

BEFORE THE DEPARTMENT OF
NATURAL RESOURCES AND CONSERVATION
OF THE STATE OF MONTANA

* * * * *

IN THE MATTER OF THE BITTERROOT VALLEY)	
SANITARY LANDFILL PETITION 76H-30003426)	<u>ORDER DESIGNATING</u>
FOR DESIGNATION OF A CONTROLLED)	CONTROLLED GROUNDWATER
GROUNDWATER AREA)	AREA

* * * * *

Pursuant to the Montana Water Use Act, Mont. Code Ann. §§ 85-2-506 and 507, and to the contested case provisions of the Montana Administrative Procedures Act, and after notice required by law, a hearing was held on May 1, 2003, in Victor, Montana, at the Victor School Multipurpose Room. The hearing was held to determine if the Montana Department of Natural Resources and Conservation (DNRC) shall order a specific area in question to be a controlled groundwater area, a temporary controlled groundwater area pending further study, or reject the petition for a controlled groundwater area (CGA). The DNRC has considered the evidence and expert testimony submitted concerning the petition.

PARTIES

All individuals who signed the Petition, testified at the hearing, or submitted written comment prior to the record closing are considered Parties. Twenty-three (23) people attended the hearing. Proponents of the proposed controlled groundwater area designation who testified at the hearing were: Kelly Schmitt, Montana Department of Environmental Quality (DEQ) Helena; Denise Martin, DEQ, Helena; and Willis Weight, Whitehall, Montana, the consultant who supervised the modeling of the proposed controlled groundwater area for DEQ. Local property owners who testified at the hearing were David Kittel, Nanette Morozumi, Hillard Betancourt, and Ben Schults, all from Victor, Montana. Bill Uthman, DNRC Water Resources hydrologist, Helena, answered a question asked by the hearings officer. No other individuals submitted written comments or evidence regarding the proposed controlled groundwater designation prior to or during the hearing.

There were no opponents who spoke at the hearing and no written comments or evidence was submitted prior to or at the hearing that was opposed to the proposed controlled groundwater designation.

EXHIBITS

No written information was received at the hearing so there are no Exhibits from the hearing. Petition documents and DNRC processing documents (e.g., Environmental Assessment [EA]) are already a part of the record and are not labeled as exhibits. The proposed controlled groundwater area boundaries are noted on the BVSL Controlled Groundwater Area Designation map included in the Petition as Figure 7. A final copy of the map that includes all the features shown in the Figure 7 map, as well as additional DNRC boundary and individual

element clarifications, is attached to this order as Exhibit 1.

Based upon the evidence and expert testimony submitted concerning the petition and the record made for this matter, the Hearings Examiner makes the following:

FINDINGS OF FACT

1. A Petition for Controlled Groundwater Area (Petition) was received by the DNRC on September 9, 2002. The Petition was submitted by DEQ and signed by the Jan P. Sensibaugh, Director, DEQ. (DNRC File)
2. The Petition alleges: a) that water quality within the groundwater area is not suited for a specific use defined by Mont. Code Ann. § 85-2-102(2)(a), and b) that excessive groundwater withdrawals will cause the contaminant, further described in this findings, to migrate. (Petition)
3. The Petition proposes that the DNRC: (1) prevent drilling of all wells in the aquifers within the proposed controlled groundwater area without first applying for and receiving a permit to drill a well, until the groundwater within the aquifer is restored to appropriate standards; and (2) allow monitoring wells and wells required for remedial action, as requested, directed, and approved by DEQ, to be installed without a permit. (Petition)
4. An addendum to the Petition was received by the DNRC on February 4, 2003 and was signed by Jan Sensibaugh, DEQ Director. The addendum requested a modification to part 2, Type of Designation Requested. DEQ requested that the petition state that "No wells be drilled without a permit or change authorization within the boundary of the controlled groundwater area. DEQ proposed that the four (4) specific conditions read:
 - a. Within Zone 1, no potable water wells may be drilled in any aquifer unit. Non-potable water wells may be drilled if the applicant can demonstrate that the well will not contribute to the expansion of the plume of contamination designated on the map.
 - b. Within Zone 2, wells yielding 35 gallons per minute (gpm) or less may be drilled and screened to a depth of less than 200 feet below land surface. No flow rate or use restrictions are placed on wells drilled and screened at a depth greater than 200 feet below ground surface.
 - c. All wells permitted for installation must be constructed in a manner that prohibits the contaminant from using the well as a migration pathway to another aquifer.
 - d. New monitoring wells shall be installed in accordance with EPA-approved Standard Operating Procedure (SOP Groundwater-3) for monitoring well design and construction.

