

Montana Department of Natural Resources and Conservation  
Water Resources Division  
Water Rights Bureau

**ENVIRONMENTAL ASSESSMENT**  
**For Routine Actions with Limited Environmental Impact**

**Part I. Proposed Action Description**

1. Applicant/Contact name and address: **Thomas & Kim Harrison  
PO Box 9738  
Helena MT 59604-9738**
2. Type of action: **Application for Beneficial Water Use Permit No. 30046072-411  
Grand Valley Estates Major Subdivision  
Jim Darcy Elementary School**
3. Water source name: **Groundwater**
4. Location affected by action: **Two wells in the SENWSE of Sec 18, Twp 11N, Rge 3W,  
Lewis and Clark County**
5. Narrative summary of the proposed project, purpose, action to be taken, and objectives:  
**This application proposes to appropriate groundwater from two manifold wells located in the SENWSE of Sec 18, Twp 11N, Rge 3W, Lewis and Clark County. The wells are referred to as PWS #1 and PWS #2 and were drilled by Treasure State Drilling, a licensed well driller, in March of 2007. PWS #1 was drilled to a depth of 150.9 feet and was tested by the well driller at 217 gpm. PWS #2 was drilled to a depth of 158 feet and was tested by the well driller at 214 gpm. The applicant is requesting 100 gpm up to 38 acre-feet per year.**

**The water would be used for multiple domestic purposes for 26 households from January 1 through December 31 and for lawn and garden purposes on 10.8 acres from April 15 to October 15 of each year. The place of use will be Lots 1 through 26, in the Grand Valley Estates Major Subdivision located in the SE of Sec 18, Twp 11N, Rge 3W, Lewis and Clark County.**

**The water will also be used for institutional purposes by the Jim Darcy Elementary School from January 1 to December 31 of each year. The school is located in the SWSESE, Sec 18, Twp 11N, Rge 3W, Lewis and Clark County. A Water Service Agreement between the school and the Harrison's is contained in the file.**

Agencies consulted during preparation of the Environmental Assessment:  
(include agencies with overlapping jurisdiction)

**Environmental Assessment Report prepared by Barry Damschen Consulting, LLC,  
dated August 2005**

**Montana Natural Heritage Program (MTNHP)  
Soil Survey of Helena Valley USDA – SCS  
Russell Levens – DNRC Hydrogeologist  
Jim Beck – HRO Engineer**

## **Part II. Environmental Review**

### **1. Environmental Impact Checklist:**

<b>PHYSICAL ENVIRONMENT</b>
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#### **WATER QUANTITY, QUALITY AND DISTRIBUTION**

**Water quantity** - Assess whether the source of supply is identified as a chronically or periodically dewatered stream by DFWP. Assess whether the proposed use will worsen the already dewatered condition.

Determination: **No significant adverse impact.**

**The proposed project would not affect chronically or periodically dewatered streams as identified by the Department of Fish, Wildlife & Parks. The water is to be diverted from groundwater wells.**

**Water quality** - Assess whether the stream is listed as water quality impaired or threatened by DEQ, and whether the proposed project will affect water quality.

Determination: **No significant adverse impact.**

**The proposed project would not affect water quality in perennial streams. The water is to be diverted from groundwater wells. It is unknown at this time whether there would be an impact to groundwater quality.**

**Groundwater** - Assess if the proposed project impacts ground water quality or supply. If this is a groundwater appropriation, assess if it could impact adjacent surface water flows.

Determination: **No significant adverse impact.**

**The applicant has demonstrated that the water for the proposed project is physically and legally available according to DNRC evaluation procedures. The nearest surface water source is Silver Creek, which is located approximately 1.5 miles to the southwest. Lake Helena is located approximately 3.25 miles to the east. The Helena Valley Canal forms the northern border of the subdivision. This application is subject to House Bill 831, which requires a hydrogeologic assessment that predicts whether the proposed appropriation will result in a net depletion of surface water. The applicant acknowledges a potential stream depletion impact of 15.8 acre-feet. The mitigated volume will be 16.1 acre-feet exceeding the 15.8 acre-feet of net depletion to Lake Helena.**

**DIVERSION WORKS** - Assess whether the means of diversion, construction and operation of the appropriation works of the proposed project will impact any of the following: channel impacts, flow modifications, barriers, riparian areas, dams, well construction.

