GENWAL MINE
015/032

MINING AND RECLAMATION PLAN

for the

CRANDALL CANYON MINE

and the

SOUTH CRANDALL MINE

ADDENDUM TO THE RECLAMATION PLAN

for the

EAST MOUNTAIN
EMERGENCY DRILLPADS AND ACCESS ROADS

Submitted: December 21, 2007

File in:
☐ Confidential
☐ Shelf
☒ Expandable
Refer to Record No 0074 Date 12/21/07
In C/015/032 Incoming
For additional information

Copies of the Assignments are included in Appendix 1-1.

Special Use Permit Assignments

Special Use Permit, 1.5 acres, 150 x 400 ft adjacent to the eastern boundary of GENWAL's Federal Coal Lease SL-062648 for construction of the Sediment Pond. (See Appendix 1-3)

Special Use Permit, .10 acres located in Section 6, SW quarter NE quarter T16S R7E SLBM for the Trailhead parking and snow storage. (See Appendix 1-3).

Special Use Permit, 1.4 acres for stockpiles 1, 2, 3 and 4 dated 8/17/87 (See Appendix 1-3)

Road Use Permit Assignment for F.S. No. 50248 road issued May 21, 1981 by the United States Forest Service (Appendix 1-2).

It should be noted that throughout this Mining and Reclamation Plan the combined area of Federal Lease UTU-78953 and the SITLA/PacifiCorp sublease are collectively referred to as the South Crandall lease area, the South Crandall tract, the South Crandall mining area, and similar such terms.

Emergency Drillholes and Access Roads

On August 6, 2007, the active mine workings in Main West barrier pillar section collapsed trapping six miners underground. In an emergency attempt to rescue these men a number of boreholes were drilled from the surface of East Mountain down to the underground workings (see Plate 1-1). Due to the emergency nature of this rescue operation all surface construction for the drillpads and access roads was done under the emergency provisions of the various surface management regulations. The Forest Service, BLM, SITLA and the Division all granted verbal authority to proceed in a cooperative effort to not hinder the rescue attempts. Due to the emergency nature of the operation no formal rights-of-entry were granted for the areas of surface disturbance. On August 30, MSHA officially called off the rescue effort. Reclamation of drill pads and access roads began shortly thereafter. Refer to Appendix 5-22(A) for the addendum to the reclamation plan for the East Mountain drillpads and access roads. This plan includes a more complete description of activities and land management issues involving this rescue attempt.

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4.11.240 Dates of Past Mining

Approximate dates of past mining: November, 1939, to September, 1955, as per USGS records.

4.11.250 Land Use Preceding Mining

The land was historically used for wildlife and domestic grazing.

4.12 Reclamation Plan

NOTE: See Appendix 5-22(A) for the stand-alone reclamation plan for the East Mountain Emergency Drillpads and Access Roads. See Plate 1-1 for location of these drillpads and access roads.

4.12.1 Postmining Land Use Plan

In areas where surface disturbances resulted from mining operations, soil reclamation and revegetation will restore the areas to their premining usefulness as range land, wildlife habitat and recreational use. The reclamation plans are presented in chapters 2, 3, 5, and 7.

Land uses are solely at the discretion of the USFS. No alternative land uses have been proposed.

4.12.2 Landowner Or Surface Manager Comments

The citations from the Manti La Sal National Forest Land and Resource Management Plan can be considered as comments from the Forest Service for most of the disturbed area. The plan states that the road will be left in place pursuant to the wishes of the Forest Service and the surface landowner. Correspondence from the Forest Service indicating the above and outlining attendant reclamation requirements is included in Appendix 1-2.

4.13 Performance Standards

4.13.1 Postmining Land Use

All disturbed areas will be restored in a timely manner to conditions that are capable of supporting the uses they were capable of supporting prior to mining.

4.13.3 Criteria for Alternative Postmining Land Use

No alternative postmining land use is planned or proposed.