A second addendum to the petition was received by the DNRC March 4,

2003 that was signed by Kelly Schmitt, DEQ. The second addendum clarified condition 2 d. to read "New monitoring wells will be installed in accordance with ARM 36.21.801-810." (Petition and DNRC file)

5. The proposed controlled groundwater area boundaries, as designated on the Exhibit 1 map, includes the Bitterroot Valley Sanitary Landfill (BVSL) historic waste disposal pit, any place where hazardous or deleterious substances have come to be located within those 328 acres, and the surrounding area within the 328 acres where pumping of groundwater may induce migration of the contamination. The proposed controlled groundwater area includes two separate zones. In Zone 1, water in any aquifer unit is not suitable for potable uses and high yield non-potable uses may cause the contaminant to migrate. Zone 2 is the buffer zone area adjacent to the contaminant plume. According to the DEQ, the contaminant is not present in Zone 2 but pumping restrictions are requested in the two upper most aquifer units in Zone 2 to prevent the contaminant from migrating. The proposed boundaries include 328 acres located within the following legal description: S $\frac{1}{2}$ & SENE Section 31 T8N R20W; N $\frac{1}{2}$ Section 6 T7N R20W; W $\frac{1}{2}$, W $\frac{1}{2}$, Section 32 T8N R20W (portion west of the Bitterroot River); W $\frac{1}{2}$, NW $\frac{1}{4}$, Section 5 T7N R20W (portion west of the Bitterroot River). Only the 328 acres located within the mapped boundary, and not the entire legal description area, is included in the controlled groundwater area. (Public Notice of Hearing on Petition, DNRC file)

6. A Notice of Hearing On Petition For Designation of a Controlled Groundwater at the Bitterroot Valley Sanitary Landfill Controlled Groundwater Area, which included the additions or changes found in the first and second addenda, was published in the Helena Independent Record and the Ravalli Republic on April 2nd, 3rd, 9th, 10th, 16th, and 17th, 2003, setting forth the Petitioner, the alleged cause for the Petition, the legal description of the proposed controlled groundwater area, the time, place, and purpose of the hearing. Additionally, the DNRC served notice by first class mail on approximately 85 individuals and public agencies that the DNRC determined might be interested in or affected by the proposed controlled groundwater area. The notice also stated that any interested person could appear, either in person or by attorney, file written objections to the granting of the proposal, and be fully heard. (DNRC file.)

7. The Petition provides evidence that shallow groundwater within the former Bitterroot Valley Sanitary Landfill site, as referenced on the Figure 7 map accompanying the Petition, is contaminated with chloroform, methylene chloride, tetrachloroethene, and vinyl chloride in amounts which exceed federal and state standards for human consumption (Petition, DEQ Bitterroot Valley Sanitary Landfill Superfund Facility, Record of Decision (ROD), January 2002, ROD Responsiveness Summary).

8. The Petition provides evidence that, after removal of some of the contamination and after on site remediation measures are nearly complete, contamination still exists in the shallow groundwater within and adjacent to the former landfill site and that a controlled groundwater area is needed because water quality within the

groundwater area is not suited for a specific beneficial use defined by Mont. Code Ann. § 85-2-102(2)(a), and b) that excessive groundwater withdrawals within the boundaries of the CGA will cause the contaminant to migrate. (Petition and DNRC File)

9. The Petition provides evidence that, although no contamination has been detected in the lower two aquifer units within the proposed controlled groundwater area boundaries, the complex hydrogeology at the facility prevents gathering sufficient information to determine conclusively that contamination will not migrate to the lower aquifer units. (DNRC File)

10. The Petition includes a report from Willis Weight, Ph.D., P.E., that described how the proposed CGWA boundaries were determined. (Petition)

11. The Petition provides evidence that wells constructed within the proposed controlled groundwater area boundaries will require construction standards that will prevent contaminants from using wells as a migration pathway to other aquifer units. (Petition)

