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September 1, 2011

Via Hand Delivery

Kent L. Jones, P.E.  
Utah State Engineer  
Utah Division of Water Rights  
1594 West North Temple, #220  
Salt Lake City, UT 84116-3156

Re: Water Right No. 57-10319  
Change App. No. a28547  
County: Salt Lake  
Applicant: William S. Hoge  
c/o Daniel A. Jensen

Water Right No. 57-10318  
Change App. No. a28546  
County: Salt Lake  
Applicant: Marvin A. Melville  
c/o Daniel A. Jensen

Water Right No. 57-10315  
Change App. No. a28537  
County: Salt Lake  
Applicant: The Butler  
Management Group  
c/o Daniel A. Jensen

Water Right No. 57-10317  
Change App. No. a28545  
County: Salt Lake  
Applicant: Judith Maack

Water Right No. 57-10316  
Change App. No. a28541  
County: Salt Lake  
Applicant: Mark C. Haik  
c/o Daniel A. Jensen

Water Right No. 57-7800  
Change App. No. a28548  
County: Salt Lake  
Applicant: Kevin Tolton

Dear Mr. Jones:

This office represents the Salt Lake City Public Utilities Department and Metropolitan Water District of Salt Lake & Sandy. As you know, a protest hearing was held regarding 2 of the above change applications, a28545 (applicant: Judith Maack) and a28548 (applicant: Kevin Tolton, M.D.). The hearing officer provided an opportunity for supplementation of the record. We are grateful for

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that opportunity. Our goal is full submission of relevant materials and authority with a minimization of repetition.

**Additional information regarding impairment of existing rights.**

We enclose a copy of those portions of the Drinking Water Source Protection Plan (Rev. 2005) for Salt Lake County Service Area #3 (SLCSA3) and Town of Alta (TOA), prepared by Aqua Engineering, that discuss geology and the methodology for the delineation of protection zones. As discussed at the hearing, zone II for SLCSA3 and TOA encompasses the proposed PODs and POU's described in the subject change applications. It is clear that a complex network of fissures, faults, cracks, etc. move water from Albion Basin to Wasatch Drain Tunnel and Bay City Mine, critical sources of water for SLCSA3 and TOA. We highlight in particular one sentence of the Drinking Water Source Protection Plan:

The delineation boundaries for each of the mine tunnels and springs were defined on the basis of outcrop patterns for the rock units intersected by the tunnel or beneath or upgradient to a spring, the surface traces of known faults or fracture systems, watershed mapping and the relative elevation of the tunnel or spring collection systems.

We commend to your review the testimony of Keith Hansen with this information about geology in mind. Because the mother right to the subject changes is a certificated ground water right and because the proposed changes would constitute a new demand on the limited water resources in the top of the watershed, the changes must be junior to existing rights. Under Utah law, a party can generally change the point of diversion, place of use or purpose of use for a water right without affecting the priority of the water right. See Utah Code Ann. § 73-3-3(8)(b). However, there is a well recognized exception to this general rule. In *East Bench Irr. Co. v. Deseret Irr. Co.*, 271 P.2d 449 (Utah 1954), the court explained that a change cannot impair the vested rights of subsequent appropriators:

The appropriator is entitled to have the stream conditions maintained substantially as they existed at the time he made his appropriation. This applies equally to senior and junior appropriators; the junior appropriator initiates his right in the belief that the water previously appropriated by others will continue to be used as it is then being used, and therefore has a vested right, as against the senior, to insist that such conditions be not changed to the detriment of his own right. This applies specifically to a change in place

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of use or diversion the effect of which will be to injure the holders of established rights. It is therefore a condition precedent to the right to make any change in diversion, place of use, or character of use, that the rights of existing water users be properly safeguarded from injury resulting from the change.

*Id.* at 454 (citation omitted). To say the subject changes cannot adversely impact existing rights - even existing rights based on later priority mother rights - is exactly the same as saying the proposed changes are junior to existing rights.

This principle is reflected in the history of this very right, of course. The Certificate of Change issued by the State Engineer as to the subject mother right unambiguously stated that the priority of the certificated change is September 25, 1962. See Certificate No. a-702, dated May 24, 1971.

**Additional information regarding the natural stream environment.**

We enclose a copy of the Declaration of John D. Skalbeck, Ph.D. summarizing his concerns that implementation of the proposed changes would adversely impact important and sensitive wetlands in Albion Basin, including one wetland that is particularly unique.

**Additional information regarding whether applicants are the appropriate persons entitled to the use of water under the mother right, as required by 73-3-3.**

There is an error in our protest letter regarding the origin of the portion of the Morse Decree South Despain right (.25 cfs first primary) that is allegedly the mother right for the subject change applications. Applicants claim to be somewhat distant successors to George Despain, but not DeBart Despain as indicated in error in our protest letter. This error has no impact to the point we made there, but, we do regret the error.

Our protest letter made the point that the Morse Decree award to South Despain Ditch was not partitioned as to the 4 families that owned lands under the ditch as of the time of the Morse Decree, nor is place of use described in the Morse Decree, of course. Our title search reveals that George Despain's interest in this water right passed at every step in the chain of title as an appurtenance. At an early point in the chain of title there appears to have been an assumption that each of the original 4 families acquired an equal 25% interest in the Morse

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Decree South Despain Ditch award. That is not supported by anything in recorded documents that we can locate. The 4 original families each owned different amounts of acreage as of the date of the Morse Decree, and it is unclear how much acreage each family irrigated as of the time of the Morse Decree. Please refer to Exhibit 5, previously provided, created by our title searcher Rod Dean. It may be tempting to reach for the practical here, but the truth is there is no recognized legal principle to support the notion that an assumption that George Despain's successors own 25% of the Morse Decree right makes it so.

The Morse Decree award is to "South Despain Ditch" only. The 1934 Contract parties retained undivided interests in the 7,500 gpd winter culinary entitlement. These undivided interests of multiple owners are held in tenancy in common.

Black's defines "tenancy in common" as:

A form of ownership whereby each tenant (i.e., owner) holds an undivided interest in property. . . .

Interest in which there is unity of possession, but separate and distinct titles. The relationship exists where property is held by several distinct titles by unity of possession, and is not an estate but a relation between persons, the only essential being a possessory right, **as to which all are entitled to equal use** and possession.

Black's Law Dictionary, 6<sup>th</sup> Ed. (1991)(emphasis added). When one owner is not using his or her share, the others presumably have the right to use, the same as shareholders in a mutual irrigation company.

As another treatise states:

In general, a tenancy in common is created whenever property is owned concurrently by two or more persons under a conveyance or under circumstances which do not either expressly or by necessary implication call for some other form of cotenancy. [. . .] **The members of a voluntary unincorporated association own as tenants in common property held in the name of, or for the use of, the association.**

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86 C.J.S. Tenancy in Common § 6, citations omitted.

The applicants' interest is defined and constrained by the ownership interests of all other successors in interest to the other four tenants in common. 86 C.J.S. Tenancy in Common § 151, citing *Rocky Mountain Stud Farm Co. v. Lunt*, 46 Utah 299, 151 P. 521 (1915).

The subject change applications stand to affect the undivided rights of all other tenants in common in the South Despain Ditch Morse Decree award and in the 7,500 gpd winter culinary entitlement. As such, just as the State Engineer requires a water company to approve a shareholder change application on a company water right, or the sign off of all right owners in a supplemental water right group, so too should he require the signature of all current tenants in common.

**Additional information regarding road access.**

Pursuant to the 1981 Wasatch-Cache Forest Travel Plan (as updated and referenced periodically since), with limited exception, winter vehicular access across United States Forest Service (USFS) lands into Albion Basin is prohibited. See USFS Decision Notice and Finding of No Significant Impact re: Albion Basin Winter Travel Management Plan Amendment, dated March 28, 2007, enclosed, and Decision on Appeal re: Same, dated July 5, 2007, enclosed.

While applicants vaguely allege there is a public right of access to their property under Revised Statute 2477 or a private right of access by historic chain of title, both approaches have been asserted to no avail.

By 2007 Order of the U.S. District Court in a case brought by applicants' affiliates, applicants may not assert an RS2477 claim in their individual capacities, or an action for title to public roads as private citizens. See *Crawford v. United States Forest Service*, 2:07-CV-146 and 106, enclosed. The court there held that any claim to a public road right-of-way across federal lands under RS 2477 must be asserted by the state, county, or other appropriate subdivision of the state, citing *SW Four Wheel Drive Ass'n v. United States BLM*, 363 F.3d 1069 (10th Cir. 2004) ("[m]embers of the public ... do not have a 'title' in public roads," and therefore cannot meet the requirements of [the Quiet Title Act]"; see also, *Kinscherff v. United States*, 586 F.2d 159, 160 (10th Cir.1978).

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As a part of the amendment to the 2005 Winter Travel Plan, USFS requested, received, and evaluated submitted title materials germane to an alleged private access right across USFS lands. As indicated in the enclosed USFS letter dated August 31, 2010, after reviewing the materials, USFS could not conclude there was such a private right of access.

**Comment regarding enlargement of the claimed rights.**

The following is repetitive, but we had a request on behalf of an applicant to restate the math that follows.

The only claim applicants have to winter water is the right to receive, in common with others, an undivided portion of 7,500 gpd of "culinary water" from a pipe off the Murray Penstock, as described in the 1934 contract between the South Despain water right holders and Salt Lake City. George and Prudence Despain were 1 of 5 families that held the winter 7,500 gpd Murray Penstock culinary entitlement under the 1934 Contract. Assuming for a moment that the alleged successors of George and Prudence are entitled to an equal segregated portion:

$$7,500 \text{ gpd} \div 5 \text{ families} = 1,500 \text{ gpd of winter water available to George and Prudence Despain}$$

Of course, each of the 6 applicants claim to hold an equal portion of this George and Prudence Despain winter culinary entitlement, which is:

$$1,500 \text{ gpd} \div 6 \text{ applicants} = 250 \text{ gpd of available winter culinary water per applicant.}$$

TOA and Salt Lake Valley Health Department (SLVHD) ordinances require that applicants have a minimum of 400 gpd in source and right, 365 days a year, for each of the proposed homes before a building permit can be issued. See the Summary of Regulatory Issues enclosed.

But the math gets much worse for applicants. Historic culinary uses at the mouth of the canyon returned to the creek, or aquifer, something like 85% of the water that was diverted. The return flow satisfies other water rights. The large majority of Little Cottonwood Creek water rights have PODs below the mouth of the canyon. State statutes and regulations, county

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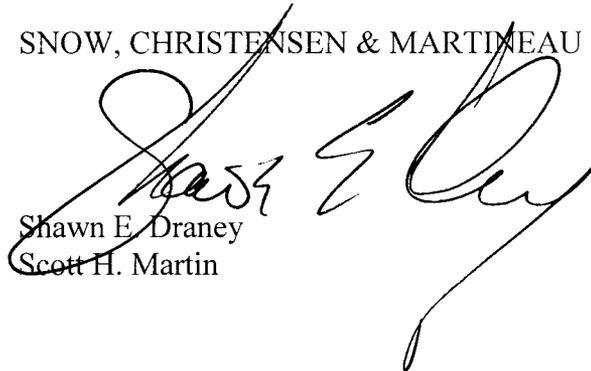
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ordinance, SLVHD ordinance, TOA ordinance, and the right of other water users to be unimpaired as to water quality, compel the conclusion that the proposed uses will require a sewer system connection. See Summary of Regulatory Issues enclosed. The point here, of course, is that the proposed hereafter uses will be completely consumptive. The State Engineer has always reduced diversion as necessary to prevent enlargement of consumption. That math for the subject change application is:

250 gpd available winter water per applicant x .15 (portion historically consumed) = 37.5 gpd available winter water consumption per applicant.

Sincerely,

SNOW, CHRISTENSEN & MARTINEAU



Shawn E. Draney  
Scott H. Martin

SED:sd

Enclosures

cc: Salt Lake City Public Utilities  
Metropolitan Water District of Salt Lake & Sandy

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Salt Lake County  
Protection Plan

**SALT LAKE COUNTY SERVICE AREA #3**

**AND**

**THE TOWN OF ALTA**

**DRINKING WATER SOURCE**

**PROTECTION PLAN**

Prepared for:

**SALT LAKE COUNTY SERVICE AREA #3**

**P.O. Box 920067**

**Snowbird, Utah 84092**

and

**THE TOWN OF ALTA**

**P.O. Box 8016**

**Alta, Utah 84092-8016**

Prepared by:

**AQUA ENGINEERING, INC.**

**2600 South 533 West – Suite 275**

**Bountiful, Utah 84010**

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### 2.2.3 Geologic Setting of the Wasatch Drain Tunnel

The tunnel begins in the Mineral Fork tillite. As the tunnel extends to the northeast it is moving stratigraphically up section and through the Tintic Quartzite, Ophir, Maxfield Limestone, Deseret and Gardison formations. Structurally, the tunnel begins on the lower plate of the Alta overthrust systems. The Alta Thrust fault is a large structural feature in the Wasatch Drain Tunnel. It strikes northwest and is broken by post thrust faults in numerous places within the tunnel. The tunnel also intersects the Howland and Snow fault systems.

Geologic mapping of the Wasatch Drain Tunnel provides information that indicates that water is coming into the tunnel from fractures and along some possible bedding planes (see Figures 2.1 through 2.3). The fractures may vary in intensity from a simple joint or cleavage with no visible displacement to substantial faults with wide shear zones and substantial fracture zones that extend several feet away from the core of the fault. Displacement along the fault may be several hundred feet. These fractures and faults are the conduits for groundwater movement in the Wasatch Drain Tunnel. This observation is consistent with groundwater occurrences in underground mine workings in the Park City and Big Cottonwood Mining districts (personal observations). Flow along the top of certain confining or impermeable layers is mapped in the tunnel. Water flowing from features that resemble bedding have been seen in underground mine workings. The Spiro Tunnel in Park City is another good example. Water flows along the top of a gypsum rich horizon in the Woodside formation. The water then flows from the rocks out of what appears to be a bedding feature (personal observation).

Because water can flow from rock formations as well as large fault or fractures it is important that these features must be protected and included within the delineation zones. In some circumstances, the delineation zone must extend into an adjacent drainage across surface water divides in order to secure the structure or formation. This also can account for the very large delineation zones that extend a substantial distance from the area directly over the Tunnel.

The Wasatch Drain Tunnel is located very near the main drainage in Little Cottonwood Canyon about 9 miles from the Salt Lake Valley. The tunnel was driven in a northeasterly direction for about 6,000 feet where it intersected the Alta Thrust. The Tunnel extends in a northwesterly direction for over 4,000 feet and crosses beneath the surface divide and into Big Cottonwood Canyon. It opens up onto the surface in South Mill D Fork of Big Cottonwood Creek north of Flagstaff Mountain. It is accessed for use by Service Area #3 through a decline from a parking lot down to the elevation of the Tunnel. Inside the tunnel, a large steel bulkhead has been constructed to damn the water flow from the tunnel.

## 2.3 GEOLOGIC SETTING OF THE DWS FOR THE TOWN OF ALTA

### 2.3.1 Geologic Setting of the Bay City Mine Tunnel

Mapping of underground workings indicates that the tunnel begins in the upper Ophir formation and is in that formation for only a hundred feet or so. The remaining part of the tunnel is in the Maxfield formation except for one working in the western part of the tunnel, which may be in the Fitchville formation. It is not clear from the data available.

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- The tunnel was originally driven to explore the deep extension of the known ore bodies mined from higher elevations in the Emma Mine. The Bay City, Montezuma, Hiawatha faults and the Reed and Benson thrust fault are the significant structures in the tunnel.

The tunnel is located on the northerly side of the road adjacent to a large parking lot in the Town of Alta. Access to the tunnel is through a steel culvert in the Bay City Mine Building also known as the Town of Alta Water System Building. The tunnel extends into the mountain over 1700 feet, providing access to the lowest workings in the Emma Mine. A shaft extends below the tunnel a little over 300 feet (Calkins & Butler, 1945 at page 122). Workings driven off of the shaft encountered heavy water flows. When the mine was shut down, the levels were allowed to flood. It is from the Bay City shaft that the water is collected for the Town of Alta. Figure 2.13 is a picture of the Bay City Mine Building.

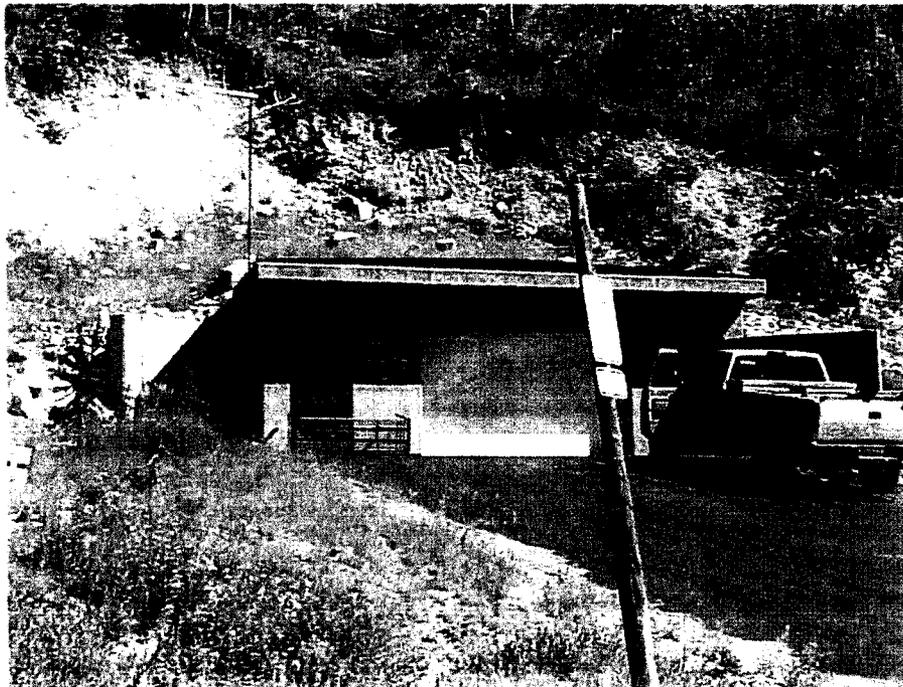


FIGURE 2.13  
BAY CITY MINE BUILDING PHOTOGRAPH  
DESC: Looking north from State Highway 210 on to the Bay City Mine Building.

## 2.4 CONSTRUCTION DATA FOR SERVICE AREA #3 DWSs

### 2.4.1 Construction Data – Peruvian Mine and Spring

The Peruvian Mine Tunnel is typical of most mine tunnels constructed over 100 years ago being low and narrow. The water collection system consists of a concrete bulkhead located near the portal of the tunnel. Water fills up the mine behind the bulkhead and flows through a transmission pipeline to a tank located lower in the valley. The spring collection system

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was constructed of perforated collection piping and a manhole connected to the transmission pipeline. The combined flow from the tunnel and spring is chlorinated prior to entering the 125,000-gallon tank and distribution system.

#### **2.4.2 Construction Data – Gad Valley Spring**

The Gad Valley Spring collection system consists of a vertical standing concrete manhole with a cement bottom. The perforated laterals come into the manhole draining water from the spring. Water rises up the manhole then flows out through a PVC pipe to the distribution system.

#### **2.4.3 Construction Data – Wasatch Drain Tunnel**

The Wasatch Mines Company undertook the Wasatch Drain Tunnel construction in 1916. The water is collected for use in the service district water system as it fills the Drain Tunnel and associated workings behind a steel bulkhead. Water has filled the area behind the bulkhead to an elevation approximately 300 feet higher than the bulkhead. Groundwater, under pressure, is collected as it passes through the bulkhead. It then flows through a treatment system designed to remove lead, cadmium, manganese, and iron. The bulkhead and pipes are made of steel with the bulkhead being grouted in place.

Due to the construction of the collection system and bulkhead, the flow from the tunnel is relatively controlled. The flow is directly related to the elevation of the water surface in the flooded parts of the mine. Water that is not collected for treatment and distribution, bypasses the treatment plant and is discharged into Little Cottonwood Creek.

### **2.5 CONSTRUCTION DATA FOR THE TOWN OF ALTA DWS**

#### **2.5.1 Construction Data – Bay City Mines Tunnel**

In 1995 the Town of Alta undertook a major water renovation project, which included the building of a concrete water building, placement of a steel culvert in the portal of the mine shaft, and a water pipeline replacement within the tunnel. The first sixty feet of the tunnel consists of a 72" diameter steel culvert. Once through the culvert, it takes on an appearance typical of a mine tunnel driven in the 1870's. It is narrow with not much headroom and the ground is generally good and stands with little support. The walls consist primarily of block white limestone. The water pipeline is located along and near the floor adjacent to the left rib going up the shaft. At the end of the tunnel, the pipeline drops down a vertical shaft for 200 feet. At this elevation submersible pumps are attached to the pipeline which supplies water to a 365,000-gallon reservoir located northwest of the mine entrance.

### **2.6 AQUIFER DATA**

The sedimentary and igneous rocks found in the study area generally have good aquifer characteristics. That is, most of the rock types found in the study area visibly exhibit rock

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strength characteristics that appear to enable the rock units to maintain open fractures or apertures. These characteristics can be changed due to contact or low-grade metamorphism and compressive stresses brought about by faulting or folding. Shale units in the Doughnut and Mineral Fork Tillite may form stratigraphic barriers to groundwater movement. Certain rock units may form barriers to groundwater movement if metamorphism of the rock changes its characteristics from being brittle and having the ability to maintain open fractures to a softer more plastic material that won't maintain fractures.

Faults forming with limestone, shale and dolomites on one or both sides of the fault would most likely form gouges that are impermeable to water movement. However the fracture zones around these faults may well be conduits for groundwater movement parallel to the fault zone. Highly silicious rocks such as those found in the Tintic quartzite, will generally not form impermeable gouges. Drill holes into faults located in the Weber Quartzite in Park City and observations of mineralized veins in the Tintic Quartzite in mines in Eureka have largely unconsolidated sandy detritus-like material forming the core of the fault (personal observations). These faults are highly permeable conduits for groundwater movement both across and adjacent to the core of the fault zone.

A good understanding of the aquifers that supply water to the four sources mentioned in this report begins with an understanding that most of the water produced is from faults, fractures, joints and pore spaces in the rocks that are all interconnected in a vast network of permeable zones. The amount of water produced from a mine tunnel is dependent upon the lateral extent of the tunnel, the extent of the faults and fractures it intercepts, the permeability of the faults and fractures and the ability of the bedrock the tunnel is constructed in to maintain an open permeable fracture.

As spring runoff from snow melt and rain flows across the surface of the ground, a certain amount of it enters the ground. This amount is dependent upon all of the factors mentioned above. It is important for the water system operator to understand that as water flows across the ground it may in the future be part of the waters flowing from one of the sources described in this report. As this water is flowing on the surface, any contaminants that it encounters may also be carried into the network of permeable features that supply water to one of the system sources.

## 2.7 HYDROGEOLOGIC METHODS AND CALCULATIONS

The current statutes provide for two methods to calculate the PZs. For the source of groundwater for the Service Area #3 and the Town of Alta, the Preferred Method of delineation was chosen because it uses the hydrogeologic conditions of the area to determine source protection boundaries. The Optional Two-Mile Method is much too general and would have created extremely large protection areas that would be difficult to manage.

Some groundwater modeling techniques assume the aquifer is a homogenous medium through which water flows uniformly from areas of recharge to areas of discharge. In the case of the fractured bedrock aquifers that supply water to the DWSSs, water moves predominantly along fractures and bedding features oriented at different angles. This type of groundwater system does not lend itself to conventional groundwater modeling techniques because of the highly variable nature of the water-bearing fractures. The ability to predict and model this type of flow regime is difficult. Guidance states that the minimum dimension of the DWSP zone should be at

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least 100 times the average fracture spacing for the aquifer to behave as a “pours-media-equivalent”. With distances between major fracture zones in the areas of the sources being on the order of several hundred feet, it is unlikely that any numerical DWSP zone delineation will satisfy these demands.

Based on the characteristics of the bedrock aquifers and fractures systems in the upper Little Cottonwood Canyon area that hosts the groundwater sources that are the subject of this report, the DWSP zones were delineated using hydrogeologic mapping in conjunction with vulnerability mapping.

The delineation boundaries for each of the mine tunnels and spring were defined on the basis of outcrop patterns for the rock units intersected by the tunnels or beneath or upgradient to a spring, the surface traces of known faults or fracture systems, watershed mapping and the relative elevation of the tunnel or spring collection systems. Underground mine workings may cross surface water divides which would require that a protection boundary go beyond the surface water divide to protect it. Under certain conditions, a fault or lithologic unit may extend well beyond the reasonable influence area of the tunnels. In this case, because the fault or rock unit may be supplying water to the tunnels it is vulnerable to contamination that may be carried to it from runoff occurring far from the tunnels. Under conditions like this, the groundwater divides may be represented as being the same as the surface water divides. The vulnerability of a structure or rock unit to potential contamination determines where the boundary is drawn.

The extreme ridges that surround the canyons and watersheds in the area form the surface water divides. The bedrock aquifers and fracture systems that supply water to the groundwater sources outcrop along these ridges. Due to this, it is reasonable to assume that in most cases, the surface water divides also form the groundwater divides in the area.

Figure 2.14 is a Jarvis Decision Analysis Diagram that that has been used extensively in determining delineation boundaries for drain tunnels in the mountains east of Salt Lake City. This diagram addresses the logic in locating the delineation boundary. It first looks at the lithologic units that may contribute water, then looks at the structural fabric of the area. The basis for the logic is that if a fault or fracture zone crosses the tunnels’ path then the entire watershed upstream of the surface expression of this fracture zone must be within the PZs.

### 2.7.1 Zone 1 Protection Boundary

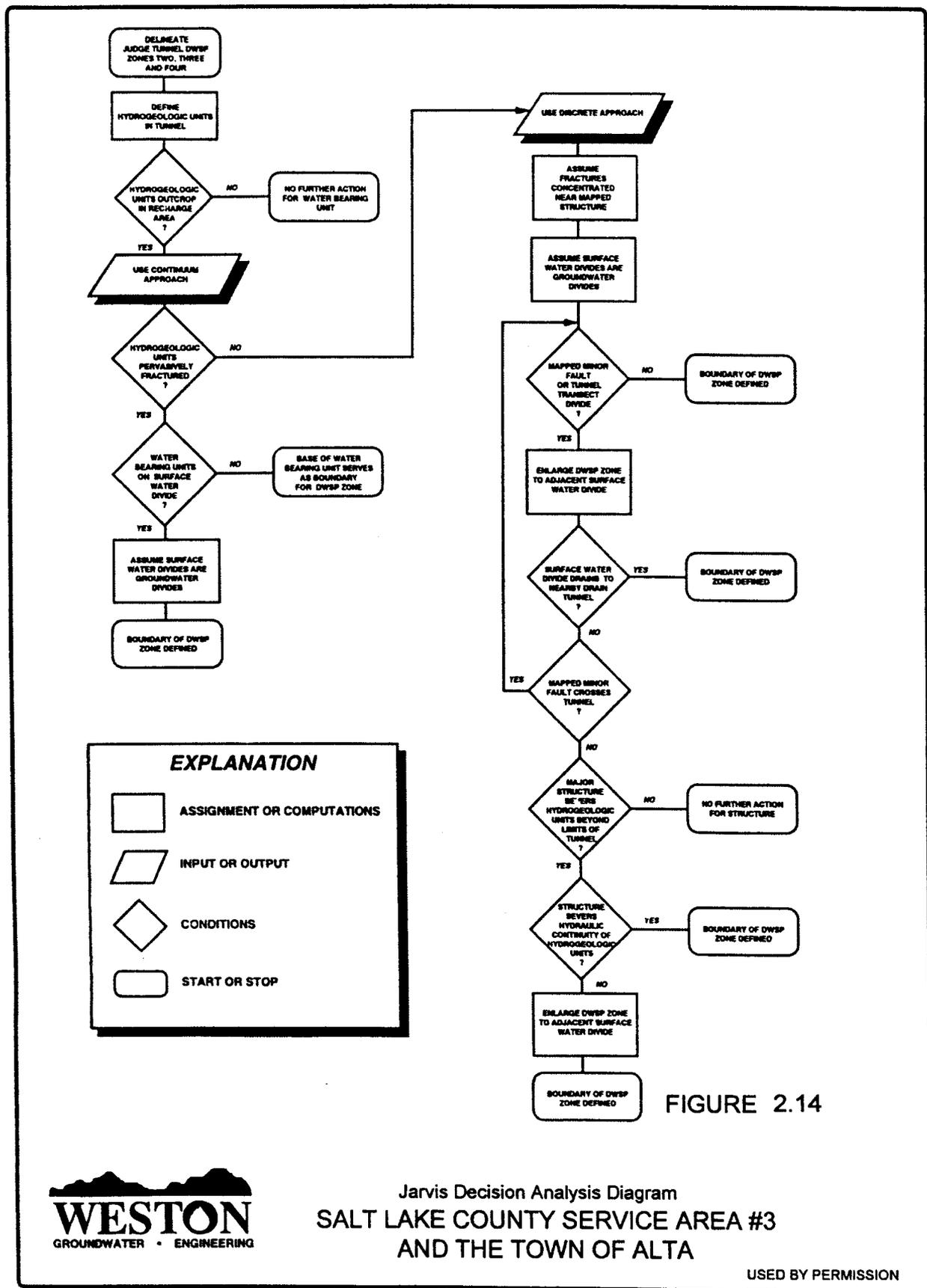
Regulations set the boundary for the Zone 1 protection as a 100-foot radius around a well or collection area for a spring or tunnel. The Zone 1 Boundaries for the Gad Valley spring and Peruvian Tunnel and Spring are somewhat straightforward. That is, a 100-foot radius can be delineated around the margin of the collection system or tunnel portal which represents the PZ.

Zone 1 for the Wasatch Drain is the most complicated of all of the Service Area #3 sources. The collection system for the tunnel consists of a bulkhead that stops the water from flowing uncontrolled out of the mine. The 100-foot zone is completely subsurface, but it may be projected to the surface for management purposes.

A 100-foot zone around the Bay City Mine Tunnel portal is also complicated. The collection

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**EXPLANATION**

- ASSIGNMENT OR COMPUTATIONS
- INPUT OR OUTPUT
- CONDITIONS
- START OR STOP

FIGURE 2.14



Jarvis Decision Analysis Diagram  
 SALT LAKE COUNTY SERVICE AREA #3  
 AND THE TOWN OF ALTA

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area for this source is located in the mine around the collar of the Bay City mineshaft and may be projected on the surface for management purposes.

### 2.7.2 Zones 2 Protection Boundary

According to R309-113-9.(2)(a)(ii), Zone 2 can be delineated by groundwater divides. A zone 2 is defined as a 250-day groundwater time-of-travel to the collection system and is referred to as the attenuation zone. It represents a moderate level of protection and is designed to reduce contamination from microorganisms and some chemicals to levels below standards prior to reaching the tunnel or collection area of the spring. The local hydrogeology coupled with extreme topography allow the assumption to be made that the surface water divides and the groundwater divides are, in most circumstances, one and the same. The extremely fractured bedrock from which the water for the sources flow coupled with the aquifer characteristics for most of the bedrock in the area allows for the relatively rapid inflow of water from spring runoff and storm events. Due to this, flow-through for some of the water that charges these sources is most certainly less than one year.

### 2.7.3 Zones 3 Protection Boundary

Zone 3 is defined as a three-year time of travel to the collection and is referred to as the waiver criteria zone. Zone 3 has not been delineated because all areas outside Zone 1 and inside the surface water divides are managed as Zone 2.

### 2.7.4 Zones 4 Protection Boundary

Zone 4 is defined as the 15-year groundwater time-of-travel to the collection area and is referred to as the remedial action zone. Its purpose is to provide protection to the drinking water source and to afford sufficient time for remediation or the development of a new source in case the source becomes contaminated. Zone 4 has not been delineated because all areas outside Zone 1 and inside the surface water divides are managed as Zone 2.

Figure 2.5 and 2.15 show the PZ boundaries. Zones 3 and 4 have not been delineated and all protection areas outside Zone 1 are proposed to be managed as Zone 2 PZs. This conservative approach was used due to the complex regional geology. The PCSs located in these protection boundaries will be managed to reflect the Zone 2 protection boundary. Strict building and zoning regulations within Little Cottonwood Canyon coupled with the extreme topography serve as important aids in maintaining a groundwater protection program that can reasonably managed to the Zone 2 requirements.

## 2.8 MAP SHOWING BOUNDARIES OF THE DWSP ZONES

Figure 2.15 is a map showing the boundaries of the delineation zones for the groundwater sources for the Service Area #3 and the Town of Alta.

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## 2.9 BOUNDARIES OF THE DWSP ZONES FOR SERVICE AREA #3

### 2.9.1 Delineation Zones for the Peruvian Mine and Spring

Due to the lack of information regarding the Peruvian Mine and Spring, a conservative approach was taken for the delineation. Due to the size of the mine dump at the portal of the tunnel, the tunnel and workings are not considered to be extensive. The boundary begins almost in the main drainage for Peruvian Gulch. It extends about 1500 feet east up the hillside to the ridge just north of Mount Baldy. This is also the protection boundary for the Wasatch Drain Tunnel. Then moving south along the ridge about 3500 feet to Mount Baldy. The boundary then extends to the southwest about 3300 feet along the ridge that marks the top of Peruvian Gulch to 10,992 Peak. The boundary then extends northwesterly along the ridge between Gad Valley and Peruvian Gulch a distance of about 3500 feet. This ridge also marks the northeastern boundary of the Gad Valley PZs. The boundary then extends down the hill along a small ridgeline with Peruvian Gulch a distance of about 3000 to the collection system. The Protection Boundary is about 5000 feet wide at its widest point.

### 2.9.2 Delineation Zones for the Gad Valley Spring

The boundary begins at the collection system for the Spring about half way from the valley floor to the ridge above Gad Valley. The boundary extends southeasterly about 2000 feet to the ridge that separates Gad Valley and Peruvian Gulch. This is also the boundary for the PZ for the Peruvian Gulch source. The boundary extends along that ridge about 3300 feet to 10,992 Peak. Then along the ridgeline that forms the Salt Lake and Utah Counties boundary line about 4000 feet to Twin Peaks. Then along the ridge that forms the southernmost boundary of Gad Valley a distance of about 3500 feet. Then the boundary lies along the ridge west of the upper reaches of Gad Valley for a distance of about 3000 feet. Then, the boundary occupies a ridgeline internal to Gad Valley that lies in a northeast/southwest direction for about 3500 feet. Then down the hill along a small ridgeline and across Gad Valley Gulch to the Spring Collection System about 4000 feet. The PZs is about 6000 feet across at its widest point.

### 2.9.3 Delineation Zones for the Wasatch Drain Tunnel

The boundary begins at the portal of the Wasatch Drain Tunnel. It then lies along the hillside and ridge northeast of the tunnel for a distance of about 2000 feet. The boundary then is along the ridge that extends southeasterly to Mount Baldy for a distance of about 6000 feet. It is then defined along the southern ridge of the watershed to Sugarloaf Peak a distance of about 4000 feet. The boundary then continues along that ridge, above Devils Castle to 10,864 Peak a distance of about 6000 feet. The boundary then continues along the ridge that forms the easternmost boundary of the watershed to a point on the ridge just south of Lake Catherine, a distance of about 6000 feet. The boundary then follows the ridge to the north about 3000 feet to Mount Tuscany, then about 1500 feet to Mount Wolverine. It then follows the ridge that loops to the north just west of Mount Wolverine to 10,479 Peak. Moving in a northwesterly direction, the boundary occupies the ridge above the Honeycomb Cliffs a distance of 2500 feet or so to the northwest. Turning southwest

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towards Davenport Hill, the boundary occupies the ridgeline a distance of about 3000 feet. Moving then southerly, at first then northerly along the ridge just above the Eclipse Mine in Big Cottonwood Canyon a distance of about 3500 feet. Leaving the Little Cottonwood Canyon Watershed, the boundary moves along a ridge above and east of the Eclipse Mine a distance of about 1500 feet. Then westerly a distance of about 3500 feet to a point on Reed and Benson Ridge. The boundary then occupies a portion of Reed and Benson Ridge for about 1000 feet to the north. Then moving westerly towards the Cardiff Mine, across Mill D South Fork of Big Cottonwood Creek the southwesterly up slope along a break in the topography to the ridge line north of the Regulator Johnson mine the boundary covers a distance of about 7500 feet. The boundary occupies this ridge to the south for about 5500 feet to a point on a ridge near the Gam Preserve Boundary. The boundary then moves easterly and southeasterly down the slope towards the portal of the Wasatch Drain Tunnel a distance of about 8000 feet.

The boundary extends almost 24,000 feet in a northwest southeast direction. It is almost 20,000 feet upstream of the portal of the Wasatch Drain Tunnel. It does not extend downstream of the tunnel except for the 100-foot requirement in Zone 1.

## 2.10 BOUNDARIES OF THE DWSP ZONES FOR THE TOWN OF ALTA

### 2.10.1 Delineation Zones for the Bay City Mine Tunnel

The delineation boundary for the Bay City Mine Tunnel is completely within the boundary for the Wasatch Drain Tunnel. Beginning at the portal of the tunnel and moving northeasterly up the main Alta road a distance of about 1500 feet the boundary turns northerly and travel to the ridge west of Davenport Hill a distance of 2500 feet. The boundary extends for about 2000 feet northwesterly along that ridge to a point southeast of the Eclipse Mine. Then along the ridge south of the Eclipse mine and forming the watershed boundary a distance of about 3000 feet. Then southerly down the hill, adjacent to the flagstaff mine and on the surface of the ground above the Wasatch Drain Tunnel a distance of 4000 feet to the Portal of the Bay City Mine Tunnel. The boundary for the PZs for the Bay City Mine Tunnel is completely within the Little Cottonwood Canyon drainage. The zones are about 4000 feet wide at the widest.

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*Attorneys for Protestants Salt Lake City and MWDSLS*

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**IN THE OFFICE OF THE UTAH STATE ENGINEER**

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PROTEST OF:

Water Right Change Applications:

57-7800 (a28548)

57-10317 (a28545)

DECLARATION OF  
JOHN D. SKALBECK, Ph.D.

Dr. John D. Skalbeck testifies as follows:

**I. Background:**

A. The Albion Basin Generally

The Albion Basin in Alta, Utah, is recognized as a highly valuable component of the Little Cottonwood Canyon watershed. It serves as the critical headwater of the watershed providing many integrated functions such as collecting and storing snow during the winter, filtering nutrients and sediment, and supporting ecological communities, including riparian areas. These wetland functions play a role in watershed health, affecting the overall timing, yield, and quality of the water.

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### B. Albion Basin Background Study

A background study of the Albion Basin was conducted in 2005-2006 as an extension of the Eco-Geographical Study initiated in 2002 by the Friends of Alta, a 30-year old non-profit environmental organization and land trust located in Alta. The background study provides an overview of the local climate, physical setting, hydrology, geology, and wetland characteristics based on the review of existing reports, publications, maps, and other available data specific to the Albion Basin. The background study also provides a foundation for a phased research plan for the Albion Basin.

### C. Albion Basin Ongoing Research

Water level and water chemistry monitoring has been conducted annually from August 2006 to present at three wetland study sites (Albion Basin Fen, Catherine's Pass, and Collins/Sugarloaf) and at Little Cottonwood Creek as part of the phased research plan. The study approach was adapted from wetlands research conducted in Wisconsin (Skalbeck et al. 2009). Summary reports for the background study and annual monitoring phases have been prepared on behalf of Friends of Alta (Skalbeck, 2011, 2010, 2009, 2007; University of Wisconsin-Parkside, 2006). I have performed this monitoring and have prepared such reporting and summary.

## **II. The Water Right Change Applications as Affecting Albion Basin:**

### A. Understanding of Proposed Diversions

The proposed diversions are related to two separate Applications for Permanent Change of Water, referenced above. The Applications request change of points of diversion located along Little Cottonwood Creek at elevations around 5400 and 5600 feet above mean sea level (msl) to points of diversion (9 total from Little Cottonwood Creek, Cecret Lake, unnamed wells, and two underground wells) in Albion Basin at elevations ranging from around 9450 to 9750 feet msl. The diverted water would be piped from the points of diversion to two designated lots located in the Cecret Lake Area of the Albion Basin for fully consumptive residential use. Per Salt Lake Valley Health Department Regulations, the applicants are required to transfer all sewage to a treatment facility. This would result in a permanent loss of water from Albion Basin.

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### B. Location of Albion Basin Fen

The Albion Basin Fen wetland study site is located in the SE ¼ NW ¼ of Sec 9, T3S, R3E SLM at elevations between around 9300 to 9400 feet msl. This wetland site is equipped with piezometers AB-4, AB-5, AB-6 from the Hydrologic Investigations of the Albion Basin studies conducted on behalf of Friends of Alta. The Albion Basin Fen wetland site is located within the lower (northern) portion of the West Albion Basin as delineated by the Jensen (1993) report for Region VIII Environmental Protection Agency and the Town of Alta. The Jensen Report is attached hereto as Exhibit A. This wetland site is down slope and down gradient (for surface water and groundwater) of the proposed points of diversion and places of use.

### C. Uniqueness of Albion Basin Fen

Fens are peat-forming wetlands that receive nutrients from sources other than precipitation such as upslope surface runoff and groundwater. Overall fen acreage nationally declined significantly from 1950 to 1970 due to mining and cropland drainage, therefore remaining fens are rare. It is crucial to protect remaining fens because they provide important watershed benefits including preventing or reducing the risk of floods, improving water quality, and providing habitat for unique plant and animal communities. The Albion Basin Fen is also located on federal land managed by the U.S. Forest Service, Uinta-Wasatch-Cache National Forest. It is important to recognize that up to 10,000 years are required to form a fen naturally. Thus, the formation of the Albion Basin Fen may have begun following the end of the last Ice Age.

The Jensen Report describes evaluation of 11 wetland areas ("Rangesites") in the Albion Basin for the following wetland functions: groundwater discharge, groundwater recharge, flood storage, shoreline anchoring, sediment trapping, pollution retention, food chain support, fishery habitat, wildlife habitat, and recreation. The West Albion Rangesite (which incorporates the Albion Basin Fen wetland site) consistently was rated high for each of the wetland functions. The West Albion Rangesite was ranked highest in Total Function Value of the Albion Basin wetlands indicating the overall importance of this wetland site for the watershed.

Water level and water chemistry data from the Albion Basin Fen site indicates this wetland area has unique characteristics relative to the other wetland areas studied at Catherine's Pass and Collins/Sugarloaf. Water level fluctuations at the Albion Basin Fen site are more variable than at the Catherine's Pass and Collins/Sugarloaf sites suggesting that the source of water is a combination of surface water runoff, groundwater recharge, and precipitation (snowmelt and rainfall).

