott Drilling & Pump Co. Firm No. 327
387 Ed Lawson/John Gladics	2N	18E	15	SW	SW	Domestic	50	8	5258.1	45		10/7/1991	Scott Drilling & Pump Co. Firm No. 327
388 Don Hanna	2N	18E	15	NW	SW	Domestic	60	25	5253.6	55		7/23/1992	Wood River Drilling and Pump Firm No. 265
389 Lazy B Hanger Association	2N	18E	15	NE	SW	Domestic	65	26	5270.5	45		11/24/1992	Wood River Drilling and Pump Firm No. 265
390 Jim Skeahan	2N	18E	15	NE	NW	Domestic	50	20	5249.1		0	11/18/1993	Scott Drilling & Pump Co. Firm No. 327
391 Blaine County School District # 61	2N	18E	15	NE	NE	Irrigation	159	57	5245.3	150		10/9/1995	Wood River Drilling and Pump Firm No. 265
392 Darin Barfuss	2N	18E	15	SW	NW	Domestic	60	10	5275.1	15		4/25/1996	Wood River Drilling and Pump Firm No. 265
393 Ed Lawson	2N	18E	15	SW	SW	Domestic	80	14	5253.1	50		9/22/1997	Wood River Drilling and Pump Firm No. 265
394 Flying Hat Ranch/Spencer F. Eccl	2N	18E	15	NW	NE	Irrigation	133	25	5246.1			8/15/2000	Hiddleston & Son, Inc. Firm No. 35
395 Oliver Dibble	2N	18E	15	SW	SW	Domestic	62	8	5265.4			9/25/2000	Wood River Drilling and Pump Firm No. 265
396 Flying Hat Ranch c/o Brockway Engineering	2N	18E	15	NW	SW	Test	167	27	5243.2	43	16	11/26/2001	Couch Well Drilling, Inc. Firm No. 161

WELL	CASINGDEPTH	PERFTOPA	PERFBTMA	PERFTOPB	PERFBTMB	PERFTOPC	PERFBTMC	OPENTOPA	OPENBTMA	OPENTOPB	OPENBTMB	OPENTOPC	OPENBTMC	OPENTOPD	OPENBTMD	BEDROCK	BEDROCKELEV
397	69							69	69							>69	9999
398	49							49	49							>49	9999
399	52							52	52							>52	9999
400	50							50	50							>50	9999
401	76	40	75					40	75	76	76					>76	9999
402	51							51	51							>51	9999
403	151	40	147					40	147	151	152					>152	9999
404	124	30	124					30	124							>124	9999
405	42							42	42							>42	9999
406	75							75	75							>75	9999
407	80	30	80					30	80							>80	9999
408	52							52	52							>52	9999
409	64							64	64							>64	9999
410	52							52	52							>52	9999
411	48							48	48							>48	9999
412	87	70	78					70	78	87	87					>87	9999
413	55							55	55							>55	9999
414	63							63	63							>63	9999
415	63							63	63							>63	9999
416	63							63	63							>63	9999
417	50	35	47					35	47	50	50					>50	9999
418	45							45	45							>45	9999
419	38.5							38.5	40							>40	9999
420	36.5							36.5	38							>38	9999
421	65							65	65							>65	9999
422	47	42	45					42	45	47	47					>47	9999
423	20							20	60							>60	9999
424	55							55	55							>55	9999
425	51	34	47					34	47	51	51					>51	9999
426	29	20	26					20	26	29	29					>29	9999
427	35							35	35							>35	9999
428	50							50	50							>50	9999
429	41							41	41							>41	9999
430	45							45	45							>45	9999
431	83							83	83							>83	9999
432	80							80	80							>80	9999
433	43							43	43							>43	9999
434	83							83	83							>83	9999
435	83							83	83							>83	9999
436	69	55	65					55	65	69	69					>69	9999
437	150							150	150							>150	9999
438	120							120	120							>120	9999
439	65							65	65							>65	9999
440	148							148	148							>148	9999
441	65							65	65							>65	9999
442	155	135	155					135	155							>155	9999
443	260	20	260					20	260							36	5202.031486
444	47							47	47							>47	9999

WELL	CASINGDEPTH	PERFTOPA	PERFTBTA	PERFTOPB	PERF8BTMB	PERFTOPC	PERFTBMC	OPENTOPA	OPENBTMA	OPENTOPB	OPENBTMB	OPENTOPD	OPENBTMD	BEDROCK	BEDROCKELEV
445	47							47	47					>47	9999
446	38							38	38					>38	9999
447	62							62	65					>65	9999
448	60							60	82					>82	9999
449	78							78	80					>80	9999
450	140	90	100					90	100	140	140			>140	9999
451	60							60	60					>60	9999
452	48	43	46					43	46	48	48			>48	9999
453	48.5	42	46					42	46	48.5	48.5			>48.5	9999
454	60							60	60					>60	9999
455	60							60	60					>60	9999
456	140							140	140					>140	9999
457	63							63	63					>63	9999
458	160							160	160					>160	9999
459	105	102	105					102	105					>105	9999
460	39							39	39					>39	9999
461	46							46	46					>46	9999
462	60							60	60					>60	9999
463	87	40	50					40	50	87	87			60	5132.551636
464	70	35	40					35	40	70	70			>70	9999
465	221	160	213					221	350	216.5	255			221	4974.616172
466	216.5							160	213					215	4986.047995
467	67							67	67					>67	9999
468	65							65	65					>65	9999
469	65							65	65					>65	9999
470	68							68	68					>68	9999
471	32							32	32					>32	9999
472	68							68	68					>68	9999
473	48	38	48					38	50					>50	9999
474	46.5							46.5	48					>48	9999
475	80							80	80					>80	9999
476	31	27	30					27	30	31	31			>31	9999
477	42							42	45					>45	9999
478	40							40	40					>40	9999
479	60							60	60					>60	9999
480	40							40	40					>40	9999
481	86	60	80					60	80	86	86			>86	9999
482	40							40	40					>40	9999
483	80	55	80					55	80					>80	9999
484	100	28	40	65	100			28	40	65	100			>100	9999
485	60							60	60					>60	9999
486	100							100	100					>100	9999
487	49	22	45					22	45	49	50			>50	9999
488	83							83	83					>83	9999
489	123	100	120					100	120	123	123			>123	9999
490	83							83	83					>83	9999
491	40							40	40					>40	9999
492	42							42	42					>42	9999

WELL	CASINGDEPTH	PERFTOPA	PERFTMA	PERFTOPB	PERFTBMB	PERFTOPC	PERFTBMC	OPENTOPA	OPENBTMA	OPENTOPB	OPENBTMB	OPENTOPC	OPENBTMC	OPENTOPD	OPENBTMD	BEDROCK	BEDROCKELEV
493	46							46	46							>46	9999
494	46	21	35					21	35	46	46					35	5133.14548
495	34							34	34							>34	9999
496	55	30	55					30	55							>55	9999
497	42.5							42.5	42.5							>42.5	9999
498	38							38	38							>38	9999
499	50							50	50							>50	9999
500	33							33	33							>33	9999
501	37	25	35					25	35	37	37					>37	9999
502	32							32	32							>32	9999
503	220	30	220					30	220							35	5162.178878
504	83							83	83							>83	9999
505	87	70	85					70	85	87	87					75	5088.861456
506	60	25	47					25	47	60	105					99.5	5099.433016
507	39	27	37					27	37	39	43					39	5124.801784
508	41							41	41							>41	9999
509	63							63	63							>63	9999
510	131	95	125					95	125	131	131					>131	9999
511	70							70	70							>70	9999
512	39	10	35					10	35	39	39					>39	9999
513	40							40	42							>42	9999
514	64	60	63					60	63	64	64					>64	9999
515	115							115	135							120	5073.085086
516	50							50	70							>70	9999
517	180	150	180					150	180							>180	9999
518	183	140	150					140	150	183	183					>183	9999
519	145	25	35	65	140			25	35	65	140	145	145			>145	9999
520	40							40	40							>40	9999
521	37							37	37							>37	9999
522	188.5	92	95	104	148	169	186	92	95	104	148	169	186	188.5	188.5	>188.5	9999
523	131	90	107					90	107	131	132					>132	9999
524	72	50	70					50	70	72	72					>72	9999
525	129	100	128					100	128	129	129					>129	9999
526	110	75	95	102	108			75	95	102	108	110	110			>110	9999
527	70							70	70							>70	9999
528	112	65	94	100	110			65	94	100	110	112	112			>112	9999
529	80							80	80							>80	9999
530	69	59	65					59	65	69	69					>69	9999
531	80							80	80							>80	9999
532	143							143	143							>143	9999
533								0	83							>83	9999
534	122							122	122							>122	9999
535	145							145	145							>145	9999
536	140	130	139					130	139	140	250					140	5103.414048
537	165	120	150					120	150	165	400					140	5110.287629
538	163.5	120	140					120	140	163.5	165					>165	9999
539	130							130	130							>130	9999
540	160	140	155					140	155	160	160					>160	9999

WELL	CASINGDEPTH	PERFTOPA	PERFTMA	PERFTPB	PERFTMB	PERFTPC	PERFTMC	OPENCTPA	OPENCTMA	OPENCTPB	OPENCTMB	OPENCTPC	OPENCTMC	OPENCTPD	OPENCTMD	BEDROCK	BEDROCKELEV
541	168							158	160							>160	9999
542	148	140	148					140	148							>148	9999
543	160							160	160							>160	9999
544	128	90	128					90	140							128	5074.737655
545	163							163	163							>163	9999
546	162	110	145					110	145	162	162					>162	9999
547	160	85	100	110	160			85	100	110	150	160	160			>160	9999
548	160							150	150							>150	9999
549	160							150	150							60	5240.355472
550	170	145	165					145	165	170	170					>170	9999
551	132							132	132							>132	9999
553	117.167	95	115					95	115	117.167	117.167					>117.167	9999
554	128							128	128							>128	9999
555	120	90	120					90	120							>120	9999
556	130	100	130					100	130							>130	9999
557	152							152	152							>152	9999
558	128	104	124					104	124	128	128					>128	9999
559	123	105	120					105	120	123	123					>123	9999
560	168							168	168							156	5125.717606
561	85							85	85							>85	9999
562																	5386.645474
563																	5710.935014
564																	5351.865552
565	41							41	49							41	5281.090978
566	36	30	36					30	60							36	5280.801681
567	33	24	30					24	30	33	33					33	5276.561187
568	180	40	180					40	180							36	5286.090978
569	44	30	41					30	41	44	44					38	5285.363341
570	33	24	30					24	30	33	33					30	5286.801681
571	181							181	181							>181	9999
572	150	50	147					50	147	150	150					>150	9999
573	114	20	112					20	112	114	114					>114	9999
574																	5252.835508
575																	5251.285605
576																	5243.469203
577																	5272.429977
578																	5170.473539
579	160	65	80	90	149			65	80	90	149	198	198			>149	9999

Appendix B
Precipitation Data

Monthly Total Precipitation (inches)
Hailey 3NNW (103942)

YEAR(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1970	4.88	0.34	1.54	1.08	1.35	2.93	1.51	0.43	0.77	1.62	3.32	5.14	24.91
1971	3.49	1.38	2.25	0.47	1.36	2.01	0.65	0.19	0.86	0.74	1.12	3.65	18.17
1972	2.01	0.5	0.38	0.69	1.35	1.15	0.22	0.94	0.9		z	1.63	
1973	2.95	1.46	0.8	0.63	0.17	0.83		z	z	z	4.33	2.4	
1974	2.8	0.79	2.84	0.25	0.07	0	0.34	0.26	0	1.46	z	1.98	10.96
1975	1.15	4.36	2.71	1.12	0.89	1.26	0.31	0.45	0.03	1.84	1.45	0.94	16.51
1976	0.96	2.74	0.43	0.63	0.44	0.64	0.28	2.06	2.44	z	z		
1977	0.28	0.6	0.2	d	0	3.7	0.91	1.2	0.77	0.12	z	3.75	12.52
1978	3.75	3.37	a	1.08	3.62	1.24	0.59	0.47	2.68	0	0.31	0.67	17.83
1979	1.34	2.9	1.56	1.01	1.13	0.04	0.39	1.29	0.19	1.88	0.69	1.84	14.26
1980	3.82	2.03	0.79	0.88		z	z	z	0.76	1.69	0.37	1.08	
1981		z	0.1	1.04	2.08	0.95	0.61	0.18	0.32	0.24	1.48	3.88	13.88
1982	1.5		z	z	z	z	z	z	z	z	z	z	1.5
1983		z	z	z	z	z	z	z	z	z	z	z	
1984		z	z	z	z	z	z	z	0.4	0.43	z	z	0.83
1985		z	z	z	z	z	z	z	z	z	z	z	
1986		z	z	z	z	z	z	z	1.87	0.04	0.26	0.07	2.24
1987	1.46	a	1.35	1.57	5.29	2.22	1.44		z	z	2	1.26	16.59
1988	1.42	0.29		z	1.24	a	1.2		0.2		z	z	4.35
1989		z	z	z	z	z	z	z	z	z	z	z	
1990		z	z	z	z	z	z	z	z	z	z	z	
1991		z	z	z	z	z	z	z	z	z	z	z	
1992		z	z	z	z	z	z	z	z	z	z	z	
1993		z	z	z	z	z	z	z	z	z	z	z	
1994		z	z	z	z	z	z	z	z	z	z	z	
1995		z	z	z	z	z	z	z	z	z	z	z	
1996		z	z	z	z	z	z	z	z	z	z	z	
1997		z	z	z	z	z	z	z	z	z	z	z	
1998		z	z	z	z	z	z	z	z	z	z	z	
1999		z	z	z	z	z	z	z	z	z	z	z	
2000		z	z	z	z	z	z	z	z	z	z	z	
2001		z	z	z	z	z	z	z	z	z	z	z	
2002		z	z	z	z	z	z	z	z	z	z	z	
2003		z	z	z	z	z	z	z	z	z	z	z	
2004		z	z	z	z	z	z	z	z	z	z	z	
2005		z	z	z	z	z	z	z	z	z	z	z	
2006		z	z	z	z	z	z	z	z	z	z	z	
2007		z	z	z	z	z	z	z	z	z	z	z	
2008		z	z	0.75	a	0.17	c	1.49	a	0.07	i	z	