12. The Petition provided a justification for allowing non-potable water wells within the contaminant plume. The Petition provided facts that the Agency for Toxic Substance and Disease Registry determined that at the BVSL facility the contaminated water, when used for sprinkler irrigation and swimming pool purposes, causes the contaminant to readily volatilize in air thereby helping to remove and disperse the contaminant to levels that represent no risk to human health. (Petition, Hearing, and DNRC File)

13. Kelly Schmitt, DEQ, testified at the hearing as a proponent of the controlled groundwater area designation and provided a PowerPoint® presentation. The presentation gave a brief history of the project, described the contaminants of concern, provided a generalized hydrostratigraphic cross section of the aquifer and aquitard units within the controlled groundwater area, provided a facility map of the chloroform plume, described the remedial actions, summarized the DEQ Record of Decision (ROD), and detailed the DEQ's proposal for a controlled groundwater area. Kelly answered questions from the hearing examiner in reference to proper well construction standards and the current status of on-site remediation measures. Kelly testified that DEQ was not aware of any seasonal migration or regression of the contaminant plume due to wet and dry year hydrologic cycles. (Hearing)

14. At the hearing David Kittel stated to Kelly Schmitt that he felt a proposed community water supply system well that will be constructed near the southern boundary of the controlled groundwater area would cause the contaminant plume to migrate toward the new well. David asked about down river (Bitterroot River) contamination and asked if the current on site remediation (the "pump and treat") was shut off, would river contamination increase. Kelly Schmitt answered that the proposed community well is outside the boundary and that DEQ believes that is an adequate location for the well and that it would not cause

contaminate migration. Kelly responded that "natural attenuation" (high volume of the river) would dilute the contaminant if it reaches the river but because the source of the contaminant has been removed it is not anticipated that the contaminant will migrate when the "pump and treat" system is shut off. (Hearing)

15. Nanette Morozumi testified at the hearing that she had the same concerns as David Kittel and asked about the potential for the contaminant to migrate to the river and if anything (contaminants) was found. Ms. Morozumi also asked if DEQ would continue to monitor the river. Kelly Schmitt answered that the river was tested in the past but had not been tested recently and that they had not found contaminants. (Hearing)

16. Hillard Betancourt asked a question at the hearing regarding the uses of irrigation wells within the contaminant plume. Kelly Schmitt explained that wells for irrigation purposes would be allowed within the contaminant plume as the contaminants readily volatilized with contact to air. (Hearing)

17. Ben Schults asked if wells in Zone 2 would require a permit. The Hearings Examiner explained that the Petitioner was requesting that applicants be required to obtain a permit before a well is drilled in all zones within the controlled groundwater area. (Hearing)

18. Willis Weight, Ph. D., P.E., testified at the hearing as a proponent of the proposed controlled groundwater area. Dr. Weight provided his professional credentials and stated that he was the supervisor of the development of the controlled groundwater modeling and was responsible for the report that provided the delineation of the controlled groundwater area boundary lines. Dr. Weight explained the parameters of the modeling and testified that the modeling used sound professional practices and judgment in delineating the controlled groundwater area boundaries. (Hearing)

19. Dr. Weight testified that the Petitioner is requesting that applicants for permits for new wells that wish to demonstrate to the DNRC how a well would not cause contaminant migration must use numerical modeling with particle tracking as it was the most reasonable approach. Dr. Weight testified that numerical models that use estimations of hydraulic conductivity might not properly estimate the hydraulic conductivity of the (whole) aquifer. Dr. Weight testified that the DNRC should review the credentials of the groundwater modeler and that they should have sufficient numerical modeling experience and should have practiced in that field. (Hearing)

20. Dr. Weight testified that the Petitioner is requesting that when an applicant is required to drill a test well, results of the well tests should provide the transmissivity and storativity values for the aquifer and that applicants must provide aquifer properties in the area where the well will be placed, as well as the aquifer properties away from the well and that the properties are characterized so a true sense of the migration of the plume can be determined. (Hearing)

21. Dr. Weight responded to previously asked questions about the location of the boundaries and in particular the location of the community well near the southern boundary, and how modeling of wells below 200 feet below ground surface was included in the model. Dr. Weight testified that the boundaries as delineated were created with the "pump and treat" system theoretically turned off during the modeling. (Hearing)