The water chemistry results from piezometer and spring samples at the Catherine's Pass match closely suggesting groundwater is the primary source for this site, while results from Albion Basin Fen show differing signatures between piezometer and spring samples. The spring samples closely resemble the results from Little Cottonwood Creek (representing the composite discharge for the entire basin). This suggests that the source of water for springs at this site may be from surface water and groundwater. The difference between water chemistry results from piezometer and spring samples at Albion Basin Fen suggests that biological and chemical reactions may change the chemistry of the water that becomes impounded in the wetland area. Visual and olfactory observations during sampling support this assessment and are unique to the Albion Basin Fen wetland study site. A sheen has been observed on the surface of the water and reducing odors have been observed while sampling. Strong coloration of the surface soils and the diverse vegetation in this area indicate active chemical and biological activity in this wetland.

#### D. Hydrologic Connections of Albion Basin Fen

The Albion Basin is the headwater location for the Little Cottonwood Canyon watershed. The Albion Basin Fen wetland site is located within the West Albion Basin Rangesite in the center of Albion basin. The wetland area in the West Albion Basin Rangesite represents nearly 30 percent of the total wetland area in the Albion Basin (Jensen Report) and given its central location within the watershed's headwater, represents a critical component of the hydrologic cycle of the watershed.

The geology of the Albion Basin is a complex assemblage of Precambrian metamorphic basement, Cambrian and Mississippian sedimentary strata (sandstone, limestone, shale, dolomite), Tertiary/Cretaceous igneous intrusive (Alta Stock), and Quaternary unconsolidated glacial, landslide, talus, and alluvial deposits (Baker et al., 1966). Tectonic activity has created abundant faults and fractures that provide hydrologic pathways for snowmelt and rainfall to infiltrate the bedrock and recharge the groundwater system. The groundwater from the unconsolidated deposits discharges to surface water streams.

The Albion Basin Fen is located within unconsolidated glacial and landslide deposits and adjacent to tributary streams of Little Cottonwood Creek. The wetland receives groundwater that recharges during spring and summer snowmelt, surface water that drains from higher elevation, and precipitation that falls directly on the land surface. The wetland holds water year round and discharges to the surface water streams and perhaps groundwater bodies at lower elevations. The wetland plays a crucial role in regulating the flow of water within the central portion of the Albion Basin watershed.

### E. Likely Effects on Albion Basin Fen from Proposed Diversions

The proposed diversions assuming 800 gallons/day for 365 days/year for 2 cabins amounts to 1.8 acre-feet/year. Assuming the entire proposed diversion volume is removed from the Basin (transferred to wastewater treatment facility), this proposed diversion would represent a permanent withdrawal from the system and a disruption of the water balance for this wetland.

The likely hydrologic impact would be a decline in water levels within the wetland area and a reduction in stream flow discharging from the area to tributaries of Little Cottonwood Creek. The likely impact of this modified hydrologic system would be a change in the wetland vegetation, the hydric soil characteristics, and the nature of the wildlife habitat. As these wetland characteristics change, the ability of this wetland to provide flood storage, sediment trapping and pollutant retention, streambank anchoring and erosion control, and food chain support would likely also change. The likely collective change of these wetland characteristics would likely lead to a change in the passive recreational and heritage values of this wetland site.

### **III. Conclusion**

Based on this review, there is reason to conclude that the proposed diversions would adversely impact the natural stream and wetland environment in the Albion Basin Fen wetland study area. These adverse impacts would likely include: in-stream flows, riparian and wildlife habitat, aquatic and terrestrial plant and animal species, and ultimately water quantity and quality in Little Cottonwood Creek.

### **IV. Qualifications**

See Curriculum Vitae, attached hereto.

Dated this Eleventh day of July, 2011.



---

Dr. John D. Skalbeck

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Skalbeck, J.D., Reed, D, Hunt R., and Lambert, J.D., 2009, Relating groundwater to seasonal wetlands in Southeastern Wisconsin, USA, *Hydrogeology Journal*. 17(1), 215-228.

University of Wisconsin-Parkside, 2006, Background Study for Development of Phased Hydrologic Investigations of the Albion Basin, Alta, Utah. Unpublished report for the Friends of Alta, 25 p.

**Curriculum Vitae  
John D. Skalbeck**

***Education***

08/2001            Ph.D., Hydrogeology, University of Nevada, Reno, NV  
12/1985            M.S., Geology, Western Washington University, Bellingham, WA  
05/1983            B.A., Geology, Gustavus Adolphus College, St. Peter, MN

***Employment History***

June 2009 – January 2011  
Interim Director, Center for Community Partnerships  
University of Wisconsin-Parkside, Kenosha, Wisconsin

June 2007 – present  
Associate Professor, Geoscience Department  
University of Wisconsin-Parkside, Kenosha, Wisconsin

August 2001 – June 2007  
Assistant Professor, Geoscience Department  
University of Wisconsin-Parkside, Kenosha, Wisconsin

July 1997 - August 2001  
Hydrology Intern  
Washoe County Department of Water  
Resources, Reno, NV

August 1996 - May 1997  
Teaching Assistant  
Department of Geologic Sciences  
University of Nevada, Reno, NV

August 1991- August 1996  
Associate Hydrogeologist  
PES Environmental, Inc., Novato, CA

April, 1990 - August 1991  
Senior Hydrogeologist  
Trans Tech Consultants, Santa Rosa, CA

September, 1987 - April 1990  
Project Hydrogeologist  
Harding Lawson Associates, Novato, CA

January 1986 - September 1987  
Staff Hydrogeologist,  
The Earth Technology Corp., Long Beach, CA

***Professional Registrations***

Wisconsin Professional Geologist, 1189-013  
Wisconsin Professional Hydrologist, 193-111  
Nevada Certified Environmental Manager, CEM 1724  
California Certified Hydrogeologist, HG 140  
California Certified Engineering Geologist, EG 1620  
California Registered Geologist, RG 5157

***Professional Memberships***

American Geophysical Union  
Association of Ground Water Scientists and Engineers, National Groundwater Water Association

### *University Service / Positions*

Academic Director, Academic Director for the Collaborative, Online Bachelor of Science Degree in Sustainable Management program. 2008 – present  
Member, Environmental Studies Program Steering Committee, 2008 – present  
Director, Environmental Studies Program, 2005 to 2008  
Member, Chancellor's Task Force for Online Teaching and Learning, 2010  
Member, Chancellor's Task Force on Environmental Stewardship  
Member, University of Wisconsin-Parkside Athletic Board  
Member, Steering Committee for the Institute for Community Based Learning  
Faculty Advisor, Geosciences Club, 2002-2007  
Faculty Advisor, Parkside Environmental Club  
Faculty Senator, Geosciences Department.

Co-developer, Root River Environmental Education Community Center (REC) in Racine and the Center for Environmental Education, Demonstration, and Applied Research (CEDAR) in Kenosha (With Dr. Thomas Schnaubelt). 2007 – present

### *Research/Scholarship Awards*

UW-Colleges and UW-Extension Chancellor's Award for Excellence, Bachelor of Science Degree in Sustainable Management Academic Directors: UW-Extension Continuing Education, Outreach and E-Learning (With Robert Baker, Anne Hoel, David Schejbal, and Gregory Trudeau, 2010.

Graduate Scholarship, Woman's Auxiliary to the American Institute of Mining, Metallurgical, and Petroleum Engineers, 1998 and 1999  
Graduate Scholarship, Nevada Water Resources Association, Carson City, NV, 1997  
Research Grant from U.S. Geological Survey and Department of Geologic Sciences, University of Nevada, Reno, 1996  
Paul Rennie Memorial Scholarship, Mackay School of Mines, University of Nevada, Reno, 1996

Research Assistantship under Dr. Myrl E. Beck, Jr., Western Washington University; National Science Foundation Grant (EAR8442524), 1984-85

### *Publications and Presentations*

Mohazzabi, P. and Skalbeck, J.D., (in preparation), Bolide impact and the superrotation of the Earth's inner core.

Skalbeck, J.D., 2001, Precambrian basement surface estimation using coupled 3D modeling of gravity and aeromagnetic data in southeastern Wisconsin and Fond du Lac County, Wisconsin Ground Water Association: 2011 Annual Meeting [abs.], Invited Paper, April 8.

- Skalbeck, J.D., Kinzelman, J.L., and Mayer, G.C., 2010, Fecal indicator organism density in beach sands: Impact of sediment grain size, uniformity, and hydrologic factors on surface water loading, *Jour. of Great Lakes Research*, 36, 707-714.  
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***Funded Grants***

Friends of Alta Ecogeographical Research and Educational Program, \$2,000. 2011 Investigation: Water Quality Monitoring, Sampling, and Analysis of the Albion Basin, Alta, Utah. Grant awarded 7/5/11.

UW-Parkside Undergraduate Research Apprenticeship Program, \$400. Hydrologic Investigation of the Albion Basin, Alta, Utah. Grant awarded 12/21/10.

Friends of Alta Ecogeographical Research and Educational Program, \$2,000. Phase 5 Investigation: Water Quality Monitoring, Sampling, and Analysis of the Albion Basin, Alta, Utah. Grant awarded 7/1/10.

AT&T Technology and Environmental Awards Program, \$20,000. The Weather and Climate Exploration Program for Racine Unified School District. Grant award 6/25/10.

Root-Pike Watershed Initiative Network, \$5,542, WATER: We All Take Environmental Responsibility. Grant awarded 5/6/10.

John J. and Ruth F. Kloss Foundation, \$7,500. Afterschool STEM Programs for Kenosha Unified School District. Grant award 1/31/10.

Friends of Alta Ecogeographical Research and Educational Program, \$2,000. Phase 4 Investigation: Water Quality Monitoring, Sampling, and Analysis of the Albion Basin, Alta, Utah. Grant awarded 6/30/09.

Root-Pike Watershed Initiative Network, \$4,120, Southport Park Environmental Education Signs and Guided Tour (With Dr. Patricia Cleary and Professor Alan Goldsmith). Grant awarded 6/01/09.

Friends of Alta Ecogeographical Research and Educational Program, \$2,000. Phase 3 Investigation: Water Quality Monitoring, Sampling, and Analysis of the Albion Basin, Alta, Utah. Grant awarded 6/30/08.

UW-Parkside Committee on Creative Research and Activity (Funded), \$211, Travel Expenses to Attend the 32<sup>nd</sup> Annual American Water Resources Meeting-Wisconsin Section in Brookfield, Wisconsin. Grant awarded 4/11/08.

UW-Parkside Faculty and Academic Staff Professional Opportunities Fund, \$695, Travel Expenses to attend the 2007 Fall Meeting of the American Geophysical Union, San Francisco, California. Grant awarded 12/20/07.

Friends of Alta Ecogeographical Research and Educational Program, \$13,000. Phase 2 Investigation: Water Quality Monitoring, Sampling, and Analysis of the Albion Basin, Alta, Utah. Grant awarded 6/26/07.

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Root-Pike Watershed Initiative Network, \$8,400, Root River Pathway Environmental Education Signs and Guided Tour (With Professor Alan Goldsmith). Grant awarded 5/17/07.

UW-Parkside Faculty and Academic Staff Professional Opportunities Fund, \$194, Travel Expenses to attend the 31<sup>st</sup> Annual Meeting of the American Water Resources Association-Wisconsin Section, Wisconsin Dells, Wisconsin. Grant awarded 12/20/07.

Wisconsin Coastal Management Program, \$59,407, Root River Environmental Education Community Center (REC): Expanding Urban Environmental Education and Recreation through a Partnership between the University of Wisconsin - Parkside and the City of Racine (with Dr. Thomas Schnaubelt). Grant of \$29,907 awarded 2/21/07.

Wisconsin Coastal Management Program, \$100,000, Center for Environmental Education, Demonstration and Applied Research (CEDAR): A Partnership of the City of Kenosha Department of Parks and the University of Wisconsin - Parkside and (with Art Strong, City of Kenosha and Dr. Thomas Schnaubelt). Grant of \$40,000 awarded 2/21/07.

UW-Parkside Provost's Fund for Faculty Research & Creative Activity, \$4,365, Planning Community Environmental Education Centers. Grant awarded 12/14/06.

UW-Parkside College of Arts and Sciences, Dean's Office, \$1,020, Instrument Repair Related to Pike River Water Quality Monitoring Program. Grant awarded 6/27/06.

Friends of Alta Ecogeographical Research and Educational Program, \$15,000, Phase 1 Investigation: Water Level Monitoring of the Albion Basin, Alta, Utah. Grant awarded 6/26/06.

UW-Parkside Center for Community Partnerships, Education Outreach, \$625, Matching Contribution For Additional Sample Analysis On Wisconsin Coastal Management Program Grant Regarding Beach Study Related to E. Coli. Grant awarded 6/16/06.

Wisconsin Department of Natural Resources through the Wisconsin Groundwater Coordinating Council, \$29,241, Precambrian Basement Surface Estimation using Coupled 3D Modeling of Gravity and Aeromagnetic Data in Fond du Lac County and Southeastern, Wisconsin. Grant awarded 05/18/06.

UW-Parkside Undergraduate Research Apprenticeship Program, \$350 Student Stipend, Wetland Delineation and Monitoring of UW-Parkside Willow Swamp. Grant awarded 05/8/06.

UW-Parkside Undergraduate Research Apprenticeship Program, \$350 Student Stipend, Incorporation of Pike River Water Quality Monitoring Program into Wisconsin Department of Natural Resources Database. Grant awarded 5/8/06.

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UW-Parkside Undergraduate Research Apprenticeship Program, \$350 Student Stipend, Chiwaukee Prairie wetlands study. Grant awarded 01/11/06.

UW-Parkside Faculty and Academic Staff Professional Opportunities Fund, \$900, Expenses to Purchase 3D Potential Fields Modeling Software. Grant awarded 12/20/05.

UW-Parkside Provost's Fund for Faculty Research & Creative Activity, \$4,275, Preparation of Research Grant Report for Beach Study Related to E. Coli. Grant awarded 12/16/05.

UW-Parkside Committee on Creative Research and Activity, \$1000, Expenses to Purchase 3D Potential Fields Modeling Software. Grant awarded 12/07/05.

Wisconsin Coastal Management Program, \$53,470, Characterization of Escherichia coli in Beach Sand Relative to Sediment Size and Hydrologic Factors (with Dr. Julie Kinzelman, City of Racine Health Department). Grant of \$20,000 awarded 6/30/05.

Friends of Alta Ecogeographical Research and Educational Program, \$7,000, Background Study for Development of Phased Hydrologic and Ecogeographic Investigations of the Albion Basin, Alta, Utah. Grant award 5/26/05.

UW-Parkside Provost's Fund for Faculty Research & Creative Activity, \$4,245, River Water Quality Monitoring. Grant awarded 12/17/04.

UW-Parkside Faculty and Academic Staff Professional Opportunities Fund, \$470, Travel Expenses to Attend the attend Basic Wetlands Delineation Workshop, Door County, Wisconsin. Grant awarded 08/04/04.

UW-Parkside General Education Course Revision and Assessment, \$700, Proposal for Revision of GEOS 106: Great Lakes Water Resources. Grant awarded 05/24/04.

UW-Parkside Committee on Creative Research and Activity, \$740, Travel Expenses to Attend the 2003 American Geophysical Union Fall Meeting in San Francisco, CA. Grants awarded 1/12/04 and 2/25/04.

UW-Parkside Collaborative Undergraduate Research Program, \$350 Student Stipend, \$100 Faculty S&E, Design of Interactive World Wide Web Site for Pike River Water Quality Monitoring Program. Grant awarded 12/10/03.

UW-Parkside Collaborative Undergraduate Research Program, Database Development for Pike River Water Quality Monitoring Program, \$350 Student Stipend, \$100 Faculty S&E. Grant awarded 12/08/03.

Root-Pike Watershed Initiative Network, \$6,176, Pike River Water Monitoring Program-Phase II. Grant of \$3,900 awarded 11/17/03.

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Wisconsin Groundwater Coordinating Council, \$19,150, Coupled Modeling of Gravity and Aeromagnetic Data for Analysis of the Waukesha Fault, Southeastern Wisconsin. Grant awarded 6/6/03.

UW-Parkside Undergraduate Research Apprenticeship Program, \$350 Student Stipend, \$100 Faculty S&E, Groundwater Monitoring and GIS Study at Chiwaukee Prairie. Grant awarded 5/22/03.

UW-Parkside Undergraduate Research Apprenticeship Program, \$350 Student Stipend, \$100 Faculty S&E, Pike River Water Quality Monitoring Program at UW-Parkside Campus. Grant awarded 5/22/03.

Wisconsin Coastal Management Program, \$60,130, Delineating Problem Wetlands in the Lake Michigan Basin Using an Integrated Approach (with Dr. Don Reed, Southeast Wisconsin Regional Planning Commission; Dr. Randall Hunt, US Geological Survey; and Peter Wood, Wisconsin Department of Natural Resources). Grant of \$24,000 awarded 3/5/03.

UW-Parkside Committee on Creative Research and Activity, \$350, Student Salary for Pike River Water Quality Monitoring Program. Grant awarded 2/21/03.

UW-Parkside Undergraduate Research Apprenticeship Program, \$350 Student Stipend, \$100 Faculty S&E, Groundwater Monitoring at UW-Parkside Campus and Three Nature Preserve Properties: Chiwaukee Prairie, Stanley Harris Tract, and Renak-Polak Woods. Grant awarded 1/15/03.

UW-Parkside Undergraduate Research Apprenticeship Program, \$350 Student Stipend, \$100 Faculty S&E, Pike River Water Quality Monitoring Program. Grant awarded 1/15/03.

UW-Parkside Faculty and Academic Staff Professional Opportunities Fund, \$750, Pike River Water Monitoring Program. Grant awarded 11/21/02.

Root-Pike Watershed Initiative Network, Pike River Water Monitoring Program, \$11,901. Proposal submitted 7/19/02, Grant of \$8,380 awarded 11/18/02.

Committee on Creative Research and Activity, \$650, Travel Expenses to Present Paper at Geothermal Resources Council Annual Meeting. Grant awarded 9/25/02.

University of Wisconsin-Parkside New Program Development, \$18,310, Groundwater Monitoring Well Network at the UW-Parkside Campus and Three UW-Parkside Nature Preserve Properties. Grant awarded 5/6/02.

Committee on Creative Research and Activity, \$500, Laboratory Groundwater Flow Model. Grant awarded 3/14/02.

**EXHIBIT A**

# SOIL & HYDROLOGY OF ALBION BASIN WETLANDS

LOCATED IN THE TOWN OF ALTA  
LITTLE COTTONWOOD CANYON, UTAH



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SOIL AND HYDROLOGY OF  
ALBION BASIN WETLANDS

LOCATED IN THE TOWN OF ALTA,  
LITTLE COTTONWOOD CANYON, UTAH

Performed for Region VIII  
Environmental Protection Agency  
and  
The Town of Alta

by

Steven F. Jensen, M.P.A.  
Water Resources Planning Coordinator  
Salt Lake County Commission Staff

June, 1993.

Funded by Region VIII Environmental Protection Agency  
Denver, Colorado

and

The Friends of Alta & Alta Municipal Corporation  
Alta, Utah

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## INTRODUCTION

The Town of Alta has been pursuing the update and refinement of the Town master plan for the last two years, and last year requested technical assistance from Salt Lake County in developing a wetland conservation ordinance. This measure would not only increase the ability of the Town to prevent development of valuable sub-alpine wetland resources, but would help maintain important functions provided by wetlands, such as flood storage, groundwater recharge, pollution control, sediment trapping, fish & wildlife habitat, and recreation.

Alta enjoys a unique reputation for world renowned alpine skiing. It is the home of "The Greatest Snow On Earth." The slopes of Alta provide premier and unmatched light powder skiing which draws a richly mixed crowd of American and European skiers and tourists. It is a very popular summer recreation area, hosting a wide density and diversity of seasonal wildflower displays, to be enjoyed while hiking several excellent trails such as Cecret Lake, Devils Castle, Catherines Pass, Superior Peak, Sunset Peak, and others.

Alta Lift Company and the Town of Alta have always and continue to emphasize a quality skiing experience, and are dedicated to maintaining a "quality" ethic above the typical "quantity" ethic which develops maximum natural terrain with the resultant over-crowded ski slopes.

The Lift Company has also been a leader in maintenance and enhancement of environmental conditions in the Albion Basin, and was one of the earliest demonstrators of "nonpoint source" pollution control measures along the Wasatch Front. They have successfully tried and monitored various local grass species for its effectiveness in revegetation of disturbed areas, initiated a tree replanting/transplanting program in conjunction with a modest nursery, and assisted the county in researching the effects of parking lot paving on the water quality of Little Cottonwood Creek.

In summary, The Town of Alta enthusiastically embraced the opportunity to begin the process of identifying important lower montane & subalpine wetlands to properly administer development controls within its jurisdiction. The Friends of Alta, a private nonprofit group of interested individuals, provided matching funds for the project in cooperation with the Town.

A grant for the project was awarded Region VIII EPA in Denver, and with local matching funds, the project began in July, 1992. Field work was conducted for approximately two months, with research assistance provided by the Town. The dedication and enthusiasm of officials and employees of Alta underscore the commitment for quality recreation within one of Utah's most important watersheds, while maintaining and enhancing the beautiful and very sensitive alpine environment.

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o **Background: Institutional & Regulatory Framework**

The project involves an identification of wetlands within geographical areas--or rangesites--in advance of future development proposals, in order to systematically plan for land acquisition or compensatory mitigation. The project supports the wetland permit program administered by the U.S. Army Corps of Engineers, which has regulatory responsibility for protecting the nation's wetlands under section 404 of the Federal Clean Water Act.

The majority of land ownership and control within the project area rests with the federal government, namely the U.S. Department of Agriculture. It is administered by the Forest Service Salt Lake Ranger District, which maintains interlocal agreements with the Town of Alta, Salt Lake County, Salt Lake City, and the State of Utah for protection of water quality & water supply. Since Little Cottonwood Creek is designated as an "Anti-degradation" segment, no new point sources of pollution--treated or otherwise--are allowed in the watershed. Best Management Practices (BMP'S) to control other "nonpoint" pollution are required to the maximum extent feasible.

The Alta Lift Company, formed in 1936, has purchased many acres from private land holdings in the upper basin, and works closely with the Forest Service in protection and maintenance of the land/water interface during construction activities.

Salt Lake City Corporation, which possesses extra-territorial authority over water supply in Little Cottonwood Canyon, relies on the canyon for providing up to 15% of total culinary water demand in Salt Lake valley. The City works closely with the City-County Health Department in monitoring water quality and cooperatively enforcing provisions of local, state, and federal clean water regulations.

o **Lead Agency and Technical Support**

The grant for the project was awarded to the Salt Lake County Commission which recently received designation by the Governor of the State of Utah and EPA as the Area-Wide Water Quality Planning Agency for the Salt Lake Sub-Basin.

The County was supported by the Town of Alta and Friends of Alta through provision of a research assistant with extensive expertise in botany. In view of the unusual diversity of plant species in the basin, this particular assistance proved invaluable. The project director received training & certification from EPA in jurisdictional delineation techniques, and is certified by the Corps of Engineers to perform local delineation investigations.

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## PROJECT SCOPE AND OBJECTIVES

The scope for the Albion Basin wetland inventory is limited to specific wetland communities--or rangesites--in the lower and upper Basin area. It is estimated that these areas comprise approximately 485 total acres, with about 237 acres potentially meeting technical wetland criteria. The total sub-watershed contains approximately 2,340 acres.

The objectives of this technical report are to describe the soil hydrology in the basin which creates seasonal saturation, and typify basin soils from samples collected within numerous sample sites and rangesite transects. Specifically, soil identification for purposes of determining "hydric" saturated anerobic conditions must be made as one of three conditions used to define wetlands.

### o Definitions

The Environmental Protection Agency and Corps of Engineers define wetlands for purposes of administering section 404 as:

"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." (EPA, 1989)<sup>1</sup>

The U.S. Fish & Wildlife Service defines wetlands as those:

"transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes, (2) the substrate is predominanately undrained hydric soil, and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year." (Cowardin, 1979)<sup>2</sup>

### o "Normal Circumstances"

The Corps/EPA definition requires that "under normal circumstances," only lands having hydrophytic vegetation, hydric soils, and hydrologic saturation can be classified as wetlands. The Wasatch Range has been in a drought condition for the past six years, and this year snowpack accumulations were measured at only 50% of normal. Areas "normally" saturated were only partially wet or even damp. Stressed conditions of some hydrophytic plant communities occurred very shortly after snowpack runoff. Normal hydrologic circumstances were not present during this study.

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## STUDY METHODOLOGY

Due to the expanse of the study area, two levels of analysis were employed. The first analytical phase used both false-color and full-color remote sensing data compiled from the USDA Aerial Survey Center. The second analytical phase employed site-specific sampling methods described in the "Federal Manual for Identifying and Delineating Jurisdictional Wetlands." Additional sources of literature used extensively in the project were "An Ecological Characterization of Rocky Mountain Montane and Subalpine Wetlands"<sup>3</sup> by the U.S. Fish & Wildlife Service in cooperation with Region VIII EPA, and "Jurisdictional Delineation of Riparian Wetland Ecosystems in Southwestern United States."<sup>4</sup>

### o Aerial Interpretation

Large scale false-color infrared aerial photography was used mainly for hydrologic interpretation. The properties of this type of remote sensing are quite useful for determining location of both ground and surface water hydrology due to changes in patterns and color hue. Only very large scale photography was available, however, which made interpretation difficult. Field notes were more reliable.

Full color aerial photography was used for mapping vegetative communities and hydrology. The resolution quality and clarity of this photography made interpretation quite accurate. Field data was collected on larger scale photo overlays and transferred to smaller scale prints for final mapping.

### o Field Data Collection

Priorities for field data collection were determined through consultation with the Town of Alta. Field study began July 7, 1992, and continued through September 10, 1992. A modified comprehensive on-site method, described in the federal delineation manual was used, which involved point-intercept sample plots along transects extending through specific plant community types.

The determination of whether soils along a sample transect should be characterized was made using hydrologic condition field indicators, including visual observations of inundation, drift lines, rilling, water marks, gullying and other drainage patterns, and plant morphology (hydrophytic species).

Potential soil sample areas were probed with an 8" steel tube, and estimation of saturation made, i.e. dry, semi-damp, damp, wet, saturated. Damp sites were most often excavated with an 18" steel spade, and soil plugs removed in order of horizon. The plugs were laid out and analyzed using the standard guide for textural classification in soil families, the Munsell Soil Color charts, visual examination of presence of mottles, inclusions, concretions, etc., and divided most often into two distinct horizon levels.

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All information was logged onto sample site data sheets, including any particular observations which may provide clues about the existence or characteristic of wetland type. These data are included in Appendix A, Soil/Hydrology Profile Data. The transects and sample sites were also recorded on maps developed for the Alta Town Master Plan. These were photo-enlarged to increase scale, and later transferred to Alta General Plan base map (Figures 1 & 2).

Due to the distinct variation of wetland communities within the Basin, representative photographs were taken of each rangesite and usually each transect. Most of the photographic documentation is shown as representative plant community types which were also logged at the time of field data collection.

**ESTIMATED ACREAGE OF ALBION BASIN STUDY RANGESITES/WETLANDS**

Acreage of each rangesite study area is estimated using 1"=250' scale full color aerial photographs obtained from the USDA aerial service center. A grid with 1" squares representing 1.43 acres was overlaid on each mapping area and estimates made. The acreages are approximate. Within each rangesite, transects ranging in length from 750-1500' and 1-6 samples sites within each transect recorded vegetation, hydrology and soil characteristics.

RANGESITE MAPPING UNIT	TOTAL ACRES	TRANSECTS	TEST SITES	WETLAND ACRES
Patsy Marley Hill	81	8	27	40
West Albion Basin	109	6	14	63
Albion Meadows	30	3	8	9
Albion Loop	29	2	9	11
East Albion Basin	26	2	6	17
Greely Bowl	34	1	3	6
Lower Greely	36	1	4	34
North Rustler	29	1	5	9
Creek Townsite	33	2	9	20
Upper Patsy Marley Hill	29	2	10	16
Emma Hill	49	3	12	12
<b>TOTALS</b>	<b>485</b>	<b>31</b>	<b>107</b>	<b>237</b>

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# ALTA, UTAH

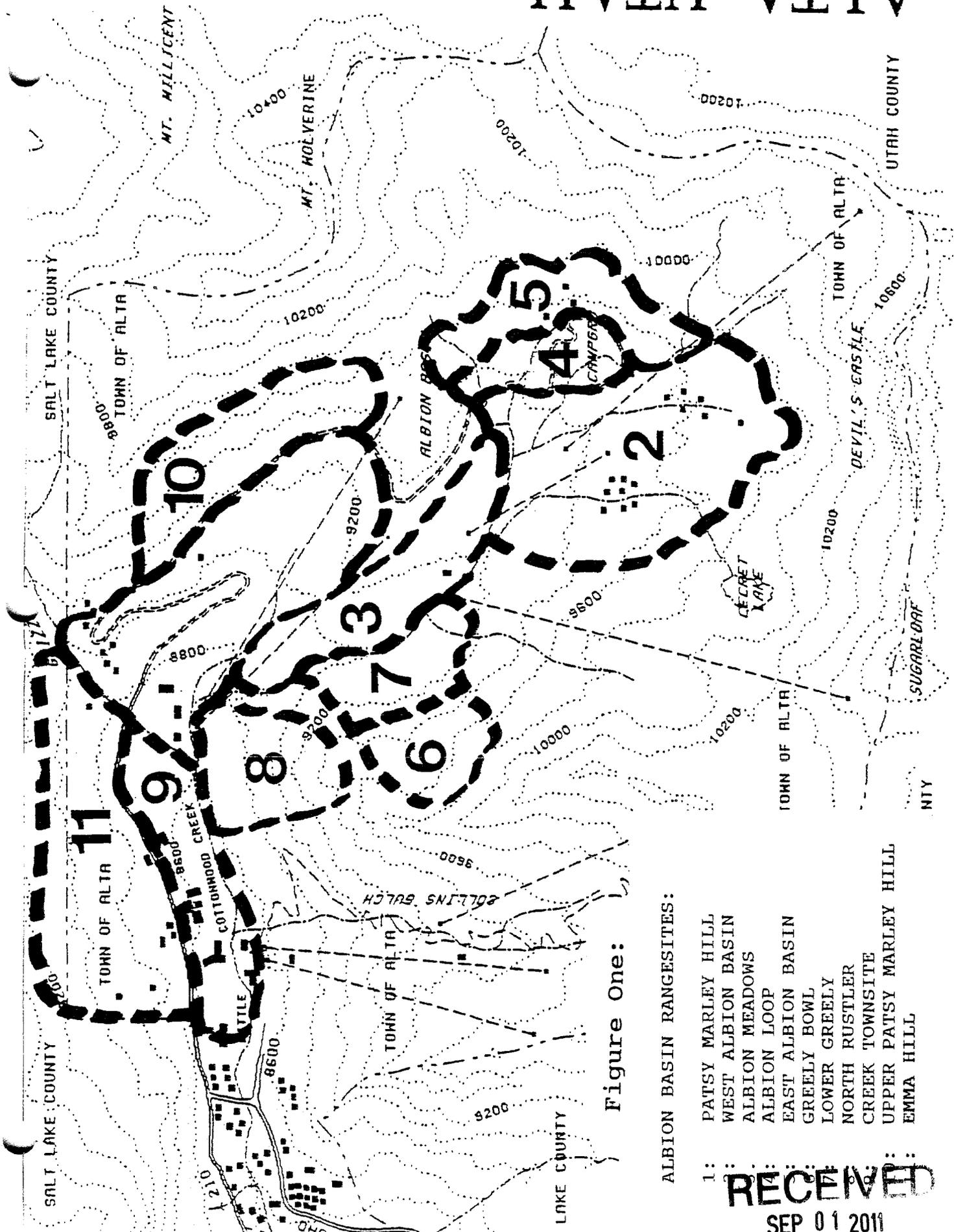


Figure One:

ALBION BASIN RANGESITES:

- 1: PATSY MARLEY HILL
- 2: WEST ALBION BASIN
- 3: ALBION MEADOWS
- 4: ALBION LOOP
- 5: EAST ALBION BASIN
- 6: GREELY BOWL
- 7: LOWER GREELY
- 8: NORTH RUSTLER
- 9: CREEK TOWNSITE
- 10: UPPER PATSY MARLEY HILL
- 11: EMMA HILL

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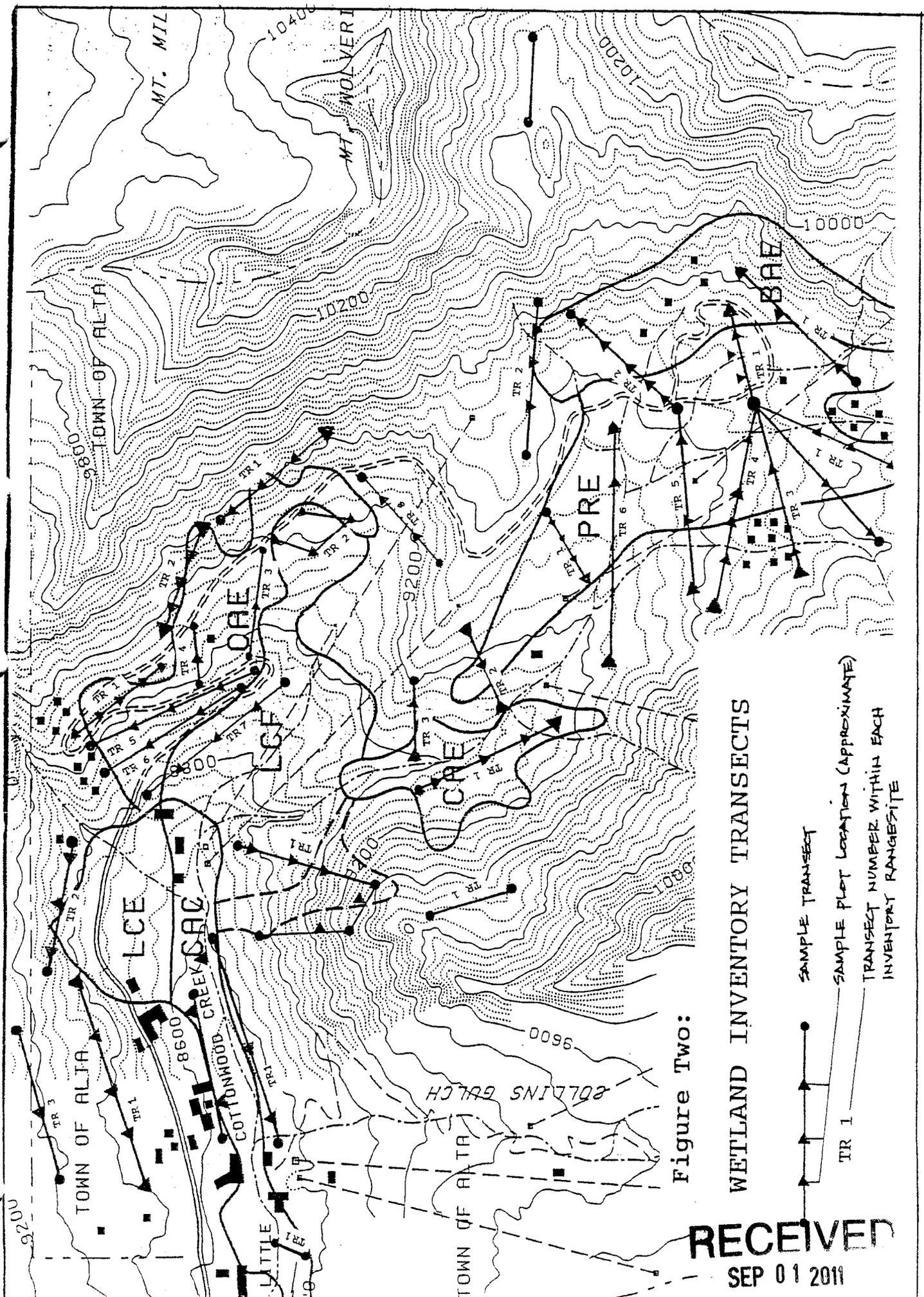


Figure Two:

WETLAND INVENTORY TRANSECTS

- SAMPLE TRANSECT
- TR 1
- SAMPLE PLOT LOCATION (APPROXIMATE)
- TRANSECT NUMBER WITHIN EACH INVENTORY RANGE SITE

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## GEOLOGIC, SOIL, AND HYDROLOGIC SETTING OF LOWER MONTANE AND SUBALPINE WETLANDS IN ALBION BASIN

Prior to describing conditions encountered within each individual study rangesite, it is important to review some basic information which clarifies how wetlands in Albion Basin are created and naturally maintained. Therefore, a description of landform and soil processes in the basin is given with discussions of the geologic setting, resultant soil setting, hydrologic setting and various ecologic interactions.

### I. GEOLOGIC SETTING

The geologic setting of the basin includes descriptions of elevation & physiography and a review of major geologic formations which directly affect snow storage, snowmelt and rainfall runoff, groundwater discharge, vegetative life zones and soils composition.

#### o Elevation and Physiography

Study areas in the Albion Basin range from 8,600 ft. to 10,200 ft. above sea level. The Basin sub-watershed is approximately two miles long from Devil's Castle Peak at the south end, to Little Cottonwood Creek near the Northern central townsite, and two miles wide from Catherine Pass to Cecret Lake, with a total drainage area of about 2,340 acres.

From the townsite near Grizzly Gulch, the southward Basin appears rather incised and divided in half from creek downcutting on the west and glaciation from the east, with a major granitic rock outcrop "finger" separating the two landforms. But near the top of the Albion Lift, at about 9,400 feet, the basin opens into a magnificent, broad expanse flanked by Cecret Lake pass to the west, Catherine Pass to the east, and the towering Devil's Castle to the South. The upper basin is heavily littered with conifers up to about 9,800 feet.

Residential development is limited to about 20 seasonal cabins, and the upper basin is dissected by three ski lifts; Supreme, Cecret, and Sugarloaf. The basin is also occupied by a Forest Service campground which is heavily used during the summer visitor season.<sup>5</sup>

# ALTA, UTAH

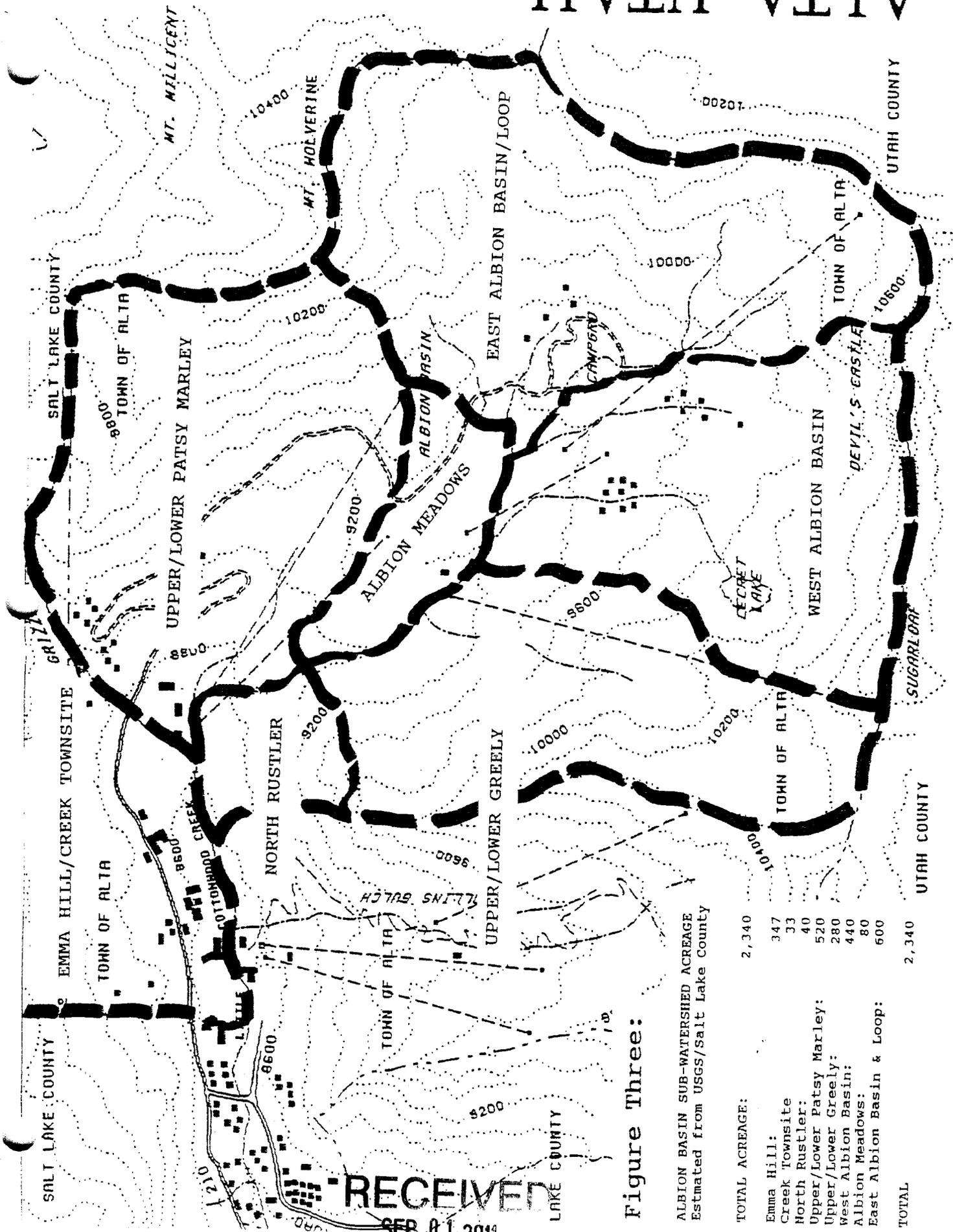


Figure Three:

ALBION BASIN SUB-WATERSHED ACREAGE  
 Estimated from USGS/Salt Lake County

TOTAL ACREAGE:	2,340
Emma Hill:	347
Creek Townsite	33
North Rustler:	40
Upper/Lower Patsy Marley:	520
Upper/Lower Greely:	280
West Albion Basin:	440
Albion Meadows:	80
East Albion Basin & Loop:	500
TOTAL	2,340

## o Major Geologic Formations & Features<sup>6</sup>

Lower Albion Basin is characterized by a steeply incised canyon downcut by Little Cottonwood creek, flanked by on both sides by spectacular granitic formations of the Alta Stock, with the canyon floor and sides mainly Wisconsin Glacial Till (Figure 4).

Upper Albion Basin is more complicated. Eastern canyon flanks (9,600-10,000 ft.) are mainly sedimentary, while western flanks are a combination of sedimentary strata intruded with quartzite.

Eastern flanks are composed of interbedded basal Mississippian limestone and Deseret-Madison undifferentiated limestone, while the western flanks are Maxfield limestone interbedded with Tintic Quartzite. The upper basin floor is principally earlier Cambrian Ophir Shale, with lateral glacial till along the east.

Both the Mississippian limestone and Cambrian shales are heavily fossilized and interlaced with random quartzite veins.