CHAPTER 5

LIST OF APPENDICES (continued)

APPENDIX NUMBER	DESCRIPTION
5-16	Storage Pad Stability Analysis
5-17	Road Expansion (within permit area) Safety Factor, Drawings
5-18	Fire Prevention Plan
5-19	Slope Stability Investigation Portal Pad
5-20	Bond Estimate (DOGM determination)
5-21	Reclamation Fill Stability Analysis At The Crandall Canyon Mine Emery County, Utah
5-22	Crandall Canyon Mine Site Reclamation Plan
5-22(A)	East Mountain Emergency Drillpads and Access Roads Reclamation Plan
5-23	Air Quality Permit Amendment, South Portals
5-24	R2P2 (Resource Recovery and Protection Plan) Approval Letter (South Crandall Federal Lease UTU-78953)
5-24A	R2P2 (Resource Recovery and Protection Plan) Approval Letter (120 Acre Modification, Federal Lease UTU-68082)
5-25	Subsidence Survey Letters of Notification

The roads are used to access the portal and substation areas and operations area as shown on Plate 5-3. Cut slopes of 0.25h:1v for competent bedrock, 0.5h:1v for fractured bedrock and 1h:1v for shallow surficial deposits less than four feet deep overlaying bedrock are proposed for the portal access roads.

A slope stability investigation was submitted by Delta Geotechnical Consultants and is included as Appendix 5-19 with a safety factor of 0.72 for the shallow surficial deposits of the proposed 1:1 cut slopes. Since the safety factor does not comply with UMC 817.162 (c) requirements, cut slopes with 1:1 slopes will be rounded to 1.5:1 in the shallow superficial material. Appendix 5-16 is a stability analysis of the storage pad (upper pad) at the Crandall Canyon Mine prepared by EarthFax Engineering, Inc. A reclamation slope stability analysis has been prepared by JME Consultants and is included in Appendix 5-21. This analysis shows that the minimum static safety factor of 1.3 for the reclamation fill slopes will be met.

5.40 Reclamation Plan

NOTE: See Appendix 5-22(A) for the stand-alone reclamation plan for the East Mountain Emergency Drillpads and Access Roads. See Plate 1-1 for location of these drillpads and access roads.

5.41 General

When no longer needed for mining operations, all entry ways or other openings to the surface from the underground mine will be sealed and backfilled. The permanent closures will be constructed to prevent access to the mine workings by people, livestock, and wildlife. Potential surface drainage will also be kept from entering the sealed entries.

Prior to final sealing of any openings, the BLM will require an on site inspection and a submission of formal sealing methods for approval of the BLM. The formal sealing methods will be presented as a plan including cross sections demonstrating the measures taken to seal or manage mine openings will comply with R645-301-529.100. At the time that the mine closure plan is submitted to the BLM, a copy will be forwarded to the Division for concurrence and approval and for addition to the mine plan on file. A copy will also be placed at the Emery County Recorder's office.

A formal plan will be submitted to the BLM for approval prior to final sealing of any openings. As per their on site inspection and plan approval, the openings will be sealed. All surface equipment, as well as structures, including all concrete foundations, will be removed by the applicant after the permanent cessation of operations.

MW-1 Supply Well Abandonment

Upon permanent cessation of mining operations, the water supply well, MW-1, will be permanently abandoned in accordance with regulations promulgated by the Utah Division of Water

APPENDIX 5-22(A)

ADDENDUM TO THE RECLAMATION PLAN

FOR THE EAST MOUNTAIN EMERGENCY DRILLPADS AND ACCESS ROADS

APPENDIX 5-22(A)
CONTENTS

ATTACHMENTS

1) General Location Map (provided by Forest Service)
2) Vicinity Photo/Map (provided by SITLA)
3) Drill Hole Map (provided by Forest Service)
4) Drillsite Aerial Photo (Olympus Aerial Survey)
5) Drillsite Contour Map (Olympus Aerial Survey)
6) Inter-agency reclamation Plan Memo (Priscilla Burton, DOGM)
7) Interim and Final Seed Mix
8) Wood Straw Information (Forest Concepts, LLC)
9) SITLA Memo Regarding Road Status
10) Reclamation Cost Estimates (Scamp Excavation)
11) Digital Photos (courtesy of Priscilla Burton)

HISTORICAL OVERVIEW

On August 6, 2007, the active mining area of the Crandall Canyon Mine collapsed, trapping six miners underground. As part of the emergency efforts to rescue the trapped miners a total of seven boreholes were drilled from the surface to the underground workings below. This required constructing approximately two miles of access road to the drill sites. Because of the emergency nature of the rescue operation no permits were obtained prior to constructing the access road, the drill pads, or the drillholes. The drillsites were located on both U. S. Forest Service and School & Institutional Trust Lands Administration (SITLA) lands, on both Bureau of Land Management (BLM) and SITLA coal leases, and were within the Division of Oil, Gas & Mining (DOGM) permit area. Normally, any surface disturbance in this area would have required the full gamut of environmental permit approvals from all of the various State and Federal agencies prior to initiating any actions on the surface. However, since this was a rescue effort done in hopes of saving the lives of the miners trapped below, all work was done under the emergency provisions of the various laws. As such there were no reclamation plans in place. Indeed, reclamation considerations were not a priority at the time of construction.