22. Denise Martin, DEQ, testified as the Site Response Section Manager in the DEQ Remediation Division and as a proponent of the proposed controlled groundwater area. Ms. Martin testified that because the mapped boundaries were set within the model with the "pump and treat" system already shut off, that DEQ believes that once the "pump and treat" system was actually shut off, there would be no significant changes that would cause the boundaries to change. (Hearing)

23. Ms. Martin stated that DEQ has a copy of the numerical model used to define the boundaries in the petition and that DEQ would make that resource available to applicants. (Hearing)

24. After reviewing the information in the Petition and supporting documentation within the DNRC's files, and after considering all testimony and evidence presented at the hearing, the DNRC finds the public health, safety, or welfare requires a corrective control to be adopted, and finds the facts alleged in the Petition as required by Mont. Code Ann. § 85-2-506(2) are true and the Petition and documentation support the establishment of a controlled groundwater area.

The DNRC finds that the water underlying the contaminant plume in the shallow aquifer is not suitable as a potable water source and is a human health risk. The DNRC finds that improperly constructed wells and excessive groundwater withdrawals from the aquifer lying within the exterior boundaries of the proposed controlled groundwater area may cause contaminant migration. The DNRC finds that the establishment of a controlled groundwater area would require future water users to apply for and receive a permit before drilling of new groundwater wells. The DNRC finds that preventing future drilling of wells into the contaminated aquifer within the landfill-facility and contaminant plume in Zone 1 and buffer-zone in Zone 2, without first applying for and receiving a water use permit or authorization to change, will prevent the potential ingestion of the contaminant and prevent further contaminant migration as a result of pumping from new wells (File, Hearing, Bill Uthman memo November 8, 2002).

Based upon the foregoing Findings of Fact, the Hearings Examiner makes the following:

CONCLUSIONS OF LAW

1. The DNRC has jurisdiction over the parties and over the subject matter herein. Mont. Code Ann. §§ 85-2-506 and 507.

2. The DNRC gave proper notice of the hearing and substantive and procedural requirements of law or rule have been fulfilled. See Findings of Fact 1, 2, 3, 4, 5, & 6.

3. Mont. Code Ann. §§ 85-2-506 and 507 provide for the designation of controlled groundwater areas by the DNRC.

4. The law allows the DNRC, and there is sufficient evidence, to designate a controlled groundwater area in the vicinity of the former Bitterroot Valley Sanitary Landfill (BVSL). All relevant boundaries, locations, legal descriptions, and land features have been designated on the accompanying map shown as Exhibit 1 to this Order. The controlled groundwater area, as designated on the Exhibit 1 map, includes the BVSL historic waste disposal pit and any place within the BVSL historic waste disposal pit where hazardous or deleterious substances have come to be located, the contaminant plume from the BVSL historic waste disposal pit eastward to the Bitterroot River, and the surrounding area within the 328 acres where pumping of groundwater may induce migration of the contamination. The proposed controlled groundwater area includes two separate zones. In Zone 1, water in any aquifer unit is not suitable for potable uses and high yield non-potable uses may cause the contaminant to migrate. Zone 2 is the buffer zone area adjacent to the contaminant plume. According to the DEQ, the contaminant is not present in Zone 2 but pumping restrictions are requested in the two upper-most aquifer units in Zone 2 to prevent the contaminant from migrating. The controlled groundwater area includes the areas located within the 328 acres having the following legal description: S1/2 & SENE Section 31 T8N R20W; N1/4 Section 6 T7N R20W; W1/2W1/2 Section 32 T8N R20W (portion west of the Bitterroot River); W1/2NW1/4 Section 5 T7N R20W (portion west of the Bitterroot River). Only the 328 acres located within the mapped boundary, and not the entire legal description area, is included in the controlled groundwater area. See Findings of Fact 7,10,16,18 & 19; Mont. Code Ann. § 85-2-506(2), 507.

5. The law allows the DNRC, and there is sufficient evidence, to prevent drilling of all wells for any new groundwater uses or to change a groundwater use, within any groundwater aquifer which lay wholly, partially, or overlies one another within the exterior boundaries of the controlled groundwater area as shown on the Exhibit 1 map, without first applying for and receiving a Beneficial Water Use Permit or Authorization to Change from the DNRC, until such time that the groundwater within the aquifer is restored to appropriate standards. See Findings of Fact 2, 4, 7, 8, 9, 11, & 19.; Mont. Code Ann. § 85-2-506,507

6. The law allows the DNRC, and there is sufficient evidence, to require that no potable water wells may be drilled within any aquifer unit within Zone 1 as shown on the accompanying Exhibit 1 map. See Findings of Fact 4, 7, 8, & 13; Mont. Code Ann. §§ 85-2-506, 507.