## o Glaciation

Late Pleistocene glaciation has played a significant role in the development of the Basin:

"As glaciers retreat, large ice chunks break off at the toe and are buried in glacial outwash deposits on the valley floor. When the ice melts, a depression forms that fills with water and becomes a glacial kettle. These kettle lakes are usually less than 50 m deep, and often correspond in shape to the original ice block (Wetzel, 1983). Kettle lakes, like other lakes, pass through wetland seral stages."<sup>7</sup>

There are several examples of these phenomena in the upper Albion Basin province: Secret Lake, Pittsburgh Lake in upper American Fork, Cloud Rim Lake near Guardsman Pass, Catherine, Twin, Blanche, Florence, and Lillian Lakes in the Big Cottonwood drainage. Some have been dammed to increase storage capacity.

## o Cirques, Nivation Depressions, and Solifluction Terraces

Glacial action also forms large cirque basins below the upper peaks "resembling amphitheaters in which snow collects and remains, sometimes into late summer." Channels of melting snow & ice may "disappear under porous boulder and talus fields, re-emerging at the toe of slopes as trickling seeps or gushing springs."

Shallow pockets are often formed on upper cirque slopes that have since filled in with eroded material. As the snow and ice melt, these "nivation depressions" form pools of subterranean water slowly discharged during the summer season (Figure 5).

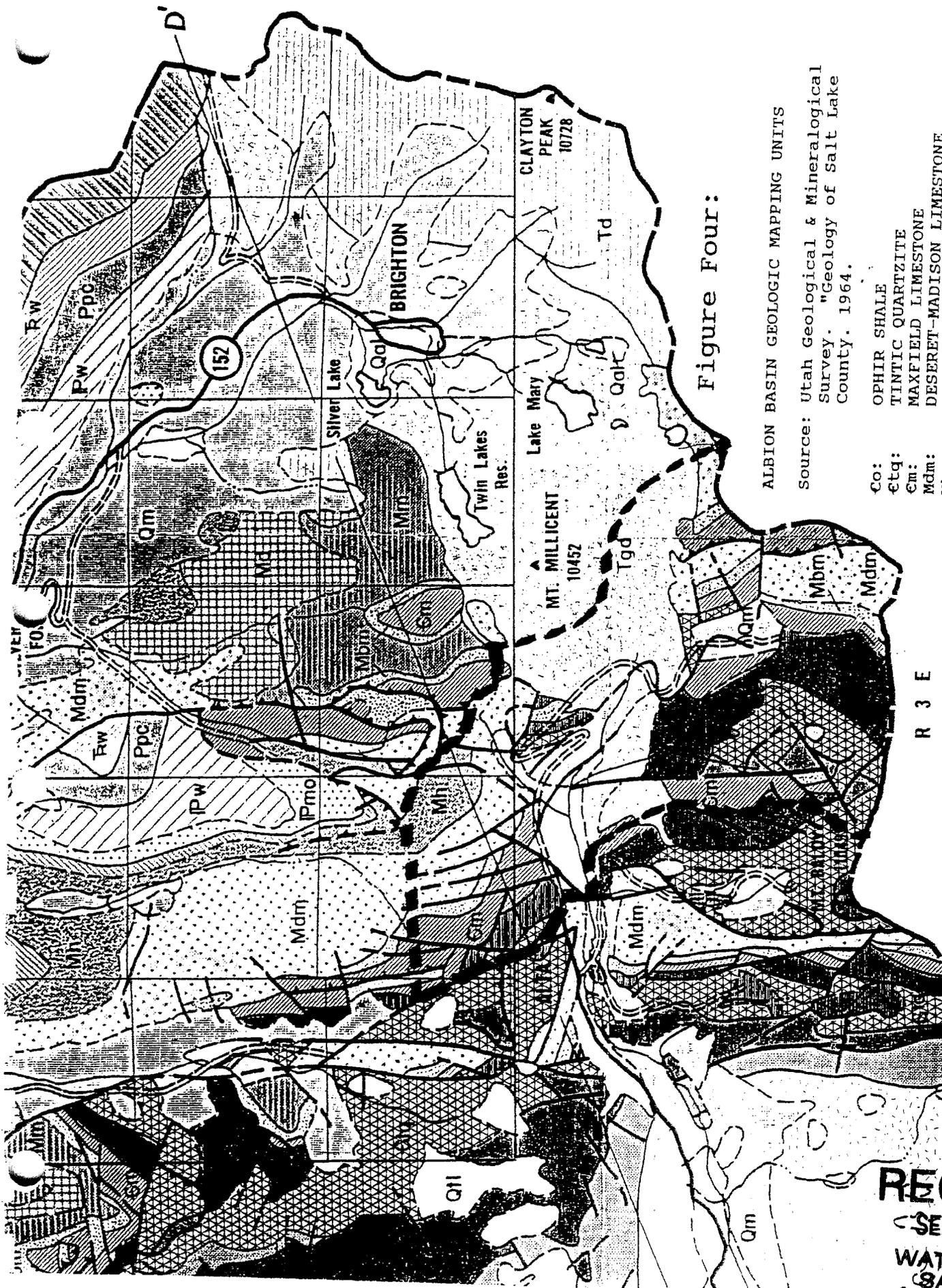


Figure Four:

ALBION BASIN GEOLOGIC MAPPING UNITS

Source: Utah Geological & Mineralogical Survey. "Geology of Salt Lake County. 1964.

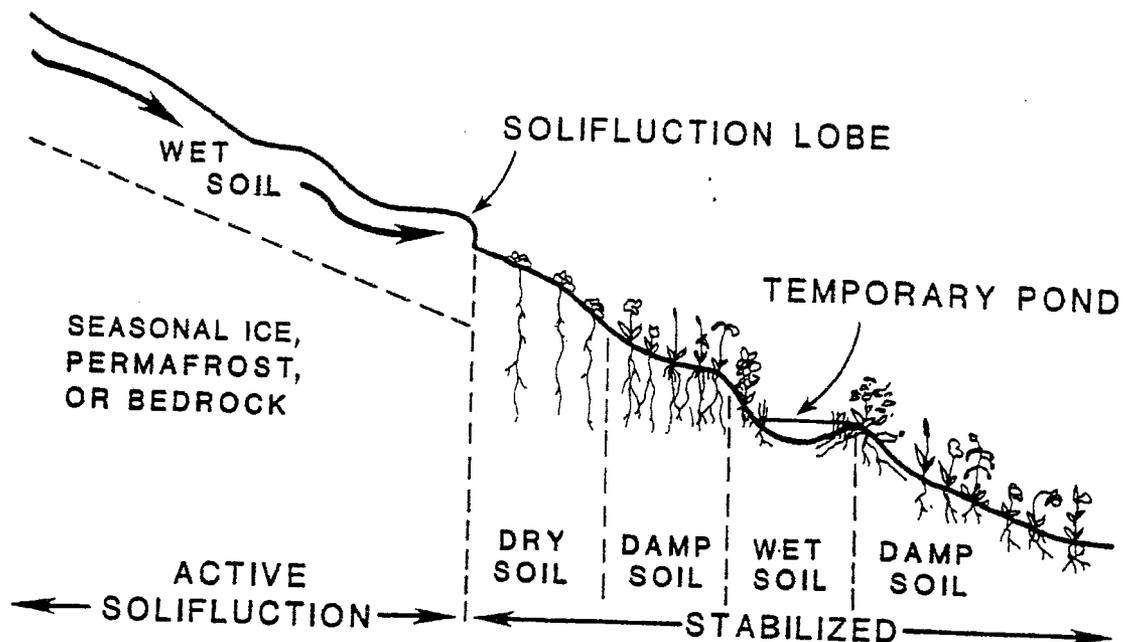
- Co: OPHIR SHALE
- ctq: TINTIC QUARTZITE
- cm: MAXFIELD LIMESTONE
- Mdm: DESERET-MADISON LIMESTONE
- Mbm: BASAL MISSISSIPPIAN LIMESTONE
- Pmf: MINERAL FORK TILLITE
- Qm: WISCONSIN GLACIAL TILL
- Tgd: ALTA STOCK-GRANDIORITE

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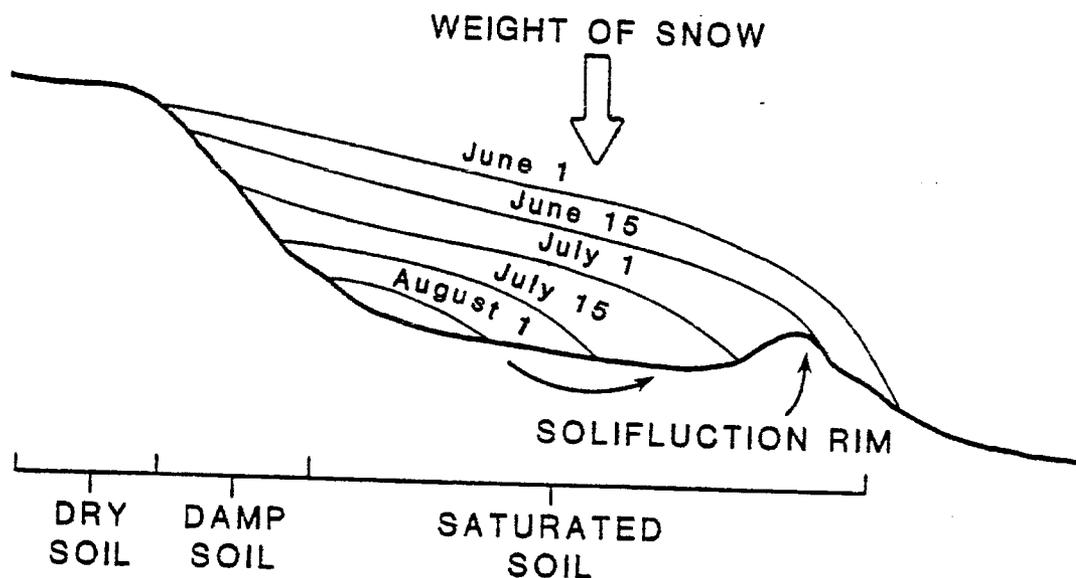
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Figure Five:

A. SOLIFLUCTION TERRACES



B. NIVATION DEPRESSION



Small pools may form near treelimit: (A) behind solifluction terraces formed by downhill movement of wet soil overlaying permafrost or bedrock; and (B) in shallow pockets (nivation depressions) as a heavy snowbed presses down on saturated soils and permafrost maintains a high water table. (Adapted from Zwinger and Willard 1972.)

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On slopes of gentler grade, soils setting on bedrock become super-saturated, causing slight movement downslope which creates solifluction lobes with subterranean ponds. These areas, called solifluction terraces, may store large quantities of water providing steady sources of springs and soil saturation (Figure 5).

Numerous cirques and depressions remain which have since drained and left relic wetlands, supported by snowmelt within porous rockfall and numerous springs and groundwater discharges through the summer season. Examples in Albion Basin are: Catherine Pass wetland (fen), Glory Hole cirques, springs below the Devil's Castle cirque, and Greely Bowl.

An excellent example of a solifluction terrace can be seen below Greely Bowl (the lower Greely Rangesite), and to a lesser extent, the saturated slopes of both upper and lower Patsy Marley Hill.

Glacial till plays an important role in the structure of basin side slopes and soil composition. Generally the formations created by lateral moraine deposition are very well drained and devoid of high concentrations of organic material.

## II. SOIL SETTING

Soil characteristics in Albion Basin were surprising in view of the unexpected diversity encountered. Soil traits follow a definite pattern, however, depending on the location and aspect, and most importantly, level of saturation.

### o Basic Characteristics of Rocky Mountain Soils<sup>8</sup>

The primary factors influencing soils development include geology, erosion, topography, climate and growing season, and vegetation. Most soils in the Rocky Mountain cordillera are categorized into five principal orders: Entisols, Mollisols, Inceptisols, Histosols, and Spodosols. The Soil Conservation Service identifies the most often occurring pattern in the Rockies as "Xeric" Mollisols, or "Xerolls."

1. **Entisols** are generally undeveloped soils, occurring on unconsolidated talus or bedrock, recent glacial moraines and sandbars.

2. **Mollisols** and **Inceptisols** may occur in subalpine meadows displaying a relatively deep, tight organic root zone.

3. **Histosols** are bog/peat soils forming in poorly drained, poorly oxygenated areas.

4. **Spodosols** are moderately deep, well drained types which may occur in subalpine zones where organic input and accumulation is high.

o **General Categorization of Albion Basin Soils**

The Soil Conservation Service mapped the soils in this area in 1975 (Summit Soil Survey Area)<sup>9</sup>. Approximately six test pits at a typical depth of five feet were excavated to discern soil mapping unit characteristics. The following summary describes the soils occurring throughout the Basin (Figure Six):

**SOIL MAPPING UNITS IN THE ALBION BASIN, UTAH**

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FHD: Gravelly Loam, 15-25% slopes  
FZE: Steep Rock Outcrop Association; very stony loam  
25-40% slopes  
FJG: Very Stony Loam, 40-70% slopes  
FZG: Very steep Rock Outcrop Association; very stony loam  
40-70% slopes  
LcE: Cobbly Sandy Loam, 15-25% slopes  
LcF: Cobbly Sandy Loam, 25-40% slopes  
MD: Mine Dump  
CaC: Gravelly Loam, 8-15% slopes  
CaE: Gravelly Loam, 15-40% slopes  
RX: Rock Land  
PUH: Very Steep Rock Outcrop Association; stony loam  
40-80% slopes  
PUE: Rock Outcrops Association, steep; stony loam, 40-70% slopes  
BaE: Silt Loam, 15-25% slopes  
PRE: Cobbly Loam, 25-40% slopes  
DRH: Very Steep Rock Outcrop Association; Lc cobbly sandy loam,  
40-70% slopes  
BWH: Very Steep Rock Outcrop Association; Ba silt loam,  
25-70% slopes

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o **Mapping Unit Correlation with Soil Samples**

Of the sixteen soil mapping units described in the SCS survey, seven occurred within potential wetland rangesites. Of the seven which occurred in these sites, only one consistently exhibited characteristics consistent with descriptions of the "A" horizon in the SCS manual, which was the BaE silt loam.

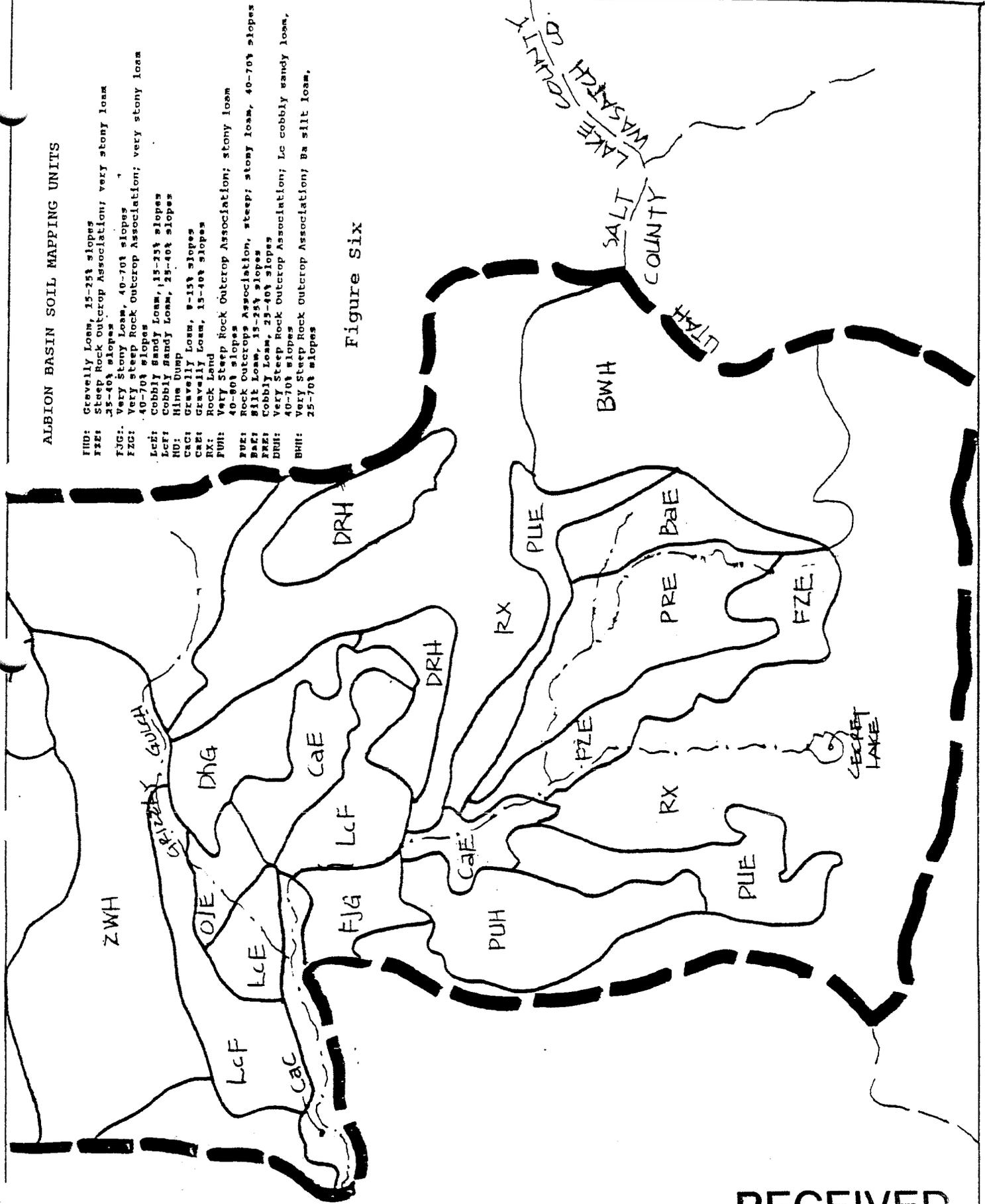
One of the dominant mapping units, PRE cobbly loam, did not appear cobbly within a shallow 12" horizon. It is a uniform, fine silty to sandy clay loam. Formed in glacial till from mixed sedimentary rocks (mainly Ophir shale), gravelly loam was encountered mostly in dry areas between drainages.

These soils were interpreted previously by SCS as "Pachic Cryoborolls," a loamy-skeletal mixed soil (Carley, 1976). Samples taken during the study also characterize them as Aquolls or Borolls, a Mollisol suborder. However, they exhibit anerobic clay layers at relatively shallow depths when occurring in drainages.

ALBION BASIN SOIL MAPPING UNITS

- IUD: Gravelly Loam, 15-25% slopes
- IRE: Steep Rock Outcrop Association; very stony loam 25-40% slopes
- FJG: Very Stony Loam, 40-70% slopes
- FZC: Very Steep Rock Outcrop Association; very stony loam 40-70% slopes
- LcE: Cobbly Sandy Loam, 15-25% slopes
- LcF: Cobbly Sandy Loam, 25-40% slopes
- HD: Mine Dump
- CaE: Gravelly Loam, 0-15% slopes
- CAC: Gravelly Loam, 15-40% slopes
- RX: Rock Land
- PUH: Very Steep Rock Outcrop Association; stony loam 40-60% slopes
- FUE: Rock Outcrops Association, steep; stony loam, 40-70% slopes
- BaE: Silt Loam, 15-25% slopes
- PRE: Cobbly Loam, 25-40% slopes
- DRH: Very Steep Rock Outcrop Association; Lc cobbly sandy loam, 40-70% slopes
- BWH: Very Steep Rock Outcrop Association; Ba silt loam, 25-70% slopes

Figure Six



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The CaE gravelly loams, found on Patsy Marley Hill and at the base of Greely bowl, are alluvium/colluvium formed soils which are deep and poorly drained. The water table is between 10-20" until mid-summer and mottled to depths of 18." The upper elevation rangesite soils are consistently more gravelly, while lower units are more silty to sandy clay loams. These soils seemed to fit this general description, except that hue value & chromas in the samples were slightly darker than those described by SCS.

The LcE soil unit is described by SCS as a cobbly sandy loam. Samples taken to 24" indicate they are more predominantly sandy loams. Hue values and chromas were darker than in the SCS manual, and exhibited values & chromas consistently at 2/2-2/1 which could qualify them as hydric. The location of these soils is closer to floodplain/deposition features than lateral moraines. These soils bear little resemblance to those described by SCS.

o **Classification of Albion Basin Soils by Order/Suborder<sup>10</sup>**

Based on the collection of over 100 soil samples ranging from shallow bedrock-overlain depths of 12" to 24" in deeper areas, the following orders & suborders characterize soils found in potential wetlands throughout Albion Basin:

1. **Entisols...**Soils without pedogenic horizons:
  - E1: Aquents (Seasonally saturated)
  - E2: Orthents (Loamy-clayey textures)
  - E4: Psamments (Sand or loamy sand textures)Most often found along glacial moraines and sideslopes throughout the Basin
2. **Histosols...**Organic Soils
  - H1: Fibrists (fibrous or woody peats, largely undecomposed) or woody or idle peats.
  - H2: Saprists (decomposed mucks)Limited to broad, wet meadow bottom lands in the upper Basin, beneath the Cecret Lift
3. **Mollisols...**Soils with nearly black, organic-rich surface horizons
  - M1: Aquolls (Seasonally saturated with water)
  - M2: Borolls (Cool or cold soils)Occurs in spring/stream channels throughout the Basin
4. **Spodosols...**Soils with accumulations of amorphous materials in subsurface horizons, often associated with coniferous forests
  - S1: Aquods (Seasonally saturated with water)
  - S2: Orthods (with subsurface accumulation of iron, aluminum, and organic matter)

### III. HYROLOGIC SETTING

Hydrologic discharge in the Albion Basin province is influenced principally by snowfall accumulation, and rainfall to a lesser extent. The discharge of Little Cottonwood Creek near the guaging station at the Sunnyside Lift base, and all of the first and second order upper Basin tributaries, is created by storage of snowmelt runoff in geologic structures modified by glaciation.

#### o Average Annual Snowpack in Albion Basin

The largest hydrologic contribution to spring and stream flow in the Albion Basin is snowpack. Mean annual total precipitation in the Rocky Mountain region in comparison to the United States ranges between 64-100 inches (Baldwin, 1973)<sup>11</sup>. Alta snowfall data is shown in **Figures Seven and Eight**.<sup>12</sup>

Discharge of the snowmelt to Little Cottonwood Creek begins in Mid-March (spring skiing conditions) and is well under way by April 1st. Second-order tributaries to Little Cottonwood Creek are Gunsite & Greely Bowl, Glory Hole, Cecret Lake, Devil's Castle cirque, Supreme Bowl, Catherine Pass, and Patsy Marley complex stream segments. These streams confluence into two main tributaries just east of the Sunnyside Lift base (**Figure Nine**).

The average annual discharge of Little Cottonwood Creek at the Sunnyside rating station is shown in **Figure Ten**. During a normal water year, the average peak discharge is about 12 cubic feet per second (c.f.s.). The majority of the discharge volume for the year occurs between April 1st and August 1st, when base flows range from 2-3 c.f.s. respectively.<sup>13</sup>

SUNNYSIDE RATING STATION - LITTLE COTTONWOOD STREAM  
ESTIMATED YEARLY HYDROGRAPH

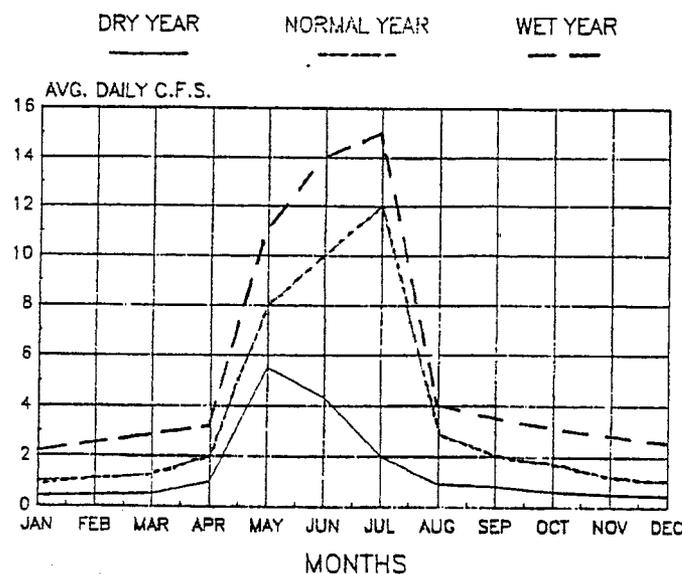
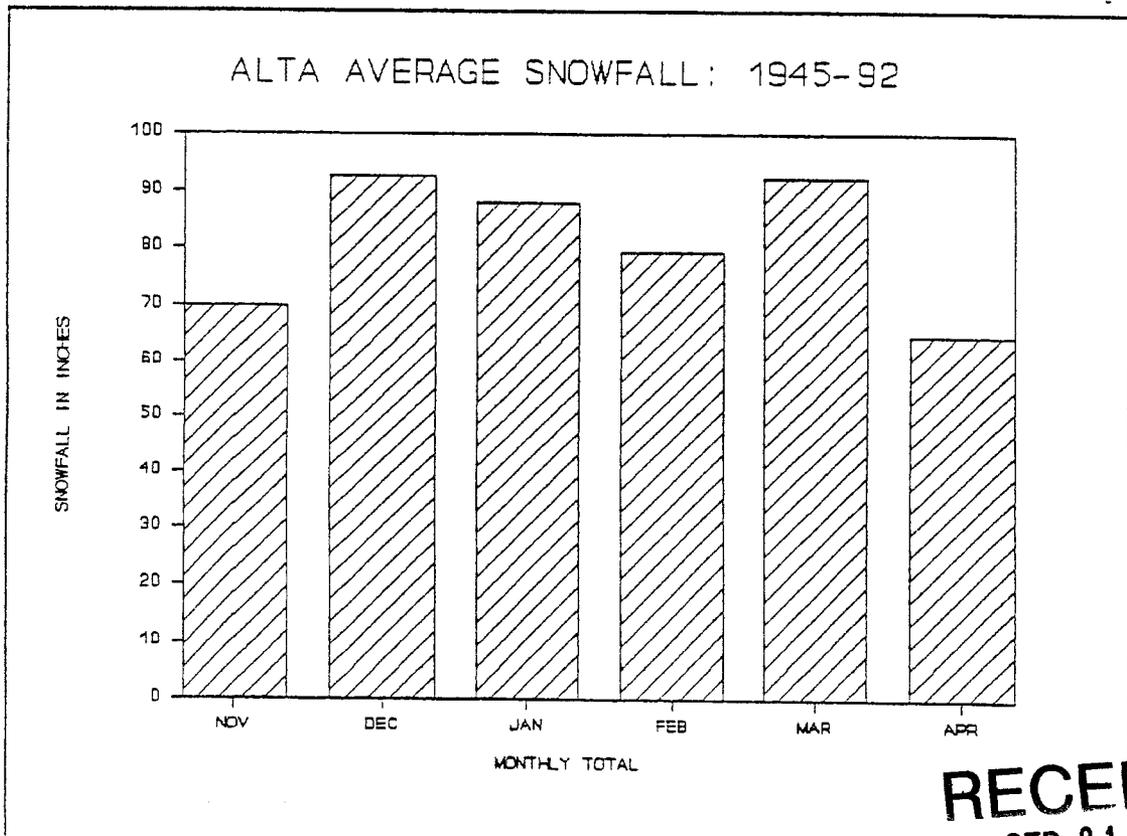
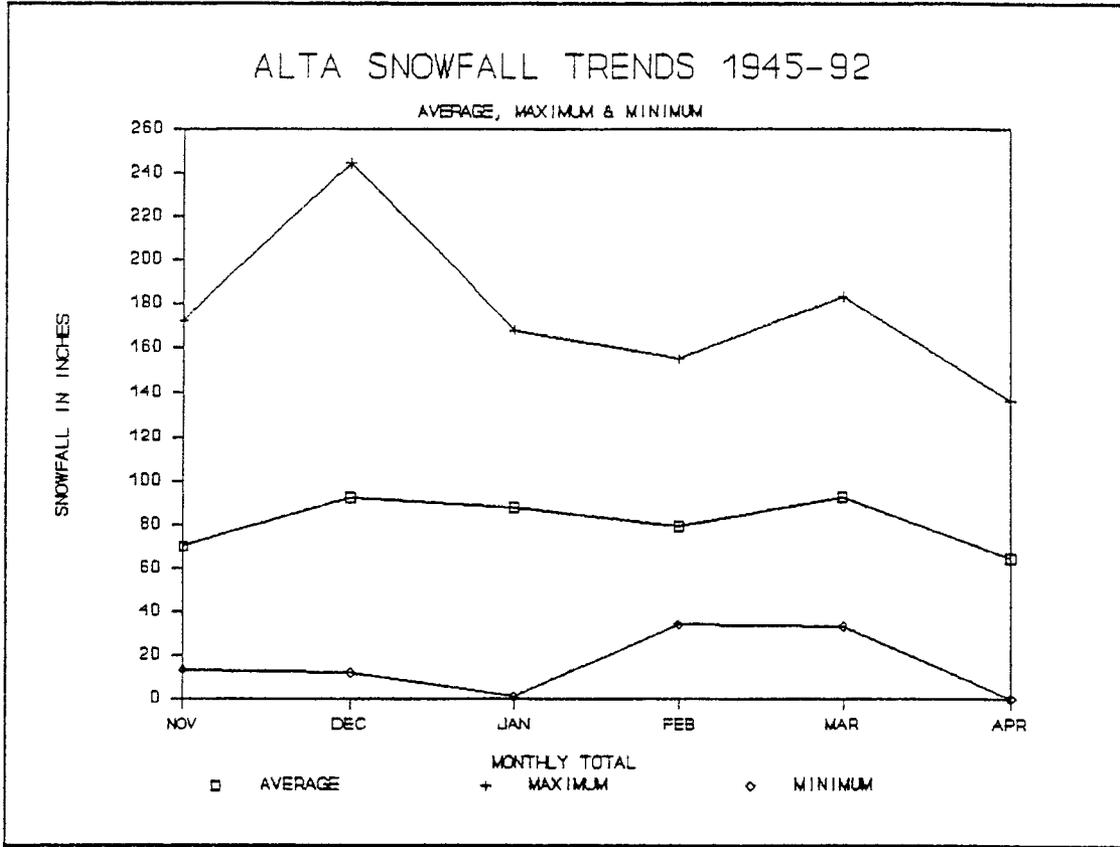


Figure Ten

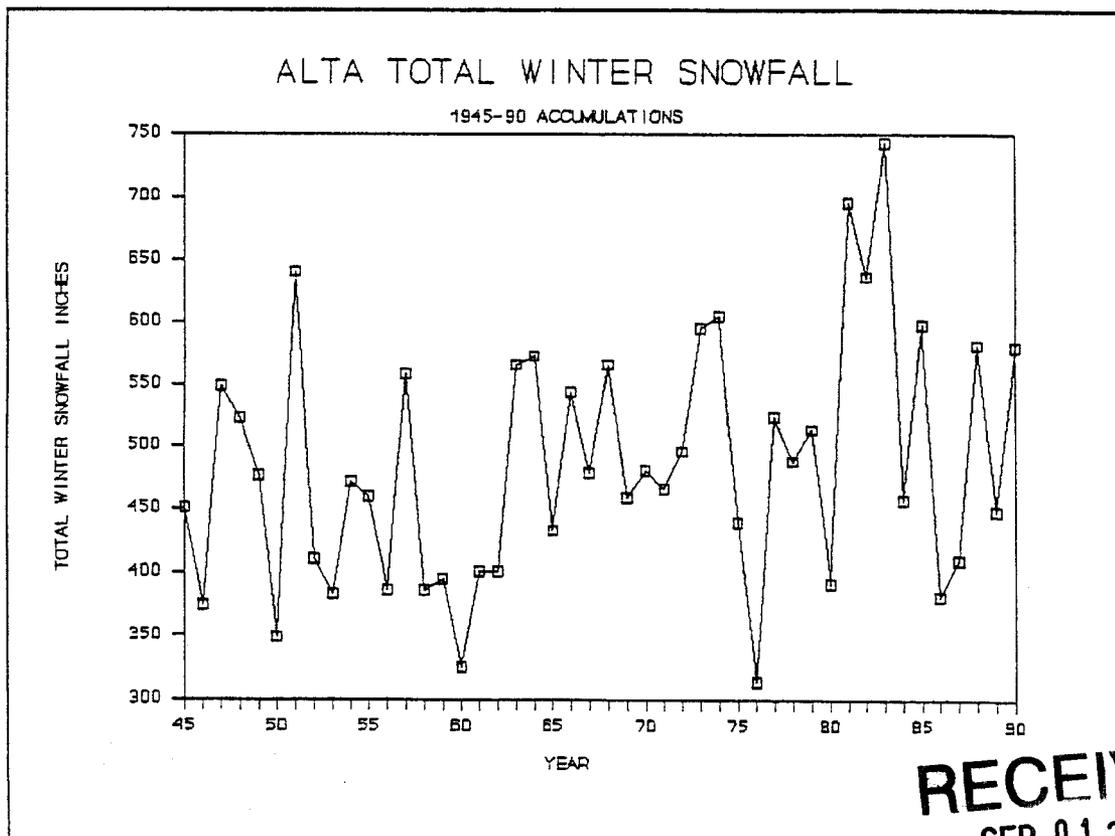
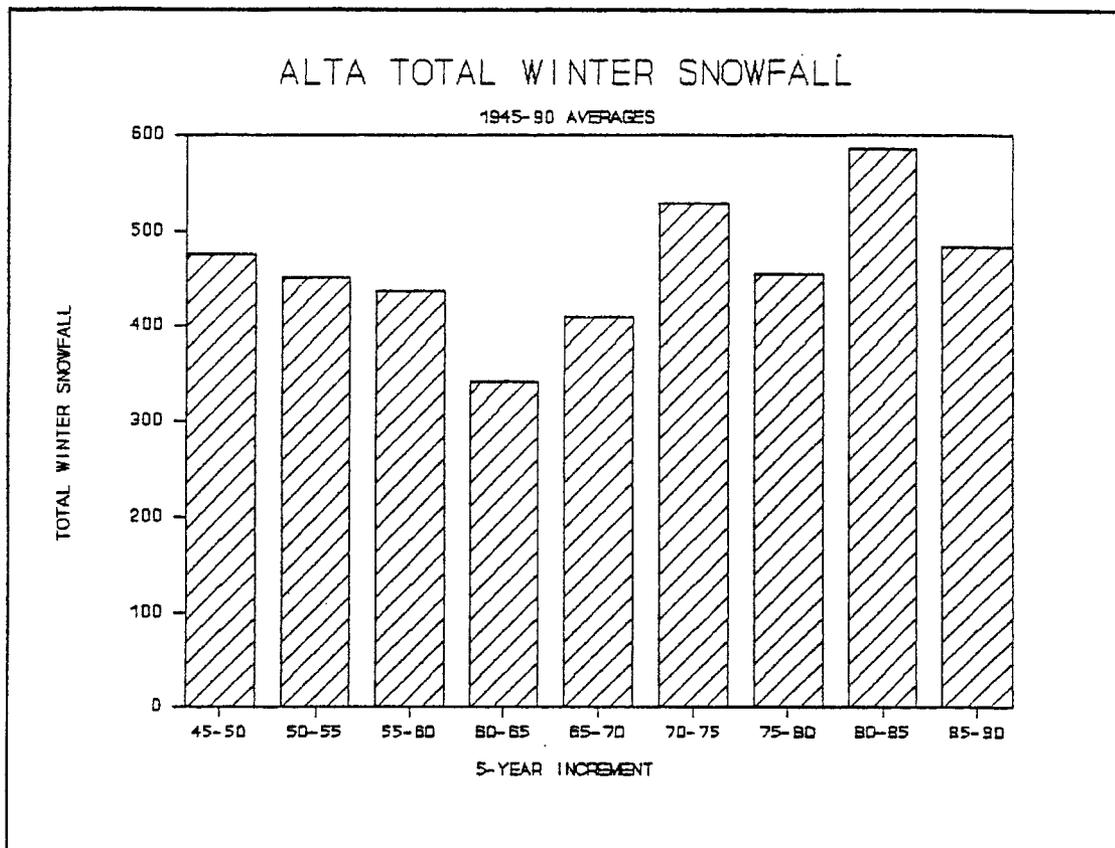
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Figure Seven



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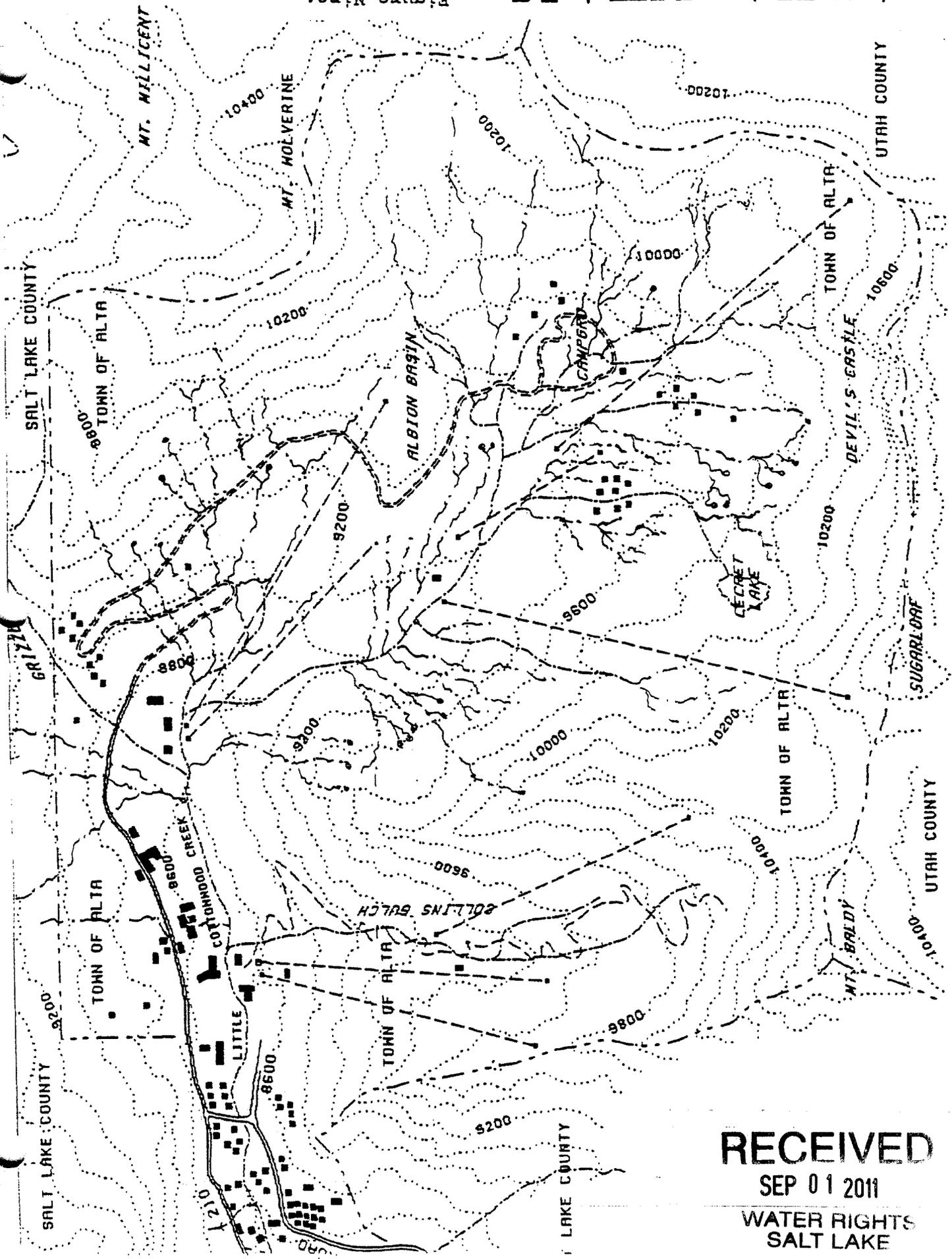
Figure Eight



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# ALTA, UTAH

Figure Nine:  
Albion Basin Surface Hydrology



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o Seasonal Soil Saturation in Albion Basin

The Soil Conservation Service estimates soil properties in the Summit Soil Survey area which includes Albion Basin.<sup>14</sup> The table below summarizes some of the mapping unit data which provides only clues to seasonal soil saturation:

SOIL TYPE	AV. ANNUAL PRECIP	FROST FREE SEASON	PERMEAB.	AVAIL. WATER CAPACITY	WATER SUP. CAPACITY
BaE Silt Loam	35-45"	50-70 Days	Mod.Slow	8.5-9.5"	18-22"
CaE Grav Loam	35-45"	50-70 Days	Mod.Rapid	3.5-4.5"	10-20" WT
CaC Grav Loam	35-45"	50-70 Days	Mod.Rapid	3.5-4.5"	10-20" WT
LcF Cobbly Sandy Loam	35-45"	50-70 Days	Moderate	4-5"	16-22"
LcE " " "	35-45"	50-70 Days	Moderate	4-5"	16-22"
PRE cob. Loam	30-45"	50-70 Days	Moderate	5.5-6.5"	17-19"

The frost free period in the Basin begins in May and extends into early September, almost double the amount of time estimated by SCS. The average annual precipitation is also higher than that estimated in the soil survey. Soil samples taken in the PRE, BaE, and CaE mapping units also exhibited characteristics of slower, rather than moderate or rapid permeability.

Saturation of soils was encountered at most elevations in each soil mapping unit even during the late summer and in one of the driest climatic regimes in 50 years. Particularly in drainage swales on steep side slopes, wetness and saturation was common. The period of soil saturation in this basin approaches 4-5 months or 120-150 days during late spring to early autumn.

o Saturated conditions on Glacial Till

The following quoted narrative is taken from the Federal Manual for Identifying and Delineating Jurisdictional Wetlands:

"Sloping wetlands occur in glaciated areas where thin soils cover relatively impermeable glacial till or where layers of glacial till have different hydraulic conditions that permit groundwater seepage. Such areas are seldom, if ever, flooded, but downslope groundwater movement keeps the soils saturated for a sufficient portion of the growing season to produce anerobic and reducing soil conditions. This promotes development of hydric soils and hydrophytic vegetation. Indicators of wetland hydrology may be lacking during the drier portion of the growing season. Hydric soil indicators also may be lacking because certain areas are so rocky that it is difficult to examine soil characteristics within 18 inches."<sup>15</sup>

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o **Wetland Hydrology Criterion**

In fact, most of the soil samples taken in areas dominated by facultative, facultative wet, or obligate vegetation, exhibit mineral characteristics and were either wet or saturated. Permeability may be moderate, but the soils appear poorly drained unless located along slopes composed of glacial till. Even for these sites, the duration of snowpack and snowmelt runoff may inundate or elevate groundwater to the extent that it meets wetland hydrology criteria. This saturation period encompasses mid-April to mid-July on lower slopes (8,600-9,600 ft.) or about two to three months depending on elevation.

The Corps of Engineers wetland hydrology criterion appear to be met at most soil transect sites.<sup>16</sup> These require saturation for only 2-3 weeks or 5% of the growing season.