The seven drillholes were drilled over a span of August 7 through August 30, 2007. In physical terms, the drilling project involved constructing about a half mile of access road on Forest Service land (in a designated roadless area), and continued construction of an additional mile of road across SITLA land. This access road basically followed the top of the ridgeline of East Mountain. At that point, in order to get the drill rigs directly overtop the area where the miners were trapped the road made a series of very steep switchbacks down the face of East Mountain on what is essentially the escarpment of the Joes Valley fault. The area is extremely steep and rugged. Six separate drill pads were constructed at various locations down along the escarpment. In the process of switchbacking down the mountain the road crossed back and forth the property boundary between the Forest Service and SITLA. As a result, some of the drill sites are located on Forest Service land, some on SITLA land, and some on both. Refer to Attachment 1 for an overall location map of the affected area, and to Attachments 2 and 3 for more detailed maps of the immediate area around the drillpads. Attachment 4 is an aerial photograph of the site taken soon after the drilling was completed. Attachment 5 is a contour map of the site as well. Also refer to Attachment 12, which is a collection of digital photos taken before, during, and after reclamation. These maps and photos are labeled to coincide with the written description that follows.

On August 30, nearly a month after the mine collapse, the Mine Safety and Health Administration (MSHA) announced that rescue efforts were being called off. This determination by MSHA effectively ended the emergency status of the effort, and soon thereafter the company engaged in discussions with the appropriate State and Federal agencies concerning the most appropriate means of falling back into a more normal mode of compliance with the existing land management regulations. Shortly thereafter, on September 5, a meeting was held involving representatives from DOGM, SITLA, BLM, Forest Service, and Genwal Resources. At that time it was decided that DOGM would be the lead agency for coordinating the reclamation efforts as

required by the various agencies pertaining to their specific areas of responsibility. It was also determined at that time that reclamation would begin as soon as possible. Since autumn was approaching and the drillsites sat at an elevation of over 10,000' the available time for reclamation was closing rapidly. Heavy snows can move into these mountainous areas quickly at this time of year. DOGM decided that posting a reclamation bond would be delayed until after as much of the reclamation as possible could be completed. It was, in essence, a grace period to allow the company to demonstrate a commitment to reclaim as much of the disturbance as possible in the limited working season remaining.

On September 7, another meeting was held on-site to address the specifics of reclamation. Involved were reclamation specialists from all the agencies, representatives from Genwal Resources, and from Scamp Excavation, the company that initially constructed the drillpads and roads and who would perform the final reclamation work. Coming out of this meeting was a well-defined plan to reclaim the various pads, the access road between them, and the 1.5 mile primary access road leading to the area. This plan was agreed to by all parties involved, and was written up in memo form by Priscilla Burton of DOGM who had been assigned the responsibility of being the agency co-ordinator. This memo is included herein as Attachment 6. This reclamation plan is essentially an after-the-fact plan designed to do the best job of reclaiming an area which had been disturbed under the duress of an attempted rescue effort.

The essential elements of the agreed-upon plan consisted of the following:

1) Plug the existing drillholes
2) perform as much final reclamation as possible prior to winter, starting at the lower pads and working up
3) establish approximate original contour by pulling material up from the slopes and backfilling the cutslopes to the extent possible
4) roughen and pock the reclaimed surface
5) apply final seed mix to reclaimed slopes, and interim seed to unreclaimed slopes
6) apply wood straw to all reclaimed surface areas (see Attachment 8)
7) provide interim drainage control on unreclaimed areas to help stabilize until next summer, including drainage ditches, water bars and erosion control logs (excelsior logs)

Reclamation of the primary access road, which was constructed on both Forest Service and SITLA land, is somewhat complicated inasmuch as the Forest Service wants their segment reclaimed while SITLA wants their segment left open permanently (see Attachment 10). Therefore, the reclamation plan will be divided into three sections to conform to the eventual political outcome of the SITLA road issue. The three components of the reclamation plan will involve 1) the drill pads and interconnecting roads on the East Mountain escarpment, 2) the SITLA segment of the primary road, and 3) the Forest Service segment of the primary access road.