Period of Record Statistics

	1970-1981												
MEAN	2.27	1.59	1.32	1.05	1.47	1.10	0.62	0.72	0.93	0.91	1.69	2.04	11.89
S.D.	1.34	1.31	0.86	0.93	1.45	0.88	0.48	0.60	0.89	0.75	1.50	1.51	7.52
SKEW	0.48	0.82	0.57	1.97	1.95	0.85	1.18	1.12	0.91	0.08	0.82	0.61	-0.21
MAX	4.88	4.36	2.84	3.62	5.29	2.93	1.51	2.06	2.68	1.88	4.33	5.14	24.91
MIN	0.28	0.1	0.2	0	0.07	0	0.18	0.05	0	0	0.17	0.07	0.83
NO YRS	35	34	35	36	33	32	32	35	36	34	33	35	22

Monthly Total Precipitation (inches)
Ketchum Ranger Station (104845)

YEAR(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1973		z	z	z	z	0.42	0.93	1.7	0.01	0.96	0.38	6.07	13.8
1974	3.71	0.97	3.54	0.9	0	0	0.37	0.23	0.06	1.32	0.99	1.96 b	14.05
1975	1.4	4.28	3.22	1.72	0.91	1.11	1.88	0.72	0.29	2.56	1.57	1.21	20.87
1976	1.24	1.91	1.18	1.66	2.41	0.63	1.62	3.16	2.76	0.21	0	0.22	17
1977	0.83	0.7	0.97	0.01	4.06	2.03	2.55	0.77	1.55	0.1 a	1.44	3.83	18.84
1978	3.24	3.21	0.57	3.27	0.69	0.52	1.24	0.32	3.51	0	0.33	1.41	18.31
1979	1.3	2.43	1.41	0.64	0.76	1.07	0.65	1.65	0.21	1.73	0.9	2.18	14.93
1980	4.5	2.02	1.29	1.18	3.87	1.6	1.39	0.8	2.35	0.1	1.05	4.06	24.21
1981	1.49	1.3	1.15	1.88	1.51	1.51	0	1.08	0.72	1.23	3.89	3.07	18.83
1982	2.28	1.85	3.1	3.22	1.05	1.47	1.23	0.19	0.76	1.81	3.14	5.29	25.39
1983	1.43	3.62	5.39	0.74	1.2	2.38	1.21	1.12	1.16	1.57	4.14	3.99	27.95
1984	0.05 a	1.91	1.91	1.09	1.53	3.67	2.28	1.33	z	0.56	2.37	2	18.7
1985	0.19	2.69	1.52	0.5	1.91	0.33	0.85	0.14	4.67	0.9 a	1.46	1.34	16.5
1986	2.41	5.07	1.92	0.78	1.11	0.83	0.95	1.08	1.91	0.32	0.39 e	0.12	16.89
1987	1.85	1.11	2.15	0.04	3.89	1.97	2.04 a	0.89	0	0.22	0.93	2.48 a	17.57
1988	1.5	0.48	0.42	2.49 b	2.04 a	0.5 a	0.1	0.11	0.41	0.37	4.79	1.85	15.06
1989	1.76	1.16	3.11	0.58	1.62	0.27	0.16	1.34	1.56	2.69	0.73	0.02 a	15
1990	2.64	1.41	0.95	2.66	2.12	1.66	0.42 b	1.77 a	0.59	0.46 d	1.38 a	0.96 a	17.02
1991	0.19	0.06	4.47	0.65 d	3.32	2.22	0.73	1.08	2.52	2.31	1.75 a	0.92	20.22
1992	0.43	1.76	0.3	0.55	0.13	2.05	0.12	0.07	0.11	1.87	0.86 a	2.69	10.94
1993	4.64 a	2.4	2.22	1.83	1	4.1	0.47	2	0.16	0.52	0.58	1.56	21.48
1994	0.68	2.02	0.05	1.06	2.26	0.76	0.3	0.55	0.38	1.49	2.46 a	2.14	14.15
1995	5.08	1.39	6.95 b	1.26	2.79	2.42	0.78 a	0.16	0.01	0.2	1.85 e	4.6	27.49
1996	2.76	2.02	1.57	1.54	2.94	0.18	0.32	0.09	0.58	0.71	2.51	6.99	22.21
1997	4.96	0.46	0.75	0.98	0.7	1.64	0.8	0.65	0.75	2.76	1.1	0.47 a	16.02
1998	3.17 c	3.19	1.4 a	1.07	5.46	2.63	0.54	0.1	1.14	0.59 a	2.81	2.21 d	24.31
1999	2.74 a	4.72 b	0.69 a	0.82	1.25 b	1.56 a	0.13	0.49	0	0.83	0.53 a	1.28 a	15.04
2000	3.04 a	3.13	1.46	0.81 b	1.77	0.01	0.25	0.67	3.01	2.9 b	0.6 b	1.05	18.7
2001	1.48	0.41	0.58	1.09	0.3	0.13	0.89	0.09	0.46	0.79	1.52 a	3.67 c	11.41
2002	1.71 a	0.81	0.91	1.11	0.58	0.04	0.1	0.29	0.35	0.44 b	1.14 b	4.18 a	11.66
2003	1.22	1.15	1.44	2.04 a	1.67	0.06	0.13	1.06	0.35	0.15	0.25 c	4.39	13.91
2004	2.26	3.12	0.42	0.97	1.69	1.01	1.45	0.51	1.24	2.44	0.27	2.91	18.29
2005	2.47		z	1.85	0.53 a	5.7	2.19	0.44	0.63	0.69	2.3	5.06	22.11
2006	4.67 a	0.46 a	2.61	5.61	0.8	1.43	0.33 a	0.18	0.89	1.46	1.79	2.13	22.36
2007	0.38	1.44	0.4	0.72	0.19	0.48	0.74	0.26	0.88	2.3	0.71	2.56	11.06
Period of Record Statistics 1973-2007													
MEAN	2.17	1.96	1.82	1.35	1.82	1.30	0.83	0.72	1.09	1.11	1.67	2.52	18.07
S.D.	1.44	1.28	1.52	1.09	1.43	1.02	0.68	0.68	1.12	0.90	1.38	1.63	4.52
SKEW	0.55	0.77	1.69	2.14	1.17	0.81	0.89	1.62	1.55	0.62	1.47	0.64	0.44
MAX	5.08	5.07	6.95	5.61	5.7	4.1	2.55	3.16	4.67	2.9	6.07	6.99	27.95
MIN	0.05	0.06	0.05	0.01	0	0	0	0.01	0	0	0	0.02	10.94

Monthly Total Precipitation (inches)
Picabo (107040)

YEAR(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1970	3.32	0.55	1.46	0.86	0.89	2.35	0.26	0.3	1.24	1.1	3.26	4.03	19.62
1971	3.31	0.57	1.75	1.05	0.62	1.52	0.21	0.31	0.56	0.9	1.68	2.62	15.1
1972	2.35	0.75	0.93	0.8	0.84	0.9	0	0.38	1.53	1.11	1.53	1.46	12.58
1973	1.57	1.01	1.03	0.49	0.46	0.28		z 0.51	0.34	0.43	3.78	2	11.9
1974	2.14	0.58	2.32	0.31	0.11	0	0.21	0.08	0	1.31	0.41	1.28	8.75
1975	1.34	3.17	2.87	1.69	1.07	0.67	0.25	0.41	0.03	1.73	0.95	0.98	15.16
1976	1.69	2.06	1.13	1.77	0.62	0.48	0.05	1.19	1.21	0.55	0	0.1	10.85
1977	1.1	0.52	0.48	0.1	2.09	0.64	0.8	0.14	0.57	0.35	1.33	3.11	11.23
1978	2.1	1.86	0.88	2.15	0.65	0.55	0.35	0.3	1.82	0.01	0.72	0.6	11.99
1979	1.32	1.38	1.05	0.5	1.15	0.59	0.35	1.03	0.14	1.51	0.65	a 0.73	10.4
1980	3.57	1.55	0.45	0.72	3.15	0.76		z 0.65	1.62	0.35	0.83	2.01	15.66
1981	0.85	0.88	1.08	1.76	0.83	0.59	0.06	0.05	0	1.52	2.55	2.6	12.77
1982	1.72	1.54	1.99	1.29	1.18	0.85	1.38	0.1	1.7	1.17	1.95	3.5	18.37
1983	0.41	2.62	2.79	0.75	0.89	1.78	0.65	1.44	0.83	0.77	3.98	3.15	20.06
1984	0	a 1.73	1	0.74	0.48	1.78	0.96	0.78	0.22	0.83	2.86	0.98	a 12.36
1985	0.6	2.38	a 0.92	0.1	0.96	0.1	2.32	0	1.8	0.75	0.93	1.97	12.83
1986	1.62	4.55	1.36	0.67	1.75	0.75	0.25	0.33	1.42	0.44	0.15	0.22	13.51
1987	1.08	0.5	1.12	0	2.69	0.71	1.42	0.15	0	0.2	1.32	1.02	10.21
1988	0.91	0.25	0.5	1.11	1.65	0.05	0	0	0.3	0	5.61	1.8	12.18
1989	1.4	0.5	1.56	0.21	1.22	0.15	0.15	0.53	0.8	2.09	0.58	a 0	9.19
1990	1.85	1.4	0.56	1.62	1.62	1.25	0.05	0.53	0.15	0.3	0.8	0.75	10.88
1991	0	0.09	2.63	a 1.25	2.57	0.7	0.33	0.22	1.41	1.8	1.28	0.12	12.4
1992	0.2	1.14	0.17	0.52	0	1.12	0	0.05	0.73	1.2	0.6	b 1.67	7.4
1993	2.11	a 1.58	2	1.1	0.95	2.7	0.65	0.42	0.65	1.75	0.05	0.4	14.36
1994	0.65	0.8	0	1.27	b 1.1	0.45	0.15	0.5	0.25	1.45	1.95	1.55	10.12
1995	3.2	0.68	3.3	1.13	3.8	3.45	1.39	0	0.27	0	1.2	2.73	21.15
1996	1.9	a 0.9	1.5	0.67	1.75	0	0.05	0	0.1	0.65	2.25	4.91	b 14.68
1997	3.19	0.25	0.74	1.16	0	2.12	0.07	0.2	0.55	0.91	0.91	a 0.75	10.85
1998	1.81	1.83	c 1.95	1.03		z 1.97	0.4	0.42	1.16	0	2.4	1.5	14.47
1999	2.4	3.37	0.25	0.9	1.55	0.65	0	0.35	0	0.5	0.16	0.06	10.19
2000	2.09	2.59	1.3	0.7	0.55	0.05	0	0.62	0.7	2.05	0.25	0.82	11.72
2001	1.05	0.7	a 0.56	1.34	0.1	0.1	0.65	0	0.2	0.5	1.26	a 2.5	8.96
2002	0.9	0.15	a 1	1.07	0.8	0.15	0.03	0	0.2	0.2	0.65	a 1.68	b 6.83
2003	0.99	c 0.72	1.04	2.18	0.85	0.2	0	0.52	0.45	0.35	0.68	3.48	11.46
2004	1.75	1.15	0.15	0.62	1.49	0.44	1.05	0.7	0.63	2.55	0.3	2.18	13.01
2005	1.17	a 0.45	2.02	1.7	3.34	1.08	0	0.1	0	0.56	1.97	4.13	16.52
2006	3.75	0.55	1.87	a 3.75	0.84	0.4	0.02		u 0.27	0.79	1.9	1.8	15.94
2007	0.15	1.3	0.4	0.5	0.3	0.37	0	0.1	0.48	2.7	0.45	2.07	8.82
Period of Record Statistics 1970-2007													
MEAN	1.62	1.28	1.27	1.04	1.21	0.86	0.40	0.36	0.64	0.93	1.42	1.77	12.75
S.D.	1.01	0.99	0.82	0.71	0.92	0.82	0.54	0.34	0.58	0.72	1.23	1.24	3.38
SKEW	0.44	1.41	0.67	1.57	1.18	1.43	1.86	1.31	0.76	0.76	1.49	0.60	0.71
MAX	3.75	4.55	3.3	3.75	3.8	3.45	2.32	1.44	1.82	2.7	5.61	4.91	21.15
MIN	0	0.09	0	0	0	0	0	0	0	0	0	0	6.83
NO YRS	49	48	50	48	48	49	47	49	49	48	49	49	39

Appendix C

Large Parcel and Subdivision Irrigation Rates

	Valley Clu	Silver Bel	Vanoff - (	Old Cutter	Lufkin - (	Brennan -	Indian Cre	Cropper -	Wilcox - (	Johnson -	Marathon P
Alfalfa	0	0	0	0.7	0	0	0.42	0.98	0	0	0.9
Bare	0.3	0	0.15	0.25	0	0.25	0.58	0	0	0	0.1
Grain	0	0	0	0	0	0	0	0	0	0	0
Pasture	0	0.49	0.28	0	0.16	0.07	0	0	0	0	0
River	0	0.26	0.57	0	0.84	0.68	0	0	0	1	0
Turf	0.7	0	0	0	0	0	0	0	0.41	0	0
Urban	0	0.25	0	0.05	0	0	0	0.02	0.59	0	0
Area	1	1	1	1	1	1	1	1	1	1	1
Days	86.8	29.7	305.3	91.4	75.8	114.2	17.3	21.4	19.5	9.4	54.0
0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0
91	0.00166	0.00134	0.00076	0.00194	0.00044	0.00019	0.00117	0.00272	0.00097	0	0.00250
120	0.00166	0.00134	0.00076	0.00194	0.00044	0.00019	0.00117	0.00272	0.00097	0	0.00250
121	0.00714	0.00628	0.00359	0.00837	0.00205	0.00090	0.00502	0.01172	0.00418	0	0.01077
151	0.00714	0.00628	0.00359	0.00837	0.00205	0.00090	0.00502	0.01172	0.00418	0	0.01077
152	0.01427	0.01098	0.00627	0.01756	0.00359	0.00157	0.01054	0.02458	0.00836	0	0.02258
181	0.01427	0.01098	0.00627	0.01756	0.00359	0.00157	0.01054	0.02458	0.00836	0	0.02258
182	0.01936	0.01412	0.00807	0.01950	0.00461	0.00202	0.01170	0.02730	0.01134	0	0.02508
212	0.01936	0.01412	0.00807	0.01950	0.00461	0.00202	0.01170	0.02730	0.01134	0	0.02508
213	0.01586	0.01170	0.00668	0.01601	0.00382	0.00167	0.00960	0.02241	0.00929	0	0.02058
243	0.01586	0.01170	0.00668	0.01601	0.00382	0.00167	0.00960	0.02241	0.00929	0	0.02058
244	0.00950	0.00668	0.00382	0.01116	0.00218	0.00095	0.00670	0.01563	0.00557	0	0.01435
273	0.00950	0.00668	0.00382	0.01116	0.00218	0.00095	0.00670	0.01563	0.00557	0	0.01435
274	0.00212	0.00116	0.00066	0.00233	0.00038	0.00017	0.00140	0.00326	0.00124	0	0.00300
304	0.00212	0.00116	0.00066	0.00233	0.00038	0.00017	0.00140	0.00326	0.00124	0	0.00300
305	0	0	0	0	0	0	0	0	0	0	0
334	0	0	0	0	0	0	0	0	0	0	0
335	0	0	0	0	0	0	0	0	0	0	0
365	0	0	0	0	0	0	0	0	0	0	0