Determination: **No significant adverse impact.**

**The project would not affect streams or riparian areas. Two wells were drilled for the Grand Valley Subdivision by Treasure State Drilling, a licensed well driller. They were drilled in accordance with the Montana Board of Water Well Contractors and the**

Administrative Rules of Montana and are subject to DEQ requirements. The well referred to as PWS-1 was drilled in March of 2007 to a depth of 160.9 feet. PWS-1 has an 8" steel casing from +2.5 to 155 feet and is screened from 143.9 to 158.9 feet. The well referred to as PWS-2 was drilled in March of 2007 to a depth of 158.6 feet. PWS-2 has an 8" steel casing from +2.5 to 155 feet and is screened from 143.6 to 156.6 feet. Both of the wells were grouted with bentonite clay during installation to prevent well contamination. The pumps are Goulds Model 100H-07, 6 inch, single phase, powered by a Model 6M071 7.5 hp motors.

#### **UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES**

**Endangered and threatened species** - Assess whether the proposed project will impact any threatened or endangered fish, wildlife, plants or aquatic species or any "species of special concern," or create a barrier to the migration or movement of fish or wildlife. For groundwater, assess whether the proposed project, including impacts on adjacent surface flows, would impact any threatened or endangered species or "species of special concern."

Determination: **No significant adverse impact.**

**According to the MTNHP there are several nearby areas that are home to the Black-tailed Prairie Dog or *Cynomys ludovicianus*. The Gray Wolf or *Canis lupus* may also migrate through the area from time to time. The Black-tailed Prairie Dog and the Gray Wolf are considered species of special concern.**

**Although antelope, deer, and other small mammals frequent the area the proposed subdivision is not located in an area with a high wildlife resource value.**

**Wetlands** - Consult and assess whether the apparent wetland is a functional wetland (according to COE definitions), and whether the wetland resource would be impacted.

Determination: **No functional wetlands have been identified.**

**Ponds** - For ponds, consult and assess whether existing wildlife, waterfowl, or fisheries resources would be impacted.

Determination: **No pond development is involved in this project.**

**GEOLOGY/SOIL QUALITY, STABILITY AND MOISTURE** - Assess whether there will be degradation of soil quality, alteration of soil stability, or moisture content. Assess whether the soils are heavy in salts that could cause saline seep.

Determination: **No significant adverse impact.**

**According to the soil survey of the Helena Valley, the chief type of soil in the proposed project area is Scravo, which is described as from 0 to 6" gravelly loam; from 6 to 17" very gravelly sandy loam; from 17 to 60" very gravelly loamy sand. Listed under soil interpretations for various uses, it is only rated good mainly for road fill because of the extremely gravelly soil and a probable source for gravel. The soils are classified as severe for lawns but with a veneer of topsoil should be able to sustain a healthy lawn.**

**As with many areas in and around Helena and the surrounding valley there is the potential for an earthquake. According to a suggestion by a seismologist that in this seismic region, one should exercise moderate concern and follow all prescribed building codes to prevent and reduce damage that could be caused during a seismic event.**

**VEGETATION COVER, QUANTITY AND QUALITY/NOXIOUS WEEDS** - Assess impacts to existing vegetative cover. Assess whether the proposed project would result in the establishment or spread of noxious weeds.

Determination: **No significant adverse impact.**

**The vegetative cover on the proposed project area consists of native grasses, small shrubs and some trees. The trees will remain as part of the Lincoln Road RV Park. The grass and shrubs will be damaged during construction. The developer is responsible for the establishment or spread of noxious weeds until such time the proposed subdivision is developed. A conversation with the Lewis and Clark County Weed District gave the developers basic guidelines of a proper weed management plan. The lot owners will be responsible for weed control on their own lots.**

**AIR QUALITY** - Assess whether there will be a deterioration of air quality or adverse effects on vegetation due to increased air pollutants.

Determination: **No significant adverse impact.**

**There may be a deterioration of air quality during the construction phase of the subdivision. There may be a more permanent deterioration of air quality due to the increased traffic within the subdivision. In addition, if any of the homes have wood burning stoves/fireplaces that are burned improperly, there may be noticeable or objectionable odors that could affect air quality and /or be offensive to other property owners. This impact would be temporary during the winter months when there is an air inversion.**

**HISTORICAL AND ARCHEOLOGICAL SITES** - Assess whether there will be degradation of unique archeological or historical sites in the vicinity of the proposed project.