From the very beginning it was understood by all parties involved that under the impending

weather conditions there was a real possibility that no reclamation could be completed in the remaining fall season before the snows moved in, and under even the best weather conditions not all the reclamation activities could be completed. Given the uncertainty of the weather in this mountain environment the biggest question was how much work could be completed in the remaining fall season (of 2007) and how much would have to be delayed until the following summer season of 2008. Everyone involved hoped to see as much reclamation completed as soon as possible.

Before any reclamation activities could begin at the sites it was necessary to first plug the drillholes. Boart Longyear Drilling Co., the same company that initially drilled the rescue holes, was hired to do the plugging. From October 10 through October 15 they worked to plug the holes to the extent possible. Unfortunately, most of the holes were obstructed and could not be plugged for the entire length of the hole from the mine workings to the surface. This resulted from deteriorating conditions in the hole from the fact that most holes were not cased (in the interest of drilling to the mine as quickly as possible), and the fact that the mountain continued to move violently for weeks after the initial collapse. Plugging operations were inspected and verified by designated representatives of DOGM (acting on behalf of SITLA) and BLM..

Even though, under these unusual circumstances, a formal reclamation plan has not yet been approved, much of the reclamation has already been completed. Obviously, there is still much that remains to be done. Therefore, the remainder of this plan amendment will describe the following:

1) What has been reclaimed, and how it was reclaimed, and
2) What remains to be reclaimed, and how it is proposed to be done.

RECLAMATION COMPLETED AS OF DECEMBER 10, 2007

(Refer also to Attachment 12 for post-reclamation photos)

Immediately after the holes were plugged and the drilling company had moved off the site reclamation of the pads began. All work was done by Scamp Excavation (the same company that put the sites in initially) under the direct oversight of DOGM, SITLA and Forest Service, and in accordance with the consensus plan agreed upon earlier. Even though the pads and connecting roads were partially located on Forest Service land, mostly it involved SITLA land, therefore the Forest Service agreed to let SITLA take the lead in implementing the on-the-ground reclamation activities in this area. In the meantime, SITLA had determined that a portion of their primary access road should be realigned to provide safer access in the future and to eliminate a section that would be more susceptible to failure from heavy snow accumulations over the winter.

No reclamation work could be done on the pads and connector roads until the drillholes had been plugged as required by BLM and SITLA.. The drilling company was contacted about the plugging work in early September. By the time the company prepared the bid, was issued the purchase order, finished a pre-existing job and mobilized onto the East Mountain site a full month had elapsed. On October 4 the drilling company moved in. Due to weather delays and equipment problems plugging operations did not actually commence until October 12. Plugging proceeded apace after that, although downhole obstructions did prevent complete plugging as mentioned previously.

In the meantime, Scamp Excavation did as much reclamation as possible in other areas that did not require waiting for the plugging operations to finish. At the top of the mountain, immediately before dropping down the escarpment to the drill sites, two road segments were reclaimed. One road lead to a higher site that had been used to stage the water trucks during the rescue attempt, the second segment was an abandoned section of the original road that was dozed in during the darkness of the first night and missed the surveyors mark in heading for the initial drillsite. Since both of the sections were on the relatively flat area of the crest of the mountain ridgetop there was not a lot of disturbance associated with their rehabilitation. Reclamation consisted of pulling material from the sides of the road, which was primarily topsoil, and re-grading the sites to approximate original contour. The areas were the roughened and reseeded with a final seed mix approved by the agencies (refer to Attachment 7). Similar reclamation was also done in the shot area. During the rescue attempt MSHA had sent off a number of explosive shots in hopes of communicating with the trapped miners. The area where these shots had been set off had a number of small craters associated with the explosive activities. These areas were reclaimed by regrading and reseeding.