**SOIL AND HYDROLOGY OF ALBION BASIN RANGESITE TRANSECTS**

The following descriptions of soil and hydrologic rangesite characteristics include a brief summary of the sub-watershed or drainage basin size, general slope, type, number, and source of hydrologic features, and influence of geology on soil/hydrology.

o **PATSY MARLEY HILL**

The total sub-watershed drainage area of both upper and lower Patsy Marley Hill rangesites contains approximately 520 acres. This rangesite contains approximately 81 acres. Elevations range from 10,700 ft. at Mt. Wolverine to 8,700 ft. near the confluence with Little Cottonwood Creek. Upper slopes are steep, ranging from 50-100%, with lower slopes between 10-40%.

Five seasonally intermittent drainages traverse the rangesite, beginning as snowmelt runoff at 9,000-10,000 ft. in early March, concluding discharge in late July to early August. At least five perennial springs discharge on mid-lower slopes of the site, which originate from groundwater storage in glacial till and talus deposited along the eastern flanks of the sub-watershed.

Groundwater saturation occurs along the full length of the rangesite for much of the growing season, due to storage of water in solifluction terraces formed from snowmelt on mid-upper slopes. By mid-summer, the more well drained soils begin to dry, leaving the drainages and adjacent areas wet to saturated.

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o **Transect 1**

This northwest to southeast line includes three data points which exhibit well drained sandy-gravelly loams within the 16-18" profile. These are very dark gray aquent entisols with chromas ranging from dark brown to dark yellowish brown. The soils are damp. The transect crosses a small Salix Drummondiana community supported by seasonal snowmelt runoff originating at about 10,000 ft. It ends in a granite outcrop area composed of large rockfall, glacial talus and till averaging from 1-6' in diameter size.

o **Transect 2**

This line is box-shaped, surrounding a small snowmelt nivation depression (aquatic bed) inhabited by a Salix Drummondiana/Veratrum community at 9,200 ft. In includes four data points with a variety of soil profiles ranging from fine organic loams to silty clay loams. The organic loams are redder 5YR hues with very dark gray, dark red-brown, to black profiles. These mollic aquolls are hydric and saturated with iron oxide mottling present in the lower horizon. The organic silty clay loams are similar but with very dark gray to black values and very dark brown chromas. They also exhibit iron oxide mottling but with black concretions and gold flecks of mica distributed throughout the lower horizon.

o **Transect 3**

This line extends from the upper road westerly downhill to the first S-turn, just south of the octagon-shaped cabin. It flanks a salix drummondiana community inhabiting a mostly perennial flowing channel between 9,000-9,200 ft. Three data points display hydric mollic aquolls consistently wet to saturated. They are mostly 10YR hues, very dark gray to black fine gravelly-organic clay loams with black to very dark brown chromas, exhibiting peaty characteristics. Some fine gravelly loams are more reddish 5YR hues.

o **Transect 4**

Beginning north of the octagon cabin, extending downhill westerly, this short transect flanks a salix community supported by perennial springs and snowmelt. It is characterized by shallow, uniform 10" profiles composed of very dark gray sandy clay loams, ranging from damp to saturated. The saturated areas occur on the lower transect level where black mottling occurs. Although saturation is variable across the transect, soils display largely hydric characteristics.

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o **Transect 5**

This long line begins at the upper S-turn cabins extending downhill in a southerly direction, intersecting several salix communities between 9,000-9,200 ft. which are supported by both perennial springs and intermittent snowmelt runoff.

Upper site soils are principally entisols with aquent/psamment traits and 10YR values ranging from dark gray to very dark gray, with very dark brown to dark yellowish brown chromas. Histic epipedons are present in upper horizons, and are most likely saturated for at least 60 days during the growing season.

The lower soils are a different story. These are organic histosols ranging from fibrist to saprist, (saturated peaty loams and mucky peats). They also tend to be shallow 8-10" uniform profiles.

o **Transect 6**

This line is located just below Transect 5, proceeding uphill and northerly to the cabins, and possesses characteristics almost identical to those of Transect 5, except that it has large communities of juncus articus and other obligate wetland species.

o **Transect 7**

Beginning west of the lower S-turn and extending downhill in a northwest orientation to the Alta Lift equipment shops, this saturated composite transect intercepts various plant community types. 10YR hues with upper black and lower dark gray horizons are principally hydric sandy to sandy clay loams.

o **Transect 8**

This line extends across the ski slopes just below the Albion loop road in a southwesterly direction at an elevation of 9,200 ft. It intersects an intermittent snowmelt drainage, together with a perennial spring flow. The sandy to sandy clay loams are orthent to aquent-textured entisols, originating from relic glacial till, possessing very dark gray values with dark brown chromas. Iron oxide mottling and gold mica flecks are common in the saturated clay loams, indicating reduced, anaerobic conditions typical of long term saturation between early April and late July.

o **WEST ALBION BASIN**

Containing about 440 acres, the subwatershed is a gently sloping network of perennial and intermittent drainages beginning at 9,200 ft. at the base of the Sugarloaf ski lift rising drastically to 11,000 ft. at Devils Castle and Sugarloaf Peak. Slopes average between 5-20%. This is the largest rangesite, containing about 109 acres.

The area is hydrologically complicated. It is traversed by four major first-order intermittent/perennial tributaries, and numerous groundwater discharges in the form of perennial springs. The origin of both streams and springs is storage from glacial talus and till formations located in alpine and subalpine cirques, nivation depressions, and solifluction terraces.

o **Devils Castle Cirque**

The principal geologic structure which influences hydrology in this rangesite is the Devils Castle cirque, a steeply glaciated formation at the southern end of Albion Basin. This feature is deeply carved at its base, forming a broad, deep nivation depression composed of glacial till and talus. The parent material is mainly shale from the Ophir formation (Cambrian), with alternating strata of Maxfield limestone, basal Mississippian limestone, Deseret-Madison undifferentiated limestone, and Tintic quartzite.

Deep snowmelt accumulations are stored in this depression and discharge to the West Albion rangesite as springs located at the base of the cirque. At least 12 large springs have this stored groundwater as the main source.

o **Cecret Lake**

Another dominant hydrologic feature in the rangesite is Cecret Lake, a glacial kettle, cirque lake or tarn. Cecret Lake (pronounced "secret" lake) has approximately a 2 1/2 acre surface area, and collects large alpine snowmelt accumulations from Sugarloaf Peak. It discharges a perennial stream down its drainage course into the western boundary of the West Albion rangesite, and confluences with the Glory Hole tributary before reaching Little Cottonwood Creek.

o **Transect 1**

Beginning at the southwest corner of the campground loop, this line extends southwesterly past the western edge of the Albion Alps subdivision (9,700 ft.), to the base of the Devils Castle cirque. The soils lie between two predominant rock outcrops and are generally shallow, fine silty loams with a uniform profile. These are very dark gray entisols with orthent, aquent, or psamment sub-order traits. An intermittent spring discharges near the base of the cirque, providing the principal source of seasonal soil saturation.

o **Transect 2**

Two data points comprise this transect which extends from the same campground loop beginning point (about 9,500 ft.) to the base of the Cecret Lake drainage (9,800 ft.). The wetland communities in this reach are supported by at least seven different springs which originate from the base of the Devils Castle cirque. These saturated, very fine silty clay loams are shallow, uniformly profiled, aquents. They display a 5YR hue with black values and chromas. These hydric soils support a variety of obligate, facultative wet, and facultative plant communities.

o **Transect 3**

Variable conditions characterize this line which extends from the southern edge of Cecret Lake subdivision to the campground loop. The line intersects three major intermittent to perennial tributaries at elevations ranging from 9,500-9,800 ft. The topography is "hill and dell" rocky outcrop to streamside drainage, changing drastically from upland plant communities to predominantly hydrophytic. Soil conditions range from: sandy-gravelly loam to being too rocky to dig; dark gray values with yellowish-brown chromas, to black values with very dark brown chromas; mostly damp to dry conditions.

Only those soils displaying values & chromas of 2/2 could be considered hydric within this transect.

Soils in this transect bear little resemblance to those which have shale parent material. The mixed gravel/cobble texture at the bottom of a drainage basin such as this suggests past drastic modification of the landscape by man-made or natural phenomena. Sites in the transect have either been filled or deposited by landslide or other erosional processes.

The characteristic deep, incised tributary courses suggest down-cutting through newly deposited, unstable material, depositing fines below the eroded channels. A separate soil survey conducted for the Alta-Little Cottonwood Study area (1975)<sup>17</sup> suggests that the upper basin may have been subjected to an ancient landslide, perhaps of post-pleistocene age.

o **Transect 4**

This transect extends from the campground loop west, below the Cecret subdivision to Tintic Quartzite outcrops flanking the western rangesite boundary. Grades are slightly flatter on this transect than those adjoining to the south, giving way to a more uniformly-sloped, deposition type fluvial system.

Soil conditions are wide ranging from gravelly loams to fine sandy loams to fine silty clay loams. They display characteristics of both aquent entisols and aquic mollisols. Bright inclusions of iron oxide mottling is common in the lower saturated horizons, and 4-6" histic epipedons are common in the upper horizons. The silty clays in the lower 8" horizon appear almost gleyed, with values & chromas ranging from 10YR 2/1 to 4/1.

Saturation of varying degree is common in these soils. The transect is generally wet and influenced by numerous springs which appear to have no discrete source. The upper soil horizons are often covered by mosses and are squishy and spongy when stepped on. The majority of the soils along this transect most likely meet hydric criteria.

o **Transect 5**

This is among the most interesting areas in the Basin, due to the unique hydrology, plant and soil conditions encountered.

The transect begins near the entrance to the campground loop and extends westward toward the Quartzite outcrops. The terrain is gently rolling depositional sandy clay loams until standing water is encountered in obligate vegetative communities comprised of *Carex Aquatilis* and *Pedicularis groenlandica* (Elephants Head). Saturated Histosols (black sandy clay loams and peaty loams) are common. Histic epipedons are evident with most soils, and iron oxide mottling is common in the sandy clay loams. The majority of the transect is saturated and hydric.

o **"The Cecret Fen"**

The hydrology of this transect is most interesting. It intersects at least eight live intermittent streams, half of which are groundwater discharges of one sort or another. Some of the springs appear to have no origin, and in fact may be a phenomenon of sheet flow across saturated plant communities which becomes braided, strewn, and separated across the rangesite:

"Peat composition greatly affects horizontal and vertical water movement and water retention...surface peat samples released water more readily than deeper samples... water movement in surface peat can be as much as 1000 times greater than water movement in deeper parts."<sup>18</sup>

This is the only area within Albion Basin which consistently exhibits peat soils (excluding Catherines Pass), dominated by *Carex aquatilis*, *mertensia*, *pedicularis*, *parnassia*, *mimulus* and other wetland obligates. The section of this transect directly below the lower Cecret lift is a distinct wetland usually denoted as a "fen" or "bog." Bogs, however, usually depend on direct precipitation, while fens have groundwater as the principal source of saturation.

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o Transect 6

The lower elevations and last of the West Albion transects are represented here. The line extends from the campground loop entrance west to a point just south of the Sugarloaf lift base station. The elevations range from 9,200-9,300 ft. This transect is very similar to transect 5, except that peaty loams are not as prevalent. Soils are mostly saturated aquolls with histic epipedons. Many are classic gleyed clays and clay loams, with hues of 5BG and values/chromas of 5/1 to 6/1, but Saprist Histosols (Mucky peat soils) occur with some regularity.

A unique aspect of the bluish gleyed soils is the presence of bright red and yellow mottling, iron oxide-sulfide traces, which could denote the existence of remnant mine tailings in the area. These were found within about 20 meters south of the Sugarloaf base station.

The transect is threaded through a maze of quartzite rock outcrops, where numerous springs discharge forming fascinating little moss-lined streamlets cascading through chains of 1-3' high waterfalls.

o ALBION MEADOWS

The rangesite designated as the "Albion Meadows" contains approximately 30 acres and is a rather long, broad, gently sloping meadow between 8,800 and 9,300 ft. elevation. Slopes average between 10-40% and are decorated with striking arrangements of colorful facultative, facultative wet, and obligate plants. The total subwatershed contains about 80 acres.

The hydrology of this site is difficult to assess, due mainly to the structure of the well-drained cobbly, gravelly, sandy loams. These are aquent entisols, remnants of lateral glacial till deposits underlain by Maxfield Limestone and Ophir Shale. Head-rilling is evident on this rangesite, indicating saturation with snowmelt or groundwater during the early part of the growing season. The rilling progresses to minor gullying on the downslopes toward Little Cottonwood Creek, which are well vegetated and non-eroding.

The very curious condition occurring on this site is the presence of a 2-3 acre plant community dominated by *Veratrum Californicum*, an obligate usually found in conjunction with *Salix* along the borders of intermittent drainages. The plants were beginning to stress in mid-July, indicating a very early and drastic drop in soil saturation. Saturation was more evident on the lower reaches of the site, closer to the creek.

o **Transect 1**

Fine sandy loams characterize this transect, with dark gray values and dark yellowish brown chromas. Soils are generally uniform, lacking definite pedogenic horizons, and are mostly dry to damp during July. It is likely that the site is saturated April, May, and most of June, when snowmelt runoff occurs.

Compared to many other sites in the Basin, this area probably receives very little snowmelt runoff because the zone of deepest accumulation is small and upper elevation snowmelt is intercepted by the Albion loop road. The soils are fairly well drained and fit the psamment subgroup of the entisol order.

The *Veratrum Californicum* community present at this transect is emergent very early, and retires very early. The site most likely becomes saturated enough to support obligates, but drains rapidly enough to stress the plants by mid-summer.

o **Transect 2**

Conditions here are very close to those in Transect 1, except that soils possess lower horizons of fine sandy clay loam. They are still dry to damp. *Veratrum* become widely dispersed.

o **Transect 3**

The lower sample site changes markedly from upper sites, where thick, 8" histic epipedons appear in the upper soil horizon, lower horizons are wet, and 10YR value/chromas are black/very dark brown. Widely distributed *Salix* groups are found here, indicating higher moisture concentration than on up-gradient transects.

These soils fall closer to the aquents, and most likely meet hydric criteria.

There is a very narrow margin between these deep, sandy loams and the shallower gravelly soils of fluvial origin near Little Cottonwood Creek.

o **ALBION BASIN LOOP**

This rangesite, like Albion Meadows, is located at the base of a larger drainage comprised of Catherines Pass and Supreme sub-basins. It encompasses approximately 30 acres, of which only about 11 acres are potentially wetland. It is a very gently sloping area with average grades between 5-20%. The loop includes a publicly owned Forest Service campground and part of a privately owned subdivision. The subwatershed is very large, encompassing about 600 acres, draining most of the Supreme area upper and lower slopes.

Geology of the area is Ophir Shale and various limestones. Soils are both alluvial and glacial till outwash from upper base formations, ranging from sandy loams to silty clay loams.

Seven first order intermittent tributaries cross the site, severely downcutting 6-10' in some instances. Snowpack accumulations on the upper sub-watershed are impressive, and the seasonal discharge of these streams extends into mid-August. Several springs originate and discharge within the upper loop, their origins upgradient in deeply drained glacial till and talus slopes.

As a result of this geology-soil-hydrology combination, a wide variety of plant communities occur, mostly facultative to facultative wet. The soil development is quite different than the adjacent West Albion rangesite: less organic, less saturated, more rapidly drained.

o **Transect 1**

A west-east line extends across the southern end of the campground inside the loop road, beginning at the southwest corner. Four data points exhibited a variety of soil conditions, all the same 10YR hue, but ranging from black/very dark brown value/chromas to gleyed. Many of the soils have damp to wet histic epipedons. These soils generally display pedogenic horizons, with the upper 6-8" having substantially higher organic content than the lower 8-12" horizon.

It is difficult to group soils here in any one order or suborder. Types range from alfisols of the aqualf/boralf suborder; Aquept or Andept Inceptisols; or mollic fluvaquents & borolls. Test sites vary greatly as to whether they meet hydric criteria, but in view of the fact that the transect crosses at least four intermittent drainages, it is likely that soils are seasonally saturated for at least three months during the growing season.

o **Transect 2**

Beginning at the northwestern loop road entrance and proceeding northeasterly to the base of the Catherine Pass trailhead, this transect crosses private ground, part of which has been subdivided. The elevation is at 9,400 ft. At least three seasonal intermittent-but dry-drains were crossed. This transect appears more well drained than the campground, and the soil profiles were consistently dry-damp fine silty loam or silty gravelly loam, with very dark gray "A" horizons. Plant communities are mostly facultative.

o EAST ALBION BASIN

This rangesite flanks the eastern boundary of the Albion loop, and extends from the southerly Supreme basin drainage north to the salix communities located just below 9,600 ft. near Catherines Pass trailhead. It includes about 26 acres, of which 17 are potential wetlands. Slopes range from 5-50%, which intersect 12-13 intermittent snowmelt drainages. Springs discharge just above the loop road, creating unique plant communities dominated by mosses, Parnassia, juncus, and other obligates.

The basic geology and soil structure is similar to the interior loop, but the soils around the springs are predominantly silt loams which are black, gleyed, mottled, and definitely hydric.

o Transect 1

This inventory line begins east of Albion Alps subdivision and extends northeasterly to the southern end of the Albion Basin subdivision at about 9,600 ft. elevation. It crosses 4-5 intermittent snowmelt drainages originating from the Supreme bowl area. All of these feed into the Albion Basin Loop rangesite.

The soil profiles are generally black to very dark brown fine silty loam in the upper horizon (10YR 2/2), and fine silty clay loam in the lower horizon (10YR 3/2). It is dominated by damp to wet conditions supporting salix, veratrum, carex, assorted mosses, lupine and coneflower. Most of the transect contains soils which meet hydric criteria, both in terms of saturation period and texture.

o Transect 2

This short line crosses numerous little springs characterized by spongy, moss-lined channels, and decorated with dispersed Parnassus, Elephant Head, and Mertensia. It extends northward along the outside of the loop road, and intercepts 3-4 intermittent drainages occupied by Salix. Soils range from damp-saturated uniform aquents composed of fine sand and fine sandy clay loam, to very wet, brightly mottled silty clay loam aquolls.

o GREELY BOWL, LOWER GREELY, AND NORTH RUSTLER

These rangesites are some of the most interesting in the basin, due to the unique hydrology and related geomorphology. They are systems which support saturated, facultative-wet plant communities distributed downslope from points of spring discharge at upper elevations. The total sub-watershed area contains approximately 320 acres. Together, this rangesite complex totals about 100 acres, among the largest communities in the Basin. Almost half (49 acres) of the combined area is potentially wetland.

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#### o Solifluction Terraces & Nivation Depressions

The rangesite is the steepest in the Basin, averaging between 15-70% slopes. The hydrology is complex, fed by at least 15 intermittent (many perennial) springs, and two major first order tributaries, Glory Hole and Gunsite. The springs discharge at a critical grade where groundwater saturation can no longer be stored in the soil or geologic substrate, and drains generously out of the hillsides forming dense thickets of salix drummondiana. These phenomena are termed "solifluction terraces," or "nivation depressions."

This condition can be observed near the summits of many alpine cirques in both Little and Big Cottonwood canyon, and is probably responsible for most overstory vegetation on steep canyon slopes.

Active solifluction appears to occur on these rangesites at elevations above 9,400 ft. Conditions become stable at lower slopes below the point of discharge where deep rooted salix keep soil creeping, sliding, and mass-wasting in check. The weight of the alpine & subalpine snow-pack is collected and stored in the glacial till and talus of the filled-in Greely Bowl cirque, where snowmelt collects and is slowly released as groundwater discharge to Little Cottonwood Creek.

#### o Faultlines

Another major influence on the discharge of geologic/soil saturation is the south-north running fault line which bisects the grandiorite of the Alta Stock formation, creating mid to upper elevation exposures of Maxfield Limestone and Ophir Shale. This fault line appears to run laterally to the 9,200 ft. elevation level occupied by Salix communities, and forms the basic configuration of sub-basin drainage for the upper Gunsite and Glory Hole tributaries.

Soil development along the western flanks of Albion Basin is influenced by a combination of upper formation colluvium and alluvium eroded downslope, and laterally deposited glacial till and talus. These have formed loose associations of gravelly loam and cobbly sandy loams, with water tables between 10-20" until mid-summer. Permeability is moderately rapid.

#### o Greely Bowl Composite Transect

A composite transect was taken south-north across the upper Greely cirque at an elevation of approximately 9,500 ft. Vegetation is mainly mixed facultative to facultative wet species, with isolated pockets of juncus, veratrum, and other obligates.

Surface hydrology across the transect was not obvious, and all four soil sampling sites were dry to a depth of 18" with traits most closely resembling orthent entisols, since pedogenic horizons were not evident. They may possess aquent characteristics earlier in the snowmelt runoff season, but it is very difficult to determine whether or not long-term saturation occurs. These are 10YR very dark gray/dark brown fine sandy loams.

o **Lower Greely Transect**

This transect was the most difficult to assess, due to the thickness and density of the salix community that calls it home. It extends 1500' northward from the Glory Hole tributary to the edge of the northernmost salix group. The elevation is about 9,200 ft. and is very steep. The transect intercepts about 12 intermittent and possibly perennial streams and springs which keep the site either wet or saturated.

Soil samples collected were mostly fine sandy to silty clay loams ranging in value from dark gray to black. They resemble aquolls (a mollisol suborder) with values & chromas usually between 3/1 and 2/1, with histic epipedons and mottling present. Some of the lower horizons are gleyed with bright yellowish brown mottles.

o **North Rustler Transect**

This box-shaped transect begins just above the Sunnyside Lift base and extends 1000' straight up to 9,400 ft., laterally across the slope, and down about 750 ft. It surrounds the salix community extending down these slopes, which easily exceed 60% near the top.

There are three principal springs which support the willows, and have formed uniform 12" thick saturated soil horizons of mucky, sandy, clay loam with 10YR values/chromas of 2/1. These soils are on the border of being classified as saprist histosols, and often heavily mottled in lower horizons with brownish-yellow inclusions. Some of the soils could be aquent entisols when uniform. The "control" sites along borders of salix drummondiana are dry, fine sandy clay loams, but most likely saturated for two to three months during the growing season. The majority of these soils appear hydric.

o **CREEK TOWNSITE**

The rangesite designated as the Creek Townsite lies at the foot of the Albion Basin drainage. It contains approximately 33 acres, and extends from the Alta day lodge to the end of the Goldminers Daughter parking area. The hydrology of the potential 20 acre wetland community here is supported mainly by Little Cottonwood Creek, and to a lesser extent several discharges from six first order tributaries (including Grizzly Gulch), and mine tunnels from the Emma Hill area.

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The geology of this study area is influenced by fluvial deposition and erosion of the stream channel. Parent material is glacial till and talus scoured from the upper Basin formations. The creek forms a broad, lower montane braided flood channel which fluctuates widely during spring runoff. The creek has been channelized and constricted by ski area development over the years which has slightly increased bank erosion and head-cutting.

Soil development is a product of stream fluvial dynamics. The Soil Conservation Service data designate the soils as gravelly loams with 8-15% slopes, but data collected during this study were mostly fine sandy loams, except near Goldminer's Daughter, where peaty to clay soils were found. Vegetation is primarily Salix Drummondiana and forbs related to that community.

#### o Goldminer's Daughter Transect

The salix community south of the Goldminer's Daughter parking area has historically been used for snow storage. As a result, soils stripped from the parking area during snow plowing operations have been deposited into the adjacent wetland. This transect was selected to survey soil conditions influenced by this specific land use.

A short transect extends from Little Cottonwood Creek northward through the salix community to the edge of the parking area, at an elevation of just under 8,600 ft. This site is seasonally inundated by spring floods (either directly by flooding or indirectly from groundwater saturation) and also saturated by deep accumulations of snow. Snowmelt ends by late June.

Soils are varied. Closest to the creek, they are sandy clay loams underlain with gravelly sand, ranging in chroma from dark gray to dark brown. Significant concentrations of histosols occur toward the middle of the transect, both saprist and fibrist types. Thick histic epipedons of peaty loam and peaty clay loam overlay heavily mottled lower horizons of sandy clay loams and coarse sandy loams. Values & chromas of these were most often black, resembling aquolls. Mottling tended to be yellowish brown. All of these soil horizons were either wet or saturated, and support extensive hydrophytes including carex, juncus, and salix. The majority of the soils meet hydric criteria.

#### o Creek Townsite Transect

This transect extends eastward from the Alta Ticket Office building to the old Gelandesprung ski jump ramp, crosses the creek, and extends westward to Alta Lodge. Soil samples were damp and represented by fine sandy loams. Dark brown to black histic epipedons occur in the upper horizons, and seasonal saturation of these soils categorize them as hydric, even though lower horizons are predominantly sand. They could be classified as mollic fluvaquents, due to the thick, dark surface layer.

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The vegetation is mainly facultative wet, dominated by salix drummondiana and related community forbs. The extent of the community had been drastically modified at the time of the inventory, with removal of about one acre of the salix to accommodate construction activity.

o UPPER PATSY MARLEY HILL

Toward the end of the inventory, it was decided that two additional rangesites should be added. These included the upper contributing drainages of Patsy Marley Hill, and Emma Hill above the Alta Townsite.

Upper Patsy Marley Hill is included in the 520 acre Patsy Marley sub-watershed area. The study area is approximately 29 acres, 16 of which are potentially wetland. It is a rather steep area with average 30-60% slopes, and is influenced by four major intermittent snowmelt drainages. Water on these steep slopes is stored in rockfall concentrations and laterally deposited glacial talus & till, and gradually discharged as springs during the summer. These upper slopes resemble solifluction terraces, with minor nivation depressions scattered along the lower slope reaches.

Springs discharge below the major rock outcrops on the upper half of the hill, supplied by storage in the network of cracks and fissures in the upper rock formations.

Vegetation is mainly Salix Drummondiana, Populus Tremuloides, and conifers scattered along the drainages between 9,400-10,000 ft.

o Transect 1

This is a southeast-northwesterly line extending across the 9,600 ft. elevation, alternately running through seasonally flooded drainages, rockfall, rock outcrops, and little subalpine meadows. Soil depths are quite variable, ranging from 8-24" and dry to wet conditions; from gravelly loams to fine sandy loams to coarse peaty loams. They are usually uniform aquent entisols with very dark brown to black chromas, consistently classified at 10YR 2/1. They are moderately well drained and very likely saturated between the end of April through the end of June. Vegetation is mainly Aspen and willow.

o Transect 2

Beginning at 9,400 ft. extending west-northwestward diagonally downhill, this transect intersects three intermittent drainages which carry both snowmelt runoff until mid-June, and spring discharges from the base of the cliffs. The vegetation consists of dense thickets of salix drummondiana, coneflower, veratrum, and associated facultative species.

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Soil conditions were variable, from dry to saturated. The fine-coarse sandy loams often possessed very dark brown to black histic epipedons, as did coarse peaty loams encountered. Near the drainages, saturated mucky peats and coarse, sandy-peaty loams displayed bright iron oxide mottling in lower horizons. Most of the soils sampled appear to meet hydric criteria.

o EMMA HILL

This large sub-basin drainage area includes about 350 acres of very steep terrain, drastically modified by past and present hardrock mining activity. Slopes average between 10-70%, with mid-slopes excavated for roads, tunnels, drains, buildings, sluices, rail lines, and dumps. The site is littered with mine tailings, and drainage channels have been directly impacted by excavated material from the mines.

Many of the drainages on Emma Hill are steeply downcut and incised from erosion caused by stripping away native vegetation during mining operations. There are six major first order tributaries flowing from elevations over 10,000 ft., which carry snowmelt runoff from mid-March to mid-June. This south-facing site is among the first to dry out during the growing season.

The principal geologic formations of this rangesite are the Deseret-Madison undifferentiated limestone, Maxfield limestone, Ophir shale, Tintic and Weber Quartzites, and Wisconsin Glacial Till. A half dozen faultlines run uphill from the main canyon road, forming the basis for much of the surface drainage and hydrology, which may also account for the deep, incised character of the stream courses.

The vegetation is mainly aspen, which has been shifted and moved over time with disturbance from mining activities. The soils are generally very well drained, but damp. Saturation occurs for at least two months during the growing season, and longer in the drainage bottoms, where most of the limited salix communities grow.

o Transect 1

Beginning just above Alta Central at 8,800 ft., this transect extends eastward for about 1200' along the contour. It crosses three intermittent tributary channels which are seasonally flooded for 2-3 months, and is occupied primarily by aspen trees.

Soils are dry-damp coarse-fine gravelly and sandy loams, often uniform in profile, with 10YR values and chromas ranging from 2/2-4/2, dark brown to very dark brown, most closely resembling aquent entisols. Dark upper profiles suggest histic epipedons.

o Transect 2

This one is an extension of TR 1, which begins where TR 1 leaves off, and extends to Grizzly Gulch at approximately 8,840 ft. Intersecting four intermittent tributaries, it possesses many soil, hydrologic, and vegetative characteristics similar to TR 1.

Most of the soils are fine sandy loams fitting the aquent entisol suborder, with very dark gray to grayish brown values & chromas. Of note, however, are fine gravelly silts and flaggy sandy to silty loams, dark yellowish brown or very pale brown, with bright iron oxide mottling. These occur in TR 2, sites III & IV and appear to be deposits from upslope mine tailings or excavated limestone.

Salix Drummondiana communities are basically "trapped" in the deep, incised intermittently flooded stream channels, where wet to saturated soil is more often found. While the other soil profiles were generally damp, they are likely saturated during at least one month during the growing season. Most of the soils do not meet hydric soil criteria.

o Transect 3

This short line extends along the 9,000 ft. elevation in proximity to the upper access road. It possesses very similar soil, hydrology and vegetation as TR 1 & 2. 10YR hues are 2/2 to 2/3 values & chromas, suggesting that even though they are fairly uniform fine sandy loams, they are saturated to the extent that they could support facultative, fac-wet, or obligate plants at least during part of the growing season.

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APPENDIX A  
SOIL AND HYDROLOGY DATA SHEETS

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PATSY MARLEY HILL RANGESITE I.  
 SOIL/HYDROLOGY PROFILE DATA  
 July 9-14, 1992  
 Transects 1 & 2

TRANSECT/SITE	SOIL TEXTURE		HUE/VALUE/CHROMA		HYDROLOGY
	HORIZON A		HORIZON A		
	HORIZON B		HORIZON B		
TR1/I	6"Fine Grav.Loam		10YR 3/3		Damp
	10"Fine Sandy Loam		10YR 3/4		Damp
TR1/II	6"Fine Grav. Loam		10YR 3/2		Damp
	10"Fine Sandy Loam		10YR 3/4		Damp
TR1/III	6"Fine Grav. Loam		10YR 3/3		Wet
	10"Fine Sandy Loam		10YR 3/4		Wet
TR1/IV	8"Fine Grav. Loam		10YR 3/3		Damp
	8"Fine Sandy Loam		10YR 3/4		Damp
TR1/V	8"Fine Grav. Loam		10YR 3/3		Damp
	8"Fine Sandy Loam		10YR 3/4		Damp
TR2/I	8" Organic Loam		10YR 3/4		Damp
	8"Fine Grav. Loam		10YR 3/4		Damp
TR2/II	8"Fine Org. Loam		5YR 2.5/1		Wet
	8"Fine Org. Loam (Iron Oxide Mottling Present)		5YR 3/2		Saturated
TR2/III	16"Uniform Coarse Gravelly Loam		10YR 3/2		Saturated
TR2/IV	8" Organic Silty Clay Loam		10YR 2/2		Saturated
	8" Silty Clay Loam (Iron Oxide Mottling w/Black Concretions)		10YR 3/4		Saturated
					Saturated

- Notes:
- Both Transects generally damp
  - Two intermittent drainages cross the transects, recently saturated by snowmelt
  - No significant changes in soil type
  - Veratrum Californicum occurs near outside zones of Salix Drummondiana communities in areas consistently saturated

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PATSY MARLEY HILL RANGESITE I.  
 SOIL/HYDROLOGY PROFILE DATA  
 July 14-17, 1992  
 Transects 3,4 & 5

TRANSECT/SITE	SOIL TEXTURE HORIZON A HORIZON B	HUE/VALUE/CHROMA HORIZON A HORIZON B	HYDROLOGY
TR3/I	10"Fine Grav.Loam Very shallow soil profile-uniform	5YR 3/2	Damp-Wet
TR3/II	10"Fine Grav.Clay Loam.Peaty.Hydric	10YR 2/1	Wet-Saturated
TR3/III	6"Fine Organic Loam 10"Fine Sandy Clay Loam	10YR 2/1 10YR 3/4	Wet Wet-Saturated
TR4/I	10"F Sndy Clay Loam Shallow soil profile	10YR 3/2	Wet
TR4/II	10"Fine Sandy Loam	10YR 3/2	Damp
TR4/III	10"F Sndy Clay Loam Black Mottling @ 2/1	10YR 3/2	Saturated
TR5/I	6"Coarse Sandy Loam Histic Epipedon 6"Coarse Sandy Loam	10YR 3/2 10YR 4/4	Wet Wet
TR5/II	16"Uniform Fine Sandy Loam.	10YR 3/4	Damp
TR5/III	4" Dark Peaty Loam 6" F Sndy Peaty Loam	10YR 2/1 10YR 3/4	Wet Saturated
TR5/IV	10"Dark Peaty Loam	5YR 2/1	Saturated
TR5/V	8"Mucky Peat-Uniform	5YR 2/1	Saturated

Notes:

1. 10" soil pit depths due to shallow rock
2. Profile is commonly uniform.
3. Veratrum commonly found in Sandy CLAY Loam within this range.
4. Very wet transects. Numerous seeps.
5. Site saturation rare in such a low water & snowpack year (60% of normal).
6. Gold mica flecks often found in Clays

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PATSY MARLEY HILL RANGESITE I.  
 SOIL/HYDROLOGY PROFILE DATA  
 July 17-23, 1992  
 Transects 6,7 & 8

TRANSECT/SITE	SOIL TEXTURE		HUE/VALUE/CHROMA		HYDROLOGY
	HORIZON A		HORIZON A		
	HORIZON B		HORIZON B		
TR6/I	4" Peaty Clay Loam		10YR 2/1		Saturated
	6" Silty Clay Loam (Iron Oxide Mottling)		10YR 2/1		Saturated
	4" Coarse Sandy Clay		10YR 4/4		Saturated
TR6/II	10" Peaty Muck. Uniform		10YR 2/1		Saturated
TR6/III	4" Peaty Loam		10YR 2/2		Damp
	6" Sandy Loam		10YR 2/2		Damp
TR6/IV	4" Peaty Loam		10YR 2/1		Damp
	6" Sandy Loam		10YR 3/2		Damp
TR7/I	8" Sandy Loam		10YR 2/1		Saturated
	8" Sandy Clay Loam		10YR 4/3		Saturated
TR8/I	6" Fine Sandy Loam		10YR 3/3		Damp
	10" Fine Sandy Loam		10YR 3/3		Damp-Dry
TR8/II	12" Sandy Clay Loam Uniform. Iron Oxide Mottling		10YR 3/3		Saturated

Notes:

1. Gold mica flecks common in clays
2. Transect 6 Peaty muck represents riparian vegetation with Veratrum & large Juncus Articus communities
3. Transect 6 Peaty loam represents Aspen Grove communities.

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WEST ALBION BASIN RANGESITE  
 SOIL/HYDROLOGY PROFILE DATA  
 July 27-29, 1992  
 Transects 1,2,3 & 4

TRANSECT/SITE	SOIL TEXTURE HORIZON A HORIZON B	HUE/VALUE/CHROMA HORIZON A HORIZON B	HYDROLOGY
TR1/I	12" Fine Silty Loam Uniform & Shallow	10YR 3/2	Damp-Dry
TR1/II	12" Fine Silty Loam	10YR 3/2	Wet
TR1/III	12" Fine Silty Loam Uniform & Shallow	10YR 2/2	Damp
TR2/I	12" Very Fine Silty Clay Loam, Uniform	5YR 2.5/1	Saturated
TR2/II	12" Very Fine Silty Clay Loam, Uniform	5YR 2.5/1	Saturated
TR3/I	12-18" Sandy-Gravelly Loam, Uniform	10YR 4/4	Dry
TR3/II	8" Gravelly Loam 10" Fine Sandy Loam	10YR 2/2 10YR 2/2	Damp Damp
TR3/III	Too Rocky to dig		
TR4/I	6" Fine Sandy Loam 6" Fine Sandy Clay Loam (Iron Oxide Mottling)	10YR 3/3 10YR 3/4	Damp Damp-Wet
TR4/II	6" Gravelly Loam 6" Sandy-Gravelly Loam	10YR 3/3 10YR 5/6	Dry Dry
TR4/III	4" Fine Sandy Loam Histic Epipedon 8" Silty Clay (Extensively Mottled Bright Fe Inclusions)	10YR 2/1 10YR 4/1	Wet Wet
TR4/IV	6" Fine Silty Clay Loam 6" Fine Silty Clay Loam (Fe Mottling. Black Incl) 4" Fine Sandy Clay Loam (Black Mottling)	10YR 2/2 10YR 4/3 10YR 4/3	Saturated Saturated Saturated

Note: Iron & Manganese Inclusions may indicate long periods of saturation

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WEST ALBION BASIN RANGESITE  
 SOIL/HYDROLOGY PROFILE DATA  
 July 27-29, 1992  
 Transects 5 & 6

TRANSECT/SITE	SOIL TEXTURE HORIZON A HORIZON B	HUE/VALUE/CHROMA HORIZON A HORIZON B	HYDROLOGY
TR5/I	8" Sandy Clay Loam Histic Epipedon Present	10YR 2/1	Saturated
	4" Fine Silty Clay (Fe Mottling Present)	10YR 3/4-6	Saturated
TR5/II	6" Peaty Loam	5YR 2.5/1	Saturated
	10" Mucky Peat	5YR 2.5/1	Saturated
TR5/III	16" Sandy Loam. Uniform	10YR 3/2	Damp
TR6/I	8" Fine Sandy Clay Loam Histic Epipedon	10YR 2/2	Saturated
	8" Gleyed Clay (Bright Red/Yellow Mottling Present)	5BG 5/1	Saturated
TR6/II	6" Peaty Loam	5YR 2.5/1	Saturated
	10" Mucky Peat	5YR 2.5/2	Saturated
TR6/III	4" Sandy Loam	10YR 2/1	Damp-Dry
	12" Fine Sandy Loam	10YR 3/6	Damp

- Notes:
1. Transect 5 encountered Peat Bog (Fen) beneath Cecret Lift. Standing Water present.
  2. Transect 6 encountered Peat Bog (Fen) beneath Cecret Lift. Standing Water present. This fen encompasses approximately 5-6 acres, and is dominated by obligate species.
  3. Transect 6 encountered major concentrations of true Bluish-gray gleyed soils.

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ALBION BASIN MEADOW RANGESITE  
 SOIL/HYDROLOGY PROFILE DATA  
 July 30, 1992  
 Transects 1, 2, & 3

TRANSECT/SITE	SOIL TEXTURE HORIZON A HORIZON B	HUE/VALUE/CHROMA HORIZON A HORIZON B	HYDROLOGY
TR1/I	8" Fine Sandy Loam 12" Fine Sandy Loam	10YR 4/6 10YR 4/6	Dry Dry
TR1/II	6" Fine Sandy Loam 12" Fine Sandy Loam	5YR 4/6 5YR 4/6	Dry Dry-Damp
TR1/III	6" Sandy-Gravelly Loam. 12" Sandy-Gravelly Loam	10YR 2/2 10YR 2/2	Damp Damp
TR1/IV	6" Sandy-Gravelly Loam 12" Sandy-Gravelly Loam	10YR 2/2 10YR 2/2	Damp Damp
TR2/I	6" Sandy Loam 6" Fine Sandy Clay Loam	10YR 3/6 10YR 3/6	Damp Damp
TR2/II	6" Sandy Loam 6" Fine Sandy Clay Loam	10YR 3/6 10YR 3/6	Damp Damp
TR2/III	6" Fine Sandy Loam 12" Fine Sandy Loam	10YR 4/6 10YR 4/6	Dry Dry
TR3/I	8" Fine Sandy Loam Histic Epipedon 10" Fine Sandy Loam	10YR 2/2  10YR 2/2	Dry  Wet

- Notes:
1. Some areas of the meadow appear to have been recently modified by filling and revegetation of primarily bromus sp.
  2. The soils within these transects appear to be problem types, i.e. entisols or spodosols with glacial till origins (well drained sandy soils)
  3. The meadow most likely meets saturation requirements under Corps guidelines, but appears well drained.
  4. The meadow most likely meets vegetation community requirements under Corps guidelines, but the obligate species are stressed from water shortage.

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ALBION BASIN LOOP RANGESITE  
 SOIL/HYDROLOGY PROFILE DATA  
 July 30-31, 1992  
 Transects 1 & 2

TRANSECT/SITE	SOIL TEXTURE HORIZON A HORIZON B	HUE/VALUE/CHROMA HORIZON A HORIZON B	HYDROLOGY
TR1/I	8" Fine Sandy Loam Histic Epipedon 8" Fine Sandy Loam	10YR 2/2  10YR 3/4	Damp-Wet  Damp
TR1/II	12" Silty Loam 4" Silty Loam	10YR 2/2 10YR 4/6	Dry Dry
TR1/III	2" Silty Clay Loam 16" Grav.Coarse Sand	10YR 5/1 10YR 3/6	Saturated Saturated
TR1/IV	6" Fine Sandy Loam 12" FineSandy-Grav.Loam	10YR 2/2 10YR 3/4	Damp Damp
TR2/I	6" Fine Silty Loam 8" Fine Silty Clay Loam	10YR 3/3 10YR 3/6	Dry-Damp Damp
TR2/II	6" Fine Silt Loam 18" Fine Silt Loam	10YR 3/3 10YR 3/3	Dry Dry
TR2/III	8" Fine Silty-Grav Loam 8" Fine Silty-Grav Loam	10YR 3/3 10YR 3/3	Dry Damp
TR2/IV	8" Fine Silty Loam 10" Fine Silty Loam	10YR 3/2 10YR 3/2	Dry Damp
TR2/V	6" Fine Silty Loam 10" Fine Silty Loam	10YR 3/2 10YR 3/2	Dry Dry

- Notes:
1. Some areas of the loop appear to have been modified by filling and revegetation
  2. The meadow most likely meets saturation requirements under Corps guidelines, with several springs originating and discharging in the upper loop campground.