	BLM - (Bar)	BLM - (Riv)	BLM - (Bar)	BLM - (Riv)	Wood River	Wood River	Valley Clu	Valley Clu	Valley Clu	Valley Clu	New Deer C	New Deer C	New Deer C
Alfalfa	0	0	0	0	0	0	0	0	0	0	0	0	0
Bare	1	0	1	0	1	1	0	0	0.09	0.09	1	0.5	0.5
Grain	0	0	0	0	0	0	0	0	0	0	0	0	0
Pasture	0	0	0	0	0	0	0	0	0	0	0	0	0
River	0	1	0	1	0	0	0	0	0	0	0	0.5	0.5
Turf	0	0	0	0	0	0	1	0.91	0.91	0	0	0	0
Urban	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1	1	1	1	1
Days	8.1	7.2	10.2	33.3	3.7	230.0	20.7	10.8	11.2				
0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0.00237	0.00216	0.00216	0.00216	0	0	0
121	0	0	0	0	0	0	0.00237	0.00216	0.00216	0.00216	0	0	0
151	0	0	0	0	0	0	0.01020	0.00928	0.00928	0.00928	0	0	0
152	0	0	0	0	0	0	0.01020	0.00928	0.00928	0.00928	0	0	0
181	0	0	0	0	0	0	0.02039	0.01856	0.01856	0.01856	0	0	0
182	0	0	0	0	0	0	0.02039	0.01856	0.01856	0.01856	0	0	0
212	0	0	0	0	0	0	0.02766	0.02517	0.02517	0.02517	0	0	0
213	0	0	0	0	0	0	0.02766	0.02517	0.02517	0.02517	0	0	0
243	0	0	0	0	0	0	0.02266	0.02062	0.02062	0.02062	0	0	0
244	0	0	0	0	0	0	0.02266	0.02062	0.02062	0.02062	0	0	0
273	0	0	0	0	0	0	0.01358	0.01236	0.01236	0.01236	0	0	0
274	0	0	0	0	0	0	0.01358	0.01236	0.01236	0.01236	0	0	0
304	0	0	0	0	0	0	0.00303	0.00276	0.00276	0.00276	0	0	0
305	0	0	0	0	0	0	0.00303	0.00276	0.00276	0.00276	0	0	0
334	0	0	0	0	0	0	0	0	0	0	0	0	0
335	0	0	0	0	0	0	0	0	0	0	0	0	0
365	0	0	0	0	0	0	0	0	0	0	0	0	0

	New Deer C	New Deer C	New Deer C	Idaho Dept	Idaho Dept	Rinker -	River Gro	Blaine Cou	Blaine Cou	Blaine Cou	Stevens -	Big Wood R	Eccles Fly
Alfalfa	0.35	0	0	1	0	0	1	0	0	0	0	0	0.8
Bare	0.1	0.5	0	0	0	0	0	0	0	0.23	0.06	0	0
Grain	0	0	0	0	0	0	0	0	0	0	0	0	0.09
Pasture	0	0	0	0	0	0	0.75	0	0	0	0.49	0.35	0
River	0.55	0.5	1	0	0	0	0.25	0	0	0	0.45	0.65	0.11
Turf	0	0	0	0	0	0	0	0.52	0.35	0.29	0	0	0
Urban	0	0	0	0	1	0	0	0.48	0.65	0.48	0	0	0
	1	1	1	1	1	1	1	1	1	1	1	1	1
Days	145.9	4.6		93.4	8.2	157.6	98.7	23.1	74.1	15.8	114.9	161.2	761.8
0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0.0097	0	0	0.00278	0	0.00278	0.00204	0.00123	0.00083	0.00069	0.00134	0.00095	0.00244
120	0.0097	0	0	0.00278	0	0.00278	0.00204	0.00123	0.00083	0.00069	0.00134	0.00095	0.00244
121	0.00419	0	0	0.01196	0	0.01196	0.00962	0.00530	0.00357	0.00296	0.00628	0.00449	0.01039
151	0.00419	0	0	0.01196	0	0.01196	0.00962	0.00530	0.00357	0.00296	0.00628	0.00449	0.01039
152	0.00878	0	0	0.02509	0	0.02509	0.01681	0.01060	0.00714	0.00591	0.01098	0.00784	0.02223
181	0.00878	0	0	0.02509	0	0.02509	0.01681	0.01060	0.00714	0.00591	0.01098	0.00784	0.02223
182	0.00975	0	0	0.02786	0	0.02786	0.02162	0.01438	0.00968	0.00802	0.01412	0.01009	0.02548
212	0.00975	0	0	0.02786	0	0.02786	0.02162	0.01438	0.00968	0.00802	0.01412	0.01009	0.02548
213	0.00800	0	0	0.02286	0	0.02286	0.01791	0.01178	0.00793	0.00657	0.01170	0.00836	0.01997
243	0.00800	0	0	0.02286	0	0.02286	0.01791	0.01178	0.00793	0.00657	0.01170	0.00836	0.01997
244	0.00558	0	0	0.01595	0	0.01595	0.01022	0.00706	0.00475	0.00394	0.00668	0.00477	0.01291
273	0.00558	0	0	0.01595	0	0.01595	0.01022	0.00706	0.00475	0.00394	0.00668	0.00477	0.01291
274	0.00117	0	0	0.00333	0	0.00333	0.00178	0.00157	0.00106	0.00088	0.00116	0.00083	0.00268
304	0.00117	0	0	0.00333	0	0.00333	0.00178	0.00157	0.00106	0.00088	0.00116	0.00083	0.00268
305	0	0	0	0	0	0	0	0	0	0	0	0	0
334	0	0	0	0	0	0	0	0	0	0	0	0	0
335	0	0	0	0	0	0	0	0	0	0	0	0	0
365	0	0	0	0	0	0	0	0	0	0	0	0	0