A more substantial reclamation effort involved the SITLA road. As mentioned previously, SITLA had determined that their portion of the access road is to be left in place permanently. It was decided that one particular stretch of this road was dangerous for future use (such as continued access to the drillhole reclamation sites) because of obstructed visibility where it

topped over the crest. This same stretch, measuring about 1100' long, was also felt to be unstable since it would hold the large snowdrifts in the winter which would then saturate the uncompacted outslopes of the road in the spring melt. It was felt that this would most likely result in a failure of the slopes at that time. The consensus was to realign this stretch to eliminate the hazards and provide for a more permanent roadway for future use. Therefore, Scamp Excavation proceeded to construct the new segment on the opposite (western) side of the ridgetop under the direction of SITLA representatives. After the new segment had been completed the old segment was completely reclaimed. Using backhoes, the outslopes were pulled back up into the roadcut and approximate original contour was re-established. The area was roughened and reseeded with a final seed mix. This area was reclaimed before any wood straw had been delivered to the site, but SITLA representatives agreed that applying the straw later could involve safety issues (workers packing in the bales by hand over steep terrain) and determined to forgo the requirement of the protective cover.

Work also proceeded on the remainder of the access road, involving both the SITLA and Forest Service sections. This included pulling some of the material up from the outslopes and placing it against the bank of the inslopes. In this manner, the outslopes and inslopes were both made less steep and therefore more stable. Waterbars were installed to direct runoff, and excelsior logs (made from bundled wood straw) were installed at the outlet sections of the waterbars. The recontoured slopes were then re-seeded. Overall, an attempt was made to dress up the previous construction, which as has been noted earlier, was done under extreme duress conditions when the only priority was to get to the trapped miners absolutely as soon as possible. All work on the SITLA segment of the road was done under the direction of SITLA personnel, while the Forest Service oversaw work on their portion. It should be noted that even though the Forest Service has determined that their road must be totally reclaimed, they understand the importance of leaving it open for access to the remaining reclamation work, which will be completed next summer (2008). The work that was done on their segment was to provide interim stability until such time as final reclamation occurs, presumably next summer..

Prior to finishing the drillhole pligging, there was a limited amount of reclamation work that could be done at the drillpads. The mudpits left over from the previous drilling were backfilled at each pad. Pads #2 and #6 involve the largest cuts and sidecasts, and will take the longest to reclaim. Therefore it was decided that due to the magnitude of work required final reclamation of these pads should be delayed until the summer of 2008 when the threat of snowstorms would no longer be a factor. To provide interim erosion protection for these areas the pads were smoothed off and drainage ditches were installed which were designed to take any water off the pads, away from the fill, and off onto stable native ground. Each of these ditches was fitted with erosion control excelsior logs where they discharged onto the native ground. Also, the outslopes of pads #6 and #2 were then seeded with an interim seed mix to help stabilize it until final reclamation next summer (see Attachment 7).

Once the drilling (plugging) operations began, the reclamation of the drillsites could begin in earnest as well. Because of the urgency of staying ahead of the weather the reclamation crews

were poised to begin reclaiming the drillpads just as soon as the drilling company finished each hole and pulled off. The first pad to be reclaimed was Pad #3 which is the lowermost site. Using two trackhoes and a dozer material was pulled from the outslopes, with the lower hoe casting material to the upper hoe which, in turn cast it to the upper part of the cutslope. The dozer also worked to help spread the material. The site was restored to approximate original contour and was then roughened (pocked) in preparation for applying a final seed mix.

Work then progressed up the to the next pad up the hill, namely pad #4. Following immediately behind the plugging crews, reclamation followed similar to pad #3, that is, regrading to approximate original contour, pocking, and re-seeding with a final seed mix. Reclamation also included the road segment from pad #4 to #3 up to a very steep area know as "the ledge" for obvious reasons. Reclamation then began on pad # 5, which is the uppermost pad, using the same techniques as on the lower pads. The crews then moved to pad # 7, which was an extension of pad #2, and reclaimed it as well. Finally the spur road leading into pad #5 was reclaimed. All permanently reclaimed areas were reseeded with a final seed mix, and a matting of wood straw was applied. As part of the interim reclamation water bars were also installed along the access road down the mountain from the top down to the ledge to help control erosion during next spring's meltoff. Each waterbar was fitted with a staked excelsior erosion log at the discharge end.