7. The law allows the DNRC, and there is sufficient evidence, to allow wells for water use for irrigation or swimming pools within any aquifer unit in Zone 1 if the applicant can demonstrate to the DNRC

that the well will not contribute to expansion of the Plume Boundary as designated on the Exhibit 1 map accompanying this order. See Findings of Fact 4, 7, & 12. ; Mont. Code Ann. § § 85-2-506, 507.

8. The law allows the DNRC, and there is sufficient evidence, to allow all types of water uses from groundwater wells that yield 35 gpm or less that are screened to a depth of 200 feet or less below ground surface in Zone 2 as designated on the Exhibit 1 map. See Findings of Fact 4, 8, 18, & 21. ; Mont. Code Ann. §§ 85-2-506, 507.

9. The law allows the DNRC, and there is sufficient evidence, to allow wells in Zone 2, as shown on the Exhibit 1 map, that have no flow rate or use restrictions if they are wells drilled and screened at a depth greater than 200 feet below ground surface. See Findings of Fact 18 & 21. ; Mont. Code Ann. § § 85-2-506, 507.

10. The law allows the DNRC, and there is sufficient evidence, to require that all wells permitted for installation must be constructed in a manner that prohibits the contaminant from using the casing of the well as a migration pathway to another aquifer. See Findings of Fact 4, 7, 8, 9, 11, 13, & 17. ; Mont. Code Ann. §§ 85-2-506, 507.

11. The law allows the DNRC, and there is sufficient evidence to require that, in addition to any permit application materials, that the applicants employ a groundwater modeler, that the modeler should have sufficient numerical modeling experience and should have practiced in that field, and that the applicant provide the results of the numerical modeling with particle tracking sufficient to demonstrate to the DNRC how a well would not cause contaminant migration. See Findings of Fact, 7, 8, 9, 10, 18, 19, 20, & 23.

12. By administrative rule, testing wells and monitoring wells do not presently require a permit from the DNRC, as stated in the ARM §36.12.106. However, any such wells must be installed in accordance with ARM 36.21.801-810. See Findings of Fact 4 & 13. No statute or rule allows the DNRC to exempt remedial wells beneficially using water from the permitting requirements of the Water Use Act. Mont. Code Ann. §§ 85-2-301,302,306.

Based upon the foregoing Findings of Fact and Conclusions of Law, the Hearing Examiner makes the following:

ORDER

1. A controlled groundwater area is designated for the Bitterroot Valley Sanitary Landfill Site (BVSL) as shown on the Exhibit 1 map accompanying the Order. The controlled groundwater area shall include the BVSL historic waste disposal pit and any place within the BVSL historic waste disposal pit where hazardous or deleterious substances have come to be located, the contaminant plume from the BVSL historic waste disposal pit eastward to the Bitterroot River, and the surrounding area within the 328 acres where pumping of groundwater may induce migration of the contamination. The proposed controlled groundwater area shall include two separate zones. In Zone 1,

water in any aquifer unit is not suitable for potable water uses and is not allowed. In Zone 1, non-potable water uses are allowed but applicants must demonstrate that the use of the well will not cause the contaminant to migrate. Zone 2 is the buffer zone area adjacent to the contaminant plume. In Zone 2 pumping restrictions are required in the two upper most aquifer units to prevent the contaminant from migrating. The area includes 328 acres located within the following legal description: S1/2 & SENE Section 31 T8N R20W; N1/4 Section 6 T7N R20W; W1/2W1/2 Section 32 T8N R20W (portion west of the Bitterroot River); W1/2NW1/4 Section 5 T7N R20W (portion west of the Bitterroot River). Only the 328 acres located within the exterior boundary shown on the Exhibit 1 map, and not the entire legal description area, is included in the controlled groundwater area.