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**EAST ALBION BASIN RANGESITE**  
**SOIL/HYDROLOGY PROFILE DATA**  
 August 7, 1992  
 Transects 1 & 2

TRANSECT/SITE	SOIL TEXTURE HORIZON A HORIZON B	HUE/VALUE/CHROMA HORIZON A HORIZON B	HYDROLOGY
TR1/I	12" Fine Silty Loam Uniform Profile	10YR 2/1	Damp
TR1/II	4" Fine Silty Loam 12" Fine Silty Clay Loam	10YR 2/2 10YR 3/2	Damp Damp
TR1/III	4" Fine Silty Loam 12" Fine Silty Clay Loam	10YR 2/2 10YR 3/2	Damp Damp
TR2/I	8" Organic Silt Clay Loam 10" Silty Clay Loam (Bright Iron Oxide Mottling Present)	10YR 2/2 10YR 2/1	Wet Wet
TR2/II	12" Uniform Fine Sand	10YR 3/2	Damp
TR2/III	18" Fine Sandy Clay Loam Uniform Soil Profile	10YR 2/1	Saturated

- Notes:
1. Transect 1 dominated by Salix, Veratrum, Carex, Mosses, Lupine & Coneflower.
  2. Transect 2 is a unique plant community which is dominated by spring discharges surrounded by Pernassus & Elephant Head with Veratrum, Mertensia, and other FACW species.

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GREELY BOWL/LOWER GREELY/NORTH GREELY RANGESITES  
 SOIL/HYDROLOGY PROFILE DATA  
 August 12-14, 1992

TRANSECT/SITE	SOIL TEXTURE HORIZON A HORIZON B	HUE/VALUE/CHROMA HORIZON A HORIZON B	HYDROLOGY
<b>Greely Bowl</b>			
TR1/I	8" Fine Sandy Loam	10YR 3/3	Dry
	10" Fine Sandy Loam	10YR 2/2	Dry
	(Composite Sample across cirque)		
<b>Lower Greely</b>			
TR1/I	4" Fine Silty Clay Loam	10YR 2/1	Wet
	8" Fine Silty Clay	10YR 3/1-5/1	Saturated
	Mottling @ 5/8 Gleyed		
TR1/II	8" Grav-Sandy Clay Loam	10YR 4/4-4/1	Wet
	8" Fine Sandy Clay	10YR 4/1-4/3	Wet
	(Mottling Present)		
TR1/III	8" Fine Silty Clay	10YR 2/1	Wet
	Histic Epipedon		
	8" Fine Silty Clay Loam	10YR 2/1	Wet
	(Mottling Present)		
TR1/IV	16" Fine Silty Clay Loam	10YR 2/3	Damp
	Uniform Profile		
<b>North Greely</b>			
TR1/I	6" Fine Sandy Clay Loam	10YR 3/2	Dry
	6" Sandy Clay Loam	10YR 3/3	Dry
TR1/II	12" Fine Sandy Clay Loam	10YR 3/3	Dry
	Uniform Profile		
TR1/III	12" Fine Sandy Clay Loam	10YR 3/2	Dry
	Uniform Profile		
TR1/IV	12" Mucky Sandy Clay Loam	10YR 2/1	Saturated
	Uniform Profile		
	Heavily Mottled @ 6/8		
TR1/V	12" Mucky Clay Loam	10YR 2/1	Saturated

Notes: 1. Several springs originate and discharge within the these transects  
 4. The rangesite slopes resemble solifluction terraces

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**CREEK TOWNSITE AND GOLDMINER'S DAUGHTER RANGESITES**  
**SOIL/HYDROLOGY PROFILE DATA**  
 August 18, 1992

TRANSECT/SITE	SOIL TEXTURE HORIZON A HORIZON B	HUE/VALUE/CHROMA HORIZON A HORIZON B	HYDROLOGY
<b>Goldminers Daughter</b>			
TR1/I	4" Sandy Clay Loam 8" Gravelly Sand	10YR 4/1 10YR 3/3	Saturated Saturated
TR1/II	8" Peaty-Org. Clay Loam (Heavily Mottled @ 5/8) 10" Sandy Clay Loam (Heavily Mottled)	10YR 2/1 10YR 5/2	Saturated Saturated
TR1/III	8" Grav-Sandy Loam 8" Grav Clay Loam (Mottling Present)	10YR 3/3 10YR 2/1	Wet Saturated
TR1/IV	8" Peaty Loam Histic Epipedon 8" Coarse Sandy Loam	10YR 2/1 10YR 2/1	Wet Wet
<b>Creek Townsite</b>			
TR1/I	6" Grav-Sandy Loam Histic Epipedon 8" Gravelly Sand	10YR 2/1 10YR 4/2	Damp Dry
TR1/II	8" Fine Sandy Loam 8" Fine Sandy Loam	10YR 3/2 10YR 3/3	Damp Damp
TR1/III	6" Fine Sandy Loam Histic Epipedon 12" Fine Sandy Loam	10YR 2/1 10YR 2/2	Damp Damp
TR1/IV	6" Fine Sandy Loam 12" Fine Sandy Loam	10YR 2/1 10YR 2/2	Damp Damp
TR1/V	6" Fine Sandy Loam 6" Fine Sandy Loam	10YR 2/1 10YR 2/2	Dry Damp

- Notes:
1. These transects are characterized by seasonally flooded "streamlets" of Little Cottonwood Creek.
  2. Further extensive investigation of Goldminer's Daughter transect is recommended, including full chemical analysis.

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UPPER PATSY MARLEY HILL RANGESITE  
 SOIL/HYDROLOGY PROFILE DATA  
 August 27-28, 1992  
 Transects 1 & 2

TRANSECT/SITE	SOIL TEXTURE HORIZON A HORIZON B	HUE/VALUE/CHROMA HORIZON A HORIZON B	HYDROLOGY
TR1/I	12" Fine Sandy Loam Uniform Profile	10YR 2/1	Dry
TR1/II	4" Fine Sandy Loam Histic Epipedon 12" Fine Sandy Loam	10YR 2/1 10YR 2/1	Damp Damp
TR1/III	8" Fine Sandy Loam Very Shallow Profile	10YR 2/1	Damp
TR1/IV	9" Coarse Peaty Loam Histic Epipedon 9" Coarse Sandy Loam	10YR 2/1 10YR 2/1	Damp Wet
TR2/I	4" Fine Sandy Loam Histic Epipedon 12" Coarse Sandy Loam	10YR 2/2 10YR 3/4	Dry Dry
TR2/II	6" Fine Sandy Loam 6" Coarse Sandy Loam	10YR 2/1 10YR 2/2	Dry Dry
TR2/III	8" Coarse Peaty Loam Histic Epipedon 10" Fine Sandy Loam	10YR 2/1 10YR 2/2	Wet Wet
TR2/IV	8" Coarse Peaty Loam 10" Fine Sandy Loam	10YR 2/1 10YR 2/2	Wet Wet
TR2/V	8" Mucky Peat 10" Coarse Sandy Clay Loam (Iron Oxide Mottling Present)	10YR 2/1 10YR 2/1	Saturated Saturated
TR2/VI	10" Coarse Sandy Peaty Loam (Bright Mottles)	10YR 2/1	Saturated

- Notes:
1. TR2 I & II are a composite Aspen/Willow site
  2. TR2 V taken in stream channel above Cahill's Spring Box

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EMMA HILL RANGESITE  
 SOIL/HYDROLOGY PROFILE DATA  
 August 31-September 10, 1992  
 Transects 1, 2 & 3

TRANSECT/SITE	SOIL TEXTURE HORIZON A HORIZON B	HUE/VALUE/CHROMA HORIZON A HORIZON B	HYDROLOGY
TR1/I	3" Coarse Gravelly Sand 12" Fine Sandy Loam	10YR 4/2 10YR 3/3	Dry Damp
TR1/II	3" Coarse Gravelly Sand 12" Fine Sandy Loam	10YR 4/2 10YR 3/3	Dry Damp
TR1/III	10" Fine Grav-Sandy Loam Uniform Profile	10YR 3/4	Damp
TR1/IV	4" Fine Sandy Loam 12" Fine Sandy Loam	10YR 2/2 10YR 2/2	Damp Damp
TR1/V	12" Fine Sandy Loam Uniform Profile	10YR 2/2	Damp
TR2/I	8" Fine Sandy Loam 12" Fine Sandy Loam	10YR 2/2 10YR 3/2	Damp Damp
TR2/II	8" Fine Sandy Loam 12" Fine Sandy Loam	10YR 2/2 10YR 3/2	Damp Damp
TR2/III	12" Flaggy Sand-Silt Loam Bright Iron Oxide Mottles Uniform Profile	10YR 4/4	Damp
TR2/IV	8" Fine Gravelly Silt 6" Fine Gravelly Sand	10YR 6/3 10YR 3/2	Damp Damp
TR2/V	8" Fine Silty Sand 8" Hard Peaty Loam	10YR 2/2 10YR 2/1	Damp Damp
TR2/VI	12" Fine Sandy/GravLoam Uniform Profile	10YR 2/2	Damp
TR3/I	6" Fine Sandy Loam 10" Fine Sany Loam	10YR 2/2 10YR 3/2	Dry Damp

- Notes:
1. Entire Rangsite disturbed from historic and present mining activity
  2. FACW communities limited to steep draws
  3. Fine silts appear to originate from mines.  
(TR2/IV)

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**DECISION NOTICE AND  
FINDING OF NO SIGNIFICANT IMPACT**

**Albion Basin Winter Travel Management Plan Amendment**

**USDA-Forest Service  
Salt Lake Ranger District, Wasatch-Cache National Forest  
Town of Alta  
Salt Lake County, Utah**

**Decision and Reasons for the Decision**

**Background**

This document details my decision regarding a proposal (Proposed Action) to amend the 2005 Winter Recreation Travel Management Plan (Travel Management Plan) for the Salt Lake Ranger District in a portion of upper Little Cottonwood Canyon. By amending the Travel Management Plan, the Proposed Action would allow the conditional use of snowmobiles and snowcats for access to 36 homes and cabins through a portion of Alta Ski Area, on National Forest System (NFS) lands. This use is currently prohibited by the Travel Management Plan and Forest Service regulations, and has been for at least 25 years.

An Environmental Assessment (EA) has been prepared to analyze the impacts of implementing the Proposed Action and three alternatives to it. The proposal arose from a need to address safety issues associated with private homeowners using snowmobiles and snowcats, or "over-snow vehicles" (OSVs), for access to their homes and cabins in the winter. These routes are located within a developed portion of Alta Ski Area known as Grizzly Gulch and Albion Basin. In traveling through the ski area, OSVs cross busy ski trails or share runs with skiers for extended distances. The potential for a collision between a snowmobile or snowcat and a skier is obvious, and the consequences for the skier could involve serious injury or death. Similarly, OSVs traveling during the ski day, after the evening slope grooming concludes, can leave ruts and rough snow that could lead to skier injury.

In the sections which follow, this document outlines my decision regarding amending the Travel Management Plan, summarizes the rationale for my decision, lists mitigation measures that will be applied to help better enforce and implement the decision, and includes alternatives that were considered in the environmental analysis and in reaching my decision. In addition, this Decision Notice summarizes the public involvement effort that was an important part of the EA process; describes why no significant environmental impacts would likely occur; documents how the decision would be consistent with applicable laws, regulations, and policies; and provides information about the administrative review opportunity that is available for those who may disagree with the decision.

**Decision**

A number of people who commented asked that the Forest Service recognize the unique nature of homeowner OSV access in Grizzly Gulch and Albion Basin in reaching a decision. As we did research and prepared the environmental analysis, we could find no comparable situations anywhere in the country. While motorized access to homes located within a ski area is not unusual, we found no instance where ski area development and home and cabin construction on this scale has not been comprehensively planned, designed, and coordinated. I believe my decision reflects the unusual nature of the situation and balances the competing interests.

Based upon a careful review of the analysis and alternatives contained in the EA, personal site visits over the course of the past two winters and much deliberation, my decision is to amend the Travel Management Plan in a way which combines aspects of two alternatives discussed in the EA. My decision generally reflects Alternative B, or the Proposed Action, for the three homeowner areas and the 21 homes in Albion Basin. There the 8

AM to 5 PM closure to OSV use would be retained, but a designated route would be opened for use from 5 PM to 8 AM to the Cecret Lake area. With respect to the Grizzly Gulch area (including Emma Heights and the Cahill cabin) and the 15 homes there, my decision opens the route in Alternative D, but with no timing restrictions. Except for a short section leading to the Cecret Lake area which would be open only from 5 PM to 8 AM, all other OSV routes I am exempting from the area closure are ones which already exist and are being used for homeowner access, notwithstanding the current closure. The approximate location of these routes is shown on the map attached to this Decision Notice. I envision that over time there may need to be slight adjustments to the routes depicted due to snow conditions, skier use patterns, and other factors. These types of minor changes would not require additional analysis, or a modification of the decision.

Though it was considered in Alternative D in the EA, my decision does not involve differing restrictions for snowcats versus snowmobiles. Likewise, the amendment to the Travel Management Plan will not make a distinction between homeowners, family members, guests, or tenants, in terms of whether they can operate an OSV to travel to and from the homes across the National Forest. For the purpose of this Travel Management Plan amendment and decision, all of these individuals will be considered "residents."

Up to this point, the Travel Management Plan has prohibited use of OSVs in this area except for those persons or entities who: 1) hold a contract or permit specifically exempting them from the closure; 2) are members of an organized rescue or firefighting organization; 3) are government officers involved in official business; or 4) are members of an organized rescue or firefighter organization.

To implement my decision, the exemptions in the Travel Management Plan will be expanded for those residents who have obtained a permit from the Town of Alta and who travel on designated OSV routes during approved hours. Residents who meet these two conditions would be exempt from the winter closure when operating an OSV on designated routes to access:

- 1) Grizzly Gulch at any time during the winter;
- 2) Albion Basin from 5 PM to 8 AM during the ski season, or at any time of the day before or after the ski season;
- 3) Albion Basin after having provided the Forest Service a copy of a written agreement from Alta Ski Area.

Among the public input we received were comments expressing concern about how the Proposed Action might create problems for residents during an emergency. Under the exemptions to the closure, persons having a Forest Service permit exempting them from the effect of the closure order will not be prohibited from operating an OSV in the closed area. Under regulations at 36 CFR 251.50, the temporary use of National Forest land when necessary for protection of life or property in emergencies is not prohibited without a permit as long as a permit is obtained at the earliest opportunity, or the permit requirement is waived by the Forest Service. Pursuant to this regulation, there is no requirement to obtain a permit from the Forest Service in advance in order to operate an OSV in the closed area if necessary for emergency protection of life or property, and such emergency OSV use is therefore not prohibited by the closure.

In order to improve visibility for both skiers and OSV operators, my decision also authorizes Alta Ski Lifts to thin trees at a number of key intersections. In total the thinning will involve less than 0.1 acres of forest land and involve no ground or soil disturbance.

This decision pertains only to NFS land, even though the attached map depicts routes crossing properties owned by others. If no right-of-way exists, it is the responsibility of individual OSV users to obtain permission or authorization from the owners of these other properties before entering them. In addition, this decision addresses only over-snow motorized travel and does not affect seasonal restrictions applicable to summer motorized use.

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## Rationale

Skier safety was the most important factor in making my decision, while allowing residents sufficient access for reasonable use of their property. The hazard to skiers must be addressed. Approximately 38 percent of the existing 1.9-mile OSV route from the Grizzly Gulch parking area to Albion Alps homeowner area is comprised of skier interface areas and other undesignated areas which support relatively high skier traffic. Almost all of these areas are located in beginner level ski terrain. Most of the undesignated skiing areas are located in the section from where the OSV route crosses under the Albion Lift, to just east of Alf's Restaurant. My decision would reduce the total linear distance of skier/OSV interface areas from 2,620 feet, as is currently the case, to 403 feet located along the lower section of Forest Road 028 (Summer Road). There is clear evidence of the seriousness of this issue based on the accidents which have occurred involving skiers and ski area OSVs at other resorts. Privately-owned OSVs, especially those operated by individuals with a wide variety of driving skills and knowledge of the area, only heightens my concern. I am not persuaded by the fact that there is no record of a skier/OSV collision at Alta Ski Area and will not wait for a tragedy to act.

In making my decision I am very much aware of the long history and complex nature of issues surrounding OSV use in Albion Basin and Grizzly Gulch. Some feel strongly the Forest Service does not have the authority to regulate access across NFS land because of pre-existing rights of access, held either by homeowners or by State or local government. Though it was not the focus of the EA, it does not appear that any pre-existing right of access exists which supersedes the Forest Service's authority to reasonably regulate OSV use as proposed in this decision. Since I do not believe it inconsistent with the various claims to access rights that have been presented to the Forest Service, the EA properly set aside these legal questions and focused its analysis on the environmental issues and safety considerations related to appropriate management of OSV use. It went on to note that administrative and judicial processes exist to evaluate and resolve title disputes on lands administered by the Forest Service. In fact, a title claim has been submitted and is under review by Forest Service real estate specialists and legal counsel. Nothing in this decision will alter the eventual determination regarding the title questions that have been raised. If the title claim review reveals that this decision is inconsistent with pre-existing rights-of-way or easements, my decision would be modified as needed.

Many who provided public comment during the EA process also reminded us of a 1981 agreement which they believe conveyed a permanent commitment by the Forest Service to not restrict their winter access. At that time, a large expansion was underway, which included construction of both the Cecret and Supreme Lifts. It is difficult for me to understand all of the circumstances which led to this agreement by the District Ranger and the ski area to not "interfere with present established access and egress" for homeowners. I can only conclude that over the years the situation has changed significantly. Obviously, the expansion brought many more skiers into the area in general and introduced lift-served skiing into areas surrounding the Albion Basin and Albion Alps subdivisions. In addition, it's my belief ski area grooming and improved OSV technology have also been a factors in an increase in OSV usage by area homeowners. It is unfortunate those who were involved in 1981 agreement could not predict the issues 26 years later and I regret some may view this decision as a broken promise, but the skier safety issues are compelling and must be addressed.

## Mitigation and Implementation Measures

A number of measures surfaced during the EA process which could help to address skier safety issues, but were not included as part of the various alternatives. In that some of these are not within the capability or authority of the Forest Service to implement or require, they are listed below as recommended measures.

- Implement a cooperative program between the ski area and the Town to educate OSV operators and improve route signing.
- Require that easily identifiable Town OSV registration be attached to OSVs at all times.
- Make a valid State driver's license, vehicle insurance, and an agreement to hold the Town and ski area harmless a prerequisite to OSV registration.
- Limit the number of OSVs which may registered and used for each home.
- Impose penalties for violations, including fines and loss of OSV privileges.

- Establish and enforce an OSV speed limit.
- Institute legal requirements for audible and visual warning devices for OSVs.

### **Other Alternatives Considered**

In addition to the Proposed Action, we considered a number of alternatives in the EA. Some of these were eliminated from detailed study because they did not meet the purpose and need for action, or were otherwise outside the scope of the review. Four alternatives were analyzed in detail in the EA. A summary of these alternatives follows below, along with an explanation of how they factored into my decision.

#### Alternative A (No Action)

This alternative would have retained the existing Travel Management Plan that prohibits all winter motorized travel in the area without a specific authorization and that would have allowed winter access to homes only for those traveling by skis, on foot, or using a ski lift. As noted earlier, Travel Management Plans going back to at least 1982 have prohibited all winter motorized travel in the area without a special use permit.

This alternative was not selected because it would have restricted residents' access beyond what is needed to address skier safety.

#### Alternative B (Proposed Action)

This alternative involved amending the Travel Management Plan to allow OSV access for all homeowners from 5 PM each day, to 8 AM the following morning on designated routes. Between 8 AM and 5 PM, the ski area would be closed to OSV travel, except for what is authorized under the ski area's special use permit. During the ski day, homeowners could access their property using ski lifts, on foot, or by skis. Unlike Alternative A, this alternative would allow homeowner access by OSVs after the ski area closes each spring on currently designated routes.

My decision incorporates the concepts of Alternative B with respect to Albion Basin homeowner areas. However, I did not extend these restrictions to the Grizzly Gulch area because it was not warranted, given the much more limited potential for skier/OSV collisions on the route these homeowners use.

#### Alternative C

This alternative was intended to capture suggestions received from homeowners and included several options. One option involved a route that skirted some of the busier portions of the ski area during the ski day, along with use of the existing OSV route before and after the ski day. The ski day route would have utilized Forest Road 028 for OSV travel. The other route was essentially the existing one, generally following Home Run and Dipsy Doodle ski runs. A variation of this option included constructing a snow road below Forest Road 028, across upper Crooked Mile and Patsy Marley ski trails, in order to avoid avalanche paths. Finally, this alternative also included the option of relocating the Home Run section of the OSV travel route to an alignment along the base of Alta's race arena and Blue Bell and Dipsy Doodle ski trails.

I did not select either option included in Alternative C because they did not sufficiently reduce the chance for collisions and tended to move the areas where a skier might collide with an OSV to different locations. Using Forest Road 028 for OSV travel during the ski day would reduce the linear distance that skiers and OSVs interface by about 1,361 feet, as compared to the existing situation. However, it creates a new interface area, near the top of the Sunnyside Lift, where lower ability level skiers must navigate on a narrow trail, as well as several others between the Supreme and Secret lifts.

Relocating the Home Run section of the OSV route would have presented several challenges and trade-offs. Moving the trail to a steeper side slope would have been difficult in early season with low snow conditions. In

addition, this relocation would effectively eliminate the lower portions of several ski runs, including the race course. While this would eliminate four skier/OSV crossing and approximately 252 feet of interface, approximately 2,368 feet of interface areas would remain. Consequently, I do not believe these options adequately address skier safety concerns.

#### Alternative D

In part, this alternative was developed in recognition that the OSV route for Grizzly Gulch homeowners has fewer skier safety issues than do existing access routes for upper Albion Basin homeowners and that the route Emma Heights homeowners use does not interface at all with skier traffic. Implementing this alternative would have entailed allowing motorized access for these homeowners without hourly restrictions. Albion Basin homeowners would have been allowed only snowmobile access during the ski day, and both snowmobile and snowcat access between 5 PM and 8 AM. In both cases, travel would be restricted to existing OSV routes. In addition, this alternative would include selected tree removal at several ski trail intersections to improve sight distances for both OSV operators and skiers. Post-ski season access OSV access would be allowed as described in Alternative B.

With respect to larger Grizzly Gulch area, this is the selected alternative. However, I did not choose to adopt Alternative D's snowmobile-versus-snowcat conditions because I do not believe it would have sufficiently addressed the skier safety issue. While snowmobiles tend not to create rough snow surface conditions, in some respects they present a greater hazard to skiers than do snowcats because of their faster speeds and lower visible profiles. Finally, I believe it's reasonable to conclude that snowmobile use in Albion Basin would have increased as residents adapted to Alternative D's restrictions on snowcats.

### **Public Involvement**

Public notices about the proposed amendment to the Travel Management Plan were placed in the Salt Lake Tribune on December 5, 2005 and January 7, 2006. Approximately 80 letters or emails were received during the extended 60-day public scoping period. In addition, the Town of Alta held two meetings in the winter of 2005-06 during which comments were made about the proposal. On July 19, 2006, a Preliminary EA was sent to interested parties and persons and an additional 42 letters or e-mails were received. All of this input was carefully reviewed and the individual comments about various issues associated with the proposal were placed in general categories, or topic areas. Appendix A of the EA contains a complete listing of the comments raised during both the initial scoping period and the comment period for the Preliminary EA. This appendix also includes an agency response to each of the categorized comments.

### **Finding of No Significant Impact**

After considering the environmental effects associated with amending the Albion Basin Travel Management Plan as described in the EA, I have determined that my decision will not have a significant effect on the quality of the human environment. Thus, an environmental impact statement will not be prepared. I base my finding on the following:

1. My finding of no significant environmental effects is not biased by the beneficial effects of the action.
2. There will be no significant effects to public health and safety.
3. There will be no significant effects to unique characteristics of the area and this decision will not affect cultural resources in the area. In addition, there are no parklands, or prime farm lands in the area. While the project area is generally located with an eligible wild and scenic river corridor, nothing in this decision will affect its potential for formal designation.
4. The effects on the quality of the human environment are not highly controversial. While there is concern about restricting access to homes, there is no scientific controversy about the effects of implementing my decision.

5. The environmental analysis shows that the effects of my decision do not involve unique or unknown risks.
6. This decision will not set a precedent for future actions with significant effects.
7. The cumulative impacts of my decision are not significant.
8. This decision will have no significant effects on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places. This action will not cause loss or destruction of significant scientific, cultural, or historic resources.
9. This decision will not adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
10. This decision will not violate Federal, State, or local laws or their requirements for protection of the environment.

## Findings Required by Other Laws and Regulations

My decision is consistent with provisions of the 2003 Revised Land and Resource Management Plan for the Wasatch-Cache National Forest (Forest Plan). The project area lies within an area allocated in the Forest Plan to a management prescription category emphasizing quality recreation opportunities in developed areas such as campgrounds, trailheads, boat docks, and resorts (page 4-73).

The Forest Plan indicates that the Winter Recreation maps which were a part of the Plan would serve as the basis for District Travel Management Plans (page 4-90). Though my decision involves a change to the Salt Lake District Winter Travel Management Plan, an amendment to the Forest Plan is not required. The exemption will be granted is for the purpose of providing access to privately-own homes consistent with the requirements of Federal law and regulations (36 CFR 251.110), rather than for public recreation purposes. In fact, the Forest Plan was enacted subject to valid existing rights such as these (page 5-2). Further, the Forest Plan's Winter Recreation Map for the Central Wasatch Management Area designates the Albion Basin area as neither "Motorized" nor "Non-motorized", but instead classifies it as "Ski Resort." As a developed ski area, residents' motorized use would occur within an area that already sees the daily traffic of ski area snowmobiles and snowcats. Finally, this decision to modify the District's Winter Travel Management Plan was taken as an alternative way of authorizing residents' access to their homes versus issuing as many as 36 special use permits, an action which would also not have required a Forest Plan amendment.

Findings related to other laws and regulations are summarized below:

**Alaska National Interest Lands Conservation Act of December 2, 1980** – Under Section 1323(a) of this Act, the Forest Service is required to provide such access across NFS land that the agency determines to be adequate for reasonable use and enjoyment of the private property. Where Forest Service closures are in place, the most common method of complying with the Act involves the agency issuing a special use permit or easement to exempt the private property owner from the closure. However, modifying an existing closure order to allow the otherwise prohibited use is also consistent with the Act.

I understand that my decision will impose some conditions on winter access to homes in both Grizzly Gulch and Albion Basin, as compared to the status quo situation where homeowners operate OSVs in violation of the Travel Management Plan. For several homeowners in Albion Basin who use their homes as a primary residence, this may present serious challenges. For others, it will require additional planning and coordination for trips to homes. In spite of that, I believe my decision sets reasonable limits that are appropriate in light of the serious skier safety issues. As such, my decision is consistent with the Alaska National Interest Lands Conservation Act.

**Clean Water Act of December 27, 1977** – The Clean Water Act requires each state to implement its own water quality standards. The State of Utah's Water Quality Anti-degradation Policy requires maintenance of water quality to protect existing in-stream Beneficial Uses on streams designated as Category 1 High Quality Water. All surface waters geographically located within the boundaries of the Wasatch-Cache National Forest,

whether on public or private lands, are designated as Category 1 High Quality Water. My decision will not affect the existing high quality water flowing through the area.

**Executive Order 11990 of May 24, 1977** – This order requires the Forest Service to take action to minimize destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. In compliance with this order, Forest Service direction requires that analysis be completed to determine whether adverse impacts would result. My decision will have no adverse effects to wetlands located within the project area and therefore is in compliance with E.O. 11990.

**Executive Order 11988 of May 24, 1977** – This order requires the Forest Service to provide leadership and take action to: (1) minimize adverse impacts associated with occupancy and modification of floodplains and reduce risk to flood loss; (2) minimize impacts of floods on human safety, health and welfare; and (3) restore and preserve natural and beneficial values served by floodplains. My decision will have no adverse effects to floodplains.

**Endangered Species Act of December 28, 1973** – This Act directs that all Federal departments and agencies shall seek to conserve endangered, and threatened (and proposed) species of fish, wildlife and plants. This obligation is further clarified in a National Interagency Memorandum of Agreement (dated August 30, 2000) that articulates a shared mission to "...enhance conservation of imperiled species while delivering appropriate goods and services provided by the lands and resources." Based on the information disclosed in the Biological Assessment it has been determined that this decision will have no adverse effects to populations of endangered, and threatened (and proposed) species of fish, wildlife and plants

**Executive Order 13186 of January 10, 2001** – This Executive Order relates to conservation of migratory bird species. My decision is in compliance with this Executive Order for the Conservation of Migratory Birds.

**Executive Order 13112 of February 3, 1999** – This Executive Order directs that federal Agencies should not authorize any activities that would increase the spread of invasive plant and animal species. This decision will not increase the spread of invasive species.

**American Antiquities Act of 1906 and the National Historic Preservation Act of 1966** – There would be no effects to any historic properties relative to this decision.

**Prime Farmland, Rangeland and Forest Land (Secretary of Agriculture Memorandum 1827)** – This is no prime farmland or grazing allotments within the project area.

**Civil Rights Act of July 2, 1964** – Based on comments received during scoping and the comment period there would be no adverse effects to groups or individuals protected under the federal Civil Rights Act.

**Executive Order 12898 of February 16, 1994 "Federal Actions to Address Environmental Justice on Minority Populations and Low-income Populations"** – This order requires federal agencies, to the extent practicable and permitted by law, to make achieving environmental justice part of its mission by identifying and addressing as appropriate disproportionately high and adverse human health effects, of its programs and policies and activities on minorities and low-income populations in the United States and territorial possessions. No minorities and low-income populations were identified during public involvement activities that would be affected by this decision.

### **Administrative Review or Appeal Opportunities**

This decision is subject to administrative review (appeal) pursuant to 36 CFR Part 215. The appeal must be filed (regular mail, fax, email, hand-delivery, or express delivery) with the Appeal Deciding Officer at *Appeal*

*Deciding Officer, Jack Troyer, Regional Forester, 324 25<sup>th</sup> Street, Ogden, Utah 84401 fax 801-625-5277.* The office business hours for those submitting hand-delivered appeals are: 8:00 to 4:30, Monday through Friday, excluding holidays. Electronic appeals must be submitted in a format such as an email message, plain text (.txt), rich text format (.rtf), and Word (.doc) to [appeals-intermtn-regional-office@fs.fed.us](mailto:appeals-intermtn-regional-office@fs.fed.us). In cases where no identifiable name is attached to an electronic message, a verification of identity will be required. A scanned signature is one way to provide verification.

Appeals, including attachments, must be filed within 45 days from the publication date of this notice in the Salt Lake Tribune, the newspaper of record. Attachments received after the 45-day appeal period will not be considered. The publication date in the Salt Lake Tribune, newspaper of record, is the exclusive means for calculating the time to file an appeal. Those wishing to appeal this decision should not rely upon dates or timeframe information provided by any other source.

Individuals or organizations who submitted comments during the comment period specified at 215.6 may appeal this decision. The notice of appeal must meet the appeal content requirements at 36 CFR 215.14.

**Implementation Date**

If no appeals are filed within the 45-day time period, implementation of the decision may occur on, but not before, 5 business days from the close of the appeal filing period. When appeals are filed, implementation may occur on, but not before, the 15<sup>th</sup> business day following the date of the last appeal disposition.

**Contact**

For additional information concerning this decision or the Forest Service appeal process, contact Steve Scheid, Salt Lake Ranger District, 6944 S 300 E, Salt Lake City UT 84121, 801-733-2689.

**/S/ Faye L. Krueger**

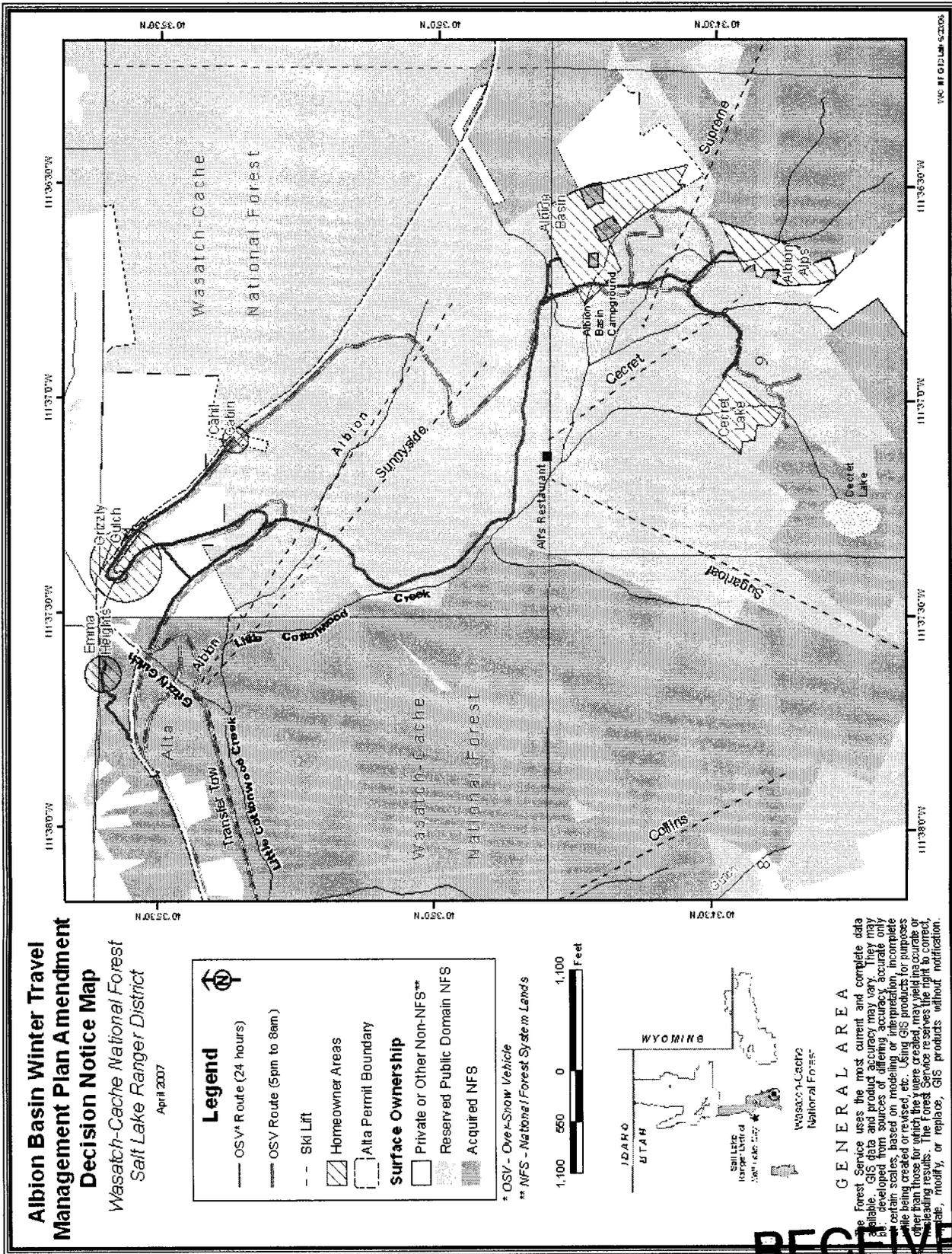
**March 28, 2007**

\_\_\_\_\_  
Faye L. Krueger  
Forest Supervisor

\_\_\_\_\_  
Date

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

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USFS Decision on  
Appeal



United States  
Department of  
Agriculture

Forest  
Service

Intermountain Region

324 25<sup>th</sup> Street  
Ogden, UT 84401  
801-625-5605

File Code: 1570-1  
#07-04-00-0053-A215

Date: **JUL 05 2007**

Scott H. Martin  
Snow, Christensen & Martineau  
10 Exchange Place, Eleventh Floor  
P.O. Box 45000  
Salt Lake City, UT 84145-5000

CERTIFIED MAIL – RETURN  
RECEIPT REQUESTED

Dear Mr. Martin:

This is my decision on the appeals of the Decision Notice and Finding of No Significant Impact (DN/FONSI) for the Albion Basin Winter Travel Management Plan Amendment. There were 21 appeals filed. One appeal was dismissed. All other appeals were consolidated into one set of contentions and I am issuing one decision.

In accordance with 36 CFR 215.18, I have reviewed the project record, Environmental Assessment (EA), DN/FONSI and the issues raised in the appeals. Although every contention made in the appeals may not be cited in the same order or format as raised in the appeals, I did consider all the concerns raised. In reviewing the appeals, I considered the recommendation of the Appeal Reviewing Officer. A copy of that recommendation is enclosed.

### **LEGAL BACKGROUND**

#### ***Forest Service Authority to Impose Travel Restrictions***

Many issues raised on appeal concern the authority of the Forest Service to regulate access. The appellants assert various theories for public or private rights of access across the National Forest land affected by the Forest Supervisor's Closure Order, which the appellants assert are exempt from Forest Service regulation and restrictions. It is important to point out first that the Forest Service closure and restrictions apply only to National Forest System lands, interests in land administered by the Forest Service such as rights-of-way or easements, and roads under Forest Service jurisdiction. Use of any public road through the Forest Service closure area that is under town, county, or state jurisdiction would not be subject to Forest Service restrictions, but would instead be subject to regulation by local or state government entities. Use of private easements or rights-of-way through the closure area would be governed by different laws and regulations. However, the record does not contain sufficient information for the Forest Supervisor to determine if public or private easements or rights-of-way exist through the closure area. Neither the Forest Supervisor's decision nor this appeal decision is intended to address this question. These are title claims which may be presented to the Forest Service, the Bureau of Land Management, or the Federal courts at any time, and which are not foreclosed or limited by the Forest Supervisor's decision.

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The Forest Supervisor's decision concerns management of winter motorized use on National Forest System land. Historically, this area has been closed to all forms of winter motorized use. However, homeowners in the area have been using over snow motorized vehicles to access their homes through the Alta Ski area. Technically, this use has been in violation of the Forest Service closure order. In recognition that this use was occurring, and that it was not consistent with the existing travel plan and closure order, the Forest Supervisor initiated a process for reconsidering the restrictions on use of the National Forest land in this area. Recognizing that motorized use had been occurring to access homes in the area, the Forest Supervisor attempted to craft exemptions to the closure that would allow for reasonable access to private property, while meeting needs for National Forest Management. Those needs include providing for skier safety at the Alta ski area by limiting potential for conflict with over snow vehicles, as well as managing the National Forest land consistently with the surrounding area, where motorized use is generally prohibited. This decision was not intended to authorize access to private property across National Forest lands, nor did it purport to evaluate or resolve any title assertions. Instead, the Forest Supervisor was attempting to craft exceptions to the general closure of National Forest lands that would accommodate the access needs that had developed over time. If there are assertions that these exceptions do not provide adequate access, or that there are rights-of-way through the area that are not subject to Forest Service restrictions, those claims may still be presented in the proper forum.

#### ***Public Road Access***

Any claim that a right-of-way for a public road exists across land administered by the Forest Service must be asserted by the appropriate state or local government entity. *Crawford v. USDA Forest Service*, 2:07-CV-146 (D. Utah 2007), citing *SW Four Wheel Drive Ass'n v. Bureau of Land Management*, 363 F.3d 1069 (10<sup>th</sup> Cir. 2004); and *Kinscherff v. United States*, 586 F. 2d 159 (10<sup>th</sup> Cir. 1978). There has been no assertion presented to the Forest Service by the Town of Alta, Salt Lake County, or the State of Utah that any one of these entities owns a right-of-way for a public highway through the closure area, or has jurisdiction over any roads in the closure area. All three of these entities were on notice of the Forest Supervisor's proposal, and none of them raised any objection to the proposed closure or restrictions.

The Forest Supervisor's decision does not foreclose any State or local government entity from future assertions of ownership of a right-of-way jurisdiction over a public road through the closure area that would exempt use of the road from Forest Service travel restrictions. While the Forest Service may evaluate assertions of title to public road rights-of-way across National Forest System land for administrative purposes, only the Federal courts may make definitive determinations of whether public road rights-of-way exist on Federal land, *SUWA v. BLM*, 425 F. 3d 735 (10<sup>th</sup> Cir. 2005).

The Forest Supervisor's decision does not preclude the State, County, or Town of Alta from claiming a public road right-of-way through the closure area, or asserting that there is a public road that would be exempt from Forest Service winter travel restrictions. However, without a claim from State or local government that a public highway exists, the Forest Service cannot evaluate such claims from the appellants. State or local government entities are necessary parties to any claim of a public highway across Federal lands, and the position of these entities would

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have to be known in order to proceed with any consideration of whether or not a public highway exists. Unless and until an appropriate State or local government entity asserts jurisdiction over any roads in the closure area, the Forest Service must administer use of National Forest System lands in accordance with Federal laws and regulations pertaining to those lands.

### *Access to Private Lands*

Where no public rights-of-way exist, access to private property across land administered by the Forest Service is governed by Federal laws and regulations at 16 U.S.C. § 3210 and 36 CFR § 251.110, *United States v. Jenks*, 129 F. 3d 1348 (10<sup>th</sup> Cir. 1997). The decision by the Forest Supervisor was to impose a general closure and restrictions on public motorized winter travel in the Albion Basin area, with certain exceptions that were intended to allow for reasonable access to private property by the owners of the property. If property owners in the area do not believe that the exceptions to the general public closure allow adequate access to their property, they remain free to seek Forest Service authorization for additional access under 36 CFR § 251.110. Under these regulations, persons seeking access to private property across National Forest System land are entitled to access that is sufficient to insure reasonable use and enjoyment of their property.

The Forest Supervisor's decision does not foreclose the appellants from applying for specific Forest Service authorizations exempting them from the closure in order to access their property under these regulations. Since such applications have not been filed and acted upon by the Forest Supervisor, it is premature to address any claims that the closure itself precludes adequate access to private property. The proper procedure would be to apply to the Forest Service for access authorizations under the regulations, and then seek appropriate redress if not satisfied with the result.

### *Private Easements*

Many of the appellants claim private easements through the closure area that they claim should not be subject to the Forest Service closure restrictions. However, the appellants have not submitted sufficient title evidence for the Forest Service to assess their claims. This is not the correct forum for asserting ownership of easements, rights-of-way, or other property interests in land administered by the Forest Service. Any appellant who believes they are the owner of such rights may submit evidence to the Forest Service for evaluation, and an administrative determination will be made as to whether or not such property rights exist.

### *Conclusion*

The Forest Supervisor's decision imposed a general closure and restrictions on public motorized winter travel on National Forest lands in the Albion Basin area, with exceptions that were intended to allow reasonable access to private landowners in the area. The Forest Supervisor's decision does not preclude State or local government from asserting jurisdiction over public roads through the closure area that would be exempt from Forest Service restrictions, and does not prevent property owners from seeking Forest Service authorizations for further exemptions from the general public closure and restrictions. Finally, any party asserting title to private

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easements through the closure area may present evidence supporting their claim to the Forest Service. Therefore, any claims in this appeal that assert the existence of public highways that are exempt from Forest Service restrictions have not been presented by state or local government entities as required; any claims that the decision does not allow adequate access to private property are premature, since the process for seeking Forest Service authorization for access through the closure area has not been exhausted by the appellants; and any claims of privately-owned rights-of-way exist through the area may be presented to the Forest Service for evaluation at any time.

**APPEAL DECISION**

I am affirming the decision by Wasatch-Cache Forest Supervisor Faye Krueger.

I find that the activities documented in the EA, DN/FONSI, and the project record comply with applicable laws, regulations, and policy. A more detailed response to the appeal issues is enclosed.