	CITY OF H	CITY OF H	Hailey Me	Bend of R	CHANTRE	CHANTRE	WOODSID	WOODSID	WOODSID	WOODSID	WOODSID	WOODSID	SEC4 OFF	Riverview	MIZER	GORDON	YORK
Turf	0.25	0	0.35	0.72	0.47	0.36	0.36	0.02	0.22	0.33	0.46	0.75	0.51	0	0.8		
Area	339.4	75.4	31.6	84.2	38.0	44.9	135.6	31.2	145.7	152.8	1.4	164.7	7.9	2.2	5.8		
Irr Area	84.9	0.0	11.1	60.7	17.9	16.2	48.8	0.6	32.0	50.4	0.6	123.5	4.0	0.0	4.7		
Days																	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0.0059	0	0.0083	0.00171	0.00111	0.00085	0.00085	0.00005	0.00052	0.00078	0.00109	0.00178	0.00121	0	0.00190		
120	0.0059	0	0.0083	0.00171	0.00111	0.00085	0.00085	0.00005	0.00052	0.00078	0.00109	0.00178	0.00121	0	0.00190		
121	0.00255	0	0.00357	0.00734	0.00479	0.00367	0.00367	0.00020	0.00224	0.00336	0.00469	0.00765	0.00520	0	0.00816		
151	0.00255	0	0.00357	0.00734	0.00479	0.00367	0.00367	0.00020	0.00224	0.00336	0.00469	0.00765	0.00520	0	0.00816		
152	0.00510	0	0.00714	0.01468	0.00958	0.00734	0.00734	0.00041	0.00449	0.00673	0.00938	0.01529	0.01040	0	0.01631		
181	0.00510	0	0.00714	0.01468	0.00958	0.00734	0.00734	0.00041	0.00449	0.00673	0.00938	0.01529	0.01040	0	0.01631		
182	0.00692	0	0.00968	0.01992	0.01300	0.00996	0.00996	0.00055	0.00609	0.00913	0.01272	0.02075	0.01411	0	0.02213		
212	0.00692	0	0.00968	0.01992	0.01300	0.00996	0.00996	0.00055	0.00609	0.00913	0.01272	0.02075	0.01411	0	0.02213		
213	0.00567	0	0.00793	0.01632	0.01065	0.00816	0.00816	0.00045	0.00499	0.00748	0.01042	0.01700	0.01156	0	0.01813		
243	0.00567	0	0.00793	0.01632	0.01065	0.00816	0.00816	0.00045	0.00499	0.00748	0.01042	0.01700	0.01156	0	0.01813		
244	0.00339	0	0.00475	0.00978	0.00638	0.00489	0.00489	0.00027	0.00299	0.00448	0.00625	0.01018	0.00692	0	0.01086		
273	0.00339	0	0.00475	0.00978	0.00638	0.00489	0.00489	0.00027	0.00299	0.00448	0.00625	0.01018	0.00692	0	0.01086		
274	0.00076	0	0.00106	0.00218	0.00142	0.00109	0.00109	0.00006	0.00067	0.00100	0.00139	0.00227	0.00154	0	0.00242		
304	0.00076	0	0.00106	0.00218	0.00142	0.00109	0.00109	0.00006	0.00067	0.00100	0.00139	0.00227	0.00154	0	0.00242		
305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
334	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
335	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	REIS	THRESHE	CALVARY	IDAHO	PQ	WG	INV	ID	TRANS	RICHMON	NELSON	BEEKWIL	BONNIVE	BREAZEA	IX-NAY	IN	BERNHAG	CONRAD	CITY OF
Turf		0	0.72	0	0.23		0.21		0	0.33	0.74	0	0.68	0.53	0.35	0.76	0.16	0	
Area	1.4	0.9	5.0	10.3	2.3	2.3	5.3		5.3	6.0	1.5	12.9	1.0	0.6	4.8	3.3	1.0	2.0	
Irr Area	0.0	0.7	0.0	2.4	0.5	0.5	0.0		0.0	2.0	1.1	0.0	0.7	0.3	1.7	2.5	0.2	0.0	
Days																			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
91	0	0.00171	0	0.00055	0.00050	0.00050	0.00050	0	0.00078	0.00176	0	0.00161	0.00126	0.00126	0.00083	0.00180	0.00038	0.00038	0
120	0	0.00171	0	0.00055	0.00050	0.00050	0.00050	0	0.00078	0.00176	0	0.00161	0.00126	0.00126	0.00083	0.00180	0.00038	0.00038	0
121	0	0.00734	0	0.00235	0.00214	0.00214	0.00214	0	0.00336	0.00754	0	0.00693	0.00540	0.00540	0.00357	0.00775	0.00163	0.00163	0
151	0	0.00734	0	0.00235	0.00214	0.00214	0.00214	0	0.00336	0.00754	0	0.00693	0.00540	0.00540	0.00357	0.00775	0.00163	0.00163	0
152	0	0.01468	0	0.00469	0.00428	0.00428	0.00428	0	0.00673	0.01509	0	0.01387	0.01081	0.01081	0.00714	0.01550	0.00326	0.00326	0
181	0	0.01468	0	0.00469	0.00428	0.00428	0.00428	0	0.00673	0.01509	0	0.01387	0.01081	0.01081	0.00714	0.01550	0.00326	0.00326	0
182	0	0.01992	0	0.00636	0.00581	0.00581	0.00581	0	0.00913	0.02047	0	0.01881	0.01466	0.01466	0.00968	0.02102	0.00443	0.00443	0
212	0	0.01992	0	0.00636	0.00581	0.00581	0.00581	0	0.00913	0.02047	0	0.01881	0.01466	0.01466	0.00968	0.02102	0.00443	0.00443	0
213	0	0.01632	0	0.00521	0.00476	0.00476	0.00476	0	0.00748	0.01677	0	0.01541	0.01201	0.01201	0.00793	0.01722	0.00363	0.00363	0
243	0	0.01632	0	0.00521	0.00476	0.00476	0.00476	0	0.00748	0.01677	0	0.01541	0.01201	0.01201	0.00793	0.01722	0.00363	0.00363	0
244	0	0.00978	0	0.00312	0.00285	0.00285	0.00285	0	0.00448	0.01005	0	0.00923	0.00720	0.00720	0.00475	0.01032	0.00217	0.00217	0
273	0	0.00978	0	0.00312	0.00285	0.00285	0.00285	0	0.00448	0.01005	0	0.00923	0.00720	0.00720	0.00475	0.01032	0.00217	0.00217	0
274	0	0.00218	0	0.00070	0.00064	0.00064	0.00064	0	0.00100	0.00224	0	0.00206	0.00161	0.00161	0.00106	0.00230	0.00048	0.00048	0
304	0	0.00218	0	0.00070	0.00064	0.00064	0.00064	0	0.00100	0.00224	0	0.00206	0.00161	0.00161	0.00106	0.00230	0.00048	0.00048	0
305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
334	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
335	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	LIFE CHU	WEEKS	RATHKE	YOUNG	old power	CITY OF H	BULLION	TINGEY	PEJSA	FOX	FOX	CITY OF H	HAILEY C	FOXMOO	CITY OF H
Turf	0	0	0.81	0.42	0.56	0.26	0	0.26	0.52	0.44	0.44	0.6	1	0.33	0.1
Area	10.9	2.9	1.9	3.4	6.4	10.0	17.1	1.4	0.3	3.0	0.6	3.0	17.4	21.2	7.5
Irr Area	0.0	0.0	1.6	1.4	3.6	2.6	0.0	0.4	0.1	1.3	0.3	1.8	17.4	7.0	0.8
Days															
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0.00192	0.00100	0.00133	0.00062	0	0.00062	0.00123	0.00104	0.00104	0.00142	0.00237	0.00078	0.00024
120	0	0	0.00192	0.00100	0.00133	0.00062	0	0.00062	0.00123	0.00104	0.00104	0.00142	0.00237	0.00078	0.00024
121	0	0	0.00826	0.00428	0.00571	0.00265	0	0.00265	0.00530	0.00449	0.00449	0.00612	0.01020	0.00336	0.00102
151	0	0	0.00826	0.00428	0.00571	0.00265	0	0.00265	0.00530	0.00449	0.00449	0.00612	0.01020	0.00336	0.00102
152	0	0	0.01652	0.00856	0.01142	0.00530	0	0.00530	0.01060	0.00897	0.00897	0.01224	0.02039	0.00673	0.00204
181	0	0	0.01652	0.00856	0.01142	0.00530	0	0.00530	0.01060	0.00897	0.00897	0.01224	0.02039	0.00673	0.00204
182	0	0	0.02240	0.01162	0.01549	0.00719	0	0.00719	0.01438	0.01217	0.01217	0.01660	0.02766	0.00913	0.00277
212	0	0	0.02240	0.01162	0.01549	0.00719	0	0.00719	0.01438	0.01217	0.01217	0.01660	0.02766	0.00913	0.00277
213	0	0	0.01836	0.00952	0.01269	0.00589	0	0.00589	0.01178	0.00997	0.00997	0.01360	0.02266	0.00748	0.00227
243	0	0	0.01836	0.00952	0.01269	0.00589	0	0.00589	0.01178	0.00997	0.00997	0.01360	0.02266	0.00748	0.00227
244	0	0	0.01100	0.00570	0.00760	0.00353	0	0.00353	0.00706	0.00597	0.00597	0.00815	0.01358	0.00448	0.00136
273	0	0	0.01100	0.00570	0.00760	0.00353	0	0.00353	0.00706	0.00597	0.00597	0.00815	0.01358	0.00448	0.00136
274	0	0	0.00245	0.00127	0.00170	0.00079	0	0.00079	0.00157	0.00133	0.00133	0.00182	0.00303	0.00100	0.00030
304	0	0	0.00245	0.00127	0.00170	0.00079	0	0.00079	0.00157	0.00133	0.00133	0.00182	0.00303	0.00100	0.00030
305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
334	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
335	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	LDS CHUR	LDS CHUR	HAILEY Cth	AIRPORT	HAILEY S	BRYSON	CITY OF H	CITY OF H	HUBS MIT	CITY OF H	DREYER	SOUTH W	CITY OF H	BROADFORD	FERRIES
Turf	0.63	0.63	0.35	0	0	0	0.52	0	0	0	0	0	0	0.53	0.06
Area	9.5	9.8	9.4	1.0	1.0	2.5	3.7	12.9	11.3	6.7	1.1	19.6	6.0	19.2	7.8
Irr Area	6.0	6.2	3.3	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.2	0.5
Days															
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0.00149	0.00149	0.00083	0	0	0.00123	0	0	0	0	0	0	0	0.00126	0.00014
120	0.00149	0.00149	0.00083	0	0	0.00123	0	0	0	0	0	0	0	0.00126	0.00014
121	0.00642	0.00642	0.00357	0	0	0.00530	0	0	0	0	0	0	0	0.00540	0.00061
151	0.00642	0.00642	0.00357	0	0	0.00530	0	0	0	0	0	0	0	0.00540	0.00061
152	0.01285	0.01285	0.00714	0	0	0.01060	0	0	0	0	0	0	0	0.01081	0.00122
181	0.01285	0.01285	0.00714	0	0	0.01060	0	0	0	0	0	0	0	0.01081	0.00122
182	0.01743	0.01743	0.00968	0	0	0.01438	0	0	0	0	0	0	0	0.01466	0.00166
212	0.01743	0.01743	0.00968	0	0	0.01438	0	0	0	0	0	0	0	0.01466	0.00166
213	0.01428	0.01428	0.00793	0	0	0.01178	0	0	0	0	0	0	0	0.01201	0.00136
243	0.01428	0.01428	0.00793	0	0	0.01178	0	0	0	0	0	0	0	0.01201	0.00136
244	0.00855	0.00855	0.00475	0	0	0.00706	0	0	0	0	0	0	0	0.00720	0.00081
273	0.00855	0.00855	0.00475	0	0	0.00706	0	0	0	0	0	0	0	0.00720	0.00081
274	0.00191	0.00191	0.00106	0	0	0.00157	0	0	0	0	0	0	0	0.00161	0.00018
304	0.00191	0.00191	0.00106	0	0	0.00157	0	0	0	0	0	0	0	0.00161	0.00018
305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
334	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
335	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	POLLOCK	RUMPELT	ROMAN	C	WOODS	TIDWELL	KAMMER	IDAHO	R	CITY OF	B	BROADBENT	NATOOTS	VACATED	OWL	CRE	YOUNG	STONE	CC	BROADBENT
Turf			0	0.88	0.36	0.68	0.61	0.8		0.1	0.35	0.21	0.34	0.42	0.36		0.4		0.45	0.4
Area	5.1	6.4	6.8	1.5	1.1	9.1	6.3	21.1	3.6	51.9	77.6	11.7	57.2	22.7				22.7	27.7	
Irr Area	0.0	0.0	6.0	0.5	0.7	5.5	5.0	2.1	1.3	10.9	26.4	4.2	24.0	10.2				10.2	11.1	
Days																				
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0.00209	0.00085	0.00161	0.00145	0.00190	0.00024	0.00083	0.00050	0.00081	0.00085	0.00100	0.00107	0.00085	0.00100	0.00095	0.00107	0.00095	0.00095
120	0	0	0.00209	0.00085	0.00161	0.00145	0.00190	0.00024	0.00083	0.00050	0.00081	0.00085	0.00100	0.00107	0.00085	0.00100	0.00095	0.00107	0.00095	0.00095
121	0	0	0.00897	0.00367	0.00693	0.00622	0.00816	0.00102	0.00357	0.00214	0.00347	0.00367	0.00428	0.00459	0.00367	0.00428	0.00408	0.00459	0.00408	0.00408
151	0	0	0.00897	0.00367	0.00693	0.00622	0.00816	0.00102	0.00357	0.00214	0.00347	0.00367	0.00428	0.00459	0.00367	0.00428	0.00408	0.00459	0.00408	0.00408
152	0	0	0.01794	0.00734	0.01387	0.01244	0.01631	0.00204	0.00714	0.00428	0.00693	0.00734	0.00856	0.00918	0.00734	0.00856	0.00816	0.00918	0.00816	0.00816
181	0	0	0.01794	0.00734	0.01387	0.01244	0.01631	0.00204	0.00714	0.00428	0.00693	0.00734	0.00856	0.00918	0.00734	0.00856	0.00816	0.00918	0.00816	0.00816
182	0	0	0.02434	0.00996	0.01881	0.01687	0.02213	0.00277	0.00968	0.00581	0.00940	0.00996	0.01162	0.01245	0.00996	0.01162	0.01106	0.01245	0.01106	0.01106
212	0	0	0.02434	0.00996	0.01881	0.01687	0.02213	0.00277	0.00968	0.00581	0.00940	0.00996	0.01162	0.01245	0.00996	0.01162	0.01106	0.01245	0.01106	0.01106
213	0	0	0.01994	0.00816	0.01541	0.01382	0.01813	0.00227	0.00793	0.00476	0.00771	0.00816	0.00952	0.01020	0.00816	0.00952	0.00907	0.01020	0.00907	0.00907
243	0	0	0.01994	0.00816	0.01541	0.01382	0.01813	0.00227	0.00793	0.00476	0.00771	0.00816	0.00952	0.01020	0.00816	0.00952	0.00907	0.01020	0.00907	0.00907
244	0	0	0.01195	0.00489	0.00923	0.00828	0.01086	0.00136	0.00475	0.00285	0.00462	0.00489	0.00570	0.00611	0.00489	0.00570	0.00543	0.00611	0.00543	0.00543
273	0	0	0.01195	0.00489	0.00923	0.00828	0.01086	0.00136	0.00475	0.00285	0.00462	0.00489	0.00570	0.00611	0.00489	0.00570	0.00543	0.00611	0.00543	0.00543
274	0	0	0.00267	0.00109	0.00206	0.00185	0.00242	0.00030	0.00106	0.00064	0.00103	0.00109	0.00127	0.00136	0.00109	0.00127	0.00121	0.00136	0.00121	0.00121
304	0	0	0.00267	0.00109	0.00206	0.00185	0.00242	0.00030	0.00106	0.00064	0.00103	0.00109	0.00127	0.00136	0.00109	0.00127	0.00121	0.00136	0.00121	0.00121
305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
334	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
335	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	AIRPORT	FRIEDMAN	LLAMA RA	COOK	MARVIN G	DOVE ME	DEERFIELD	HIAWATH	DELLA VII	LITTLE IN	MOUNTAIN	NORTH ST	ORIEN ES	HAPPY AD	MCGR
Turf	0.1	0	0.71	0.66	0.34	0.58	0.48	0.53	0.51	0.28	0.55	0.39	0.68	0.51	0.36
Area	60.6	16.7	13.2	11.4	40.7	13.8	84.7	27.7	111.2	17.6	12.0	47.3	15.4	10.0	5.0
Irr Area	6.1	0.0	9.4	7.6	13.8	8.0	40.6	14.7	56.7	4.9	6.6	18.5	10.5	5.1	1.8
Days															
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0.00024	0	0.00168	0.00157	0.00081	0.00138	0.00114	0.00126	0.00121	0.00066	0.00130	0.00093	0.00161	0.00121	0.00085
120	0.00024	0	0.00168	0.00157	0.00081	0.00138	0.00114	0.00126	0.00121	0.00066	0.00130	0.00093	0.00161	0.00121	0.00085
121	0.00102	0	0.00724	0.00673	0.00347	0.00591	0.00489	0.00540	0.00520	0.00285	0.00561	0.00398	0.00693	0.00520	0.00367
151	0.00102	0	0.00724	0.00673	0.00347	0.00591	0.00489	0.00540	0.00520	0.00285	0.00561	0.00398	0.00693	0.00520	0.00367
152	0.00204	0	0.01448	0.01346	0.00693	0.01183	0.00979	0.01081	0.01040	0.00571	0.01122	0.00795	0.01387	0.01040	0.00734
181	0.00204	0	0.01448	0.01346	0.00693	0.01183	0.00979	0.01081	0.01040	0.00571	0.01122	0.00795	0.01387	0.01040	0.00734
182	0.00277	0	0.01964	0.01826	0.00940	0.01604	0.01328	0.01466	0.01411	0.00774	0.01521	0.01079	0.01881	0.01411	0.00996
212	0.00277	0	0.01964	0.01826	0.00940	0.01604	0.01328	0.01466	0.01411	0.00774	0.01521	0.01079	0.01881	0.01411	0.00996
213	0.00227	0	0.01609	0.01496	0.00771	0.01314	0.01088	0.01201	0.01156	0.00635	0.01246	0.00884	0.01541	0.01156	0.00816
243	0.00227	0	0.01609	0.01496	0.00771	0.01314	0.01088	0.01201	0.01156	0.00635	0.01246	0.00884	0.01541	0.01156	0.00816
244	0.00136	0	0.00964	0.00896	0.00462	0.00788	0.00652	0.00720	0.00692	0.00380	0.00747	0.00530	0.00923	0.00692	0.00489
273	0.00136	0	0.00964	0.00896	0.00462	0.00788	0.00652	0.00720	0.00692	0.00380	0.00747	0.00530	0.00923	0.00692	0.00489
274	0.00030	0	0.00215	0.00200	0.00103	0.00176	0.00145	0.00161	0.00154	0.00085	0.00167	0.00118	0.00206	0.00154	0.00109
304	0.00030	0	0.00215	0.00200	0.00103	0.00176	0.00145	0.00161	0.00154	0.00085	0.00167	0.00118	0.00206	0.00154	0.00109
305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
334	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
335	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	BUTTERC	NORTH	JEFFERS	FLYING	HOLIDAY	COYOTE	SILVER S	BUTTERC	RED DEV	BUCKHORN	INDIAN CR	FAWN CR	DEER CR	WOODL	SAGEBR
Turf	0.5	0.53	0.34	0.3	0.45	0.66	0.99	0.75	0.49	0.59	0.85	0.7	0.53	0.89	0.21
Area	20.6	158.6	4.3	244.5	7.9	32.1	15.9	19.8	17.7	90.9	21.4	39.9	17.4	18.2	18.2
Irr Area	10.3	84.1	1.5	73.3	3.6	21.2	11.0	14.8	8.7	53.6	18.2	28.0	9.2	16.2	3.8
Days															
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0.00119	0.00126	0.00081	0.00071	0.00107	0.00157	0.00164	0.00178	0.00116	0.00140	0.00202	0.00166	0.00126	0.00211	0.00050
120	0.00119	0.00126	0.00081	0.00071	0.00107	0.00157	0.00164	0.00178	0.00116	0.00140	0.00202	0.00166	0.00126	0.00211	0.00050
121	0.00510	0.00540	0.00347	0.00306	0.00459	0.00673	0.00704	0.00765	0.00500	0.00602	0.00867	0.00714	0.00540	0.00907	0.00214
151	0.00510	0.00540	0.00347	0.00306	0.00459	0.00673	0.00704	0.00765	0.00500	0.00602	0.00867	0.00714	0.00540	0.00907	0.00214
152	0.01020	0.01081	0.00693	0.00612	0.00918	0.01346	0.01407	0.01529	0.00999	0.01203	0.01733	0.01427	0.01081	0.01815	0.00428
181	0.01020	0.01081	0.00693	0.00612	0.00918	0.01346	0.01407	0.01529	0.00999	0.01203	0.01733	0.01427	0.01081	0.01815	0.00428
182	0.01383	0.01466	0.00940	0.00830	0.01245	0.01826	0.01909	0.02075	0.01355	0.01632	0.02351	0.01936	0.01466	0.02462	0.00581
212	0.01383	0.01466	0.00940	0.00830	0.01245	0.01826	0.01909	0.02075	0.01355	0.01632	0.02351	0.01936	0.01466	0.02462	0.00581
213	0.01133	0.01201	0.00771	0.00680	0.01020	0.01496	0.01564	0.01700	0.01110	0.01337	0.01926	0.01586	0.01201	0.02017	0.00476
243	0.01133	0.01201	0.00771	0.00680	0.01020	0.01496	0.01564	0.01700	0.01110	0.01337	0.01926	0.01586	0.01201	0.02017	0.00476
244	0.00679	0.00720	0.00462	0.00407	0.00611	0.00896	0.00937	0.01018	0.00665	0.00801	0.01154	0.00950	0.00720	0.01208	0.00285
273	0.00679	0.00720	0.00462	0.00407	0.00611	0.00896	0.00937	0.01018	0.00665	0.00801	0.01154	0.00950	0.00720	0.01208	0.00285
274	0.00151	0.00161	0.00103	0.00091	0.00136	0.00200	0.00209	0.00227	0.00148	0.00179	0.00257	0.00212	0.00161	0.00270	0.00064
304	0.00151	0.00161	0.00103	0.00091	0.00136	0.00200	0.00209	0.00227	0.00148	0.00179	0.00257	0.00212	0.00161	0.00270	0.00064
305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
334	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
335	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	VILLAGE	VILLAGE	BLUEGRD	ZINC	SPU	STARWEA	GOLDEN	HIDDEN	HALTURAS	SUNDANC	Heatherla
Turf	0.5	0.5	0.11	0.48	0.31	0.71	0.7	0.57	0.38	0.5	
Area	26.7	30.0	80.9	251.4	13.6	9.9	14.6	24.1	180.6	0.5	
Irr Area	13.4	0.0	3.3	38.8	77.9	9.6	6.9	8.3	9.2	180.6	
Days										90.3	
0	0	0	0	0	0	0	0	0	0	0	
30	0	0	0	0	0	0	0	0	0	0	
31	0	0	0	0	0	0	0	0	0	0	
58	0	0	0	0	0	0	0	0	0	0	
60	0	0	0	0	0	0	0	0	0	0	
90	0	0	0	0	0	0	0	0	0	0	
91	0.00119	0.00119	0.00026	0.00114	0.00074	0.00168	0.00166	0.00135	0.00090	0.00119	
120	0.00119	0.00119	0.00026	0.00114	0.00074	0.00168	0.00166	0.00135	0.00090	0.00119	
121	0.00510	0.00510	0.00112	0.00489	0.00316	0.00724	0.00714	0.00581	0.00387	0.00510	
151	0.00510	0.00510	0.00112	0.00489	0.00316	0.00724	0.00714	0.00581	0.00387	0.00510	
152	0.01020	0.01020	0.00224	0.00979	0.00632	0.01448	0.01427	0.01162	0.00775	0.01020	
181	0.01020	0.01020	0.00224	0.00979	0.00632	0.01448	0.01427	0.01162	0.00775	0.01020	
182	0.01383	0.01383	0.00304	0.01328	0.00857	0.01964	0.01936	0.01577	0.01051	0.01383	
212	0.01383	0.01383	0.00304	0.01328	0.00857	0.01964	0.01936	0.01577	0.01051	0.01383	
213	0.01133	0.01133	0.00249	0.01088	0.00703	0.01609	0.01586	0.01292	0.00861	0.01133	
243	0.01133	0.01133	0.00249	0.01088	0.00703	0.01609	0.01586	0.01292	0.00861	0.01133	
244	0.00679	0.00679	0.00149	0.00652	0.00421	0.00964	0.00950	0.00774	0.00516	0.00679	
273	0.00679	0.00679	0.00149	0.00652	0.00421	0.00964	0.00950	0.00774	0.00516	0.00679	
274	0.00151	0.00151	0.00033	0.00145	0.00094	0.00215	0.00212	0.00173	0.00115	0.00151	
304	0.00151	0.00151	0.00033	0.00145	0.00094	0.00215	0.00212	0.00173	0.00115	0.00151	
305	0	0	0	0	0	0	0	0	0	0	
334	0	0	0	0	0	0	0	0	0	0	
335	0	0	0	0	0	0	0	0	0	0	
365	0	0	0	0	0	0	0	0	0	0	