Determination: **No significant adverse impact.**

**According to the document prepared by Barry Damschen, the State Historic Preservation Office was contacted to conduct a file search of the cultural resources in the proposed project area. The Helena Irrigation Canal was the only historical feature on the property. The canal will be protected throughout the development process. The existing easement shall be maintained in order to preserve the canal in its current condition. With the exception of the canal the project is located on private property and it is at the landowner's discretion to further conduct a reconnaissance survey.**

**DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AND ENERGY** - Assess any other impacts on environmental resources of land, water and energy not already addressed.

Determination: **No additional impacts on environmental resources of land, water and energy not already addressed were identified.**

**HUMAN ENVIRONMENT**

**LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS** - Assess whether the proposed project is inconsistent with any locally adopted environmental plans and goals.

Determination: **The proposed subdivision resides in “Area E” of the Lewis and Clark County Growth Policy. This area is located in the northwest Helena Valley and is bordered by the Helena Valley Irrigation Canal and Silver Creek on the south and Green Meadow Drive on the west. These boundaries reflect agricultural lands, low-density residential developments and/or floodplain. There is also some non-residential development. Jim Darcy Elementary School, which will also be using this water. There is a commercial center located just east of the area on Lincoln Road.**

**The principal road network has been established but additional linkages will need to be established to provide for infill development of interior areas. Most of the roads are gravel and pavement improvements would be necessary to accommodate additional development.**

**Water availability is a critical issue in the accommodation of additional development. A study was conducted to analyze the availability of groundwater in this area. The North Hills Controlled Groundwater area established in 2002 answered many of the questions about water quantity and quality. The project area is no longer part of the Controlled Groundwater area, but is still subject to DEQ requirements.**

**ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES** - Assess whether the proposed project will impact access to or the quality of recreational and wilderness activities.

Determination: **No significant adverse impact.**

**The proposed project would not impact access to or the quality of recreational and wilderness activities.**

**HUMAN HEALTH** - Assess whether the proposed project impacts on human health.

Determination: **No significant adverse impact.**

**The proposed subdivision will utilize a new central gravity collection wastewater system and treatment facility. The facility will include a large septic tank, sand filter, and pressure dosed drain fields. Plans and specifications for distribution and storage will have to be approved by DEQ.**

**Solid waste will be disposed of at the county landfill transfer station. The landowners can either haul their own waste or have a private hauler pick up and dispose of the solid waste.**

**The Helena Valley Irrigation Canal is one prominent safety hazard located on the northern boundary of the subdivision. It is unknown at this time how that problem will be overcome.**

**PRIVATE PROPERTY** - Assess whether there are any government regulatory impacts on private property rights.

Yes \_\_\_ No **X**.

**OTHER HUMAN ENVIRONMENTAL ISSUES** - For routine actions of limited environmental impact, the following may be addressed in a checklist fashion.

Impacts on:

- (a) Cultural uniqueness and diversity? **No significant adverse impact.**
- (b) Local and state tax base and tax revenues? **No significant adverse impact.**  
**This subdivision project should increase the local and state tax base and revenues. Although this is expected to be a positive impact, the magnitude of the potential increase in tax revenues has not been quantified.**
- (c) Existing land uses? **No significant adverse impact.**  
**In the past the historic land use was agriculture. The land has not been used as farmland since the Lincoln Road RV Park was constructed. There has been some construction on site to prepare for the subdivision.**
- (d) Quantity and distribution of employment? **No significant adverse impact.**  
**This proposed project has the potential to increase the demand for services in the Helena area and create employment opportunities.**
- (e) Distribution and density of population and housing? **No significant adverse impact.**  
**The development of this subdivision would increase the population growth outside the city limits of Helena. There will be 26 households at full development and the Jim Darcy Elementary School.**
- (f) Demands for government services? **No significant adverse impact.**  
**There would be a demand for a number of government and local services. The residents of the subdivision would need fire and police protection, bus service to some schools, however the Jim Darcy Elementary School is in the immediate area. There will also be a need for medical/health care services, solid waste disposal, postal services, road maintenance, etc. Some of these issues were discussed earlier in this environmental assessment or can be found in the environmental assessment prepared by Barry Damschen Consulting, LLC.**
- (g) Industrial and commercial activity? **No significant adverse impact.**  
**This subdivision is strictly for domestic and lawn and garden uses. The water will also be used for the Jim Darcy Elementary School. The school well has dangerously high levels of nitrates and cannot be used for drinking. The school well will continue to be used for irrigation of the school complex.**
- (h) Utilities? **No significant impact.**  
**This proposed project would create the need for new facilities for electrical power, natural gas, telephone lines, and cable television lines. All utilities will be installed underground in accordance with Lewis and Clark County Subdivision Regulations. Some of the utility companies have been contacted regarding this subdivision.**
- (i) Transportation? **No significant adverse impact.**  
**The streets that will be impacted by this subdivision are Montana Avenue and Lincoln Road. Montana Avenue is a north-south route located east of the proposed development. Lincoln Road is an east-west route located south of the proposed development. Interstate 15 is accessible via an interchange at Lincoln**