This constitutes the final administrative determination of the United States Department of Agriculture under 36 CFR 215.18(c).

Sincerely,

*Mary Wagner*  
MARY WAGNER  
Appeal Deciding Officer

ENCLOSURES

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United States  
Department of  
Agriculture

Forest  
Service

Intermountain  
Region

324 25<sup>th</sup> Street  
Ogden, UT 84401-2310

File Code: 1570-1

Date: June 22, 2007

Route To:

Subject: Reviewing Officer Recommendation, Albion Basin Winter Travel Management Plan Amendment Appeals

To: Appeal Deciding Officer

This is my review and recommendation on the disposition of the appeals filed on the Wasatch-Cache NF's Albion Basin Winter Travel Management Plan Decision Notice (DN) and Finding of No Significant Impact (FONSI). Twenty appeals were received from landowners potentially affected by the decision. Many of the appellants raised the same appeal issues; therefore I have consolidated my review and recommendations.

### Project Background

The decision in question proposes to amend the 2005 Winter Recreation Travel Management Plan for the Salt Lake Ranger District in a portion of upper Little Cottonwood Canyon. By amending the Travel Management Plan, the Proposed Action would allow the conditional use of snowmobiles and snowcats for access to 36 homes and cabins through a portion of Alta Ski Area on National Forest System lands. This use is currently prohibited by the Travel Management Plan and Forest Service regulations. The decision provides for snowmobile and snowcat access in the evenings. Access during the day i.e. from 8 a.m. to 5 p.m. is prohibited, except for emergency purposes.

### Appellant's Request for Relief

Not all appellants specifically indicated what relief they sought in their appeal. Those appellants that did indicate what relief they were seeking, requested a remand of the decision for further consideration.

### Appeal Summary

The appellants all express concern that restricting over-the-snow vehicle access across National Forest System lands, including lands operated by Alta Ski Lifts Company under a Forest Service Special Use Permit, to their private residences during the hours of 5 p.m. to 8 a.m. creates undue hardship and presents potential safety issues.

The appellants assert violations of the National Environmental Policy Act, the National Forest Management Act, and the Administrative Procedures Act. The appellants also challenge the Forest Supervisor's interpretations of RS 2477, Alaska National Interest Lands Conservation Act of December 2, 1980 (ANILCA), the Americans with Disabilities Act, and associated aspects related to the Special Use Permit held by Alta Ski Lifts Company.



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## Findings

As Appeal Reviewing Officer, my role is to review the substantive quality and correctness, or appropriateness of the project decision with respect to clarity, comprehension, effectiveness of public participation, and requested changes. My findings are based on my review of the decision and project record, in accordance with 36 CFR 215.19.

### **1. Clarity of the Decision and Rationale**

The Responsible Official's decision is clearly described in the DN/FONSI. The rationale for the decision is logical and explains how the decision reflects elements from the original Proposed Action after careful consideration of the input received from the public, including the affected landowners. It is evident from the project record and the DN that the Responsible Official spent considerable time researching the history of access and development in the area, exploring options, and conveying her rationale for the decision. Her focus and commitment to providing private land access while providing a safe skiing environment is evident.

### **2. Comprehension of Benefits and Purpose of the Proposal**

The Purpose and Need and Decision framework are clearly stated in the Environmental Assessment (EA), DN, and FONSI. The EA describes the need to amend the Winter Travel Management Plan to provide a balance between the needs for homeowner access and public safety, while minimizing potential impacts to the biological, physical, and social environment in Albion Basin.

### **3. Consistency of the Decision with Policy, Direction, and Supporting Information**

I find the decision to be consistent with agency policy, direction, and procedures for completing the EA, DN, and FONSI. The EA, DN, and FONSI and the project record adequately disclose the environmental effects and provide sufficient evidence and analysis to make a reasoned choice.

### **4. Effectiveness of Public Participation Activities and Use of Comments**

The Forest conducted a thorough public involvement process including two scoping notices published in the Salt Lake Tribune and an extended 60-day scoping period. The Town of Alta held two public meetings providing more opportunity for comment. Additional comment was received and considered after the Forest published a preliminary EA. The agency's responses to the comments were well documented in Appendix A of the EA.

### **5. Requested Changes and Objections of the Appellant**

The appellants request reversal of the decision due to violations of laws and regulations; and a remand for reconsideration. In my review of the appeal I did not find that the appellants presented a compelling argument in contrast to the information the Responsible Official had to

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make her decision. I feel the decision and record adequately address and refute the appellants' rationale for reversing the decision.

**Recommendation**

Based on my review of the EA, DN, FONSI, and supporting documentation in the project record, I recommend that the decision made by Forest Supervisor Faye Krueger be affirmed.

*/s/ Kevin B. Elliott*

Kevin B. Elliott  
Appeal Reviewing Officer

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**Albion Basin Winter Recreation Travel Plan Amendment  
Appeal Issue Responses**

#07-04-00-0035-A215	#07-04-00-0039-A215	#07-04-00-0040-A215	#07-04-00-0041-A215
#07-04-00-0044-A215	#07-04-00-0045-A215	#07-04-00-0046-A215	#07-04-00-0047-A215
#07-04-00-0048-A215	#07-04-00-0049-A215	#07-04-00-0051-A215	#07-04-00-0052-A215
#07-04-00-0053-A215	#07-04-00-0054-A215	#07-04-00-0055-A215	#07-04-00-0056-A215
#07-04-00-0057-A215	#07-04-00-0058-A215	#07-04-00-0059-A215	#07-04-00-0060-A215

**APPEAL ISSUE #1:** The Forest Service (FS) does not have the authority to regulate access on roads claimed to be exempt from FS regulations and restrictions under RS 2477, State Common law (prescriptive rights by necessity), or other ownerships/jurisdictions of State Highway 210.

**RESPONSE:** Any RS 2477 claim that a right-of-way for a public road exists across land administered by the FS must be asserted by the appropriate State or local government entity (*Crawford v. USDA Forest Service*, 2:07-CV-146 (D. Utah 2007), citing *SW Four Wheel Drive Ass'n v. Bureau of Land Management*, 363 F.3d 1069 (10<sup>th</sup> Cir. 2004); and *Kinscherff v. United States*, 586 F. 2d 159 (10<sup>th</sup> Cir. 1978)). To date, the FS has not received such an assertion from a State or local government entity. The decision does not foreclose consideration of any claim that a private easement or right-of-way exists through the closure area. The decision does not extinguish any right an individual or entity may have in asserting a title claim for a right-of-way or easement that is proven to exist and can be located.

FS closure restrictions apply only to National Forest System lands, interests in land administered by the FS such as rights-of-way or easements, and roads under FS jurisdiction. If it is determined that public or private rights-of-way through the closure area exist, a determination will be made as to whether or how they may be affected by the closure at that time. The Forest Supervisor has a need to evaluate how motorized winter travel would be managed in the area of the National Forest affected by the closure and to make a decision. By definition, the closure does not apply to lands that are not under FS jurisdiction, and it is the responsibility of parties claiming property interests in lands administered by the FS to present evidence in support of their claim and have it evaluated in the correct forum.

Any claim that there are either public or private rights-of-way across National Forest land must be supported by sufficient evidence to show that a valid-right-of way exists and where it is located.

**APPEAL ISSUE #2:** The decision was contrary to the Americans with Disabilities Act (ADA) because it does not provide reasonable access for people with disabilities.

**RESPONSE:** The ADA does not apply to Federal government entities. Instead, under Section 504 of the Rehabilitation Act of 1973, no person with a disability can be denied participation in a Federal program that is available to all other people solely because of his or her disability. The Secretary of Agriculture has promulgated regulations at 7 CFR Part 15e whose purpose

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... is to effectuate Section 119 of the Rehabilitation, Comprehensive Services, and Developmental Disabilities Amendments of 1978, which amended Section 504 of the Rehabilitation Act of 1973 to prohibit discrimination on the basis of handicap in programs or activities conducted by the Executive agencies or the United States Postal Service.

Under the Compliance Procedures at 7 CFR § 15e.170, "all allegations of discrimination on the basis of handicap in programs and activities conducted by the agency" are subject to the procedures set forth therein (7 CFR § 15e.170(a)). Under the regulations, the agency must act on a "complete complaint" of violation within 180 days (7 CFR § 15e.170(g)). A "complete complaint" is defined as:

a written statement that contains the complainant's name and address and describes the agency's alleged discriminatory action in sufficient detail to inform the agency of the nature and date of the alleged violation of Section 504. It shall be signed by the complainant or by someone authorized to do so on his or her behalf. Complaints filed on behalf of classes or third parties shall describe or identify (by name, if possible) the alleged victims of discrimination.

The agency's response to the complaint is subject to appeal (7 CFR 15e.107(h)). Appeals must be filed within ninety days of receipt of the agency's response to the initial complaint. Accordingly, under 7 U.S.C. § 6912(e), complainants seeking redress for discrimination on the basis of handicap in programs of the Secretary of Agriculture under Section 504 are required by law to exhaust the Department's administrative appeal process prior to seeking judicial review.

U.S. Department of Agriculture regulation 4300-3 provides that complaints of discrimination under Section 504 be filed with:

USDA, Director, Office of Civil Rights  
Room 326-W, Whitten Building  
1400 Independence Avenue, SW  
Washington, D.C. 20250-9410

**APPEAL ISSUE #3:** Appellants claim that the decision restricts their use and enjoyment and does not provide reasonable access to private in-holdings and thus is not consistent with the Alaska National Interest Lands Conservation Act (ANILCA). Many appellants sited numerous impacts of the over-snow vehicle (OSV) restrictions that they claimed would restrict their access and reduce their use and enjoyment of their property and thus qualify as a "Taking."

**RESPONSE:**

**"Restricts use and enjoyment"**: Under Section 1323(a) of ANILCA, the FS is required to provide such access across NFS land that the agency determines to be adequate for reasonable use and enjoyment of the private property. The Forest Supervisor's decision determined how winter motorized travel would be managed on National Forest land. While the Forest Supervisor

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tried to fashion exceptions to the closure that would address private land access needs, she did not make a decision as to whether or how to authorize access to private land through the closure area. Where landowners feel that they require access through the closure area that is not provided by the exceptions to the closure order, they may file application, in accordance with 36 CFR § 251.110, to seek authorization to travel across National Forest lands through the closure area.

**“Taking”:** The Forest Supervisor’s decision determined how use of National Forest land under her jurisdiction would be managed. The decision does not affect private property, nor does it affect public rights-of-way under State or local jurisdiction. Public and private title claims are not decided or foreclosed by this decision, and will be evaluated if presented by the appropriate party and supported by adequate evidence.

**APPEAL ISSUE #4:** The Wasatch-Cache Winter Recreation Travel Plan, as established in the 2003 Forest Plan (FP), created an error in that it identified the Albion Basin area as a recreation area rather than a residential area. Resident access is not recreational and, therefore, not subject to the Winter Travel Plan.

**RESPONSE:** The 1981 Forest Travel Plan map states that Little Cottonwood Canyon is “closed to all motor vehicle travel yearlong except for that necessary for the maintenance, operation, and administration of developed winter sports areas” (Wasatch-Cache National Forest Travel Plan Map, 1982). The Winter Recreation Travel Plan within the 2003 Forest Plan map states “No over snow motor travel permitted on National Forest System Lands in Salt Lake County” (Winter Recreation Travel Plan – Exhibit 1). Further, the Albion Basin area is designated as neither “Motorized” nor “Non-Motorized,” but instead it is classified as a “Ski Resort.” (EA, p. 53, H15)

The Forest Service includes the term “recreational” in many of its travel plans and maps because these documents are used primarily by recreation visitors to the National Forest. However, Travel Management Plans cover all winter motorized use on National Forest System lands, regardless of the purpose of the travel. The final Environmental Assessment (EA) is called the “Albion Basin Winter Travel Management Plan Amendment” (EA, p. 52, H13).

Regardless of the term used in the Winter Recreation Travel Plan, the land under FS jurisdiction in area is currently closed to OSV use.

**APPEAL ISSUE #5:** Should all home and landowner groups be subject to the same decision and treated equally.

**RESPONSE:** Federal regulations (36 CFR 251.114) make it clear that the FS authorizing officer shall determine what constitutes reasonable use and enjoyment of the lands. In the Decision Notice (DN), the Forest Supervisor states “skier safety was the most important factor in making my decision, while allowing residents sufficient access for reasonable use of their property” (DN, pp. 1 and 3).

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The potential for skier collisions with OSVs varies greatly between the subdivisions. The analysis process showed the motorized travel route for Grizzly Gulch residents have fewer skier safety concerns than travel routes for upper Albion Basin residents. There is no requirement that each group of residents have the same conditions applied to their access. The decision is based on skier safety, not consistency between subdivisions. Potential collisions are quite low in the Grizzly Gulch area and considerably higher for homeowners traveling to Secret Lake and Albion Basin subdivisions due to OSV crossings and running along ski runs. This difference is reflected in the decision.

**APPEAL ISSUE #6:** Numerous appellants claimed that the decision constituted a breach of contract/agreement. They claimed that the decision did not recognize the binding nature of the June 22, 1981, July 22, 1996 and October 13, 1997, letters from the FS that endorsed continued use of OSVs for residential access. They also claimed that the analysis was flawed in the EA as it stated that OSV use for access for private residents had been prohibited for approximately 26 years when the above-referenced letters show that access had been allowed.

**RESPONSE:** Travel management plans are developed and used by the FS to manage motorized use of public lands, protect natural resources, and address public safety concerns. These plans are updated periodically to address new and on-going issues and concerns with the area under review. The travel plan for the Salt Lake Ranger District was originally completed in 1981, and has been periodically updated since. The April 1982 Travel Plan map states that all areas within the Alta and Snowbird Ski areas are closed to motorized vehicle travel yearlong except for the Albion Basin road, which is open to vehicle traffic when free of snow to provide access to private land and the Albion Basin Campground located in the basin. This closure has been affirmed through updates to the Travel Plan map in 1992, 1997, 2004, 2004 and 2005.

Between 1981 and 1997, three letters written by two District Rangers addressed the issue of using OSVs in the Tri Canyon area. These letters affirm the need for owners of private lands or summer home permits within the district to access their property, but also impress the need to acquire permits in certain cases. The July 22, 1996, letter from District Ranger Sieg to Cabin owners and Permittees specifically addressed the safety hazard of using OSVs in Albion Basin.

While there has been an acknowledgement of the need for access, there has been an inconsistency in the management of the area. Under the Travel Plan and closure orders, OSV use was prohibited without exception on land under FS jurisdiction. Under Federal regulations, exceptions to the prohibition may only be made through issuance of a special use authorization under 36 CFR §§ 251.50, 251.110, and 261.50(e)(1). The purpose of the Forest Supervisor's decision was to update the closure orders in an attempt to properly provide exceptions to the closure necessary to accommodate OSV use for private property access that had been occurring without proper exception or authorization.

As acknowledged by the Forest Supervisor, there has been a long history and complex issues surrounding OSV use in Albion Basin and Grizzly Gulch (DN, p. 3). The above-mentioned letters are a case in point. While the Rangers attempted to address access issues, the proper

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mechanism would have been to modify the closure order in effect at the time or issue a special use authorization to individual private landowners on a case-by-case basis. The Forest Supervisor's decision handles exceptions to the closure properly. Any additional exceptions to the closure that may be needed to address access concerns should also be properly addressed through the application process for seeking authorization for access through the closure area.

**APPEAL ISSUE #7:** Appellants claim that the analysis and decision do not recognize the legal standing for the hierarchy of rights for the homeowners who claim that their private land rights have superior legal standing to the junior rights of Alta Ski Lift's special use permit. They claim that the decision should have required Alta Ski Lifts to adjust their operations to address the skier safety issues rather than impose the restrictions on the residents who have superior rights.

**RESPONSE:** The Forest Supervisor's decision was directed at proper management of National Forest land under her jurisdiction. Unrestricted OSV use through an area of the National Forest that is operated as a commercial ski area would not be appropriate. Accordingly, the Forest Supervisor attempted to balance competing demands for use of National Forest lands by providing exceptions to the closure that allow for access to private property, while maintaining adequate restrictions to provide for skier safety. Since property owners may still seek FS authorization to exempt them from the closure to address additional access needs, or may present evidence of public or private rights-of-way through the area that are not subject to FS restrictions, the decision in no way elevates the "rights" of one party over another.

The DN states that "the exemptions in the Travel Management Plan will be expanded for those residents who have obtained a permit from the town of Alta and who travel on designated OSV routes during approved hours. Residents who meet these two conditions would be exempt from the winter closure when operating an OSV on designated routes to access: 1. Grizzly Gulch at any time during the winter; 2. Albion Basin from 5 PM to 8 AM during ski season, or at any time of the day before or after the ski season; 3. Albion Basin after having provided the Forest Service a copy of a written agreement from Alta Ski Area" (DN, p. 2). This action does not foreclose the homeowner from applying for specific Forest Service authorizations exempting them from the closure order to access their property.

The purpose of this provision of the decision is to provide an additional opportunity for exemption from the closure if OSV use is coordinated with the ski area. The restrictions are intended to mitigate potential conflicts between OSVs and skiers. Alta is responsible for management of the ski area, including skier safety. If a homeowner is able to reach agreement with Alta on operation of OSVs that adequately addresses skier safety, they will be exempted from the closure. It was logical for the decision to assign this responsibility to the ski area, since it has the knowledge and expertise to manage skier safety issues.

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**APPEAL ISSUE #8:** The purpose and need is not supported or substantiated by relevant data or facts.

**RESPONSE:** In the background section of the EA, the Forest describes the increase in OSV use to access homes in the Albion Basin area, the increase in the extent of the ski area, and the national increase in OSV/skier collisions (EA, (p. 5-9). These sections of the EA frame the purpose and need for the action in a succinct qualitative manner. In the DN, the Forest Supervisor reiterates the importance of reducing the skier/OSV interface to limit the potentially lethal or debilitating effects of an accident (DN, p. 3).

It is unclear what kind of data or facts the appellants expect to see. The purpose of the restrictions is to prevent and avoid accidents before they occur. The potential for skier and OSV conflict is reasonably foreseeable, and waiting for an accident to occur to confirm that assessment is not acceptable. The decision was clearly an attempt to balance the need to provide for public safety with the need for access.

**APPEAL ISSUE #9:** The Forest violated the National Environmental Policy Act (NEPA) by failing to consider an adequate range of alternatives.

**RESPONSE:** NEPA requires analysis of alternatives in order to display a range of environmental consequences sufficient to support an informed decision. There is no requirement to analyze an infinite range of alternatives (FSH, 1909-15-14). NEPA also requires a brief description of the alternatives not considered in detail (FSH, 1909-15-14.3). The environmental consequences of the selected alternative are within the range of the environmental consequences of the alternatives explored (DN, pp. 1- 3).

The Forest Supervisor considered a reasonable range of alternatives as required by NEPA. The Forest considered three action alternatives along with the No Action alternative (EA, p. 15). It also considered several alternatives brought forward during scoping. An alternative allowing unlimited OSV access was eliminated from detailed study because it did not meet the purpose and need or the existing Travel Management Plan (EA, p. 15). Another alternative to provide OSV access into the Cecret Lake area was eliminated from detailed study because all potential routes required the use of ski trails thus creating additional safety issues. The EA also incorporated several comments received during the EA process by including them as possible mitigation measures that could be attached to one or more of the alternatives (EA, p. 15).

**APPEAL ISSUE #10:** The selected alternative did not meet all aspects of the purpose and need of the proposed action.

**RESPONSE:** In making the decision, the Forest Supervisor met the purpose and need in that the both homeowner access and public safety would be provided by the decision. The purpose and need of the proposed action was to update the Winter Travel Management Plan to properly provide for exceptions to the general OSV closure to accommodate OSV use for access that has

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evolved while the previous general closure was in effect. The Forest Supervisor attempted to provide a balance between the needs for homeowner access and public safety (EA, p. 10).

The Council on Environmental Quality (CEQ) regulations (1502.14) describe how proposed actions and alternatives to the proposed actions are treated in an environmental document. In reviewing the alternatives described in the EA, this requirement has been met (EA, pp. 15-24). The Forest analyzed four alternatives, including the No Action Alternative, several mitigation measures that met the purpose and need, and addressed the significant issues related to balancing skier safety and homeowner access (EA, pp. 13-14). In the analysis of the alternatives, the Forest Supervisor considered public safety in areas where skier and OSVs have a potential to interact and resident safety (EA, pp. 28-33). In making the decision to select the proposed action, the decision describes how the Forest Supervisor balanced the needs of homeowner access, as required by 16 U.S.C. 3210, 36 CFR 251.110, and public safety (DN, p. 2).

**APPEAL ISSUE #11:** The Forest inappropriately accepted the Finding of No Significant Impacts (FONSI). An Environmental Impact Statement (EIS) should be prepared. The decision to require homeowners to access their property either by OSV at night, or by foot or by ski lift and skis during the day, represents a significant health and safety issue that was not addressed in the FONSI. The EA, DN, and FONSI failed to address social impacts. The EA, DN, FONSI do not show that the decision does not involve unique or unknown risks.

**RESPONSE:** The CEQ regulations implementing NEPA describe a FONSI as a brief description of the reasons why an action will not have significant effects on the Human Environment (40 CFR 1508-13). The FONSI does not need to repeat any discussion in the EA but may incorporate it by reference (40 CFR 1508.14). The EA describes the overall growth in the number of skiers and increased use of OSVs by homeowners, tenants and guests (EA, p. 25). Health and Safety, and resident access are the primary issues addressed in the EA, as can be seen in the Purpose and Need and the Issues Considered in Detail sections (EA, pp. 10 and 14). The EA describes the effects of the proposed action and alternatives on resident access (EA, pp. 26-28). The EA addresses skier safety and describes safety concerns of residents and potential effects of the proposed action and alternatives on residents (EA, pp. 28-33).

Alternatives in the EA try to minimize the safety risk to both skiers and residents by either separating the two uses physically (Alternatives A and C) or by timing (Alternative B and D). The DN identifies skier safety as the most important factor in the selection of the decision because of the hazards presented by OSVs on ski routes during the day (DN, p. 3). The EA identifies the safety risks associated with Alternative B, residents traveling to Albion basin between 5 PM and 8 AM, but also recognizes the increased risks could be minimized through actions such as maintenance of a well marked trail, user familiarity, and careful decision making (EA, p. 32).

Three of the four issues addressed in the EA are related to social impacts and form the proposed action. These include the effects of the proposed action and alternatives on resident access to their property, skier safety in relation to OSV crossings or traveling on ski runs, and resident safety when accessing properties.

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The effects of the decision on the human environment are described in detail in the EA (EA, 25-35). These effects to skier and resident safety, the effects to resident access, and the potential effects to physical and biological resources are all fairly typical and do not involve any unique or unknown risks. The DN describes the expected outcomes and risks of the selected alternative in enough detail to show that there is no potential for unique or unknown risks related to implementation of the decision.

The effects disclosed in the EA, and DN and summarized in the FONSI do not indicate that a significant impact requiring the preparation of an EIS would result from implementation of the decision. The Forest Supervisor has met the requirements of the CEQ regulations through the publication of the FONSI.

The Forest Supervisor's finding that the decision does not significantly impact health and safety of homeowners is reasonably supported. First, the decision properly acknowledges that the regulations at 36 CFR § 251.50(b) provide a general exemption from requirements for a special use authorization for temporary occupancy of National Forest lands for the protection of life and property in emergencies. Second, any homeowner may seek FS authorization exempting them from the closure on either a case-by-case or general basis to authorize access for health, safety, or other reasons in non-emergencies (36 CFR § 261.50(e)(1)). Given these exemptions for access for health and safety reasons, there is virtually no restriction on access needed for health and safety reasons, and the Forest Supervisor's finding that these impacts are not significant is reasonable.

**APPEAL ISSUE #12:** Albion, Albion Alps and Cecret Lake homeowners will be required to travel primarily by night and by foot during the day. This will subject them to numerous hazards that were not fully or adequately analyzed in the decision.

**RESPONSE:** The EA recognized that residents may be required to access their homes in darkness and during adverse evening weather. This would increase the potential for homeowners to get lost, become exposed to avalanches, and suffer from exposure, especially during adverse weather (EA, pp. 3 and 31). This risk could be minimized by maintaining a well-marked route; each homeowner being thoroughly familiar with the route and operation of the machine; carrying navigation equipment on board; packing winter survival provisions; and careful decision making in determining whether to travel in certain conditions (EA, p. 32, Alt. B). Other mitigation measures could include improving signing and education, horns, lights and other safety equipment; not permitting recreation travel, and enforcing a speed limit (EA, p. 18, 2.4). The Forest Supervisor considered these effects.

**APPEAL ISSUE #13:** The EA failed to adequately analyze the effects or relative risks including collisions with trees, rocks, towers, other skiers, ski area OSVs, uphill skier or foot traffic or pedestrian-vehicle incidents in the ski area parking lot. It also fails to analyze the effects of the limitations of ski-lift access for pedestrians.

**RESPONSE:** The potential for collisions with OSVs in a developed ski area is not considered a normal risk associated with alpine skiing, as are many of the other hazards identified by the appellants. OSV-skier collisions have occurred in ski areas around the country and often result in serious injury and death (Denver Post, December 24, 2004; EA, p. 9). The appeal point seems to suggest that since there are hazards associated with skiing generally, and with the resort parking lot, adding one more hazard from OSVs in the ski area should not be considered unacceptable. However, the purpose of the decision was to evaluate a hazard that is not inherent in the operation of a ski area generally, and determine if there were reasonable steps that could be taken to mitigate any hazard identified.

Appellants claim that the ski resort will not allow non-skiers (those without skis on) to ride on the lifts and carry on bulky items, and that pedestrians are also not allowed to walk up and down ski runs. These uses are not a major component of the access afforded by the exceptions to the closure. In general, the portion of the National Forest that is under permit to Alta is open to public use unless specifically restricted by the Forest Service, although it is expected that Alta would not want pedestrians interfering with ski operations by tracking groomed runs or blocking skiers.

OSV access is available to the Grizzly Gulch area without limit, and to the Albion Basin, except during the daytime. During the day, ski access is available. OSV access is allowed during the day in emergencies, and by FS authorization under certain circumstances. If, as maintained by some appellants, there are public or private rights-of-way through the closure area, public rights-of-way are not subject to FS restrictions, and private rights-of-way may not be subject to such restrictions, thus providing further access. Evidence would need to be presented to the FS to establish that such rights-of-way exist.

Non-motorized access to the Albion, Albion Alps and Cecret Lake areas by foot or ski lift is identified as an option, yet the EA acknowledges it may not be very practical for most residents. Potential for conflicts in parking lots was not relevant to the proposed action here, which was to regulate OSV use on NFS lands generally.

**APPEAL ISSUE #14:** The EA and DN are flawed because the FP is inadequate. The FP fails to address homeowner access and access conflict resolution. The FP winter recreation maps are for recreation not private property access. There is no roads analysis for the project as required by the FP. The FP fails to consider homeowners and their access in any Desired Future Condition (DFC) statements; it fails to ensure overall quality of life for communities adjacent to the Forest; and it fails to ensure that private and public land boundaries are clearly fenced or signed. The FP also includes management prescriptions that are not compatible with or do not include residential use.

**RESPONSE:** Forest Plans are designed to provide for multiple use and sustained yield of products and services from National Forests and determine forest management systems and procedures for outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness (16 U.S.C. § 1604(d)). Plans are not required to address access to private property. The EA describes how the proposed action and alternatives are consistent with the Wasatch-Cache Land

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and Resource Management Plan (2003) (EA, p. 10). In Appendix A of the EA, the Forest responded to comments related to the FP.

A comment was received stating that the Travel Management Plan should not apply because it is titled "Winter Recreation Travel Plan" and homeowners are not recreating when traveling to and from their homes (EA, p. 52, H13). The FS includes the term "recreational" in many of its travel plans and maps because these documents are used primarily by recreation visitors to the National Forest. Travel management plans cover all winter motorized use on National Forest System lands, regardless of the purpose of the travel. The final EA is called the "Albion Basin Winter Travel Management Plan Amendment" (EA, p. 52, H13).

When no roads are proposed to be built or altered as part of the proposed action or alternatives, the current forest-level roads analysis is adequate to inform the decision maker of any roads issues (EA, p. 53, H17).

The appellants characterization of other inadequacies of the FP DFC—the failure to ensure quality of life for communities, the failure to ensure that private and public boundaries are fenced or signed, or that management prescriptions are not compatible or do not include residential—are outside the scope of the Albion Basin Winter Travel Management Plan Amendment. In 2003, the Chief of the FS reviewed appeals of the Revised FP and affirmed the Wasatch-Cache Revised FP. He found that the plan complies with laws, regulations, and policy, including the National Forest Management Act (NFMA) (Consolidated Decision for Appeals of the Wasatch-Cache National Forest Land and Resource Management Plan, Gloria Manning, March 9, 2005).

**APPEAL ISSUE #15:** The EA and decision are flawed because the FP and Alta Ski lift special use permit treat Grizzly Gulch as it were National Forest.

**RESPONSE:** The EA addresses the complex ownership pattern within the Albion Basin area, and recognizes the four tracts of private land within or immediately adjacent to the ski area's boundary (EA, pp. 5-7). The DN specifically recognizes Grizzly Gulch (including Emma Heights and the Cahill cabin) and the 15 homes there and opens the route in Alternative D (DN, pp. 1-2). Alternative D states "Grizzly Gulch/Emma Heights - Open to OSV use on designated routes without timing restrictions for residents" (EA, p. 17). The travel restrictions in the decision apply only to lands and interests in land under FS jurisdiction.

The decision generally closes National Forest land, with exceptions for OSV travel on designated routes during designated hours through those areas of the National Forest where OSV travel is restricted. Accordingly, the decision does not purport to restrict or regulate use of the road through the Grizzly Gulch parcel. Any closure Order issued to implement the decision will appropriately identify private property that is not subject to FS travel restrictions, and distinguish them from the designated routes through the closure area where there is an exemption or partial exemption from OSV restrictions.

Furthermore, the record indicates that the private property owners in the Grizzly Gulch area retained rights of "full and free access" to the section of road that crosses that parcel of private

property. Accordingly, the owners of property in the Grizzly Gulch area would be exempt from any FS restrictions on use of the portions of the road that cross private property through the Grizzly Gulch Area even if the FS did restrict general public use of that section of road.

**APPEAL ISSUE #16:** The EA and decision failed to define the term “emergency” and did not take into account the unique nature of the Albion Basin and needs of the community. The difficulties in dealing with everyday incidents in their mountainous winter environments constitute emergencies because access outside daylight and working hours presents safety issues, and concerns relating to the ability to complete repair services. Typical emergency situations take on a greater severity outside of daylight working hours.

**RESPONSE:** Under Federal regulations, the temporary use of National Forest System land when necessary for protection of life or property in emergencies does not require a permit (36 CFR 251.50). There is no requirement to obtain a permit from the FS in order to operate an OSV in the closed area if necessary for emergency protection of life or property, and such emergency OSV use is, therefore, not prohibited by the closure (DN, pp. 2 and 5). The regulations do not expressly define the term emergency, except to indicate that there must be an immediate threat to life or property. The regulations further provide that a permit must be sought at the earliest opportunity. Accordingly, the regulations provide that no permit is required to use OSVs in the closure area if there is an immediate threat to life or property and there is not reasonable opportunity to seek FS authorization in advance. The current Travel Management Plan has an exemption for emergencies and no person should feel they would be prosecuted in the event of a true medical emergency (EA, p. 45, C11). The DN does “recognize the unique nature of the homeowner OSV access” situation and attempts to balance the competing interests (DN, pp. 1 and 4). Furthermore, authorization may be sought to operate an OSV in the closure area for non-emergency situations in accordance with 36 CFR §§ 251.50, 251.110.

**APPEAL ISSUE #17:** Numerous appellants claim the EA and decision fail to substantiate the claim that OSV use has increased. They claim the FS used incomplete and irrelevant information that was not substantiated by proper data or analysis.

**RESPONSE:** Most of the data suggesting increases in both OSV and skier use is qualitative and anecdotal. Observations made over the years strongly suggest a growing use trend (EA, pp. 2 and 7). Information is available in the record concerning historic OSV use by residents, even though conditions have changed over the years, especially in the increase of ski run capacity. Three different letters in 1997 to OSV users in the area state that there is a “gradual increase,” “an increase in the illegal use of OSVs,” and a “growing number of OSVs” (Letter to Snowmobile Users in Alta, April 9, 1997; Letter from Michael Sieg Oct. 13, 1997; Letter from Alta Ski Lifts Co. Nov. 22, 1997; and Albion Basin OSV Use History). The Alta Town Marshall also began requiring registration of OSVs in response to increased use in Alta.

Due to increased numbers of ski runs, capacity skier use has increased. OSV use by residents intuitively seems to have increased; regardless, skier safety is still the most important factor in

the decision. Use of OSVs by residents pose a hazard to skiers and increased use only adds to the safety issue.

**APPEAL ISSUE #18:** The EA and DN failed to consider and incorporate public comments.

**RESPONSE:** The Forest Supervisor met the requirements of the CEQ regulations by using comments received during scoping and preliminary EA in the decision making process. CEQ regulations require Agencies to assess and consider comments both individually and collectively, and respond to comments by either modifying the proposed action, developing an alternative, supplementing or modifying the analysis, making factual corrections, or explaining why comments do not warrant further response (40 CFR 1503.4). Appendix A of the EA includes the Forest's response to scoping and preliminary EA comments (EA, pp. 39-54). Alternative D was developed to address comments related to social and economic concerns of the residents, and to address the difference in the potential for accidents related to the different subdivisions ((EA, pp. 42 and 46). Comments were also used to supplement the analysis, make clarifications in the EA, and explain why comments did not warrant further response (EA, p. 44, C5; p. 43, B6; and p. 52, H9).

**APPEAL ISSUE #19:** The EA and DN violate NFMA, NEPA, and APA. The decision fails to meet requirements of the 2005 NFMA regulations as upheld by the Tenth Circuit Court of Appeals. The decision fails to substantiate the purpose and need, a true No Action Alternative, a reasonable range of alternatives, direct, indirect and cumulative impacts, as required by NEPA; and it is based on empirical data.

**RESPONSE:**

**NFMA**

The Wasatch-Cache FP was revised in 2003 under the 1982 planning rule. All projects proposed on the Forest are required by law to be consistent with the FP. The EA documents the proposals consistency with the FP and the Forest Travel Management Plan (EA, pp. 10-12). The Forest also included relevant current information in the preparation of the EA as evidenced by the references cited (EA, pp. 36-38).

**NEPA**

The EA includes a purpose and need that is based on improving safety for skiers by reducing the potential for accidents between skiers and OSVs. While no accidents have occurred in this ski area, accidents have occurred at other areas and have proven fatal for the skier (Denver Post, 12/24/2004). The EA further quantifies the distances for each alternative that have OSVs crossings or sharing ski runs substantiating the need for the proposed action (EA, p. 29).

The No Action Alternative is described in the EA as the full enforcement of the existing Travel Management Plan that prohibits winter motorized travel in the project area (EA, p. 16). This alternative would allow winter travel to homes only on foot or by skis, snowshoes, and or ski lifts. This No Action alternative meets CEQ requirements to include a no action alternative (40

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CFR 1502.14d). This No Action meets the purpose and need, addresses the significant issues, and complies with current FP direction

The CEQ regulations require the Forest to identify environmental effects and values in adequate detail so they can be compared to economic and technical analyses (40 CFR 1501.2b). EAs are intended to be concise public documents which briefly provide sufficient evidence and analysis for determining whether an EIS is required (40 CFR 1508.9-1a). EAs should also include a brief discussion of the proposal, alternatives, and the impacts of the proposal and alternatives (40 CFR 1508.9b).

The Albion Basin Winter Travel Management Plan Amendment meets these requirements in that it identified the need for the proposal to reduce the potential risk of accidents between skiers and OSVs (EA, pp. 9-10). The issues the EA addressed are primarily social issues, which are not intended by themselves to require preparation of an EIS, and included resident access, skier safety, resident safety, physical and biological resources (40 CFR 1508-14; EA, pp. 25-34;). The analysis of the direct, indirect effects of the proposed action and alternatives is sufficient given the issues being addressed and the scope of the project. While the EA relies primarily on qualitative information to compare the effects of the alternatives, the conclusion is that reducing the potential for risk of accidents is supported by the information presented in the EA.

Cumulative effects are addressed at an appropriate scale considering the time of year the action is occurring, the location in a highly developed ski area, and the fact that there are no effects of the proposed action and alternatives to the physical and biological environment. Cumulative effects of the proposed action and alternatives on resident access, skier safety and resident safety consider the increased risks related to other aspects of safety or access. The lack of reasonably foreseeable future actions within the project area is reflected in the past and present Schedules of Proposed Actions (SOPA) for the Forest.

#### APA

The APA requires that agency actions have a rational foundation and not be arbitrary, capricious, or an abuse of discretion. As discussed in the preceding appeal issues, the documentation for the project complied with NEPA and NFMA. The decision clearly explained the rationale for the decisions (DN, p. 3). Therefore, the decision complies with APA.

**APPEAL ISSUE #20:** The FS has no authority over private property, and it must not depict OSV routes across any private property. The decision, EA, special use permit and FP must be changed to reflect this.

**RESPONSE:** Forest Service closure restrictions apply only to National Forest System lands, interests in land administered by the Forest Service such as rights-of-way or easements, and roads under Forest Service jurisdiction. The decision pertains only to NFS land, even though maps associated with the decision depict routes crossing properties owned by others. If no public or other right-of-way exists across private property, it is the responsibility of individual OSV users to obtain permission or authorization from the owners of these other properties before entering them. The maps in the record were created to depict OSV routes used by the public, and

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therefore, showed where that use occurs across private property. However, the FS decision is not legally operative until a closure order is issued. The closure order will only depict lands and interests under FS jurisdiction that are subject to OSV restrictions, and exceptions to that general FS closure where travel is allowed across those lands. Routes on private property will not be depicted in the closure order.

**APPEAL ISSUE #21:** Appellant claims that EA failed to address real property owners without cabins or homes.

**RESPONSE:** The decision applies equally to all property owners whether or not there is a cabin or home constructed on the property. Since the access needs for undeveloped property are different than for developed property, it was logical to distinguish the two categories.

**APPEAL ISSUE #22:** Salt Lake District Ranger Loren Kroenke should not have been involved with the EA and decision.

**RESPONSE:** The EA was prepared by an Interdisciplinary Team of which Ranger Kroenke was a member. The decision was signed by Forest Supervisor Faye Krueger.

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Crawford v. U.S.

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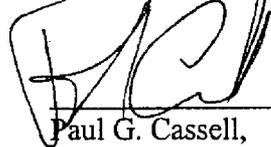


this case for the reasons provided for in the Amended Report and Recommendation.<sup>4</sup> The Clerk's Office is directed to close this case.

SO ORDERED.

DATED this 26th day of April, 2006.

BY THE COURT:

A handwritten signature in black ink, appearing to read 'P. G. Cassell', written over a horizontal line.

Paul G. Cassell,  
United States District Judge

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<sup>4</sup> A copy of the Amended Report and Recommendation from *Crawford et al. v. Salt Lake County, et al.* is attached to this Order.

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IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF UTAH  
CENTRAL DIVISION

WAYNE CRAWFORD and CARDIFF  
FORK LANDOWNERS ASSOCIATION,

Plaintiffs,

v.

SALT LAKE COUNTY, STATE OF  
UTAH, UNITED STATES DEPARTMENT  
OF AGRICULTURE, and UNITED  
STATES FOREST SERVICE,

Defendants.

Case No. 2:06-CV-106 PGC

**AMENDED REPORT AND  
RECOMMENDATION AND ORDER**

Plaintiffs filed this action in state court to obtain a declaratory judgment acknowledging that Plaintiffs have vested title in the Cardiff Fork Road right-of-way. The Defendants United States Department of Agriculture and United States Forest Service (hereafter referred to as "Defendants USDA-USFS") removed the action to this court.

Currently before the court is *pro se* Plaintiff Crawford's Motion for Default Judgment (Document #33), Plaintiff Crawford's Motion to Sever Defendant and Remand to State Court (Document #3), a Motion to Dismiss filed by Defendants USDA-USFS (Document #17), Plaintiff Crawford's Motion for Injunction (Document #14), and Plaintiff Cardiff Fork Landowners Association's Motion for

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Leave to Supplement Plaintiff's Opposition to the Federal Defendant's Motion to Dismiss (Document #40).<sup>1</sup> Defendants USDA-USFS argue that this court must dismiss Plaintiffs' complaint because the court lacks subject matter jurisdiction in this case. Having carefully considered the parties' pleadings and oral arguments, the court recommends that Plaintiff's Motion for Default Judgment be denied and that Defendants' Motion to Dismiss be granted. The court also orders that Plaintiff's Motion to Sever and Remand is denied, Plaintiff's Motion for Injunction is moot, and Plaintiff's Motion for Leave to Supplement is denied.

#### **BACKGROUND**

Plaintiffs assert that the Cardiff Fork Road, also known as the Mill D South Fork Road, connects Big Cottonwood Canyon to Little Cottonwood Canyon through Cardiff Pass. Plaintiffs allege that it is an R.S. 2477 right-of-way.

R.S. 2477 was passed as part of the Mining Act of 1866 and provides in its entirety: "And be it further enacted, That the right-of-way for the construction of highways over public lands, not reserved for public uses, is hereby granted." Mining Act of July 26, 1866, § 8, 14 Stat. 253, formerly § 2477 of the Revised

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<sup>1</sup>Also pending before the court is Plaintiff Crawford's Cross Motion for Summary Judgment (Document #23) and Plaintiff Cardiff Fork Landowners Association's Motion for Leave to Supplement the Record on Plaintiffs' Motion for Summary Judgment (Document #37). On April 3, 2006, the court granted Defendants USDA-USFS' motion requesting that the court postpone briefing on the Motion for Summary Judgment until the court ruled on the Motion to Dismiss. (Documents #28, 29.)

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Statutes and later 43 U.S.C. § 932, repealed by Federal Land Policy Management Act of 1976 (hereafter referred to as "FLPMA"), § 706(a), Pub. L. No. 94-579, 90 Stat. 2793. Until its repeal in 1976, this statute set out an open-ended offer from the United States to the public of a right-of-way across unreserved public lands. See *Sierra Club v. Hodel*, 848 F.2d 1068, 1078 (10<sup>th</sup> Cir. 1988), overruled on other grounds by *Village of Los Ranchos de Albuquerque v. Marsh*, 956 F.2d 970 (10<sup>th</sup> Cir. 1991), 956 F.2d 970 (10<sup>th</sup> Cir. 1992). An R.S. 2477 right-of-way is "a species of easement across the public lands of the United States." *United States v. Garfield County*, 122 F. Supp. 2d 1201, 1242 (D. Utah 2000) (citing *Hodel*, 848 F.2d at 1083). This offer was accepted, and a valid R.S. 2477 right-of-way created, by the construction of a road open and used by the public on public lands that were not reserved at the time of acceptance. See R.S. 2477; *Southern Utah Wilderness Alliance v. Bureau of Land Management*, 147 F. Supp. 2d 1130, 1138-45 (D. Utah 2001); *Fitzgerald v. United States*, 932 F. Supp. 1195, 1204 (D. Ariz. 1996). R.S. 2477 rights-of-way that existed and were perfected on the date of the repeal of R.S. 2477 remain valid and enforceable. See FLPMA, 43 U.S.C. § 1769.