Appendix D
Weighted ET Values

	Valley Clu	Silver Bel	Vanoff - (	Old Cutter	Lufkin - (	Brennan -	Indian Cre	Cropper -	Wilcox - (	Johnson -	Marathon	Croy Cany	Dilley - (
Alfalfa	0	0	0	0.7	0	0	0.42	0.98	0	0	0.9	0	0
Bare	0.3	0	0.15	0.25	0	0.25	0.58	0	0	0	0.1	0	1
Grain	0	0	0	0	0	0	0	0	0	0	0	0	0
Pasture	0	0.49	0.28	0	0.16	0.07	0	0	0	0	0	0	0
River	0	0.26	0.57	0	0.84	0.68	0	0	0	1	0	1	0
Turf	0.7	0	0	0	0	0	0	0	0.41	0	0	0	0
Urban	0	0.25	0	0.05	0	0	0	0.02	0.59	0	0	0	0
Area	86.8	29.7	305.3	91.4	75.8	114.2	17.3	21.4	19.5	9.4	54.0	4.0	5.1
Days	1	1	1	1	1	1	1	1	1	1	1	1	1
0	0.00115	0.00118	0.00117	0.00127	0.00112	0.00128	0.00145	0.00110	0.00139	0.00116	0.00115	0.00116	0.00172
30	0.00115	0.00118	0.00117	0.00127	0.00112	0.00128	0.00145	0.00110	0.00139	0.00116	0.00115	0.00116	0.00172
31	0.00183	0.00185	0.00182	0.00197	0.00172	0.00197	0.00225	0.00169	0.00218	0.00177	0.00177	0.00177	0.00268
58	0.00183	0.00185	0.00182	0.00197	0.00172	0.00197	0.00225	0.00169	0.00218	0.00177	0.00177	0.00177	0.00268
60	0.00260	0.00263	0.00261	0.00265	0.00252	0.00278	0.00298	0.00232	0.00297	0.00257	0.00242	0.00257	0.00348
90	0.00260	0.00263	0.00261	0.00265	0.00252	0.00278	0.00298	0.00232	0.00297	0.00257	0.00242	0.00257	0.00348
91	0.00392	0.00417	0.00420	0.00337	0.00421	0.00425	0.00376	0.00298	0.00409	0.00424	0.00309	0.00424	0.00434
120	0.00392	0.00417	0.00420	0.00337	0.00421	0.00425	0.00376	0.00298	0.00409	0.00424	0.00309	0.00424	0.00434
121	0.01197	0.01144	0.00910	0.00920	0.00788	0.00652	0.00744	0.01096	0.00900	0.00601	0.01046	0.00601	0.00480
151	0.01197	0.01144	0.00910	0.00920	0.00788	0.00652	0.00744	0.01096	0.00900	0.00601	0.01046	0.00601	0.00480
152	0.01955	0.01819	0.01587	0.01532	0.01529	0.01198	0.01119	0.01946	0.01352	0.01292	0.01828	0.01292	0.00500
181	0.01955	0.01819	0.01587	0.01532	0.01529	0.01198	0.01119	0.01946	0.01352	0.01292	0.01828	0.01292	0.00500
182	0.02077	0.02320	0.02605	0.01389	0.03036	0.02314	0.00894	0.01884	0.01279	0.03034	0.01743	0.03034	0.00151
212	0.02077	0.02320	0.02605	0.01389	0.03036	0.02314	0.00894	0.01884	0.01279	0.03034	0.01743	0.03034	0.00151
213	0.01802	0.02099	0.02462	0.01207	0.02932	0.02260	0.00791	0.01624	0.01125	0.02993	0.01505	0.02993	0.00167
243	0.01802	0.02099	0.02462	0.01207	0.02932	0.02260	0.00791	0.01624	0.01125	0.02993	0.01505	0.02993	0.00167
244	0.01176	0.01145	0.01156	0.00923	0.01252	0.00974	0.00643	0.01204	0.00781	0.01186	0.01124	0.01186	0.00222
273	0.01176	0.01145	0.01156	0.00923	0.01252	0.00974	0.00643	0.01204	0.00781	0.01186	0.01124	0.01186	0.00222
274	0.00387	0.00369	0.00372	0.00348	0.00387	0.00348	0.00306	0.00391	0.00327	0.00379	0.00379	0.00379	0.00242
304	0.00387	0.00369	0.00372	0.00348	0.00387	0.00348	0.00306	0.00391	0.00327	0.00379	0.00379	0.00379	0.00242
305	0.00152	0.00157	0.00159	0.00172	0.00156	0.00172	0.00188	0.00155	0.00177	0.00162	0.00160	0.00162	0.00212
334	0.00152	0.00157	0.00159	0.00172	0.00156	0.00172	0.00188	0.00155	0.00177	0.00162	0.00160	0.00162	0.00212
335	0.00099	0.00102	0.00104	0.00111	0.00102	0.00113	0.00123	0.00099	0.00116	0.00106	0.00103	0.00106	0.00141
365	0.00099	0.00102	0.00104	0.00111	0.00102	0.00113	0.00123	0.00099	0.00116	0.00106	0.00103	0.00106	0.00141

	BLM - (Riv)	Wood Riv	Wood Riv	Valley Ciu	Valley Ciu	Valley Ciu	Valley Ciu	Valley Ciu	New Deer	New Deer	New Deer	New Deer	New Deer	New Deer
Alfalfa	0	0	0	0	0	0	0	0	0	0	0	0	0.35	0
Bare	0	1	1	0	0	0.09	0.09	0.09	1	0.5	0.5	0.5	0.1	0.5
Grain	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pasture	0	0	0	0	0	0	0	0	0	0	0	0	0	0
River	1	0	0	0	0	0	0	0	0	0.5	0.5	0.5	0.55	0.5
Turf	0	0	0	1	1	0.91	0.91	0.91	0	0	0	0	0	0
Urban	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Area	33.3	3.7						230.0	20.7	10.8	11.2	145.9	4.6	
Days	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	0.00116	0.00172	0.00172	0.00091	0.00091	0.00098	0.00098	0.00098	0.00172	0.00144	0.00144	0.00119	0.00144	0.00116
30	0.00116	0.00172	0.00172	0.00091	0.00091	0.00098	0.00098	0.00098	0.00172	0.00144	0.00144	0.00119	0.00144	0.00116
31	0.00177	0.00268	0.00268	0.00146	0.00146	0.00157	0.00157	0.00157	0.00268	0.00222	0.00222	0.00182	0.00222	0.00177
58	0.00177	0.00268	0.00268	0.00146	0.00146	0.00157	0.00157	0.00157	0.00268	0.00222	0.00222	0.00182	0.00222	0.00177
60	0.00257	0.00348	0.00348	0.00222	0.00222	0.00233	0.00233	0.00233	0.00348	0.00303	0.00303	0.00257	0.00303	0.00257
90	0.00257	0.00348	0.00348	0.00222	0.00222	0.00233	0.00233	0.00233	0.00348	0.00303	0.00303	0.00257	0.00303	0.00257
91	0.00424	0.00434	0.00434	0.00374	0.00374	0.00379	0.00379	0.00379	0.00434	0.00429	0.00429	0.00380	0.00429	0.00424
120	0.00424	0.00434	0.00434	0.00374	0.00374	0.00379	0.00379	0.00379	0.00434	0.00429	0.00429	0.00380	0.00429	0.00424
121	0.00601	0.00480	0.00480	0.01504	0.01504	0.01412	0.01412	0.01412	0.00480	0.00540	0.00540	0.00766	0.00540	0.00601
151	0.00601	0.00480	0.00480	0.01504	0.01504	0.01412	0.01412	0.01412	0.00480	0.00540	0.00540	0.00766	0.00540	0.00601
152	0.01292	0.00500	0.00500	0.02579	0.02579	0.02392	0.02392	0.02392	0.00500	0.00896	0.00896	0.01452	0.00896	0.01292
181	0.01292	0.00500	0.00500	0.02579	0.02579	0.02392	0.02392	0.02392	0.00500	0.00896	0.00896	0.01452	0.00896	0.01292
182	0.03034	0.00151	0.00151	0.02902	0.02902	0.02655	0.02655	0.02655	0.00151	0.01592	0.01592	0.02355	0.01592	0.03034
212	0.03034	0.00151	0.00151	0.02902	0.02902	0.02655	0.02655	0.02655	0.00151	0.01592	0.01592	0.02355	0.01592	0.03034
213	0.02993	0.00167	0.00167	0.02504	0.02504	0.02293	0.02293	0.02293	0.00167	0.01580	0.01580	0.02242	0.01580	0.02993
243	0.02993	0.00167	0.00167	0.02504	0.02504	0.02293	0.02293	0.02293	0.00167	0.01580	0.01580	0.02242	0.01580	0.02993
244	0.01186	0.00222	0.00222	0.01585	0.01585	0.01462	0.01462	0.01462	0.00222	0.00704	0.00704	0.01103	0.00704	0.01186
273	0.01186	0.00222	0.00222	0.01585	0.01585	0.01462	0.01462	0.01462	0.00222	0.00704	0.00704	0.01103	0.00704	0.01186
274	0.00379	0.00242	0.00242	0.00449	0.00449	0.00431	0.00431	0.00431	0.00242	0.00310	0.00310	0.00370	0.00310	0.00379
304	0.00379	0.00242	0.00242	0.00449	0.00449	0.00431	0.00431	0.00431	0.00242	0.00310	0.00310	0.00370	0.00310	0.00379
305	0.00162	0.00212	0.00212	0.00126	0.00126	0.00134	0.00134	0.00134	0.00212	0.00187	0.00187	0.00164	0.00187	0.00162
334	0.00162	0.00212	0.00212	0.00126	0.00126	0.00134	0.00134	0.00134	0.00212	0.00187	0.00187	0.00164	0.00187	0.00162
335	0.00106	0.00141	0.00141	0.00081	0.00081	0.00086	0.00086	0.00086	0.00141	0.00124	0.00124	0.00107	0.00124	0.00106
365	0.00106	0.00141	0.00141	0.00081	0.00081	0.00086	0.00086	0.00086	0.00141	0.00124	0.00124	0.00107	0.00124	0.00106