Road. The proposed subdivision will have new public access roads constructed to meet the Lewis and Clark County Road Standards.

(j) Safety? **No significant adverse impact.**

There may be safety impacts created by the increased traffic on Montana Avenue, Lincoln Road and the close proximity of the Interstate. As mentioned earlier in the environmental assessment the Helena Valley Irrigation Canal is one prominent safety hazard located on the northern boundary of the subdivision. It is unknown at this time how that problem will be overcome. The subdivision would increase the need for emergency services such as fire, police and medical. The response time for the emergency services may increase due to the growth of the Helena Valley area and limited resources and personnel. The developer will work with the individual services and they have been contacted about the Grand Valley Subdivision. A 120,000-gallon concrete storage tank for fire protection will be designed. A 1000 gpm fire pump capable of producing 20 psi through a fire hydrant will be part of the design.

(k) Other appropriate social and economic circumstances? **No significant adverse impact.**

2. Secondary and cumulative impacts on the physical environment and human population:

Secondary Impacts: **No significant adverse impacts have been identified at this time. No secondary impacts have been identified at this time.**

Cumulative Impacts: **No cumulative impacts have been identified at this time.**

3. Describe any mitigation/stipulation measures: **The permit, if issued would be subject to all prior existing water rights in the source of supply.**

**The permit if issued is subject to §85-2-505, MCA, requiring a well be constructed so it will not allow water to be wasted or contaminate other water supplies or sources, and a flowing well must be capped or equipped so the flow of the water may be stopped when not being put to beneficial use.**

**The applicant acknowledges a potential stream depletion impact of 15.8 acre-feet per year to Lake Helena. The applicant has submitted an Application to Change a Water Right to mitigate the potential impacts from the public water supply wells for the Grand Valley Subdivision. Eleven acres will be retired from irrigation to provide 16.1 acre-feet of mitigation water. See Application to Change No. 411-30046072.**

**This application will go through the DNRC public notice procedure, and water users concerned with potential impacts will be given the opportunity to object to the application. The decision by the DNRC to grant or deny the application would not be made until these review processes are completed.**

4. Description and analysis of reasonable alternatives to the proposed action, including the no action alternative, if an alternative is reasonably available and prudent to consider **The no action alternative would prevent the applicant from obtaining water to develop a public water system for the Grand Valley Subdivision and the Jim Darcy Elementary School. If the permit were denied the individual lot owners in the subdivision would have to construct their own wells. The school well has a high concentration of nitrates and the water is unsafe to drink. The subdivision wells would be subject to high water quality standards and DEQ felt this would be the best solution to their problem. The school has stated at this time drilling a new**

well is not an option. If the school cannot use these wells for drinking they would be forced to find another source. The no action alternative could have a greater potential for an adverse impact to water quality and quantity because of the 26 new wells that would be drilled to service home sites and the school being without a potable water supply.

### **PART III. Conclusion**

1. Preferred Alternative: **Issue the permit as applied for by the applicant, or in some modified form considered reasonable. As stated above the potential for adverse affect would seem to be greater with individual new wells being constructed in the area.**
2. Comments and Responses: **Comments and responses were compiled by Barry Damschen Consulting, LLC for the subdivision preliminary plat application for Grand Valley Estates formerly known as Mountain View Estates.**
3. Finding:  
Yes \_\_\_ No **X** Based on the significance criteria evaluated in this EA, is an EIS required?

If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action: **Based on a consideration of the criteria found in DNRC Administrative Rule 36.2.524, "Determining the Significance of Impacts," there is not a sufficient adverse impact. An EA is sufficient for this level of action. The possible impacts from the community water system and wells for the subdivision are not significant adverse impacts and thus do not warrant and EIS.**

Name of person(s) responsible for preparation of EA:

Name: Kathy Arndt  
Title: Water Resources Specialist  
Date: January 26, 2011