2. No well may be drilled, for any water use, with the exception of wells designated as testing and monitoring wells as allowed in 36.12.106 ARM, within the boundary of the controlled groundwater area, without first applying for and receiving, a Permit To Appropriate Water, a Change of Use Authorization, or an authorization to drill a well to evaluate aquifer properties, from DNRC.
3. No potable water wells may be drilled in any groundwater aquifer that underlies the area within Zone 1 as shown on the Exhibit 1 map.
4. Wells for non-potable water use for irrigation purposes and swimming pool use may be drilled within any aquifer unit within Zone 1 if the applicant can demonstrate to the DNRC that the well will not contribute to expansion of the Plume boundary as designated on the Exhibit 1 map accompanying this order.
5. Within Zone 2, wells that are screened at a depth of 200 feet or less below ground surface are allowed if the yield is 35 gallons per minute or less. Well screens shall be constructed in accordance with A.R.M 36.21.652.
6. Within Zone 2, all water yields and uses are allowed if the well is drilled and screened to a depth of greater than 200 feet below ground surface. Well screens shall be constructed in accordance with A.R.M 36.21.652.
7. Before DNRC will grant a Water Use Permit, Change Authorization or authorize drilling of a well to provide additional information for an application, within the boundary of the controlled groundwater area, the applicant must provide clear and convincing evidence that the well will be constructed in a manner that prohibits the contaminant from using the well as a migration pathway to another aquifer, information showing that the proposed well driller possess a valid Montana Well Drillers License, and evidence that the

proposed well driller has experience drilling wells in State Controlled Groundwater Areas or Federal Superfund sites.

8. Authorization will not be required for wells requested, directed, and approved by DEQ within the boundaries of the controlled groundwater area, when used for testing and monitoring water quantity and quality. Wells must be installed in accordance with ARM 36.21.801-810
9. In addition to requirements of the Montana Water Use Act (85-2-101 et.seq.) the application for Beneficial Water Use Permit or Change of Use Authorization must demonstrate how the applicant will meet all the conditions of this order.
10. If after review of the application, the DNRC determines that a well must be drilled to conduct aquifer evaluations to prove physical and legal availability or to determine potential for migration of the contaminant plume, the DNRC may authorize the drilling of such a well in writing to the applicant.
11. Tests conducted to determine the potential for migration of the contaminant plume must monitor the water level in the pumping well and the water level in an observation well oriented toward the plume, and the influence of the pumping well must be measured in the observation well. Results of the test must provide, at a minimum, values for transmissivity and storativity in the area of the well that will be used in the numerical model.
12. Water Use Permit applications and Change of Use applications for wells that must demonstrate that the use of water from the well will not contribute to expansion of the plume boundary, must provide the tabular and graphical results of numerical modeling with particle tracking algorithms and must evaluate whether capture of particles would occur in the applicant well. The model results must use accurate aquifer properties in the area where the well would be placed and accurate aquifer properties for the surrounding area that may be influenced. The applicant must supply the name and qualifications of the groundwater expert who modeled the potential migration of the plume of contamination.
13. The DNRC may require any other specifications and information deemed necessary by the DNRC to ensure the conditions of the controlled groundwater area Order are met.
14. All new wells, including wells for testing, monitoring or remediation within the controlled groundwater area must also be installed in accordance with the appropriate well construction standards as described in Administrative Rules of Montana 36.21.801-810.
15. All new wells, including wells for testing, monitoring, or remediation, that are drilled within the controlled

groundwater area, in addition to any other requirements, must be reported to the DNRC within 60 days of completing the well. Reports must be on a form provided by the DNRC or in the form of a letter to the DNRC and must include the well log, the name of the applicant, the DNRC water right permit or change authorization number, the name of the driller, the legal location of the well, map showing location of the well, the Zone the well was drilled in, and all well construction standards that were incorporated to prevent contaminants from using the well as a migration pathway to another aquifer unit.

16. When groundwater within the controlled groundwater area has been restored to acceptable conditions the controlled groundwater designation can be lifted or reduced in size.

APPEALS

The DNRC Order may be appealed in accordance with the Montana Administrative Procedures Act by filing a petition in the appropriate court within 30 days after service of the Order. If petition for judicial review is filed, the DNRC will transmit a copy of the tape of the oral proceedings to the district court along with documentary evidence in the file. If a party to the proceeding elects to have a written transcript prepared, that party may purchase the tapes and have a transcript prepared.

Dated this 9th day of February, 2004.