	Idaho Dep	Idaho Dep	Rinker - (	River Grov	Blaine Col	Blaine Col	Blaine Col	Stevens -	Big Wood	Eccles Fly
Alfalfa	1	0	1	0	0	0	0	0	0	0.7
Bare	0	0	0	0	0	0	0.23	0.06	0	0
Grain	0	0	0	0	0	0	0	0	0	0.085
Pasture	0	0	0	0.75	0	0	0	0.49	0.35	0
River	0	0	0	0.25	0	0	0	0.45	0.65	0.215
Turf	0	0	0	0	0.52	0.35	0.29	0	0	0
Urban	0	1	0	0	0.48	0.65	0.48	0	0	0
Area	93.4	8.2	157.6	98.7	23.1	74.1	15.8	114.9	161.2	761.8
Days	1	1	1	1	1	1	1	1	1	1
0	0.00108	0.00172	0.00108	0.00097	0.00130	0.00143	0.00148	0.00107	0.00107	0.00115
30	0.00108	0.00172	0.00108	0.00097	0.00130	0.00143	0.00148	0.00107	0.00107	0.00115
31	0.00167	0.00268	0.00167	0.00154	0.00205	0.00225	0.00232	0.00167	0.00166	0.00177
58	0.00167	0.00268	0.00167	0.00154	0.00205	0.00225	0.00232	0.00167	0.00166	0.00177
60	0.00230	0.00348	0.00230	0.00231	0.00283	0.00304	0.00312	0.00246	0.00245	0.00249
90	0.00230	0.00348	0.00230	0.00231	0.00283	0.00304	0.00312	0.00246	0.00245	0.00249
91	0.00295	0.00434	0.00295	0.00409	0.00403	0.00413	0.00417	0.00415	0.00417	0.00359
120	0.00295	0.00434	0.00295	0.00409	0.00403	0.00413	0.00417	0.00415	0.00417	0.00359
121	0.01109	0.00480	0.01109	0.01479	0.01012	0.00838	0.00777	0.01167	0.01010	0.01028
151	0.01109	0.00480	0.01109	0.01479	0.01012	0.00838	0.00777	0.01167	0.01010	0.01028
152	0.01975	0.00500	0.01975	0.02401	0.01581	0.01228	0.01103	0.01969	0.01810	0.01913
181	0.01975	0.00500	0.01975	0.02401	0.01581	0.01228	0.01103	0.01969	0.01810	0.01913
182	0.01919	0.00151	0.01919	0.03045	0.01582	0.01114	0.00949	0.02868	0.03039	0.02310
212	0.01919	0.00151	0.01919	0.03045	0.01582	0.01114	0.00949	0.02868	0.03039	0.02310
213	0.01654	0.00167	0.01654	0.02705	0.01382	0.00985	0.00844	0.02636	0.02859	0.01976
243	0.01654	0.00167	0.01654	0.02705	0.01382	0.00985	0.00844	0.02636	0.02859	0.01976
244	0.01224	0.00222	0.01224	0.01493	0.00931	0.00699	0.00617	0.01329	0.01329	0.01150
273	0.01224	0.00222	0.01224	0.01493	0.00931	0.00699	0.00617	0.01329	0.01329	0.01150
274	0.00394	0.00242	0.00394	0.00416	0.00350	0.00315	0.00302	0.00395	0.00396	0.00383
304	0.00394	0.00242	0.00394	0.00416	0.00350	0.00315	0.00302	0.00395	0.00396	0.00383
305	0.00154	0.00212	0.00154	0.00135	0.00167	0.00182	0.00187	0.00147	0.00149	0.00162
334	0.00154	0.00212	0.00154	0.00135	0.00167	0.00182	0.00187	0.00147	0.00149	0.00162
335	0.00098	0.00141	0.00098	0.00087	0.00110	0.00120	0.00124	0.00096	0.00097	0.00104
365	0.00098	0.00141	0.00098	0.00087	0.00110	0.00120	0.00124	0.00096	0.00097	0.00104

	CITY OF H	CITY OF H	Hailey Met	Bend of R	CHANTRE	CHANTRE	WOODSID	WOODSID	WOODSID	WOODSID	SEC4 OFF	Riverview	MIZER	GORDON	YORK
	0.75	1	0.65	0.28	0.53	0.64	0.64	0.98	0.78	0.67	0.54	0.25	0.49	1	0.2
Bare	0.0098	0.0112	0.0093	0.0074	0.0087	0.0093	0.0093	0.0110	0.0100	0.0094	0.0087	0.0072	0.0085	0.0112	0.0070
30	0.0098	0.0112	0.0093	0.0074	0.0087	0.0093	0.0093	0.0110	0.0100	0.0094	0.0087	0.0072	0.0085	0.0112	0.0070
31	0.0154	0.0174	0.0146	0.0117	0.0137	0.0146	0.0146	0.0172	0.0157	0.0148	0.0138	0.0115	0.0134	0.0174	0.0111
58	0.0154	0.0174	0.0146	0.0117	0.0137	0.0146	0.0146	0.0172	0.0157	0.0148	0.0138	0.0115	0.0134	0.0174	0.0111
60	0.0206	0.0226	0.0198	0.0167	0.0188	0.0197	0.0197	0.0225	0.0208	0.0199	0.0189	0.0165	0.0185	0.0226	0.0161
90	0.0206	0.0226	0.0198	0.0167	0.0188	0.0197	0.0197	0.0225	0.0208	0.0199	0.0189	0.0165	0.0185	0.0226	0.0161
91	0.0272	0.0282	0.0268	0.0254	0.0264	0.0268	0.0268	0.0281	0.0273	0.0269	0.0264	0.0253	0.0262	0.0282	0.0251
120	0.0272	0.0282	0.0268	0.0254	0.0264	0.0268	0.0268	0.0281	0.0273	0.0269	0.0264	0.0253	0.0262	0.0282	0.0251
121	0.0478	0.0312	0.0545	0.0791	0.0825	0.0551	0.0551	0.0325	0.0458	0.0531	0.0618	0.0811	0.0651	0.0312	0.0844
151	0.0478	0.0312	0.0545	0.0791	0.0825	0.0551	0.0551	0.0325	0.0458	0.0531	0.0618	0.0811	0.0651	0.0312	0.0844
152	0.0663	0.0325	0.0798	0.1298	0.0960	0.0811	0.0811	0.0352	0.0622	0.0771	0.0947	0.1339	0.1014	0.0325	0.1406
181	0.0663	0.0325	0.0798	0.1298	0.0960	0.0811	0.0811	0.0352	0.0622	0.0771	0.0947	0.1339	0.1014	0.0325	0.1406
182	0.0545	0.0098	0.0724	0.1386	0.0939	0.0742	0.0742	0.0134	0.0492	0.0688	0.0921	0.1439	0.1010	0.0098	0.1529
212	0.0545	0.0098	0.0724	0.1386	0.0939	0.0742	0.0742	0.0134	0.0492	0.0688	0.0921	0.1439	0.1010	0.0098	0.1529
213	0.0488	0.0108	0.0640	0.1202	0.0822	0.0655	0.0655	0.0139	0.0442	0.0610	0.0807	0.1248	0.0883	0.0108	0.1323
243	0.0488	0.0108	0.0640	0.1202	0.0822	0.0655	0.0655	0.0139	0.0442	0.0610	0.0807	0.1248	0.0883	0.0108	0.1323
244	0.0366	0.0144	0.0454	0.0782	0.0561	0.0463	0.0463	0.0162	0.0339	0.0437	0.0552	0.0809	0.0596	0.0144	0.0853
273	0.0366	0.0144	0.0454	0.0782	0.0561	0.0463	0.0463	0.0162	0.0339	0.0437	0.0552	0.0809	0.0596	0.0144	0.0853
274	0.0191	0.0157	0.0205	0.0254	0.0221	0.0206	0.0206	0.0160	0.0187	0.0202	0.0219	0.0258	0.0226	0.0157	0.0265
304	0.0191	0.0157	0.0205	0.0254	0.0221	0.0206	0.0206	0.0160	0.0187	0.0202	0.0219	0.0258	0.0226	0.0157	0.0265
305	0.0124	0.0138	0.0118	0.0098	0.0112	0.0118	0.0118	0.0137	0.0126	0.0119	0.0112	0.0096	0.0109	0.0138	0.0093
334	0.0124	0.0138	0.0118	0.0098	0.0112	0.0118	0.0118	0.0137	0.0126	0.0119	0.0112	0.0096	0.0109	0.0138	0.0093
335	0.0082	0.0092	0.0078	0.0064	0.0073	0.0078	0.0078	0.0091	0.0083	0.0079	0.0074	0.0062	0.0072	0.0092	0.0060
365	0.0082	0.0092	0.0078	0.0064	0.0073	0.0078	0.0078	0.0091	0.0083	0.0079	0.0074	0.0062	0.0072	0.0092	0.0060

	IREIS	THRESHE	CALVARY	IDAHO	PC	WGWI	INV	ID	TRANS	RICHMON	NELSON	BEEKWIL	BONNIVE	BREAZEA	IX-NAY	IN	BERNHAG	CONRAD	CITY OF H
Bare	1	0.28	1	0.77	0.79	0.79	1	0.67	0.26	0.0073	0.00112	0.00076	0.00084	0.00093	0.00072	0.00103	0.00112	0.84	1
Turf	0.00	0.72	0.00	0.23	0.21	0.21	0.00	0.33	0.74	0.0073	0.00112	0.00076	0.00084	0.00093	0.00072	0.00103	0.00112	0.16	0.00
Area	1.4	0.9	5.0	10.3	2.3	2.3	5.3	6.0	1.5	12.9	12.9	1.0	0.6	4.8	3.3	1.0	2.0		
Days																			
0	0.00112	0.00074	0.00112	0.00099	0.00101	0.00101	0.00112	0.00094	0.00073	0.00112	0.00076	0.00084	0.00093	0.00072	0.00103	0.00112			
30	0.00112	0.00074	0.00112	0.00099	0.00101	0.00101	0.00112	0.00094	0.00073	0.00112	0.00076	0.00084	0.00093	0.00072	0.00103	0.00112			
31	0.00174	0.00117	0.00174	0.00156	0.00157	0.00157	0.00174	0.00148	0.00116	0.00174	0.00120	0.00132	0.00146	0.00114	0.00161	0.00174			
58	0.00174	0.00117	0.00174	0.00156	0.00157	0.00157	0.00174	0.00148	0.00116	0.00174	0.00120	0.00132	0.00146	0.00114	0.00161	0.00174			
60	0.00226	0.00167	0.00226	0.00208	0.00209	0.00209	0.00226	0.00199	0.00166	0.00226	0.00171	0.00183	0.00198	0.00164	0.00213	0.00226			
90	0.00226	0.00167	0.00226	0.00208	0.00209	0.00209	0.00226	0.00199	0.00166	0.00226	0.00171	0.00183	0.00198	0.00164	0.00213	0.00226			
91	0.00282	0.00254	0.00282	0.00273	0.00274	0.00274	0.00282	0.00269	0.00253	0.00282	0.00255	0.00261	0.00268	0.00252	0.00276	0.00282			
120	0.00282	0.00254	0.00282	0.00273	0.00274	0.00274	0.00282	0.00269	0.00253	0.00282	0.00255	0.00261	0.00268	0.00252	0.00276	0.00282			
121	0.00312	0.00791	0.00312	0.00465	0.00452	0.00452	0.00312	0.00531	0.00805	0.00312	0.00765	0.00665	0.00545	0.00818	0.00418	0.00312			
151	0.00312	0.00791	0.00312	0.00465	0.00452	0.00452	0.00312	0.00531	0.00805	0.00312	0.00765	0.00665	0.00545	0.00818	0.00418	0.00312			
152	0.00325	0.01298	0.00325	0.00636	0.00609	0.00609	0.00325	0.00771	0.01325	0.00325	0.01244	0.01041	0.00798	0.01352	0.00541	0.00325			
181	0.00325	0.01298	0.00325	0.00636	0.00609	0.00609	0.00325	0.00771	0.01325	0.00325	0.01244	0.01041	0.00798	0.01352	0.00541	0.00325			
182	0.00098	0.01386	0.00098	0.00510	0.00474	0.00474	0.00098	0.00688	0.01422	0.00098	0.01314	0.01046	0.00724	0.01457	0.00385	0.00098			
212	0.00098	0.01386	0.00098	0.00510	0.00474	0.00474	0.00098	0.00688	0.01422	0.00098	0.01314	0.01046	0.00724	0.01457	0.00385	0.00098			
213	0.00108	0.01202	0.00108	0.00458	0.00427	0.00427	0.00108	0.00610	0.01232	0.00108	0.01141	0.00913	0.00640	0.01263	0.00351	0.00108			
243	0.00108	0.01202	0.00108	0.00458	0.00427	0.00427	0.00108	0.00610	0.01232	0.00108	0.01141	0.00913	0.00640	0.01263	0.00351	0.00108			
244	0.00144	0.00782	0.00144	0.00348	0.00330	0.00330	0.00144	0.00437	0.00800	0.00144	0.00747	0.00614	0.00454	0.00818	0.00286	0.00144			
273	0.00144	0.00782	0.00144	0.00348	0.00330	0.00330	0.00144	0.00437	0.00800	0.00144	0.00747	0.00614	0.00454	0.00818	0.00286	0.00144			
274	0.00157	0.00254	0.00157	0.00188	0.00186	0.00186	0.00157	0.00202	0.00257	0.00157	0.00249	0.00229	0.00205	0.00260	0.00179	0.00157			
304	0.00157	0.00254	0.00157	0.00188	0.00186	0.00186	0.00157	0.00202	0.00257	0.00157	0.00249	0.00229	0.00205	0.00260	0.00179	0.00157			
305	0.00138	0.00098	0.00138	0.00125	0.00126	0.00126	0.00138	0.00119	0.00097	0.00138	0.00100	0.00108	0.00118	0.00095	0.00129	0.00138			
334	0.00138	0.00098	0.00138	0.00125	0.00126	0.00126	0.00138	0.00119	0.00097	0.00138	0.00100	0.00108	0.00118	0.00095	0.00129	0.00138			
335	0.00092	0.00064	0.00092	0.00083	0.00084	0.00084	0.00092	0.00079	0.00063	0.00092	0.00065	0.00071	0.00078	0.00062	0.00086	0.00092			
365	0.00092	0.00064	0.00092	0.00083	0.00084	0.00084	0.00092	0.00079	0.00063	0.00092	0.00065	0.00071	0.00078	0.00062	0.00086	0.00092			