According to Plaintiffs, the Cardiff Fork Road was initiated in 1871 to enable miners to get to a mine in the Mill D South Fork area of Big Cottonwood Canyon, also known as Cardiff Fork. Plaintiffs allege that by 1904, there were dozens of mining

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properties in Cardiff Fork, all utilizing the Cardiff Fork Road and its spurs. According to Plaintiffs, Cardiff Fork is mountainous terrain approximately four square miles in size and is now roughly 40 percent privately owned. Plaintiffs allege this land is owned independently by dozens of owners in parcels ranging from less than one acre to multiple contiguous 20-acre parcels.

According to Plaintiffs, following the passage by Congress in 1866 of the federal grant establishing R.S. 2477 rights-of-way, those people who constructed the Cardiff Fork Road filed formal notice in the public record of their acceptance of the federal grant for the Cardiff Fork Road. Plaintiffs allege the notice was filed on June 30, 1871. (Document #15, Exhibit 1.)

Plaintiffs allege the United States Surveyor General surveyed the area in 1903 in preparation for the creation of the Wasatch Forest in 1906, and that his survey shows the Cardiff Fork Road. According to Plaintiffs, in 1904, a reporter from the Salt Lake Mining Review traveled to the Cardiff Fork area and took a photograph, which allegedly shows the Cardiff Fork Road. (Document #22, at 6.) In addition, Plaintiffs allege W.H. Child & Co. published a map of the Cardiff Fork area showing extensive ownership by various competing entities all using the Cardiff Fork Road. (Document #22, at 6 & Exhibit 1.) The Wasatch Forest Reserve was created in 1906. According to Plaintiffs, at that time, the Cardiff Fork Road was apparent to casual inspection of

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the property. Plaintiffs allege that the March 14, 1916 minutes of the Salt Lake County Road Commission appropriated public funds for the widening, grading, and ongoing maintenance of the Cardiff Fork Road. (Document #22, at 6 & Exhibit II.)

Plaintiffs assert, and have submitted an exhibit to so show, that in 1985, a Salt Lake District Ranger of the Wasatch Cache National Forest wrote in a letter, "We have also taken the position that there is a prescriptive public right of access and that such public use of the road is significant and important. This road serves as access to the popular Doughnut Falls trailhead and the Cardiff Mine area." (Document #22, Exhibit II.)

Plaintiffs claim that in 1987, Defendants USDA-USFS admitted that a prescriptive public right of access exists. (Document #22, at 7.)

According to Plaintiffs, the Cardiff Fork Road was used heavily until it was gated by the Forest Service in approximately 1991. Plaintiffs allege that the gating of the Cardiff Fork Road solved a substantial trespass problem with which the landowners had been burdened. Plaintiffs assert that landowners continued to use the Cardiff Fork Road until approximately 2001, at which time the Forest Service locked out the landowners and refused to accept an R.S. 2477 claim unless it came from Salt Lake County.

On May 29, 2003, Salt Lake County Deputy District Attorney Jeffrey H. Thorpe sent Plaintiff Crawford a letter. In that

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letter, Mr. Thorpe wrote, "Salt Lake County is of the position that this road is a valid R.S. 2477 right-of-way, which is currently being claimed jointly by Salt Lake County and the State of Utah. This right-of-way has not been vacated by the County or the State. This road is apparently being claimed and controlled by the Forest Service, which has installed locked gates and is currently controlling access." (Document #1, Amended Petition for Declaratory Judgment, Exhibit A.)

On December 16, 2003, the Salt Lake County Mayor requested "the withdrawal from consideration as candidates for R.S. 2477 claim status" several roads, including Cardiff Fork Road. (Document #5, Exhibit A.)

Defendants USDA-USFS assert that in 2003, Defendants USDA-USFS offered special use permits for ten years, which would renew prior permits, for motorized access to private property to those landowners who completed applications, including Plaintiff Crawford. (Document #18, at 7 n.4.)

In an October 27, 2005 letter to Plaintiff Crawford, State Assistant Attorney General Jaysen Oldroyd explained that due to the County's letter, the State had determined "it should not take action to resolve the R.S. 2477 status of the road without the support of Salt Lake County" because "[u]nder Utah law the State and Salt Lake County are joint owners of any R.S. 2477 rights-of-way in the County," so "the State is not well positioned unilaterally to assert that Cardiff Fork Road is an R.S. 2477

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right-of-way." (Document #4, Exhibit B.) Mr. Oldroyd continued, "The Client Committee would be willing, however, to revisit your concerns regarding Cardiff Fork Road if Salt Lake County retracts its earlier request that Cardiff Fork Road not be considered an R.S. 2477 candidate road."

On January 23, 2006, Plaintiffs filed this action in Utah State Third District Court. (Document #1, at 2.) On February 3, 2006, Defendants USDA-USFS filed a Notice of Removal in this court, and the case was assigned to United States District Judge Paul Cassell. (Document #1.) On February 7, 2006, Plaintiff Crawford filed a motion requesting that the court sever Defendants USDA-USFS, the federal defendants, from this case and remand the remainder of the case to state court. (Document #3.) On February 22, 2006, Plaintiff Crawford filed a motion requesting the court enter an order of injunction "enjoining the USDA-USFS from interfering with Plaintiffs['] use of the Cardiff Fork road during the pendency of this action." (Document #14, at 1.) On February 24, 2006, Judge Cassell referred the case to United States Magistrate Judge Samuel Alba pursuant to 28 U.S.C. § 636(b)(1)(B).

On March 13, 2006, Defendants USDA-USFS filed a Motion to Dismiss. (Document #17.) On March 23, 2006, Plaintiff Crawford filed a Memorandum in Opposition to the Motion to Dismiss and a Cross Motion for Summary Judgment. (Documents #22, 23.) On March 27, 2006, Plaintiff Cardiff Fork Landowners Association

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filed a Memorandum in Opposition to Defendants' Motion to Dismiss. (Document #24.) Defendants USDA-USFS filed a Reply to the memoranda in opposition to their Motion to Dismiss on March 31, 2006. (Document #25.)<sup>2</sup> On April 3, 2006, the court granted a motion submitted by Defendants USDA-USFS requesting that the court postpone briefing on the Motion for Summary Judgment until the court ruled on the Motion to Dismiss. (Documents #28, 29.) On April 10, 2006, Plaintiff Crawford filed a Motion for Default Judgment as to Defendants USDA-USFS. (Document #33.) Defendants USDA-USFS filed a Response to that Motion for Default Judgment on April 11, 2006. (Document #35.)

On April 27, 2006, the court held oral arguments on the Motion for Injunction, the Motion to Sever and Remand to State Court, and the Motion to Dismiss. (Document #36.)

#### ANALYSIS

Plaintiffs seek a declaratory judgment. Plaintiffs ask that the declaratory judgment recognize that because the State and County allegedly have abandoned their claims to the Cardiff Fork

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<sup>2</sup>On March 31, 2006, Defendants USDA-USFS also filed a Motion to Strike any pleadings submitted by Cyle Buxton, who is not an attorney, on behalf of Plaintiff Cardiff Fork Landowners Association. (Document #26.) On April 10, 2006, Gary B. Ferguson, an attorney, entered an appearance on behalf of Cardiff Fork Landowners Association. (Document #32.) As a result, at the April 27, 2006 hearing, the court declared the Motion to Strike as moot. (Document #36.) In addition, the pleadings filed by Cyle Buxton on behalf of Cardiff Fork Landowners Association were withdrawn.

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Road right-of-way, pursuant to Utah Code Annotated § 72-5-105,<sup>3</sup> Plaintiffs allegedly now have the right to vested title in the Cardiff Fork Road right-of-way.

Plaintiffs argue that when Cardiff Fork Road was accepted and notice filed in the Salt Lake County Recorder's Office in 1871, all federal interest in the Cardiff Fork Road right-of-way was granted and accepted out of federal interest. Plaintiffs further argue that therefore, the Wasatch Forest Reserve acquired its lands subject to the Cardiff Fork Road right-of-way. Plaintiffs argue that the State of Utah and Salt Lake County, who jointly owned the Cardiff Fork Road, then abandoned their interest in it when they did not take action to resolve the R.S. 2477 status of the road. Plaintiffs argue that the road has never been abandoned by land owners using the road for property

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<sup>3</sup>Plaintiffs argue that they acquired the right to vested title in the R.S. 2477 right-of-way pursuant to Utah Code Annotated § 72-5-105. That statute provides, in relevant part:

- (1) All public highways, streets, or roads once established shall continue to be highways, streets, or roads until abandoned or vacated by order of a highway authority having jurisdiction or by other competent authority.
- (2)(a) For purposes of assessment, upon the recordation of an order executed by the proper authority with the county recorder's office, title to the vacated or abandoned highway, street, or road shall vest to the adjoining record owners, with  $\frac{1}{2}$  of the width of the highway, street, or road assessed to each of the adjoining owners.

Utah Code Ann. § 72-5-105(1), (2)(a).

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access or public use. Plaintiffs argue that Utah Code Annotated § 72-5-105 then operated to give them, as the adjacent landowners to the Cardiff Fork Road, rights to the vested interest in the right-of-way. Thus, Plaintiffs want to be declared as having vested title as private successors to Salt Lake County and the State of Utah in the Cardiff Fork Road R.S. 2477 right-of-way.

Notably, Plaintiffs repeatedly argue that Defendants USDA-USFS have no interest in the Cardiff Fork Road and should not be a part of the declaratory judgment action. Plaintiffs explain that they named the USDA-USFS as defendants in this action because a state court allegedly erroneously determined they were necessary parties to this action.

The court now addresses Plaintiff's Motion for Default Judgment, Plaintiff's Motion to Sever Defendant and Remand to State Court, Defendant's Motion to Dismiss, and Plaintiff's Motion for Injunction. The court addresses each of these motions in turn.

**A. Plaintiff's Motion for Default Judgment**

First, the court addresses Plaintiff's Motion for Default Judgment. (Document #33.) Plaintiff argues in his motion that Defendants USDA-USFS failed to plead or otherwise defend by March 27, 2006, the deadline for Defendants USDA-USFS to respond to Plaintiff's case.

The court concludes that Plaintiff's Motion for Default Judgment lacks merit. As Defendants USDA-USFS pointed out in

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their response to Plaintiff's motion, Defendants USDA-USFS obviously responded in a timely way to Plaintiff's lawsuit by filing their Motion to Dismiss on March 13, 2006. (Document #17.) By so doing, Defendants USDA-USFS pleaded or otherwise defended in a timely way, as required by Rule 12 of the Federal Rules of Civil Procedure. As a result, the court recommends that Plaintiff's Motion for Default Judgment be denied.

**B. Plaintiff's Motion to Sever  
and Remand to State Court**

Second, the court addresses Plaintiff's Motion to Sever Defendant and Remand to State Court. (Document #3.) In that motion, Plaintiff Crawford requests that the court sever all claims against the county and state defendants and remand that portion of the case back to state court, essentially severing Defendants USDA-USFS from the action involving the state and county defendants. Plaintiff Crawford argues that such a severance and remand is appropriate because "[t]his action concerns the succession of title under a Utah Statute to an existing R.S. 2477 right of way. Because this right of way has been granted out of federal ownership and has been claimed jointly by Salt Lake County and the State of Utah, it is unlikely that there is any federal land involved." (Document #3, at 1.) Plaintiff Crawford argues that "[i]t will be convenient and expedient to first resolve the question of succession of title to non-federal lands under Utah law" and then "[t]he prevailing

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party may thereafter resolve question of title to federal lands, if any claim is remaining, in Federal Court." (Document #3, at 1.)

To rule on Plaintiff's motion, which essentially seeks to sever Defendants USDA-USFS from the rest of the case, the court must determine whether Defendants USDA-USFS are necessary and indispensable parties to this action. See Fed. R. Civ. P. 19; *Sac & Fox Nation v. Norton*, 240 F.3d 1250, 1258 (10<sup>th</sup> Cir. 2001), cert. denied *Wyandotte Nation v. Sac and Fox Nation of Missouri*, 534 U.S. 1078 (2002). Rule 19 of the Federal Rules of Civil Procedure defines who must be joined as a party in an action, and thus who is considered a necessary party to an action:

A person who is subject to service of process and whose joinder will not deprive the court of jurisdiction over the subject matter of the action shall be joined as a party in the action if (1) in the person's absence complete relief cannot be accorded among those already parties, or (2) the person claims an interest relating to the subject of the action and is so situated that the disposition of the action in the person's absence may (i) as a practical matter impair or impede the person's ability to protect that interest or (ii) leave any of the persons already parties subject to a substantial risk of incurring double, multiple, or otherwise inconsistent obligations by reason of the claimed interest.

Fed. R. Civ. P. 19(a). The Tenth Circuit applies the two-part test set forth above as stated in Rule 19. See *Sac & Fox Nation*, 240 F.3d at 1258-59.

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Applying the two-part test of Rule 19 to the instant case, the court concludes that Defendants USDA-USFS should not be severed from this case. Although Plaintiff Crawford claims that this action seeks to determine individual ownership of the Cardiff Fork Road right-of-way "obtained by and through non-federal Defendants," that "[n]o federal reacquisition of the right of way has occurred," that this "action does not seek fee simple title to any federal lands underlying the Cardiff Fork Road right of way," that "[s]uccession of title to the right of way from non-federal Defendants to Plaintiffs will not affect any federal management rights to the right of way that may exist, and no federal interests whatsoever are at issue by the petitioned order," (Document #22, at 2), the court cannot begin its analysis with such assumptions. Instead, the court must first determine issues such as whether an R.S. 2477 right-of-way on federal land exists; whether that R.S. 2477 right-of-way was once owned by Salt Lake County and/or the State of Utah; whether Salt Lake County and/or the State of Utah abandoned the R.S. 2477 right-of-way on federal land; and whether Plaintiffs are entitled to ownership of an R.S. 2477 right-of-way across National Forest property.<sup>4</sup>

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<sup>4</sup>The court notes that both the State of Utah and Salt Lake County contradict Plaintiffs' assertions in their separate Answers. Both the State and the County allege that they do not know whether the route is an R.S. 2477 right-of-way, that if one exists the State and the County are joint owners, that neither the State nor the County has taken any steps to formally abandon

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In addition, the court must acknowledge that Defendants USDA-USFS have asserted rights in the Cardiff Fork Road right-of-way. In his oral argument, the attorney for Defendants USDA-USFS asserted that the Cardiff Fork Road, which runs across National Forest land, is simply part of that land and therefore is federally owned and controlled. Furthermore, citing *Brown v. Oregon Short Line R.R. Co.*, 102 P. 740, 743 (Utah 1909), Defendants USDA-USFS argue in their pleadings that if the State of Utah and Salt Lake County have abandoned their purported interests in the Cardiff Fork Road right-of-way, as Plaintiff Crawford argues, that the abandoned right-of-way then reverted to the federal government as the underlying property owner, and not to Plaintiffs.

Also, because the United States owns the underlying property across which the Cardiff Fork Road allegedly passes, the United States' involvement is necessarily implicated in this action. As explained above, an R.S. 2477 right-of-way is a type of easement. An easement is "[a] right of use over the property of another." *Black's Law Dictionary*, 6<sup>th</sup> ed., at 509. Thus, the existence and scope of Plaintiff's alleged rights to use an easement crossing Defendants USDA-USFS's property implicates the property rights of Defendants USDA-USFS.

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the right-of-way, and that instead, in 2003 the County simply "withdrew from consideration for R.S. 2477 claim status several roads including Mill D South Road (Cardiff Fork Road)." (Documents #5, at 2 and #6, at 2.)

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As such, the declaratory relief Plaintiffs would seek in state court would necessarily implicate the property and management interests that Defendants USDA-USFS assert in the purported R.S. 2477 right-of-way. Therefore, because Defendants USDA-USFS have asserted an interest in the disputed property in this case, the court concludes that Defendants USDA-USFS are necessary and indispensable parties to this action.

The court reiterates that it understands that Plaintiff Crawford has explained that he simply is seeking a declaratory judgment regarding the non-federal property interests involved in this case. However, as the court has sought to explain above, such an action is not allowed under Rule 19 of the Federal Rules of Civil Procedure. Therefore, Plaintiff's Motion to Sever Defendant and Remand to State Court is denied.

**C. Defendant's Motion to Dismiss**

Third, the court addresses Defendants' Motion to Dismiss. (Document #17.) Defendants argue that the court should dismiss this action for lack of subject matter jurisdiction and failure to state a claim because Plaintiffs failed to plead under the Quiet Title Act (hereafter referred to as "the QTA"), and even if they had, individual members of the public cannot quiet title in an R.S. 2477 right-of-way. Plaintiffs argue that the QTA does not apply to their complaint because the United States does not own the Cardiff Fork Road right-of-way; that the QTA does not apply because they are seeking relief under the Declaratory

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Judgment Act; that their action is merely "to declare succession of title formerly held by Salt Lake County and the State of Utah, to plaintiffs" in the Cardiff Fork Road right-of-way; and that the Tenth Circuit ruled in *Southern Utah Wilderness Alliance v. Bureau of Land Management*, 425 F.3d 735 (10<sup>th</sup> Cir. 2005), that private parties can quiet title to R.S. 2477 rights-of-way.

**1. To Overcome Sovereign Immunity,  
Plaintiffs Must Plead Under the QTA**

Federal courts are courts of limited jurisdiction and are empowered to hear only those cases authorized by Article III of the Constitution that have been entrusted to them under a jurisdictional grant by Congress. See *Bender v. Williamsport Area School Dist.*, 475 U.S. 534, 541 (1986); *Henry v. Office of Thrift Supervision*, 43 F.3d 507, 511 (10<sup>th</sup> Cir. 1994). Because federal courts are courts of limited jurisdiction, this court may not presume jurisdiction. See *United States ex rel. Precision Co. v. Koch Indus.*, 971 F.2d 548, 551 (10<sup>th</sup> Cir. 1992), cert. denied, 507 U.S. 951 (1993). In addition, because sovereign immunity bars any suit against the United States absent congressional consent, see *Block v. North Dakota*, 461 U.S. 273, 287 (1983), "[j]urisdiction over any suit against the Government requires a clear statement from the United States waiving sovereign immunity. . . . The terms of consent to be sued may not be inferred, but must be unequivocally expressed." *United States*

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v. *White Mountain Apache Tribe*, 537 U.S. 465, 472 (2003)  
(citation omitted).

Therefore, Plaintiffs may not bring an action against Defendants USDA-USFS unless they do so in a way approved by Congress, in which Congress has waived sovereign immunity. Defendants USDA-USFS assert that the only way Plaintiffs may bring the instant action and not be barred by sovereign immunity is by pleading under the QTA.

Plaintiffs contend that they are seeking relief under the Declaratory Judgment Act. However, the Tenth Circuit has ruled that the Declaratory Judgment Act does not waive sovereign immunity for claims that challenge the United States' title to real property. See *Rosette, Inc. v. United States*, 141 F.3d 1394, 1396-97 (10<sup>th</sup> Cir. 1998). Instead, the Tenth Circuit held that only the QTA waives federal sovereign immunity for cases in which the United States asserts title to real property. See *id.*

In *Block v. North Dakota*, 461 U.S. 273, 275-76 (1983), the Supreme Court held that the QTA is the "exclusive means by which adverse claimants could challenge the United States' title to real property." 461 U.S. at 286. In other words, only through the QTA has "the United States, subject to certain exceptions, . . . waived its sovereign immunity and . . . permitted plaintiffs to name it as a party defendant in civil actions to adjudicate title disputes involving real property in which the United States claims an interest." See *id.* at 275-76 (footnote omitted). In

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*Southwest Four Wheel Drive Association v. Land Management*, 363 F.3d 1069, 1071 (10<sup>th</sup> Cir. 2004), the Tenth Circuit reiterated that the QTA is the exclusive means by which the federal government's claim to title in real property can be challenged.

Plaintiffs argue that the QTA does not apply to their action. Plaintiffs explain that they seek a declaration of succession of interest of the Cardiff Fork Road right-of-way from the non-federal defendants to Plaintiffs. Plaintiffs strongly assert that they simply want a declaratory judgment not involving Defendants USDA-USFS. Plaintiffs argue that because Defendants USDA-USFS do not have title to the Cardiff Fork Road right-of-way, this is not a challenge to that title and, therefore, this is not a quiet title action.

However, although Plaintiffs' argue that Defendants USDA-USFS do not have title to the Cardiff Fork Road right-of-way, Defendants USDA-USFS assert that if the County and State have abandoned their interest in the R.S. 2477 right-of-way (assuming that an R.S. 2477 right-of-way exists and that the State and County shared ownership of that right-of-way), Defendants USDA-USFS were the ones who then received that abandoned interest in the right-of-way. Thus, Plaintiffs seek a declaration of "vested title" in the Cardiff Fork Road right-of-way and Defendants USDA-USFS are asserting title to the right-of-way. Therefore, under *Block*, to overcome sovereign immunity, Plaintiffs must plead their action under the QTA.

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Because Plaintiffs have not brought their action under the QTA, their action is barred by sovereign immunity. However, as discussed below, even if Plaintiffs amended their complaint to bring an action under the QTA in this case, they would fail to state a claim because their level of interest in the Cardiff Fork Road right-of-way does not rise to the level required to bring an action under the QTA.

**2. Even if Plaintiffs Amended Their Complaint,  
Tenth Circuit Law Prohibits Them From  
Bringing a Successful Quiet Title Action**

Plaintiffs claim the Cardiff Fork Road is an R.S. 2477 right-of-way. Plaintiff Crawford alleges the R.S. 2477 grant was accepted in 1871 and proper notice was filed in the office of the Salt Lake County Recorder. (Document #22, at 3.) Plaintiff Crawford alleges a general public right of use of the Cardiff Fork Road right-of-way was established. Plaintiff Crawford alleges that Defendants USDA-USFS do not have an interest in the Cardiff Fork Road right-of-way because of a long history of allegedly documented acknowledgment that it is a public right of access, including the alleged disclaimed interest in the Cardiff Fork Road in 1903, as allegedly acknowledged by the United States Surveyor General. Plaintiffs claim that the State of Utah and Salt Lake County, who at one time allegedly jointly owned the Cardiff Fork Road right-of-way, allegedly both abandoned their interests in the Cardiff Fork Road right-of-way and that

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Plaintiffs now are the vested owners of the Cardiff Fork Road right-of-way.

On the other hand, Defendants USDA-USFS argue that under Tenth Circuit law, private parties like Plaintiffs simply cannot own public easements, including R.S. 2477 rights-of-way. Defendants USDA-USFS rely on five main cases to establish this point.

The first and main case Defendants USDA-USFS rely upon is *Kinscherff v. United States*, 586 F.2d 159 (10<sup>th</sup> Cir. 1978) (*per curiam*). In *Kinscherff*, the Tenth Circuit examined a lawsuit brought under the QTA which sought declaratory relief and damages against the United States and others. According to the court, the complaint alleged "that the United States had built a road on its land to reach a dam site, and that it continues to control the use of this road. The road is asserted to be the only access plaintiffs have to their property. Plaintiffs are seeking to develop their land, but the United States would not let them use the road, which is adjacent to the property, to bring in equipment, machinery, or material." *Id.* at 160. The plaintiffs sought to establish a right to use the road for all purposes as members of the public and by way of necessity. Citing to New Mexico state statutes and 43 U.S.C. § 932 (R.S. 2477), the plaintiffs asserted that they had a real property interest in the road as members of the public entitled to use public roads and as an owner of land abutting a public highway.

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The court held that the "interest" asserted by the plaintiffs was not an interest in real property contemplated by the QTA, but, if it existed, it was vested in the public generally. The court explained, "The plaintiffs, on this point, do not assert that their interest is an easement or any similar right; instead, as mentioned above, the right is claimed by them as members of the public. The substantive law in New Mexico for quiet title actions refutes the notion that the public has a real property interest in public roads." *Id.* Citing to New Mexico state court decisions, the court explained that a quiet title action may be brought by anyone claiming an interest in the real property, but the interest must be some interest in the title to the property, because an attempt to remove a cloud from title presupposes that the plaintiff has some title to defend. *See id.*

Between the citations to New Mexico law, the Tenth Circuit made the following statement Defendants USDA-USFS rely upon, and upon which other courts, discussed below, appear to rely:

"Members of the public as such do not have a 'title' in public roads. To hold otherwise would signify some degree of ownership as an easement. It is apparent that a member of the public cannot assert such an ownership in a public road." *Id.* As a result of its analysis, the court held that the interest the plaintiffs sought to assert as members of the public was not of such a nature to enable them to bring an action under the QTA.

*See id.* at 161.

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Defendants USDA-USFS also rely on another more recent Tenth Circuit case coming out of New Mexico. In *Southwest Four Wheel Drive Association v. Bureau of Land Management*, 363 F.3d 1069 (10<sup>th</sup> Cir. 2004), the plaintiff filed suit seeking a judgment granting to the public the title to certain roads on federal land. See *id.* at 1070-71. The Bureau of Land Management (hereafter referred to as "BLM") had closed the roads at issue after designating the area encompassing them a wilderness study area and declaring the area "roadless." The court explained that the plaintiff could not meet the QTA's requirement to "'set forth with particularity the nature of the right, title, or interest which the plaintiff claims in the real property.'" *Id.* at 1070 (quoting 28 U.S.C. § 2409a(d)). Relying on the reasoning of *Kinscherff*, the court held that because "'[m]embers of the public . . . do not have 'title' in public roads,' and therefore cannot meet the requirements of [the QTA]," the plaintiff's claim was indistinguishable from the one denied in *Kinscherff*. *Id.* at 1071.

A third case Defendants USDA-USFS rely upon is *Long v. Area Manager, Bureau of Reclamation*, 236 F.3d 910 (8<sup>th</sup> Cir. 2001). In this Eighth Circuit case, the plaintiff owned property near a reservoir in South Dakota. The land that used to create the reservoir and an adjoining park was condemned by the federal government and then leased to the State of South Dakota. The plaintiff brought suit to quiet title a right of access to his

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property through the southern half of the park. The plaintiff claimed that his right to use the road to gain access to his property from a certain area in the park was never taken during the condemnation proceedings, and he thus was seeking to quiet title that right. The Eighth Circuit concluded that the plaintiff's action was barred by the twelve-year statute of limitations under the QTA. The Eighth Circuit then noted, in language relied upon by Defendants USDA-USFS: "Even if we were to find that Mr. Long's quiet title action is not barred by the statute of limitations, moreover, it would fail because he does not claim a property interest to which title may be quieted. What Mr. Long seeks in this case is an undifferentiated right to use what was once a public road." *Id.* at 915. Setting forth the QTA's requirement that a plaintiff state "'the nature of the right . . . or interest' that is asserted in the property," the Eighth Circuit explained, citing to *Kinscherff*, "We agree with the Tenth Circuit that the right of an individual to use a public road is not a right or interest in property for purposes of the Quiet Title Act. The proper plaintiff to challenge the condemnation of a public road is the governmental entity that owns the easement." *Id.* (citation omitted).

Defendants USDA-USFS also rely on two 2001 District of Colorado cases. In *Staley v. United States*, 168 F. Supp. 2d 1209 (D. Colorado 2001), the plaintiffs brought a claim seeking the declaration, pursuant to R.S. 2477, of a public road that ran

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across United States property. As in this case, in *Staley* the plaintiffs claimed that a public road was created by operation of R.S. 2477, and the federal defendant argued that the court lacked jurisdiction to hear the quiet title action where the plaintiff was a private party who was seeking a right of access over a public road. Citing to *Kinscherff*, the court stated that "[t]he Tenth Circuit has interpreted the Quiet Title Act as requiring a plaintiff to have some interest in the title to the property." *Id.* at 1212. However, acknowledging that *Kinscherff* was construing New Mexico law in reaching its holding, the court examined Colorado law. After examining Colorado law, the court concluded, "While Plaintiffs may correctly assert that abutting landowners may have rights beyond those of the general public in certain public roads, the authorities cited above cannot be fairly construed to mean that an abutting landowner has a title interest in any public road such that they can maintain an action under the Quiet Title Act. The Court refuses Plaintiffs' invitation to blur the lines between a title interest and a right of access to a public road." *Id.* at 1213 (citation omitted).

The court continued:

When the Tenth Circuit found that the public does not have a real property interest in public roads under New Mexico law, it did so by reviewing that state's laws pertaining to quiet title actions. Under New Mexico law, the interest necessary to pursue a quiet title action was an interest in the title to the property. Contrary to Plaintiff's suggestion, Colorado law does not differ on

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this point. Like New Mexico, Colorado law requires a plaintiff to possess an interest in the title to the property in order to maintain a quiet title action. Therefore, the Court finds that *Kinscherff* is controlling in this case and Plaintiffs' attempt to distinguish it on the basis of differences between New Mexico and Colorado substantive law is not persuasive. The Court holds that under the law of this circuit, Plaintiffs do not have a title interest in a public road that would properly invoke the jurisdiction of the Court over Plaintiff's First Claim for Relief.

*Id.* at 1213 (citations omitted).

The other Colorado case Defendants USDA-USFS rely upon is *Fairhurst Family Association v. United States Forest Service, Department of Agriculture*, 172 F. Supp. 2d 1328 (D. Colorado 2001). In that case, the plaintiff sought a declaration under the QTA confirming its right of access to certain properties via an alleged public road and right-of-way across federal land administered by the defendant United States Forest Service. As in the instant case, in *Fairhurst Family* the federal defendant moved to dismiss the plaintiff's complaint for lack of jurisdiction on the ground that the plaintiff lacked the requisite ownership interest in the road and right-of-way to maintain an action under the QTA. Citing to *Kinscherff, Long, and Staley*, the court agreed with the federal defendant. The court stated, "an R.S. 2477 right-of-way is, by definition, open to all members of the public who wish to use it. As such, under *Kinscherff*, the real property interest in this easement vests in

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the public generally and not in individual members of the public." *Id.* at 1332 (citation omitted).

In determining whether the reasoning in *Kinscherff* and the other cases discussed above apply to the instant case, the court first examines Utah law regarding quiet title actions. Under Utah law, a quiet title claim may be brought by a party to determine that party's interest in real or personal property when another party has made an adverse claim to that property. See *Anderson v. Wilshire Investments, L.L.C.*, 123 P.3d 393, 400 (Utah 2005). Utah's quiet title statute provides: "An action may be brought by any person against another who claims an estate or interest in real property or an interest or claim to personal property adverse to him, for the purpose of determining such adverse claim." Utah Code Ann. § 78-40-1. Looking more closely at Utah quiet title cases, this court concludes that under Utah law, the party bringing a quiet title action must establish that it has legal title to the property. See, e.g., *State, by and through Utah State Dep't of Soc. Servs. v. Santiago*, 590 P.2d 335, 337-38 (Utah 1979) ("[A] quiet title action, as its name connotes, is one to quiet an Existing title against an adverse or hostile claim of another and not one brought to Establish title."); *Ash v. State of Utah*, 572 P.2d 1374, 1376 (Utah 1977) ("In [an action to quiet title] . . . all the plaintiff needs to do is to prove prima facie that he has title, which if not overcome by defendant, is sufficient."); *Colman v. Butkovich*, 538

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P.2d 188, 189 (Utah 1975) ("One cannot prevail on the weakness of his adversary's title, but only on the strength of his own."); *Gibson v. McGurrin*, 106 P. 669, 671 (Utah 1910) (explaining that to bring a quiet title action, "it is sufficient if he establishes that the legal title is in him, and that defendants have no right, title, or interest adverse to him in the premises"); see also *1<sup>st</sup> Nat'l Credit Corp. v. Von Hake*, 511 F. Supp. 634, 637 (D. Utah 1981) ("The purpose of [a quiet title action under Utah law] is to judicially quiet an existing title against an adverse or hostile claim by one or more others.").

Having reviewed Utah quiet title cases, this court concludes that Utah's law is similar enough to New Mexico law for *Kinscherff* to apply to this case. This court is particularly persuaded by language from the Utah 1979 *Santiago* decision. In that case, the Utah Supreme Court explained:

[A] quiet title action, as its name connotes, is one to quiet an Existing title against an adverse or hostile claim of another and not one brought to Establish title. One seeking such equitable relief must allege title, entitlement to possession, and that the estate or interest claimed by others is adverse or hostile to the alleged claims of title or interest. Hence it is to be seen that the effect of a decree quieting title is not to Vest title but rather is to Perfect an existing title as against other claimants.

*Santiago*, 590 P.2d at 337-38. Plaintiffs here are seeking to establish title under Utah Code Annotated § 72-5-105 by arguing the State and County have abandoned the R.S. 2477 right-of-way;

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Plaintiffs are not asserting that title already has been established.<sup>5</sup>

Plaintiffs argue that, contrary to the cases discussed above, recent Tenth Circuit case law establishes that private parties, such as themselves, can obtain title to an R.S. § 2477 right-of-way. Plaintiffs quote from *Southern Utah Wilderness Alliance v. Bureau of Land Management*, 425 F.3d 735 (10<sup>th</sup> Cir. 2005). As part of its discussion regarding how state law often resolves R.S. 2477 controversies, the Tenth Circuit offered the following quote, taken from a 1902 Department of Interior decision in which the Department of Interior considered whether toll roads could be R.S. 2477 highways, and in which the Department of Interior drew from state court decisions, common law treatises, and legal dictionaries:

Section 2477 of the Revised Statutes grants "the right of way for the construction of highways over the public lands not reserved for public uses." A highway is "a road over which the public at large have a right of passage" (Dic.Loc.V.) and includes "every thoroughfare which is used by the public, and is, in the language of the English books, "common to all the King's subjects" (3 Kent. Com., 432). Toll roads are highways, and differ from ordinary highways merely in the fact that they are also subjects of property

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<sup>5</sup>The court notes that under Utah Code Annotated § 72-5-105, the statute upon which Plaintiffs rely to make their claim of title in the right-of-way, it appears that to have title vest in Plaintiffs, as the alleged "adjoining record owners," "recordation of an order executed by the proper authority with the county recorder's office" must first occur. See Utah Code Ann. § 72-5-105(2)(a).

and the cost of their construction and maintenance is raised by a toll from those using them, instead of by general taxation. . . . A highway may be a mere footway. (*Tyler v. Sturdy*, 108 Mass., 196 [1871].) Neither the breadth, form, degree of facility, manner of construction, private, corporate, or public ownership, or source or manner of raising the fund for construction and maintenance, distinguishes a highway, but the fact of general public right of user for passage, without individual discrimination, is the essential feature. The necessities and volume of traffic, difficulties of route, and funds available for construction and maintenance, will vary the unessential features, but the fact of general public right of user for passage upon equal terms under like circumstances is the one constant characteristic of a highway.

*Southern Utah Wilderness Alliance*, 425 F.3d at 764 (quoting *The Pasadena and Mount Wilson Toll Road Co. v. Schneider*, 31 Pub. Lands Dec. 405, 407-08 (1902)) (emphasis added). Thus, Plaintiffs have seized upon the mention, in this 1902 Department of Interior opinion, of private ownership of a highway as support for their position.

The court has read numerous cases involving R.S. 2477 rights-of-way to determine whether private parties have been allowed to acquire an R.S. 2477 right-of-way. The court has found numerous cases in which a public entity was allowed to assert its interest in an R.S. 2477 right-of-way. See, e.g., *San Juan County, UT v. United States*, 420 F.3d 1197 (10<sup>th</sup> Cir. 2005); *Sierra Club v. Lujan*, 949 F.2d 362 (10<sup>th</sup> Cir. 1991); *Sierra Club v. Hodel*, 848 F.2d 1068 (10<sup>th</sup> Cir. 1988); *The Wilderness Society*

*v. Kane County, Utah*, 2006 WL 2471518 (D. Utah August 24, 2006); *Southern Utah Wilderness Alliance v. National Park Serv.*, 387 F. Supp. 2d 1178 (D. Utah 2005); *The Wilderness Society v. United States Dep't of Interior*, 2005 WL 3276256 (D. D.C. September 12, 2005). Many cases emphasize that R.S. 2477 rights-of-way are public highways. See, e.g., *Alleman v. United States*, 372 F. Supp. 2d 1212 (D. Or. 2005). In *Skranak v. Castenada*, 425 F.3d 1213 (9<sup>th</sup> Cir. 2005), the Ninth Circuit court mentions that the Forest Service had determined, though cursorily, that the private plaintiffs did not have an R.S. 2477 easement. See *id.* at 1219. However, no explanation of the Forest Service's reasoning is given, so it is unclear whether the Forest Service determined it was possible for private parties to acquire an R.S. 2477 right-of-way. In another Ninth Circuit case, *Shultz v. Department of Army*, 96 F.3d 1222 (9<sup>th</sup> Cir. 1996) (*per curiam*), cert. denied, 523 U.S. 1072 (1998), the court issued a very cursory opinion finding that the private party plaintiff, who had asserted he had a right-of-way under R.S. 2477, Alaska common law, or both, had not sustained his burden to factually establish a continuous R.S. 2477 route. In addition, in *Adams v. United States*, 3 F.3d 1254 (9<sup>th</sup> Cir. 1993), where a private party asserted an easement under R.S. 2477, the court noted that "[e]ven if the [private party plaintiffs] had an easement under R.S. 2477, they would still be subject to reasonable Forest Service regulations." *Id.* at 1258

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n.1. However, neither *Skranak* nor *Adams* actually addresses the issue of whether a private party can acquire title to an R.S. 2477 right-of-way. Similarly, the quote offered by Plaintiffs in the *Southern Utah Wilderness Alliance* case, which mentioned private ownership of highways, does not address the issue, but merely suggests a possibility in passing. On the other hand, a federal court in Oregon has also adopted the reasoning in *Kinscherff* and held that a private landowner's interest in an R.S. 2477 right-of-way was insufficient to allow him to bring a suit under the QTA. See *Alleman*, 372 F. Supp. 2d at 1225-26. The federal Oregon district court explained,

Although the court in *Kinscherff* relied in part on New Mexico state law in determining that only parties claiming title may bring a quiet title action for a public road, Oregon law also only allows parties claiming title to the property to bring a quiet title action. . . . The court finds that plaintiffs' 'interest' as members of the public in using the routes, is insufficient to bring an action to have the roads declared R.S. 2477 roads under the Quiet Title Act.

*Id.* at 1225-26. The court's research has not revealed a case that holds that a private plaintiff can acquire title to an R.S. 2477 right-of-way. Therefore, the court has found no legal support for Plaintiffs' position.

Plaintiffs in this case are seeking, under a rather elaborate theory of succession of title, to establish that they have vested title in the Cardiff Fork Road right-of-way pursuant to Utah Code Annotated § 72-5-105. Thus, they are not seeking to

quiet an existing title against an adverse or hostile claim of another, but they are seeking, as private parties, to establish title in an R.S. 2477 right-of-way across National Forest property. Such an action cannot be pursued under Utah law, as established by the *Santiago* decision, nor by Tenth Circuit precedent, as established by *Kinsherff* and *Southwest Four Wheel Drive Association*. Unfortunately for Plaintiffs in this case, they find themselves similarly situated to the plaintiffs in *Southwest Four Wheel Drive Association*, where the Tenth Circuit explained that if the plaintiff could not state a claim under the QTA, the plaintiff had "no other recourse against the United States." 363 F.3d at 1071.

As a result, this court recommends that Defendants USDA-USFS' Motion to Dismiss be granted because "a member of the public cannot assert such an ownership in a public road." *Kinscherff*, 586 F.2d at 160. Plaintiffs' claim is barred by sovereign immunity because they did not plead under the QTA. Furthermore, even if they were given an opportunity to amend their complaint, Plaintiffs cannot assert title in an R.S. 2477 right-of-way, and therefore they cannot state a claim under the QTA.

**D. Plaintiff's Motion for an Injunction**

Plaintiff Crawford also filed a motion requesting an injunction enjoining Defendants USDA-USFS from interfering with Plaintiffs' use of the Cardiff Fork Road during the pendency of

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this action. (Document #14.) The court concludes that its decision to grant Defendant's Motion to Dismiss renders moot this motion.

However, even if this motion were not rendered moot, the court concludes Plaintiff's motion is not allowed under the QTA and would have been denied. The court has established above that Plaintiffs would be required to bring their action under the QTA or be barred by sovereign immunity. The QTA provides, "No preliminary injunction shall issue in any action brought under this section." 28 U.S.C. § 2409a(c).

Therefore, Plaintiff's motion is moot; however, even if Plaintiff's motion were not moot, it would be denied as prohibited by the QTA.

**E. Despite the Conclusion that Plaintiffs  
are Barred by Sovereign Immunity,  
the Case was Properly Removed to Federal Court**

Plaintiffs understandably argue that if this court lacks jurisdiction over their action, then the action was improperly removed from state court to this court. Plaintiffs overlook that Defendants USDA-USFS are necessary parties to this action, as discussed above, and under 28 U.S.C. § 1442(a)(1), actions commenced against an agency of the United States may be removed to federal court. Furthermore, the United States District Court has original, exclusive jurisdiction over civil actions to quiet title to property "in which an interest is claimed by the United States." 28 U.S.C. § 1346(f). In addition, because Plaintiffs

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allege their title arose under R.S. 2477, a federal statute, the United States District Court has original jurisdiction. See 28 U.S.C. § 1331. Any action over which the federal court has original jurisdiction may be removed from state court. See 28 U.S.C. § 1441(a), (b).

The court notes that a state court would also be required to find that Plaintiffs' action is barred by sovereign immunity.<sup>6</sup>

**ORDER**

Based on the above analysis, **IT IS HEREBY ORDERED** that (1) Plaintiff's Motion to Sever and Remand to State Court (**Document #3**) is **DENIED** and Plaintiff's Motion for Injunction (**Document #14**) is **MOOT**. In addition, Plaintiff's Motion for Leave to File Supplement to Plaintiff's Opposition to the Federal Defendant's Motion to Dismiss (**Document #40**) is **DENIED** because it fails to address the jurisdictional issues before the court on Defendants' Motion to Dismiss.

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<sup>6</sup>Additionally or alternatively, Plaintiffs claim in one of their pleadings that they enjoy a "perpetual private right of ownership." (Document #20, at 4.) Plaintiffs argue that although privately accepted, the original grant acceptance was valid because the road was open for general public use. Plaintiffs argue that "[s]uch private ownership has never been relinquished." The court notes that this claim is only mentioned in Plaintiffs' one pleading, Plaintiff Crawford's Reply Memorandum to Motion for Injunction (Document 20, at 4), that it was not developed either in that pleading or any other pleading, and it was not developed at oral argument. The court can neither discern Plaintiff's claim nor the basis - factual or legal - for it. As a result, the court concludes Plaintiff has abandoned this claim and the court does not address it.