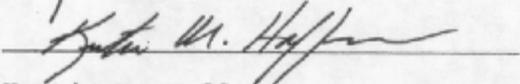
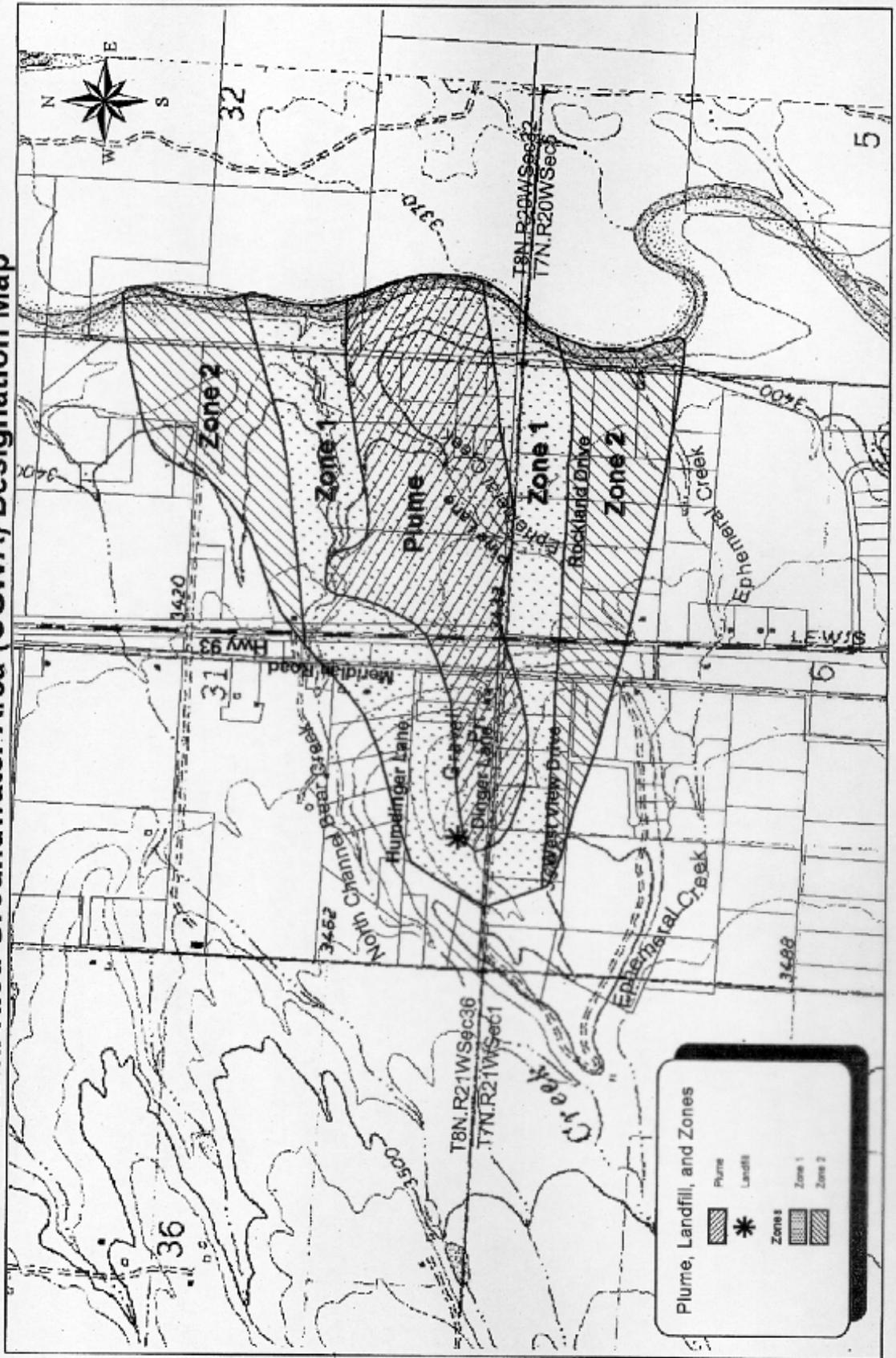

Kurtis M. Hafferman
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Exhibit 1: Bitterroot Valley Sanitary Landfill Controlled Groundwater Area (CGWA) Designation Map



Plume, Landfill, and Zones

	Plume
	Landfill
Zones	
	Zone 1
	Zone 2