	LIFE CHU	WEEKS	RATHKE	YOUNG	old power	CITY OF H	BULLION	TINGEY	PEJSA	FOX	FOX	CITY OF H	HAILEY C	FOXMOORE	CITY OF H
Bare	1	1	0.19	0.58	0.44	0.74	1	0.74	0.48	0.56	0.56	0.4	0	0.67	0.9
Turf	0.00	0.00	0.81	0.42	0.56	0.26	0.00	0.26	0.52	0.44	0.44	0.60	1.00	0.33	0.10
Area	10.9	2.9	1.9	3.4	6.4	10.0	17.1	1.4	0.3	3.0	0.6	3.0	17.4	21.2	7.5
Days															
0	0.00112	0.00112	0.00069	0.00090	0.00082	0.00098	0.00112	0.00098	0.00084	0.00088	0.00088	0.00080	0.00059	0.00094	0.00106
30	0.00112	0.00112	0.00069	0.00090	0.00082	0.00098	0.00112	0.00098	0.00084	0.00088	0.00088	0.00080	0.00059	0.00094	0.00106
31	0.00174	0.00174	0.00110	0.00141	0.00130	0.00153	0.00174	0.00153	0.00133	0.00139	0.00139	0.00127	0.00095	0.00148	0.00166
58	0.00174	0.00174	0.00110	0.00141	0.00130	0.00153	0.00174	0.00153	0.00133	0.00139	0.00139	0.00127	0.00095	0.00148	0.00166
60	0.00226	0.00226	0.00160	0.00192	0.00180	0.00205	0.00226	0.00205	0.00184	0.00190	0.00190	0.00177	0.00144	0.00199	0.00218
90	0.00226	0.00226	0.00160	0.00192	0.00180	0.00205	0.00226	0.00205	0.00184	0.00190	0.00190	0.00177	0.00144	0.00199	0.00218
91	0.00282	0.00282	0.00250	0.00266	0.00260	0.00272	0.00282	0.00272	0.00262	0.00265	0.00265	0.00259	0.00243	0.00269	0.00278
120	0.00282	0.00282	0.00250	0.00266	0.00260	0.00272	0.00282	0.00272	0.00262	0.00265	0.00265	0.00259	0.00243	0.00269	0.00278
121	0.00312	0.00312	0.00851	0.00591	0.00685	0.00485	0.00312	0.00485	0.00658	0.00605	0.00605	0.00711	0.00978	0.00531	0.00378
151	0.00312	0.00312	0.00851	0.00591	0.00685	0.00485	0.00312	0.00485	0.00658	0.00605	0.00605	0.00711	0.00978	0.00531	0.00378
152	0.00325	0.00325	0.01420	0.00893	0.01082	0.00676	0.00325	0.00676	0.01028	0.00920	0.00920	0.01136	0.01677	0.00771	0.00460
181	0.00325	0.00325	0.01420	0.00893	0.01082	0.00676	0.00325	0.00676	0.01028	0.00920	0.00920	0.01136	0.01677	0.00771	0.00460
182	0.00098	0.00098	0.01547	0.00849	0.01100	0.00563	0.00098	0.00563	0.01028	0.00885	0.00885	0.01171	0.01886	0.00688	0.00277
212	0.00098	0.00098	0.01547	0.00849	0.01100	0.00563	0.00098	0.00563	0.01028	0.00885	0.00885	0.01171	0.01886	0.00688	0.00277
213	0.00108	0.00108	0.01339	0.00746	0.00959	0.00503	0.00108	0.00503	0.00898	0.00777	0.00777	0.01020	0.01627	0.00610	0.00260
243	0.00108	0.00108	0.01339	0.00746	0.00959	0.00503	0.00108	0.00503	0.00898	0.00777	0.00777	0.01020	0.01627	0.00610	0.00260
244	0.00144	0.00144	0.00862	0.00516	0.00640	0.00375	0.00144	0.00375	0.00605	0.00534	0.00534	0.00676	0.01030	0.00437	0.00233
273	0.00144	0.00144	0.00862	0.00516	0.00640	0.00375	0.00144	0.00375	0.00605	0.00534	0.00534	0.00676	0.01030	0.00437	0.00233
274	0.00157	0.00157	0.00266	0.00214	0.00233	0.00192	0.00157	0.00192	0.00227	0.00217	0.00217	0.00238	0.00292	0.00202	0.00171
304	0.00157	0.00157	0.00266	0.00214	0.00233	0.00192	0.00157	0.00192	0.00227	0.00217	0.00217	0.00238	0.00292	0.00202	0.00171
305	0.00138	0.00138	0.00093	0.00114	0.00107	0.00123	0.00138	0.00123	0.00109	0.00113	0.00113	0.00104	0.00082	0.00119	0.00132
334	0.00138	0.00138	0.00093	0.00114	0.00107	0.00123	0.00138	0.00123	0.00109	0.00113	0.00113	0.00104	0.00082	0.00119	0.00132
335	0.00092	0.00092	0.00060	0.00075	0.00070	0.00082	0.00092	0.00082	0.00071	0.00075	0.00075	0.00068	0.00052	0.00079	0.00088
365	0.00092	0.00092	0.00060	0.00075	0.00070	0.00082	0.00092	0.00082	0.00071	0.00075	0.00075	0.00068	0.00052	0.00079	0.00088

	LDS CHURCH	LDS CHURCH	HAILEY CIV	AIRPORT	HAILEY ST	BRYSON	CITY OF HCITY OF H	HUBSMITH	CITY OF H	DREYER	SOUTH W	CITY OF H	Broadford	FERRIES
Bare	0.37	0.37	0.65	1	1	1	0.48	1	1	1	1	1	1	0.94
Turf	0.63	0.63	0.35	0.00	0.00	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.06
Area	9.5	9.8	9.4	1.0	1.0	2.5	3.7	12.9	11.3	6.7	1.1	19.6	6.0	19.2
Days	0	0.00078	0.00078	0.00093	0.00112	0.00084	0.00112	0.00112	0.00112	0.00112	0.00112	0.00112	0.00084	0.00108
30	0.00078	0.00078	0.00093	0.00112	0.00112	0.00084	0.00112	0.00112	0.00112	0.00112	0.00112	0.00112	0.00084	0.00108
31	0.00124	0.00124	0.00146	0.00174	0.00174	0.00133	0.00174	0.00174	0.00174	0.00174	0.00174	0.00174	0.00132	0.00169
58	0.00124	0.00124	0.00146	0.00174	0.00174	0.00133	0.00174	0.00174	0.00174	0.00174	0.00174	0.00174	0.00132	0.00169
60	0.00175	0.00175	0.00198	0.00226	0.00226	0.00184	0.00226	0.00226	0.00226	0.00226	0.00226	0.00226	0.00183	0.00221
90	0.00175	0.00175	0.00198	0.00226	0.00226	0.00184	0.00226	0.00226	0.00226	0.00226	0.00226	0.00226	0.00183	0.00221
91	0.00257	0.00257	0.00268	0.00282	0.00282	0.00262	0.00282	0.00282	0.00282	0.00282	0.00282	0.00282	0.00261	0.00280
120	0.00257	0.00257	0.00268	0.00282	0.00282	0.00262	0.00282	0.00282	0.00282	0.00282	0.00282	0.00282	0.00261	0.00280
121	0.00731	0.00731	0.00545	0.00312	0.00312	0.00658	0.00312	0.00312	0.00312	0.00312	0.00312	0.00312	0.00665	0.00352
151	0.00731	0.00731	0.00545	0.00312	0.00312	0.00658	0.00312	0.00312	0.00312	0.00312	0.00312	0.00312	0.00665	0.00352
152	0.01176	0.01176	0.00798	0.00325	0.00325	0.01028	0.00325	0.00325	0.00325	0.00325	0.00325	0.00325	0.01041	0.00406
181	0.01176	0.01176	0.00798	0.00325	0.00325	0.01028	0.00325	0.00325	0.00325	0.00325	0.00325	0.00325	0.01041	0.00406
182	0.01225	0.01225	0.00724	0.00098	0.00098	0.01028	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.01046	0.00206
212	0.01225	0.01225	0.00724	0.00098	0.00098	0.01028	0.00098	0.00098	0.00098	0.00098	0.00098	0.00098	0.01046	0.00206
213	0.01065	0.01065	0.00640	0.00108	0.00108	0.00898	0.00108	0.00108	0.00108	0.00108	0.00108	0.00108	0.00913	0.00199
243	0.01065	0.01065	0.00640	0.00108	0.00108	0.00898	0.00108	0.00108	0.00108	0.00108	0.00108	0.00108	0.00913	0.00199
244	0.00702	0.00702	0.00454	0.00144	0.00144	0.00605	0.00144	0.00144	0.00144	0.00144	0.00144	0.00144	0.00614	0.00198
273	0.00702	0.00702	0.00454	0.00144	0.00144	0.00605	0.00144	0.00144	0.00144	0.00144	0.00144	0.00144	0.00614	0.00198
274	0.00242	0.00242	0.00205	0.00157	0.00157	0.00227	0.00157	0.00157	0.00157	0.00157	0.00157	0.00157	0.00229	0.00166
304	0.00242	0.00242	0.00205	0.00157	0.00157	0.00227	0.00157	0.00157	0.00157	0.00157	0.00157	0.00157	0.00229	0.00166
305	0.00103	0.00103	0.00118	0.00138	0.00138	0.00109	0.00138	0.00138	0.00138	0.00138	0.00138	0.00138	0.00108	0.00134
334	0.00103	0.00103	0.00118	0.00138	0.00138	0.00109	0.00138	0.00138	0.00138	0.00138	0.00138	0.00138	0.00108	0.00134
335	0.00067	0.00067	0.00078	0.00092	0.00092	0.00071	0.00092	0.00092	0.00092	0.00092	0.00092	0.00092	0.00071	0.00090
365	0.00067	0.00067	0.00078	0.00092	0.00092	0.00071	0.00092	0.00092	0.00092	0.00092	0.00092	0.00092	0.00071	0.00090

	POLLOCK	RUMPELT	ROMAN C	WOODS	TIDWELL	KAMMER	IDAHO RA	CITY OF B	BROADFC	NATOOTS	VACATED	OWL CRE	YOUNG	STONEC	BROADFC
Bare	1	1	0.12	0.64	0.32	0.39	0.2	0.9	0.65	0.79	0.66	0.64	0.58	0.55	0.6
Turf	0.00	0.00	0.88	0.36	0.68	0.61	0.80	0.10	0.35	0.21	0.34	0.36	0.42	0.45	0.40
Area	5.1	6.4	6.8	1.5	1.1	9.1	6.3	21.1	3.6	51.9	77.6	11.7	57.2	22.7	27.7
Days															
0	0.00112	0.00112	0.00065	0.00093	0.00076	0.00080	0.00070	0.00106	0.00093	0.00101	0.00094	0.00093	0.00090	0.00088	0.00091
30	0.00112	0.00112	0.00065	0.00093	0.00076	0.00080	0.00070	0.00106	0.00093	0.00101	0.00094	0.00093	0.00090	0.00088	0.00091
31	0.00174	0.00174	0.00105	0.00146	0.00120	0.00126	0.00111	0.00166	0.00146	0.00157	0.00147	0.00146	0.00141	0.00138	0.00142
58	0.00174	0.00174	0.00105	0.00146	0.00120	0.00126	0.00111	0.00166	0.00146	0.00157	0.00147	0.00146	0.00141	0.00138	0.00142
60	0.00226	0.00226	0.00154	0.00197	0.00171	0.00176	0.00161	0.00218	0.00198	0.00209	0.00198	0.00197	0.00192	0.00189	0.00194
90	0.00226	0.00226	0.00154	0.00197	0.00171	0.00176	0.00161	0.00218	0.00198	0.00209	0.00198	0.00197	0.00192	0.00189	0.00194
120	0.00282	0.00282	0.00248	0.00268	0.00255	0.00258	0.00251	0.00278	0.00268	0.00274	0.00269	0.00268	0.00266	0.00264	0.00266
121	0.00312	0.00312	0.00898	0.00551	0.00765	0.00718	0.00844	0.00378	0.00545	0.00452	0.00538	0.00551	0.00591	0.00611	0.00578
151	0.00312	0.00312	0.00898	0.00551	0.00765	0.00718	0.00844	0.00378	0.00545	0.00452	0.00538	0.00551	0.00591	0.00611	0.00578
152	0.00325	0.00325	0.01514	0.00811	0.01244	0.01149	0.01406	0.00460	0.00798	0.00609	0.00784	0.00811	0.00893	0.00933	0.00865
181	0.00325	0.00325	0.01514	0.00811	0.01244	0.01149	0.01406	0.00460	0.00798	0.00609	0.00784	0.00811	0.00893	0.00933	0.00865
182	0.00098	0.00098	0.01672	0.00742	0.01314	0.01189	0.01529	0.00277	0.00724	0.00474	0.00706	0.00742	0.00849	0.00903	0.00814
212	0.00098	0.00098	0.01672	0.00742	0.01314	0.01189	0.01529	0.00277	0.00724	0.00474	0.00706	0.00742	0.00849	0.00903	0.00814
213	0.00108	0.00108	0.01445	0.00655	0.01141	0.01035	0.01323	0.00260	0.00640	0.00427	0.00625	0.00655	0.00746	0.00792	0.00716
243	0.00108	0.00108	0.01445	0.00655	0.01141	0.01035	0.01323	0.00260	0.00640	0.00427	0.00625	0.00655	0.00746	0.00792	0.00716
244	0.00144	0.00144	0.00924	0.00463	0.00747	0.00685	0.00853	0.00233	0.00454	0.00330	0.00446	0.00463	0.00516	0.00543	0.00499
273	0.00144	0.00144	0.00924	0.00463	0.00747	0.00685	0.00853	0.00233	0.00454	0.00330	0.00446	0.00463	0.00516	0.00543	0.00499
274	0.00157	0.00157	0.00276	0.00206	0.00249	0.00240	0.00265	0.00171	0.00205	0.00186	0.00203	0.00206	0.00214	0.00218	0.00211
304	0.00157	0.00157	0.00276	0.00206	0.00249	0.00240	0.00265	0.00171	0.00205	0.00186	0.00203	0.00206	0.00214	0.00218	0.00211
305	0.00138	0.00138	0.00089	0.00118	0.00100	0.00104	0.00093	0.00132	0.00118	0.00126	0.00119	0.00118	0.00114	0.00113	0.00115
334	0.00138	0.00138	0.00089	0.00118	0.00100	0.00104	0.00093	0.00132	0.00118	0.00126	0.00119	0.00118	0.00114	0.00113	0.00115
335	0.00092	0.00092	0.00057	0.00078	0.00065	0.00068	0.00060	0.00088	0.00078	0.00084	0.00078	0.00078	0.00075	0.00074	0.00076
365	0.00092	0.00092	0.00057	0.00078	0.00065	0.00068	0.00060	0.00088	0.00078	0.00084	0.00078	0.00078	0.00075	0.00074	0.00076