On November 8, 2007, an on-site meeting was held involving representatives from DOGM, SITLA, BLM, Forest Service, Scamp Excavation, and Genwal Resources. The purpose of this meeting was to determine if the interim and final reclamation efforts accomplished to date were satisfactory to all the various state and federal agencies according to their individual management responsibilities. After a number of small issues were addressed the final outcome was an agreement among all parties that the following areas have been adequately reclaimed, subject to determining revegetation success in the future:

Pad #3 and its access road
Pad #4 and its access road up to the ledge
Pad #5 and its access road
Pad #7
The rerouted (reclaimed) segment of the SITLA road

Based on aerial surveys prepared by Olympus Aerial Survey approximately 7.91 acres were originally disturbed by the drillpads and roads on the side of the mountain. This figure does not include the SITLA or Forest Service access roads. To date, 3.99 acres have been reclaimed, pending revegetation success, leaving 3.92 acres to be reclaimed next summer (see Attachment 5). Upon wrapping up the reclamation efforts for the winter and de-mobilizing the equipment off the mountain, on the way out Scamp re-established the waterbars along the SITLA and Forest Service road sections, tightened up some of the erosion logs and removed all trash from the site. Lastly, the main staging area at the Flat Canyon road junction (which had seen heavy usage during the rescue attempt) was regraded and reseeded.

It should be noted that, under the emergency nature of the road and drillsite construction, there was no opportunity to assess possible effects on archeological resources in the area. However, immediately after the rescue efforts were called off Genwal Resources hired the archeological firm if Senco-Phenix to perform an on-site evaluation. The results of this evaluation are submitted under the confidential file.

RECLAMATION REMAINING TO BE COMPLETED AS OF DECEMBER 10, 2007

(Refer also to Attachment 12 for pre-reclamation photos)

As discussed above, much of the East Mountain rescue drilling area has already been reclaimed. Due to the unprecedented circumstances under which the drilling was done no formal reclamation plan was in place at the time. Therefore, reclamation done to date has been through a consensus agreement among the responsible state and federal land management agencies. The purpose of the following part of this plan amendment is to establish an approved written reclamation plan to be used for the remainder of the work. The proposed reclamation plan for the remainder of work to be done is essentially a continuation of the work that has already been done, using the techniques that have already been verbally agreed to, and which have meet with approval of all the agencies in terms of what has already been accomplished. The following areas remain to be reclaimed, and will be discussed in detail individually

1) Drillpad #2 and its access road
2) Drillpad #6 and its access road
3) The "oops road"
4) The remainder of the access road from the ledge to the top of the mountain
5) The SITLA road
6) The Forest Service road

1) Drillpad #2, Drillpad #6, and the "Oops Road"

These areas are listed together because the will be reclaimed as a unit. These two pads combined involve the biggest disturbance on the site in terms of quantity of earth material to be relocated. The outslope of pad #2 extends to the cut of pad #6 below. In turn, the outslope of pad #6 extends to the "oops road". The "oops road" is an abandoned segment of the primary access road. It was constructed in the middle of the night in an effort to gain access to the new drillsite at pad #3. The dozer operators were unable to see the surveyors ribbon marking the proposed route down the mountainside. As a result, they reached an impassable ledge and were forced to abandon this road segment. They then backed up and constructed a new road below, which is the present alignment. While the oops road goes nowhere, it did serve a useful purpose because it subsequently became an effective landing area which caught boulders and other debris from rolling down the hill from the construction above. This allowed construction work to be done on pad #6 while drilling continued safely down below on pads #3 and #4. This was most important in the frenzied attempts to move the drill rig from location to location attempting to find the trapped miners below.

Because of the magnitude of the effort required to reclaim combined pad #2/6 this work was always planned for the summer of 2008 when the threat of snowstorms would no longer be a factor. The plan to reclaim this site consists of using three trackhoes, two rock trucks, and several dozers. Much of the outslope from pad #2 will be pulled down and be used as backfill

for pad #6. Some of the outslope material below pad #6 can be pulled back up to the pad, but most of this outslope material will be loaded by backhoes into rock trucks and hauled back up the hill to be used as backfill for both pads #2 and #6. By carrying the material back up to the top of the padsites the trackhoes can do much of their work with gravity rather than against it. The oops road will be cleaned off and will serve as the bottom-side access for the rock trucks to get loaded. The existing access road (located below the oops road) has been reclaimed up to the ledge. The remaining extent of this road will act as a catchment for any material which may roll down from the final reclamation of the pad #2/6/oops combined area. This will help ensue that no extraneous material rolls down onto undisturbed areas. Indeed, the reason that reclamation of this road stopped at the ledge was to allow it to serve as a cathchpoint for subsequent reclamation above. Reclamation of the pad #2/6/oops area will be done to re-establish approximate original contour as much as possible. Prior reclamation of pads #3, 4, 5 and 7 are good indicators of the ability to achieve approximate original contour at this site, even in these very steep conditions.