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**RECOMMENDATION**

Furthermore, **IT IS RECOMMENDED** that the court **DENY** Plaintiff's Motion for Default Judgment (**Document #33**) and **GRANT** Defendants' Motion to Dismiss (**Document #17**).

Copies of the foregoing Report and Recommendation are being mailed to the parties who are hereby notified of their right to object to the same. The parties are further notified that they must file any objections to the Report and Recommendation, with the clerk of the district court, pursuant to 28 U.S.C. § 636(b), within ten (10) days after receiving it. Failure to file objections may constitute a waiver of those objections on subsequent appellate review.

DATED this 25<sup>th</sup> day of September, 2006.

BY THE COURT:



Samuel Alba  
United States Chief Magistrate Judge

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8-31-10 USFS Letter

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United States  
Department of  
Agriculture

Forest  
Service

**Uinta-Wasatch-Cache National Forest**

88 West 100 North  
Provo, UT 84601  
801-342-5100

125 South State Street  
Federal Building, Room 8236  
Salt Lake City, UT 84138  
801-236-3400

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**File Code:** 2350

**Date:** August 31, 2010

Dear Albion Basin Homeowners,

I am writing in regard to future mid-day winter motorized access to your home or cabin across Alta Ski area beginning the 2010/2011 ski season. Motorized winter access is currently provided for between the hours of 5:00 pm and 8:00 am via a designated route. As you'll recall, the Forest Service extended the exception to the general motorized closure to allow motorized access to homes in Albion Basin during a mid-day window. This "mid day exception" was intended to be a temporary solution in order to provide an opportunity for homeowners to assemble documentation showing the existence of rights-of-way that would exempt them from the closure order and to examine alternative travel routes that might alleviate some of the ski safety issues associated with motorized travel during the ski day.

We have received one formal claim and documentation in May 2010 from the Albion Basin homeowners that was evaluated for evidence of a right-of-way that would exempt homeowners from Forest Service winter motorized use closure. Based on the information submitted in that claim, it was administratively determined that there is not sufficient evidence to show a legal right of way across federal land for over the snow vehicle access to the 21 Albion Basin homes within the Alta Ski permit area. There also does not appear to have been any plan developed to develop a safe alternative access route.

In our communications with you we have advised you of the temporary nature of the mid-day exemption, which in 2007 was to be a one year time period for the homeowners to bring forward information supporting a outstanding or reserved right of way or alternative access plan. We extended the time each year for three years in order to provide you enough time to demonstrate those rights of way or develop an alternate plan, each year we emphasized the temporary nature of the mid-day window exception.

In the interest of public safety to avoid a skier/OSV collision we can no longer continue the exception to the March 2007 motorized travel Decision. That decision states that the 21 Albion Basin home owners and residents OSV are allowed travel on designated routes from 5:00pm to 8:00 am the following morning.

We appreciate the amount of time it took to gather the information to submit the claim that one of the homeowners made on May 24, 2010. It took our Boundary and Title department considerable time and effort to review the documents.

Federal laws and regulations provide for access to private property across National Forest land where such access is required for reasonable use of the private property, subject to compliance with Forest Service rules. Home owners may request authorization for a mid-day window travel exception. Applications must be submitted in accordance with the enclosed regulations which are published in 36



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CFR 251.110 and 251.50. Among other requirements, the applicant must show that access across National Forest land is necessary for reasonable use of their private land. Requests for a special use permit must identify issues not already addressed in the NEPA analysis and decision of March 2007. We would be happy to meet with you to discuss the special use authorization process.

In closing, discontinuing the exception to the closure order will preclude any motorized travel by homeowners during the day. Those homeowners who believe that this will not allow sufficient access for reasonable use of their property may apply for a special use permit from the Forest Service. As has been discussed previously, evaluations of any request for authorization for use of motor vehicles during Alta Ski Area's operating hours will consider coordination of access between homeowners and with the ski area to minimize potential conflicts with operation of the ski area and skier safety. Please direct any questions you might have to Cathy Kahlow at the Salt Lake Ranger District at (801) 733-2675.

Sincerely,

/s/ Brian Ferebee  
BRIAN FEREBEE  
Forest Supervisor

cc: Town of Alta  
Alta Ski Lifts

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Summary of  
Regulatory Issues

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## SUMMARY OF REGULATORY ISSUES

### 400 GPD Requirement for Source and Right

TOA Ordinance 9-1-5A requires approval by Salt Lake Valley Health Department:

#### **9-1-5: OUTSIDE AGENCY APPROVAL FOR DEVELOPMENT PRIOR TO PLANNING COMMISSION REVIEW:**

A. Each real property development proposal brought to the town must have evidence of approval from each of the following agencies or political subdivisions of the United States government or state government prior to submission to the town planning commission for further action. Said agencies or political subdivisions are: Salt Lake City department of public utilities, water division; Salt Lake Valley health department and division of water quality; Salt Lake Valley health department, environmental health division; Salt Lake County service area no. 3; Cottonwood improvement district; Utah department of transportation; U.S. army corps of engineers; town marshal department; and unified fire authority.

SLVHD Reg. #11 states:

§4.1: No person shall occupy, lease for occupancy, or permit the occupancy of any building or structure within Salt Lake County:

4.1.1 Unless the building or structure is connected to a public water system; or

4.1.2 Unless the building or structure is connected to an individual water system approved by the Director that provides water that meets standards of quantity, pressure, and quality as stated here.

...  
§ 4.2.1: ...the [individual water] system owner shall have the necessary water rights and the system shall have the physical ability to supply a minimum of 400 gallons per day per household 365 days a year.

### Sewer Connection

The Utah Safe Drinking Water Act, Utah Code Ann. § 19-4-113, mandates a Salt Lake County (SLCo.) drinking water source protection ordinance for ground water sources, including the tunnels used by SLCSA3 and TOA. The mandated county drinking water source protection ordinance is applicable to incorporated portions of the county, unless the municipality adopts an ordinance in compliance with this section:

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(2)(a) A county ordinance adopted in accordance with this section applies to the incorporated and unincorporated areas of the county unless a municipality adopts an ordinance in accordance with this section.

(b) A municipal ordinance adopted in accordance with this section supercedes, within the municipality's jurisdiction, a county ordinance adopted in accordance with this section.

TOA has not enacted its own drinking water source protection ordinance. As one of the minimum requirements of this code section, SLCo. was required to adopt a 250 day travel time protection zone, or zone II:

(4) A county shall designate a drinking water source protection zone required by Subsection (3)(a) within:

(a) a 100 foot radius from the groundwater source; and

(b) a 250 day groundwater time of travel to the groundwater source if the supplier calculates the time of travel in the public water system's drinking water source protection plan in accordance with board rules.

As described by Keith Hansen at the protest hearing, the proposed POD and POU's under the subject change applications are in the SLCo. Zone II for SLCSA3 and TOA.

The SLCo. ordinance expressly prohibits holding tanks and septic systems in zone IIs. Salt Lake County Health and Safety Ordinance Chapter 9.25, particularly 9.25.090 App. A, enclosed.

### Year-Round Fire/EMT Access

The State of Utah formally adopted the 2009 International Fire Code (IFC) in 2011, codifying its adoption at Section 15A-5-103:

**“15A-5-103. Nationally recognized codes incorporated by reference.**

The following codes are incorporated by reference into the State Fire Code: (1) the International Fire Code, 2009 edition, excluding appendices, as issued by the International Code Council, Inc...”

Fire fighters and their trucks and machinery must have year-round access to buildings and to persons who may require emergency care. Section 503.2 of the IFC (2009) defines those access specifications:

**503.2.1 Dimensions.** Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of

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shoulders . . . and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).

...  
**503.2.3 Surface.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities.

Intern. Fire Code, 2009 Ed., emphasis added.

The unplowed, dirt/gravel road located in Albion Basin does not meet this access requirement.

### **Individual Source Protection**

SLVHD Regulation #11, Individual Water Systems Regulation makes no provisions for diversions from creeks or mines, setting out requirements for wells and springs only. See: §§ 4.3 and 4.4. Regulation #11 set out detailed source protection requirements at § 4.7.

TOA authorizes SLVHD as its culinary water authority, from whom all approvals must be obtained:

#### **10-6C-9: SPECIAL REGULATIONS:**

B. Board Of Health Approval: Prior to issuance of a conditional use permit by the planning commission or the town council, *or issuance of a building permit by the building official*, approval of all uses, regardless of size or number of units, shall be given in writing by the Salt Lake Valley health department, who shall certify as to the adequacy of the culinary water system and the sewage system. *The approval of all culinary water and sewage facilities shall be in accordance with the regulations of the Salt Lake Valley health department and the state division of health.*

### **Parking Requirements**

TOA ordinances require a minimum of 2 year-round parking stalls located no more than 500 feet from the permitted structure:

#### **10-12-2: OFF STREET PARKING REQUIRED:**

There shall be provided at the time any building or structure is erected or enlarged or increased in capacity, or any use is established, off street parking spaces for automobiles in accordance with the requirements of this chapter. Except as defined in subsection B of this section, all required parking spaces shall be provided on the lot on which the building or structure is proposed to be erected.

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B. Alternatives To On Site Parking: The required off street parking for any new use, structure or building which, due to the size or location of the parcel, cannot be provided on the premises, may be provided on other property not more than five hundred feet (500') distance from the building site measured along the shortest available pedestrian route of access.

**10-12-4: NUMBER OF SPACES REQUIRED:**

A. Required Number: The number of off street parking spaces required shall be as follows:

Dwellings, single-family	2 spaces for each dwelling unit. For single-family dwellings, the spaces may be arranged one behind the other.
--------------------------	--

A year round access road to the property, or to within 500' of the property, to an approved parking site, would be required.

**Stream Buffer Requirements**

SLVHD Regulation #14, Watershed Regulation, provides for both subdivisions and individual construction:

**4.5 Subdivision and Individual Construction on Watershed Areas.**

**4.5.4 Building Near Water Source Prohibited.** Unless otherwise approved, it shall be unlawful for any person to build any house, cottage, cabin, or other structure to be occupied by people within 50 feet of any watercourse or source of drinking water within the watershed area or within the watercourse bugger area established by the [SLVHD].

...  
In extraordinary cases, relief from the 50 foot requirement for human inhabited structures may be granted by the Director and the Director of Public Utilities or watershed superintendent over the impacted watershed, based upon a written application demonstrating that:

- (i) No reasonable alternative is available based on property boundaries in existence as of January 1, 2007;
- (ii) Groundwater and surface waters will be protected from runoff or contamination; and

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(iii) Specific conditions or requirements deemed necessary by the Director and the Director of Public Utilities or watershed superintendent will be followed.

TOA Ordinance likewise provides specific regulatory conditions to its stream buffer zones, with a more detailed definition that building may not occur within 50' of the *nearest high water line*:

**10-6D-12: SPECIAL REGULATIONS:**

G. Stream Regulations; Erosion Control: No building, structure, improvement or appurtenance shall be constructed, raised or established, the nearest point of which is *closer than fifty feet (50') from the nearest high water line of any "natural waterway"*, as defined in section 10-1-6 of this title. The approved site plan shall also indicate the extent and specific design of the proposed method of control of erosion during and after construction activities. The complete, approved erosion control system shall be installed and approved by the building official prior to commencement of any construction activities on any site.

**Vegetation Preservation**

TOA has strict ordinances regarding necessary approvals for the removal and replacement of vegetation:

**9-3-2: SITE PLAN APPROVAL:**

A. Required; Approving Authority: It is the express policy of the town to preserve as many mature trees as possible. It shall be unlawful for any person to proceed with any development or remove mature trees within the town without first having submitted a site plan and obtaining an approved site plan with respect to vegetation. For single-family residential development, the mayor shall provide said approval. For all other development, the planning commission shall provide said approval. In order to obtain approval to remove mature trees, a person must show that the failure to remove a mature tree will constitute extreme hardship.

B. Forest Service Land: For development on forest service land, and private land being developed in conjunction with forest service permitted land, on which a building is not proposed or contemplated, written approval by the forest service of a vegetation plan shall constitute approval from the town, which must receive said written approval prior to issuing any building permits and prior to any development proceeding. (Ord. 1992-O-1, 6-11-1992)

**9-3-3: REQUIREMENTS FOR PRESERVATION OR REPLACEMENT:**

A. Seedlings: Any seedling removed from the property shall be replaced with three (3) vigorous seedlings of at least six inches (6") in height.

B. Saplings: Any sapling removed from the property shall be replaced with three (3) vigorous seedlings at least six inches (6") in height and three (3) vigorous saplings at least five feet (5') in height.

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C. Mature Trees:

1. Any mature tree, if approved for removal from the property, shall be replaced with five (5) vigorous seedlings at least six inches (6") in height and five (5) vigorous saplings at least five feet (5') in height.

2. No mature tree shall be removed without site plan approval.

D. Survival; Replacement: Appropriate steps shall be taken to ensure all planted trees survive. Any planted trees that do not survive shall be replaced.

E. Bond; Replacement: A two (2) year bond shall be given to the town in the amount of the value of the replaced trees to be utilized in the event of their death and nonreplacement by the developer or landowner. Submission of a site plan shall constitute a license in favor of the town to enter upon a development and replace dead vegetation in the event the landowner or developer does not replace the same after written notice from the town to do so. (Ord. 1992-O-1, 6-11-1992)

**9-3-4: PENALTY:**

Any person convicted of a violation of this chapter, in addition to civil remedies, shall be guilty of a class B misdemeanor, subject to penalty as provided in section 1-4-1 of this code. Landowners shall be jointly liable with persons developing their land in the event of violations of this chapter. (Ord. 1992-O-1, 6-11-1992; amd. 2010 Code)

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**Salt Lake Valley Health Department**

**Health Regulation**

**#11**

**INDIVIDUAL WATER SYSTEMS  
REGULATION**

**Adopted by the Salt Lake Valley Board of Health**

**November 5, 1981**

**And amended:  
August 3, 2006**

**Under Authority of Section 26A-1-114  
Utah Code Annotated, 1953, as amended**

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## 1. PURPOSE AND APPLICABILITY.

- 1.1. The purpose of this regulation is to protect and promote the public health, safety, and welfare; and to prevent the spread of disease, the creation of nuisances, and water pollution by ensuring that residents of Salt Lake County have safe drinking water systems.
- 1.2. It shall be unlawful for any person not to comply with any rule or regulation promulgated by the Department, unless expressly waived by these rules and regulations.

## 2. DEFINITIONS

For the purposes of this regulation, the following terms, phrases, and words shall have the meanings herein expressed:

- 2.1. "Aquifer" shall mean a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs.
- 2.2. "Concentrated sources of pollution" shall mean sources that include, but are not limited to septic tanks, drain field systems, drain lines, ordinary sewer lines, solid waste management facilities, pit privies, hazardous waste disposal systems, and corrals.
- 2.3. "Deep well" shall mean a well that:
  - 2.3.1. has an effective geologic seal between the ground surface and the water bearing aquifer of sufficient thickness and continuity to give confidence of its uniformity throughout the region generally;
  - 2.3.2. has a grouted annular space between the drilled hole and the well casing at least two inches thick and extending a minimum of 100 feet below the surface or into an effective geologic seal to eliminate water of questionable quality from seeping alongside the casing into the water bearing aquifer; and
  - 2.3.3. has a well casing which extends to an elevation greater than the maximum flood water elevation but not less than 18 inches above the surrounding ground. Casings terminated in underground vaults may be permitted on a case-by-case basis if the vault is provided with a drain to daylight sized to handle in excess of the well flow.
- 2.4. "Department" shall mean the Salt Lake Valley Health Department.
- 2.5. "Director" shall mean the Director of the Salt Lake Valley Health Department or his or her designated representative.

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2.6. "Individual water system" shall mean any drinking water system not subject to the rules of the State Department of Environmental Quality, Division of Drinking Water.

2.7. "Owner" shall mean any person who alone, jointly, or severally with others:

2.7.1. Has legal title to an individual water system or any premises with or without accompanying actual possession thereof; or

2.7.2. Has charge, care, or control of an individual water system or any premises as legal or equitable owner, agent of the owner, lessee, or is executor, executrix, administrator, administratrix, trustee, or guardian of the estate of the owner.

2.8. "Person" shall mean any individual, public or private corporation and its officers, partnership, association, firm, trustee, executor of an estate, the State or its departments, institution, bureau, agency, municipal corporation, county, city, political subdivision, or any legal entity recognized by law.

2.9. "Pollution" shall mean such contamination, or other alteration of the physical, chemical, or biological properties of any waters of the state, or such discharge of any liquid, gaseous or solid substance into any waters of the state as will create a nuisance or render such waters harmful or detrimental or injurious to public health, safety, or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.

2.10. "Shallow well" shall mean a well installed in an unprotected or unconfined aquifer or any well not defined as a deep well.

2.11. "Spring" shall mean a water source issuing from the ground that is fed by precipitation that travels from a higher elevation through natural soil.

2.12. "Well" shall mean any excavation that is drilled, cored, bored, washed, driven, dug, fitted, or otherwise constructed and the intended use of the excavation is to acquire ground water.

### **3. GENERAL PROVISIONS**

#### **3.1. Jurisdiction of the Department.**

3.1.1. This regulation is promulgated by the Salt Lake Valley Board of Health as authorized by Section 26A-1-121(1), Utah Code Ann., 1953 as amended and Chapter 9.04, Salt Lake County Code of Ordinances.

3.1.2. The Department is empowered to enforce this regulation as authorized by Section 26A-1-114(1)(a), in all incorporated and unincorporated areas served by the

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Department, Utah Code Ann., 1953 as amended and Chapter 9.04, Salt Lake County Code of Ordinances.

- 3.2. It shall be unlawful for any person not to comply with any regulation promulgated by the Department unless granted an express variance by the Salt Lake Valley Board of Health.
- 3.3. Compliance with this regulation does not constitute a defense if charged with any environmental crime or violation of any local, state, or federal law.
- 3.4. Legal action taken by the Department under this Regulation does not preclude prosecution for any environmental crime that may have been committed or violation of any other local, state, or federal law.
- 3.5. Nothing in this regulation affects or modifies in any way the obligations or liability of any person under any other regulation or provision thereof issued by the Department, any ordinance issued by Salt Lake County or any municipality located within Salt Lake County, or any state or federally issued law, including common law. However, Departmental regulations supersede other existing local and county standards, regulations and ordinances pertaining to similar subject matter that are inconsistent.
- 3.6. Verbal or contractual obligations shall not diminish or remove the owner's or other responsible person's obligation to comply with this regulation.
- 3.7. **Severance.** If any section, subsection, sentence, clause, or phrase of this regulation is for any reason held to be invalid or unconstitutional by a decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this regulation.

#### 4. SUBSTANTIVE PROVISIONS

- 4.1. **Approved Drinking Water Supply Required.** No person shall occupy, lease for occupancy, or permit the occupancy of any building or structure within Salt Lake County:
  - 4.1.1. Unless the building or structure is connected to a public water system; or
  - 4.1.2. Unless the building or structure is connected to an individual water system approved by the Director that provides water that meets standards of quantity, pressure, and quality as stated herein.
- 4.2. **Quantity, Pressure, and Quality Standards.**
  - 4.2.1. **Quantity.** In order for an individual water supply to be approved, the individual system owner shall have the necessary water rights and the system shall have the physical ability to supply a minimum of 400 gallons (800 gallons if landscaping is to be watered) per day per household 365 days a year. For seasonally used

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recreational housing, the system shall meet the same requirements during the time period the housing is occupied. Seasonally used recreational housing shall not be occupied when the above requirements cannot be met.

4.2.2. **Pressure.** Individual water systems shall provide a minimum of 20 pounds per square inch of pressure at all times.

4.2.3. **Quality.** Individual water systems shall provide water which has contaminant levels below the maximum levels listed below (further sampling and analysis may be recommended based on specific environmental circumstances):

(i) **Inorganic Contaminant Levels.** Water shall be tested for the following contaminants within one year prior to approval:

<b>Contaminant:</b>	<b>Maximum Contaminant Level (MCL):</b>
1. Antimony	0.006 mg/L
2. Arsenic	0.05 mg/L
3. Barium	2 mg/L
4. Beryllium	0.004 mg/L
5. Cadmium	0.005 mg/L
6. Chromium	0.1 mg/L
7. Mercury	0.002 mg/L
8. Nickel	(See note 1 below)
9. Nitrate	10 mg/L (as Nitrogen) (See note 4 below)
10. Selenium	0.05 mg/L
11. Sodium	(See note 1 below)
12. Sulfate	1000 mg/L (See note 2 below)
13. Thallium	0.002 mg/L
14. Total Dissolved Solids	2000 mg/L (See note 3 below)

**NOTES:**

1. No maximum contaminant level has been established for nickel and sodium. However, these contaminants shall be monitored and reported.
2. If the sulfate level is greater than 200 mg/L, the owner shall satisfactorily demonstrate to the Department that no better quality water is available. The Department should not allow the use of water having a sulfate level greater than 1000 mg/L; however, a variance may be given under certain circumstances.
3. If TDS is greater than 1000 mg/L, the supplier shall satisfactorily demonstrate to the Department that no better water is available. The Department should not allow the use of water having a TDS level greater than 2000 mg/L; however, a variance may be given under certain circumstances.
4. In the case of water systems which exceed the MCL for nitrate, the Department may allow, on a case-by-case basis, a nitrate

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level not to exceed 20 mg/L if the supplier can adequately demonstrate that such water will not be available to children under 6 months of age.

- (ii) **Bacteriologic Contaminant Levels.** Three samples shall be taken on separate days and analyzed for total coliform. The levels shall be less than 1 coliform per 100 milliliters for each sample.

#### 4.3. Plan Approval for Individual Systems.

4.3.1. The information that shall be required to be submitted to the Department for approval of an individual drinking water source shall include, but shall not be limited to the following:

- (i) The results of the aforementioned inorganic contaminant analysis;
- (ii) The results of the three aforementioned total coliform analysis;
- (iii) A water rights certificate;
- (iv) If the source is a well, a copy of the well driller's report or if the source is a spring, drawings showing the construction details and documentation of the spring's flow rate; and
- (v) A topographic map of the property showing the proposed site of the water source and all concentrated sources of pollution within the protection zone distance for that source; and
- (vi) Documentation of how protection areas for the water source will be maintained.

4.4. **General Requirements for Approved Wells.** All wells shall be constructed and maintained according to the following requirements:

- 4.4.1. The well driller and drilling procedure shall meet the requirements of the Utah State Division of Water Rights.
- 4.4.2. After drilling is completed, the well shall be pumped free of all mud and sand and then disinfected by the introduction of sufficient chlorine solution into the well to produce a chlorine residual of at least 50 mg/L. After the chlorine solution has remained in the well for at least 24 hours, it shall be pumped out and the well water tested as described in the section on water quality above.
- 4.4.3. Alternative methods of disinfection may be approved by the Department.

4.5. **Protection Zones.** To ensure that protection is available for well water from concentrated sources of chemical or biological pollution, minimum allowable separation

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distances between the water and pollution source(s) are given in, subsections 4.6 and 4.7 of this regulation. In addition, the water supplier shall either own the protection zone and may not locate or permit concentrated sources of pollution within it; or, if the water supplier does not own the land in question, he or she shall then obtain a land use agreement with owner(s) of the land by which the land owner agrees not to locate or permit concentrated sources of pollution within the protection zone. In all cases, said restrictions(s) shall be binding on all heirs, successors, and assigns.

#### **4.6. Approved Deep Wells.**

- 4.6.1. A deep well shall be isolated from concentrated sources of pollution for a distance of at least 100 feet, except as allowed by subpart 4.7.1 (i).
- 4.6.2. The Director, at his discretion, may permit specially constructed sewer lines to be located within the protection zone no less than ten feet from the well head.

#### **4.7. Approved Shallow Wells.**

- 4.7.1. Except as allowed by part 4.7.2, a shallow well shall be isolated from concentrated pollution sources as follows:
  - (i) On all lands equal to or above the operating water level in the well the protection zone shall extend at least 1,500 feet from the well head.
  - (ii) On all lands below the operating water level in the well protection zone shall extend at least 100 feet beyond the point of intersection of the operating water level elevation with the ground surface, or 1,500 feet, whichever is less.
  - (iii) If necessary to protect the quality of the well water the Director may require that a shallow well(s) be fenced in a manner similar to fencing required around spring areas.
- 4.7.2. At the discretion of the Director, a specially constructed sewer(s) may be permitted to be located no less than 300 feet from a shallow well on all lands equal to in elevation or above the operating water level in the well. The specially constructed sewer(s) may be permitted to be no less than 30 feet downhill beyond the point of intersection of the operating water level elevation with the ground surface.
- 4.7.3. **Protection Zone for Spring Areas.**
  - (i) All land at elevations equal to or higher than and within 1,500 feet horizontal to the spring source shall be protected against concentrated sources of pollution.

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- (ii) All land at an elevation lower than and within 100 feet horizontal to the spring source shall be protected against concentrated sources of pollution, except as allowed by subpart 4.7.3 (iv).
- (iii) To ensure that protection is available, the water supplier shall do one of the following, and the restriction shall be binding on all heirs, successors, and assigns:
  - a. Own the protection zone and agree not to locate or permit a concentrated source(s) of pollution within it; or
  - b. If the water supplier does not own the land in question, achieve a land use agreement with the owner(s) of the land by which the land owner(s) agrees to not locate or permit a concentrated source of pollution within the protection zone.
- (iv) If approved by the Director, a specially constructed sewer may be permitted no less than 300 feet from a spring on all lands equal to or above the spring source elevation. On lands below the spring source elevation a specially constructed sewer(s) may be permitted to no less than 30 feet from the spring.

**4.7.4. Spring Development.** The development of a spring(s) for drinking water purposes shall comply with the following requirements:

- (i) The spring collection device, whether it be collection tile, infiltration boxes, or tunnels shall be covered with a minimum of ten feet of relatively impervious soil cover, except as allowed by subpart 4.7.4 (ii). Such cover shall extend a minimum of fifteen feet in all directions horizontally from the spring collection device.
- (ii) If it is impossible to achieve the ten feet of relatively impervious soil cover, the Director may approve the use of an impermeable liner that is acceptable for contact with drinking water, provided that:
  - a. The liner is of sufficient thickness and installed in such a manner as to ensure its integrity for the service life of the spring source;
  - b. A minimum of two feet of relatively impervious soil cover is placed over the impermeable liner; and
  - c. The soil and liner cover are extended a minimum of fifteen feet in all directions horizontally from the collection devices.
- (iii) Each spring collection area shall be provided with at least one junction box to permit spring inspection and testing.

- (iv) All junction boxes or collection boxes or both shall comply with Department requirements concerning access manholes, air vents, and overflow piping. All lids for spring boxes shall be of the shoebox type, gasketed and the chamber adequately vented.
- (v) The spring collection area shall be surrounded by a fence located a minimum of fifty feet from all collection devices on land at an elevation equal to or higher than the collection device and fifteen feet from all collection devices on land at an elevation lower than the collection device. The elevation datum to be used is the surface elevation at the point of collection. The fence shall be at least stock tight. In remote areas where no grazing or public access is possible, the fencing requirement may be waived by the Director. In populated areas a six foot high fence with three strands of barbed wire may be required.
- (vi) All vegetation that has a deep root system shall be removed within the fenced area.
- (vii) A diversion channel capable of diverting all anticipated surface water runoff away from the spring area shall be constructed and located immediately inside the fenced area, unless another location is approved in writing by the Director.
- (viii) A permanent flow measuring device shall be installed. Flow measurement devices, such as critical depth meters or weirs, shall be properly housed and otherwise protected.
- (ix) The spring shall be developed as thoroughly as possible to minimize the possibility of excess spring water ponding within the collection area. If the ponding of spring water is unavoidable, the excess shall be collected by shallow piping or french drain and routed beyond the immediate collection area.

## 5. RESERVED

## 6. INSPECTIONS & INVESTIGATIONS

6.1. To ensure compliance, the Department has the authority to perform inspections, investigations, reviews, and other actions as necessary.

### 6.2. Authority for Department to Enter Premises.

6.2.1. **Regulated Commercial Premises.** Upon presenting proper identification, authorized representatives of the Department may enter upon the premises of properties regulated by the Department to perform routine inspections to ensure

compliance with rules, standards, regulations, and ordinances adopted by the Department, the Departments of Health & Environmental Quality, county or municipal governing bodies, or the division of Occupational and Professional Licensing.

6.2.2. **Unregulated Commercial Premises.** The Department may enter upon the premises of unregulated commercial properties upon the consent of the owner or otherwise responsible party or upon a warrant issued by a court.

6.2.3. **Private Dwellings.** Inspections of private dwellings are made by consent of owner or otherwise responsible party or upon a warrant issued by a court.

6.2.4. **Consent by License or Permit:** The Department may require licensees or permittees to consent to access for inspections as part of their license or permit. Failure to allow access for inspections as set out in the license or permit may result in the suspension or revocation of the license or permit.

6.3. The owner or other responsible person may request information gathered by the Department during an investigation, inspection or review as authorized by the Government Records Access and Management Act, §§ 63-2-101 to 63-2-1001 Utah Code Ann., 1953 as amended.

7. **ENFORCEMENT MECHANISMS.** If the Department has investigated or inspected any property or facility and believes the property owner or other responsible party is in violation of this regulation or the Department has other reasonable grounds to believe that there has been a violation of any part of this regulation or that the property owner or otherwise responsible party is not in compliance with this regulation, the Department may take civil enforcement action as authorized by statute, rule, ordinance, and regulation and may also refer the matter for criminal prosecution. Civil enforcement may involve court or administrative actions, injunctive actions, and closures and may involve cost recovery, penalties, and other remedies. Civil and criminal actions may be brought simultaneously. A person does not need to be first adjudged liable in a civil matter before facing criminal charges.

7.1. **Criminal Enforcement Actions.** The Department may recommend criminal prosecution for environmental violations either alone or in conjunction with civil enforcement. Criminal prosecutions for environmental violations of state or federal law may be filed by the District Attorney, Utah Attorney General, United States Department of Justice, or other enforcement entity. Factors that the Department may consider in recommending criminal enforcement include the following factors and any other relevant factors.

7.1.1. The nature and seriousness of the offense including the immediacy of the threat of danger to the life or safety of another or the harm or threatened harm to human health or environment;

- 7.1.2. The degree to which the violation was designed to provide economic gain or cost avoidance or it involved a pattern of conduct or a common attitude of illegal conduct;
- 7.1.3. The degree to which the offender is a known violator and has avoided prior actions by the department;
- 7.1.4. The degree to which prosecution might deter future violations;
- 7.1.5. The person's actual culpability in connection with the offense including the presence in connection with the offense including the presence of criminal intent;
- 7.1.6. The person's willingness to cooperate in the investigation including whether the violator has attempted to conceal evidence or prosecution of others;
- 7.1.7. The appropriateness of referring the case to other agencies having prosecutorial interest; and
- 7.1.8. Possibilities of civil remedies which would be more appropriate than initiating the criminal justice process.

**7.2. Civil Enforcement Actions.**

- 7.2.1. The Department may request that the District Attorney bring an action to restrain or enjoin actions in violation of public health, environmental laws, and other laws or abate conditions in violation of such laws.

**7.3. Administrative Actions.**

- 7.3.1. The Department may, at its discretion, issue a Notice of Violation & Order of Compliance (NOV).
- 7.3.2. **Service of NOV.** The Department may provide notice to the owner of the property or otherwise responsible person by sending the NOV via first class mail to the last known address of the owner of the property or other responsible person. If notice is returned undeliverable, the owner of the property or other responsible person may be personally served or be given notice by other methods reasonably calculated to give actual notice to the owner or other responsible party.
- 7.3.3. **Contents of NOV.** The NOV shall:
  - (i) Describe the property and the persons believed to be in violation;
  - (ii) Describe the violation;

- (iii) Describe remedial action that will comply with the provisions of this regulation;
- (iv) Set a reasonable time for the performance of any required remedial action(s);
- (v) Describe the procedure to contest the NOV and the time limits for such a contest; and
- (vi) Notify the owner or other responsible person that if no written contest is filed within the time required, the NOV will become final and unappealable to any administrative entity or court.

7.3.4. **Challenging an NOV.** As detailed in the SLVHD's Adjudicative Hearing Procedures, a party aggrieved by an NOV may request a departmental conference, departmental hearing, or departmental appeal in writing within ten (10) days of the date of the NOV.

7.3.5. **Departmental Conference, Settlement Agreements, and Stipulations & Orders.**

- (i) After issuance of the NOV, the alleged violator has the option to request and attend a Departmental Conference to discuss the NOV and settlement with the Department and its legal counsel. No hearing officer will be present. The process of requesting a Departmental Conference is more fully described in the SLVHD's Adjudicative Hearing Procedures.
- (ii) If the parties agree to a settlement, the Department will prepare, in conjunction with the District Attorney's Office, a binding Settlement Agreement or Stipulation & Consent Order which may require the payment of penalties and the costs of investigation. Parties may also agree to a settlement at any time subsequent to the Departmental Conference. After signing a Settlement Agreement or Stipulation & Consent Decree, the parties waive all rights to further department and court hearings or appeals. Settlement Agreements or Stipulation & Consent orders may be enforced in state courts.

7.3.6. **Hearings & Appeals.** Parties by an NOV may also request a Departmental Hearing or a Departmental Appeal. A hearing officer is present at these proceedings and makes a written determination. The methods of challenging an NOV are more fully described in the SLVHD's Adjudicative Hearing Procedures. Departmental Hearing Orders and Departmental Appeal Orders may be appealed to the entities and within the time limits set out in the SLVHD's Adjudicatory Hearing Procedures.

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7.3.7. **Failing to respond to an NOV.** If a party fails to respond to an NOV within the required time, the NOV becomes a final order unappealable to any administrative entity or court. The Department may then enforce the order in state court.

#### 7.4. **Additional Administrative Enforcement Authority.**

7.4.1. The Department may declare unsanitary conditions a nuisance and cause every nuisance affecting the public health to be abated.

7.4.2. Any variances allowed by the Department to the requirements of this regulation shall be only by written approval of the Board.

7.4.3. **Exercise of Physical Control.** The Department may establish, maintain, and exercise physical control over property and over individuals as the Department finds necessary for the protection of the public health including but not limited to closing theaters, schools, and other public or private places and prohibit public gatherings. The order shall be effective immediately. Any person to whom the order is directed shall comply immediately but may petition the Director for a hearing in accordance with the Salt Lake Valley Health Department's Adjudicative Hearing Procedures. After the hearing and depending upon the findings as to whether the person has complied with the provisions of this regulation, the Director shall continue the order in effect or modify or revoke it.

7.4.4. **Emergency Enforcement.** If the Director finds that an emergency exists that requires immediate action to protect the public health, he or she may without notice or hearing issue an order declaring the existence of an emergency and requiring that action be taken as he deems necessary to meet the emergency. The order shall be effective immediately. Any person to whom the order is directed shall comply and abate the nuisance immediately; but may petition the Director for a hearing in accordance with the Salt Lake Valley Health Department's Adjudicative Hearing Procedures. After the hearing and depending upon the findings as to whether the person has complied with the provisions of this regulation, the Director shall continue the order in effect or modify or revoke it. If circumstances warrant because of the seriousness of the hazard, the Department may act to correct or abate the emergency without issuance of an order or directive or without waiting for the expiration of compliance time previously given in an order.

## 8. **CRIMINAL, CIVIL & ADMINISTRATIVE PENALTIES**

### 8.1. **Criminal Penalties.**

8.1.1. Any person who is found guilty by a court of violating any of the provisions of this regulation, either by failing to do the acts required herein or by doing a prohibited act, is guilty of a class B misdemeanor, pursuant to Section 26A-1-123, Utah Code Annotated, 1953, as amended.

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8.1.2. Each day such violation is committed or permitted to continue shall constitute a separate violation.

8.1.3. Each similar subsequent violation occurring within two years of the initial violation may constitute a class A misdemeanor.

## **8.2. Civil & Administrative Penalties.**

8.2.1. Penalties may be included in a Settlement Agreement or Stipulation & Consent Order. Penalties may also be imposed by the Hearing Officer. Penalties may be assessed according to the following factors:

- (i) The violator's history of compliance or non-compliance;
- (ii) The violator's economic benefit of non-compliance;
- (iii) The documented costs associated with environmental or health damage;
- (iv) The violator's degree of willfulness or negligence; and
- (v) The violator's good faith efforts to comply and cooperate.

8.2.2. The Director may multiply the penalty by the number of days the violation occurred

## **8.3. Recovery of Investigation & Abatement Costs**

8.3.1. The Department may recover its inspection, investigative and abatement expenses and costs from owners or other responsible person.

8.3.2. The Department may record a judgment lien on a violator's property to recover its expenses and costs.

## **9. EFFECTIVE DATE.**

9.1. This regulation shall become effective upon its enactment by the Salt Lake Valley Board of Health.

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APPROVED AND ADOPTED this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

SALT LAKE VALLEY BOARD OF HEALTH

By: \_\_\_\_\_  
William S. Kidder, D.D.S.

ATTEST:

By: \_\_\_\_\_  
GARY L. EDWARDS, M.S.  
Executive Director  
Salt Lake Valley Health Department

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### **9.25.090 - Restricted and prohibited uses.**

**A.**

The matrix attached as Appendix "A" adopted in this chapter, identifies specified land uses and conditions which have the potential to pollute or contaminate groundwater sources.

**B.**

These land uses have been classified according to the potential risk of pollution or contamination posed by specified land uses and conditions in each of the four designated source protection zones as a "restricted" or "prohibited" use.

**C.**

Any use deemed a potential contamination source by the public water system or a regulatory agency not listed on the matrix shall be reviewed by the source protection technical advisory committee as provided for in Section 9.25.130

*(Ord. No. 1677, § 1 5-11-2010)*

### **9.25.100 - Drinking water source protection requirements.**

Following the effective date of this section, no building permit or other form of approval required to develop or use real property in Salt Lake County shall be issued by the planning and development services division until the SLVHD determines that the proposed development or use of real property complies with the requirements of this section.

*(Ord. No. 1677, § 1 5-11-2010)*

### **9.25.110 - Review of applications.**

**A.**

Restricted use - a restricted use poses some risk of causing pollution or potential contamination in a specified protection zone. Following preliminary staff review of an application, the planning and development services division will request a verification of compliance from the SLVHD and from the appropriate public water system. The applicant shall submit to the appropriate public water system the best management practices and engineered and/or construction controls, or land management strategy to be implemented. Upon acceptance and approval, the appropriate public water system must issue a recommendation letter to the SLVHD listing the best management practices, engineered and/or construction controls, or land management strategy to be implemented as part of the recommendation. Any engineered and/or construction controls must be illustrated on the site plan or construction drawings. A public water system shall respond to an applicant's best management practices, engineered and/or construction controls, or land management strategy within forty-five days of submission. If a public water system does not approve of the best management practices, engineered and/or construction controls, or land management strategy submitted by an applicant, or cannot come to an agreement on the issue, the public water system will submit the reason that approval is not given and provide recommendations for additions or changes. The recommendation must also comply with this chapter and any applicable SLVHD health regulations. The SLVHD shall review all recommendations received and specify the conditions of any approval before forwarding the approval to the planning and development services division.

Challenges to the best management practices, engineered and/or construction controls, land management strategy or other conditions recommended by a public water system may be appealed as provided for in Section 9.25.130 herein. The division of drinking water may assist the SLVHD in the resolution of an appeal challenging the recommendations of a public water system. No permits or land use approvals including, but not limited to, a subdivision approval, conditional or permitted use approval, business license or building permit shall be issued until such appeal has been resolved.

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Every applicant having received a land use approval in accordance with this title shall re-submit to the responsible public water system their best management practices whenever significant changes or modifications are made and once every three years. Failure to do so may result in revocation of the land use permit.

B.

Prohibited use - a prohibited use poses a very high risk of causing pollution or potential contamination in the specified source protection zone. An application received by the planning and development services division for any permits or land use approvals including, but not limited to, a subdivision approval, conditional or permitted use approval, business license or building permit in a zone designated as prohibited shall be denied. If a denial is based on a prohibited use designation listed on the matrix within a specified source protection zone, the applicant may:

(1)

work with the public water system in the specified source protection zone to implement an acceptable engineered and/or construction control or a land management strategy; or

(2)

appeal the denial to the SLVHD. The division of drinking water may assist the SLVHD, public water system, and applicant in the resolution of any appeal challenging a prohibited use.

(Ord. No. 1677 §1 5-11-2010)

#### **9.25.120 - Administration.**

The policies and procedures for the administration of any groundwater source protection zone established under this chapter shall be administered by the planning and development services division and the SLVHD as provided for in this chapter.

(Ord. No. 1677 §1 5-11-2010)

#### **9.25.130 - Appeals process.**

An applicant challenging the use restrictions imposed in a specified source protection zone, the best management practices, engineered and/or construction controls, conditions, or the denial of an application based on this chapter, may appeal by filing a written notice of appeal with the SLVHD within thirty days following the action. The public water system in the specified source protection zone must be made a party to the appeal.

The board of health shall appoint a source protection technical advisory committee. The purpose of the committee shall be to hear appeals filed by an applicant and to make recommendations to the board of health. The committee shall consist of a member from the planning and development services division, a member from the environmental health division, a member from a public water system, a member from the division of drinking water, a member of the board of health, and a member from a municipality with extra-territorial jurisdiction. All appeals shall be governed by the adjudicative hearing procedures adopted by the board of health.

(Ord. No. 1677 §1 5-11-2010)

#### **9.25.140 - Enforcement.**

A retail water supplier may seek enforcement of this chapter following the procedures provided for in § 19-4-113(3)(c), Utah Code Ann.

(Ord. No. 1677 §1 5-11-2010)

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**9.25.150 - Effective date.**

This chapter shall become effective fifteen days after its passage and upon at least one publication of the ordinance from which this chapter derives or a summary thereof in a newspaper published and having general circulation in Salt Lake County.

(Ord. No. 1677, §1, 5-11-2010)

**APPENDIX A**

The following table identifies uses which have varying potentials to contaminate groundwater sources. These uses have been classified according to the risk of contamination in each protection zone as follows:

- Restricted (R)
- Prohibited Uses (X)
- Allowed (A)

**Appendix A  
Regulated Uses**

Potential Contamination Sources	Protection Zone		
	Zone 1	Zone 2	Zones 3 and 4
Agricultural pesticide, herbicide, and fertilizer storage, use, filling, and mixing areas	X	R	R
Agriculture experimental station	X	R	R
Airport maintenance and fueling sites	X	R	R
Animal byproduct plants; offal or dead animal reduction or dumping	X	X	R
Animal feeding operations with more than 10 animal units, including dairy, stockyard, etc	X	X	R
Animal hospital or clinic; veterinary office	X	R	A
Apiary (Bee yard)	X	R	A
Appliance repair (commercial)	X	R	A
Aviary	X	R	A
Baby diaper service	X	R	R
Beauty salons and barber shops	X	R	A
Beverage bottling facilities	X	R	R
Boat building and refinishing	X	R	R
Blacksmith shop	X	R	R
Blast furnace	X	R	R
Boilers	X	R	R
Bookbinding	X	R	A
Breweries	X	R	R
Campgrounds	X	R	A

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