	AIRPORT	FRIEDMAN	LLAMA RA	COOK	MARVIN G	DOVE ME	DEERFIELD	HIAWATH	DELLA VILL	LITTLE IN	MOUNTAIN	NORTH S	ORIEN	ES	HAPPY AC	MCGRW
Bare	0.9	0.00106	0.00112	0.00077	0.00094	0.00081	0.00086	0.00084	0.00085	0.00097	0.00083	0.00091	0.00076	0.00085	0.00085	0.00093
Turf	0.10	0.00106	0.00112	0.00077	0.00094	0.00081	0.00086	0.00084	0.00085	0.00097	0.00083	0.00091	0.00076	0.00085	0.00085	0.00093
Area	60.6	0.00106	0.00112	0.00077	0.00094	0.00081	0.00086	0.00084	0.00085	0.00097	0.00083	0.00091	0.00076	0.00085	0.00085	0.00093
Days																
0	0.00106	0.00112	0.00077	0.00094	0.00081	0.00086	0.00084	0.00085	0.00097	0.00083	0.00091	0.00076	0.00085	0.00085	0.00093	0.00093
30	0.00106	0.00112	0.00077	0.00094	0.00081	0.00086	0.00084	0.00085	0.00097	0.00083	0.00091	0.00076	0.00085	0.00085	0.00093	0.00093
31	0.00166	0.00174	0.00118	0.00122	0.00147	0.00128	0.00136	0.00132	0.00134	0.00152	0.00131	0.00143	0.00120	0.00134	0.00146	0.00146
58	0.00166	0.00174	0.00118	0.00122	0.00147	0.00128	0.00136	0.00132	0.00134	0.00152	0.00131	0.00143	0.00120	0.00134	0.00146	0.00146
60	0.00218	0.00226	0.00168	0.00172	0.00198	0.00179	0.00187	0.00183	0.00185	0.00203	0.00181	0.00194	0.00171	0.00185	0.00197	0.00197
90	0.00218	0.00226	0.00168	0.00172	0.00198	0.00179	0.00187	0.00183	0.00185	0.00203	0.00181	0.00194	0.00171	0.00185	0.00197	0.00197
91	0.00278	0.00282	0.00254	0.00256	0.00269	0.00259	0.00263	0.00261	0.00262	0.00271	0.00260	0.00267	0.00255	0.00262	0.00268	0.00268
120	0.00278	0.00282	0.00254	0.00256	0.00269	0.00259	0.00263	0.00261	0.00262	0.00271	0.00260	0.00267	0.00255	0.00262	0.00268	0.00268
121	0.00378	0.00312	0.00785	0.00751	0.00538	0.00698	0.00631	0.00665	0.00651	0.00498	0.00678	0.00571	0.00765	0.00651	0.00551	0.00551
151	0.00378	0.00312	0.00785	0.00751	0.00538	0.00698	0.00631	0.00665	0.00651	0.00498	0.00678	0.00571	0.00765	0.00651	0.00551	0.00551
152	0.00460	0.00325	0.01285	0.01217	0.00784	0.01109	0.00974	0.01041	0.01014	0.00703	0.01068	0.00852	0.01244	0.01014	0.00811	0.00811
181	0.00460	0.00325	0.01285	0.01217	0.00784	0.01109	0.00974	0.01041	0.01014	0.00703	0.01068	0.00852	0.01244	0.01014	0.00811	0.00811
182	0.00277	0.00098	0.01368	0.01279	0.00706	0.01135	0.00957	0.01046	0.01010	0.00599	0.01082	0.00796	0.01314	0.01010	0.00742	0.00742
212	0.00277	0.00098	0.01368	0.01279	0.00706	0.01135	0.00957	0.01046	0.01010	0.00599	0.01082	0.00796	0.01314	0.01010	0.00742	0.00742
213	0.00260	0.00108	0.01187	0.01111	0.00625	0.00989	0.00837	0.00913	0.00883	0.00534	0.00944	0.00701	0.01141	0.00883	0.00655	0.00655
243	0.00260	0.00108	0.01187	0.01111	0.00625	0.00989	0.00837	0.00913	0.00883	0.00534	0.00944	0.00701	0.01141	0.00883	0.00655	0.00655
244	0.00233	0.00144	0.00773	0.00729	0.00446	0.00658	0.00570	0.00614	0.00596	0.00392	0.00632	0.00490	0.00747	0.00596	0.00463	0.00463
273	0.00233	0.00144	0.00773	0.00729	0.00446	0.00658	0.00570	0.00614	0.00596	0.00392	0.00632	0.00490	0.00747	0.00596	0.00463	0.00463
274	0.00171	0.00157	0.00253	0.00246	0.00203	0.00235	0.00222	0.00229	0.00226	0.00195	0.00231	0.00210	0.00249	0.00226	0.00206	0.00206
304	0.00171	0.00157	0.00253	0.00246	0.00203	0.00235	0.00222	0.00229	0.00226	0.00195	0.00231	0.00210	0.00249	0.00226	0.00206	0.00206
305	0.00132	0.00138	0.00098	0.00101	0.00119	0.00105	0.00111	0.00108	0.00109	0.00122	0.00107	0.00116	0.00100	0.00109	0.00118	0.00118
334	0.00132	0.00138	0.00098	0.00101	0.00119	0.00105	0.00111	0.00108	0.00109	0.00122	0.00107	0.00116	0.00100	0.00109	0.00118	0.00118
335	0.00088	0.00092	0.00064	0.00066	0.00078	0.00069	0.00073	0.00071	0.00072	0.00081	0.00070	0.00077	0.00065	0.00072	0.00078	0.00078
365	0.00088	0.00092	0.00064	0.00066	0.00078	0.00069	0.00073	0.00071	0.00072	0.00081	0.00070	0.00077	0.00065	0.00072	0.00078	0.00078

	BUTTERC	NORTHRI	JEFFERS	FLYING H	HOLIDAY	COYOTE	SILVER S	BUTTERC	RED DEV	BUCKHOR	INDIAN C	FAWN C	DEER C	CR	WOODL	SAGEBRU
Bare	0.5	0.47	0.66	0.7	0.55	0.34	0.31	0.25	0.51	0.41	0.15	0.15	0.3	0.47	0.11	0.79
Turf	0.50	0.53	0.34	0.30	0.45	0.66	0.69	0.75	0.49	0.59	0.85	0.70	0.53	0.89	0.21	0.21
Area	20.6	158.6	4.3	244.5	7.9	32.1	15.9	19.8	17.7	90.9	21.4	39.9	17.4	18.2	18.2	18.2
Days																
0	0.0085	0.0084	0.0094	0.0096	0.0088	0.0077	0.0075	0.0072	0.0086	0.0081	0.0067	0.0075	0.0084	0.0084	0.0065	0.00101
30	0.0085	0.0084	0.0094	0.0096	0.0088	0.0077	0.0075	0.0072	0.0086	0.0081	0.0067	0.0075	0.0084	0.0084	0.0065	0.00101
31	0.00135	0.00132	0.00147	0.00150	0.00138	0.00122	0.00120	0.00115	0.00135	0.00127	0.00107	0.00119	0.00132	0.00132	0.00104	0.00157
58	0.00135	0.00132	0.00147	0.00150	0.00138	0.00122	0.00120	0.00115	0.00135	0.00127	0.00107	0.00119	0.00132	0.00132	0.00104	0.00157
60	0.00185	0.00183	0.00198	0.00202	0.00189	0.00172	0.00170	0.00165	0.00186	0.00178	0.00157	0.00169	0.00183	0.00183	0.00153	0.00209
90	0.00185	0.00183	0.00198	0.00202	0.00189	0.00172	0.00170	0.00165	0.00186	0.00178	0.00157	0.00169	0.00183	0.00183	0.00153	0.00209
91	0.00262	0.00261	0.00269	0.00270	0.00264	0.00256	0.00255	0.00253	0.00263	0.00259	0.00249	0.00255	0.00261	0.00261	0.00247	0.00274
120	0.00262	0.00261	0.00269	0.00270	0.00264	0.00256	0.00255	0.00253	0.00263	0.00259	0.00249	0.00255	0.00261	0.00261	0.00247	0.00274
121	0.00645	0.00665	0.00538	0.00511	0.00611	0.00751	0.00771	0.00811	0.00638	0.00705	0.00878	0.00778	0.00665	0.00665	0.00904	0.00452
151	0.00645	0.00665	0.00538	0.00511	0.00611	0.00751	0.00771	0.00811	0.00638	0.00705	0.00878	0.00778	0.00665	0.00665	0.00904	0.00452
152	0.01001	0.01041	0.00784	0.00730	0.00933	0.01217	0.01257	0.01339	0.00987	0.01122	0.01474	0.01271	0.01041	0.01041	0.01528	0.00609
181	0.01001	0.01041	0.00784	0.00730	0.00933	0.01217	0.01257	0.01339	0.00987	0.01122	0.01474	0.01271	0.01041	0.01041	0.01528	0.00609
182	0.00992	0.01046	0.00706	0.00635	0.00903	0.01279	0.01332	0.01439	0.00975	0.01153	0.01618	0.01350	0.01046	0.01046	0.01690	0.00474
212	0.00992	0.01046	0.00706	0.00635	0.00903	0.01279	0.01332	0.01439	0.00975	0.01153	0.01618	0.01350	0.01046	0.01046	0.01690	0.00474
213	0.00868	0.00913	0.00625	0.00564	0.00792	0.01111	0.01156	0.01248	0.00853	0.01004	0.01399	0.01172	0.00913	0.00913	0.01460	0.00427
243	0.00868	0.00913	0.00625	0.00564	0.00792	0.01111	0.01156	0.01248	0.00853	0.01004	0.01399	0.01172	0.00913	0.00913	0.01460	0.00427
244	0.00587	0.00614	0.00446	0.00410	0.00543	0.00729	0.00756	0.00809	0.00578	0.00667	0.00897	0.00764	0.00614	0.00614	0.00933	0.00330
273	0.00587	0.00614	0.00446	0.00410	0.00543	0.00729	0.00756	0.00809	0.00578	0.00667	0.00897	0.00764	0.00614	0.00614	0.00933	0.00330
274	0.00225	0.00229	0.00203	0.00198	0.00218	0.00246	0.00250	0.00258	0.00223	0.00237	0.00272	0.00252	0.00229	0.00229	0.00277	0.00186
304	0.00225	0.00229	0.00203	0.00198	0.00218	0.00246	0.00250	0.00258	0.00223	0.00237	0.00272	0.00252	0.00229	0.00229	0.00277	0.00186
305	0.00110	0.00108	0.00119	0.00121	0.00113	0.00101	0.00099	0.00096	0.00110	0.00105	0.00090	0.00099	0.00108	0.00108	0.00088	0.00126
334	0.00110	0.00108	0.00119	0.00121	0.00113	0.00101	0.00099	0.00096	0.00110	0.00105	0.00090	0.00099	0.00108	0.00108	0.00088	0.00126
335	0.00072	0.00071	0.00078	0.00080	0.00074	0.00066	0.00065	0.00062	0.00073	0.00069	0.00058	0.00064	0.00071	0.00071	0.00057	0.00084
365	0.00072	0.00071	0.00078	0.00080	0.00074	0.00066	0.00065	0.00062	0.00073	0.00069	0.00058	0.00064	0.00071	0.00071	0.00057	0.00084

	VILLAGE	VILLAGE	BLUEGRASS	ZINC	SPI	STARWEA	GOLDEN	HIDDEN	HALTURAS	SUNDANC	Heatherlat
Bare	0	0.5	0.89	0.52	0.52	0.89	0.29	0.3	0.43	0.62	0.5
Turf	1	0.5	0.11	0.48	0.31	0.71	0.71	0.7	0.57	0.38	0.5
Area	26.7		30.0	80.9	251.4	13.6		9.9	14.6	24.1	180.6
Days											
0	0.00059	0.00085	0.00106	0.00086	0.00095	0.00074	0.00075	0.00082	0.00092	0.00085	
30	0.00059	0.00085	0.00106	0.00086	0.00095	0.00074	0.00075	0.00082	0.00092	0.00085	
31	0.00095	0.00135	0.00165	0.00136	0.00149	0.00118	0.00119	0.00129	0.00144	0.00135	
58	0.00095	0.00135	0.00165	0.00136	0.00149	0.00118	0.00119	0.00129	0.00144	0.00135	
60	0.00144	0.00185	0.00217	0.00187	0.00201	0.00168	0.00169	0.00180	0.00195	0.00185	
90	0.00144	0.00185	0.00217	0.00187	0.00201	0.00168	0.00169	0.00180	0.00195	0.00185	
91	0.00243	0.00262	0.00278	0.00263	0.00270	0.00254	0.00255	0.00260	0.00267	0.00262	
120	0.00243	0.00262	0.00278	0.00263	0.00270	0.00254	0.00255	0.00260	0.00267	0.00262	
121	0.00978	0.00645	0.00385	0.00631	0.00518	0.00785	0.00778	0.00691	0.00565	0.00645	
151	0.00978	0.00645	0.00385	0.00631	0.00518	0.00785	0.00778	0.00691	0.00565	0.00645	
152	0.01677	0.01001	0.00473	0.00974	0.00744	0.01285	0.01271	0.01095	0.00838	0.01001	
181	0.01677	0.01001	0.00473	0.00974	0.00744	0.01285	0.01271	0.01095	0.00838	0.01001	
182	0.01886	0.00992	0.00295	0.00957	0.00653	0.01368	0.01350	0.01118	0.00778	0.00992	
212	0.01886	0.00992	0.00295	0.00957	0.00653	0.01368	0.01350	0.01118	0.00778	0.00992	
213	0.01627	0.00868	0.00275	0.00837	0.00579	0.01187	0.01172	0.00974	0.00685	0.00868	
243	0.01627	0.00868	0.00275	0.00837	0.00579	0.01187	0.01172	0.00974	0.00685	0.00868	
244	0.01030	0.00587	0.00242	0.00570	0.00419	0.00773	0.00764	0.00649	0.00481	0.00587	
273	0.01030	0.00587	0.00242	0.00570	0.00419	0.00773	0.00764	0.00649	0.00481	0.00587	
274	0.00292	0.00225	0.00172	0.00222	0.00199	0.00253	0.00252	0.00234	0.00209	0.00225	
304	0.00292	0.00225	0.00172	0.00222	0.00199	0.00253	0.00252	0.00234	0.00209	0.00225	
305	0.00082	0.00110	0.00132	0.00111	0.00121	0.00098	0.00099	0.00106	0.00117	0.00110	
334	0.00082	0.00110	0.00132	0.00111	0.00121	0.00098	0.00099	0.00106	0.00117	0.00110	
335	0.00052	0.00072	0.00088	0.00073	0.00080	0.00064	0.00064	0.00069	0.00077	0.00072	
365	0.00052	0.00072	0.00088	0.00073	0.00080	0.00064	0.00064	0.00069	0.00077	0.00072	

Appendix E

Well Extraction for Large Agricultural Parcels

	Valley Cld	Silver Bel	Vanoff - (	Old Cutter	Lufkin - (	Brennan -	Indian Cre	Cropper -	Wilcox - (	Johnson -	Marathon	Croy Cany	Dilley - (	Quigley G	Wood Riv
Alfalfa	0	0	0	0.7	0	0	0.42	0.98	0	0	0.9	0	0	0	0
Bare	0.3	0	0.15	0.25	0	0.25	0.58	0	0	0	0.1	0	1	0.55	0.3
Grain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pasture	0	0.49	0.28	0	0.16	0.07	0	0	0	0	0	0	0	0	0
River	0	0.26	0.57	0	0.84	0.68	0	0	0	1	0	1	0	0	0.7
Turf	0.7	0	0	0	0	0	0	0	0.41	0	0	0	0	0	0
Urban	0	0.25	0	0.05	0	0	0	0.02	0.59	0	0	0	0	0.45	0
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Date of Surface															
Water Cutoff															
January	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
August	0	6.611	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	5.959	29.121	0	0	0	0	0	0	0	0	0	0	0	0
October	0	1.072	6.286	5.542	0.019	0	0	1.814	0.628	0	4.209	0	0	0	0
November	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Big Wood	Eccles Fly
0	0.8
0	0
0	0.09
0.35	0
0.65	0.11
0	0
0	0
1	1

29-Oct	5-Oct
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0.402	53.146
0	0
0	0