After the backfilling and grading operations are complete the site will be roughened with pocks similar in size and spacing as those placed in the previously reclaimed pad areas. A permanent seed mix will then be applied, followed by putting down a layer of a wood straw. Density of seed application and wood straw application will be similar to that of the previously reclaimed pads, which in all cases exceeded pre-determined recommended application rates.

2) Remaining access road from ledge to top of mountain

As described above, reclamation work on the access road started at the bottom (pad #3) and continued up past pad #4 to the ledge, where work was halted for the winter. Work was stopped here for two reasons. First, the segment of road immediately above the ledge will serve as a catchment for construction work to be done next summer on pads #2/6 as described above. Second, there is an active seep in the roadcut at this location which will need to be dressed up permanently for final reclamation. This work could not be done this fall because of the need to keep the road open for access to pads #3 and 4 which were being reclaimed below. Next summer when work resumes (and after pads #2/6 have been totally reclaimed) the seep will be contained by laying a course of drainrock from the seep across the road, daylighting on the downhill side as close to native ground as possible. The drainrock courseway will then be covered with geotextile fabric. Based on flow conditions, a perforated-drain pipe may also be installed within the drainrock as determined by the Division field representative. The road will then be reclaimed from there to the top of the mountain by pulling as much sidecast material as possible back up from the outslope onto the roadcut and backfilling to approximate original contour. Seed mix (final) and wood straw will be staged ahead of time along the remaining length of roadside so that seeding and application of wood straw can be done by hand as the earthwork progresses up to the top. Once this road has been reclaimed there will no longer be any vehicular access to any part of the mountainside.

3) The SITLA road

The SILTA road is defined as that portion of the in-coming access road located on SILTA land, namely Section 2, T16S, R6E. As shown on Attachment 2, it is approximately 4959' long. This road was constructed under emergency conditions as part of the rescue attempt, and is a continuation of the road which comes off Forest Service property from the south in Section 11. The width of disturbance varies, being greater in those steeper hillside areas (approximately 45' total disturbance), and less on the flatter areas where no cuts or sidecasts were involved (approximately 25' wide).

The road generally follows the alignment of a road previously envisioned by SITLA, but which had never been constructed due to legal complications involving SITLA, the Forest Service and certain environmental groups. It is SITLA's formal position that since the road has now been constructed (and improved to their satisfaction) that the road should remain permanently to provide commercial and other access to their land (see Attachment 10). However, the Forest Service has taken the position that the newly constructed segment of road on their property in Section 11, which connects the SITLA road segment to the south to the previously established road system, has no formal authorization and therefore must be reclaimed. The obvious dilemma is that SITLA would then be left with an inaccessible piece of road on their land. SITLA has stated that it would seek legal remedy to keep their road accessible if Forest Service requires that the (Forest Service) interconnecting segment be reclaimed. The Forest Service contends that it is not legal to keep the FS road open since there is presently no legal authority for its existence. Obviously, this is a matter beyond the control of Genwal Resources, and may not be resolved in the foreseeable future. This said, Genwal acknowledges that since the company constructed the road in the rescue attempt, it has the responsibility to reclaim it if and when the legal decision is made that it must be reclaimed if it has not been included as part of SITLA inventoried road system in the meantime.

Because of SITLA's stated position that the road must be left in place, in lieu of reclamation, Genwal has agreed to perform some additional work next summer at the time of final reclamation of the drillsites. This work will include compacting the outslopes and cutslopes of the road. This would be done with a trackhoe equipped with a sheepfoots roller. The slopes would then be reseeded with a final seed mix. The existing waterbars would be removed and permanent rolling dips would be installed at locations determined by SITLA representatives. Also, there are two wet areas (seeps) that will require collection boxes utilizing 2" drain rock and perforated drainpipe. All work done on the SITLA road will be done at the direction of SITLA representatives.

If it is eventually determined that the SITLA road is to be reclaimed it would be reclaimed in the standard manner. That is, pull the outslopes up using a trackhoe, and place the material into the cutslope to achieve approximate original contour. The surface would be roughened (pocked) and re-seeded with a final seed mix. An example of this reclamation method can be seen at the existing segment of SITLA road that has already been reclaimed where the road was realigned to the other side of the ridge.

4) Forest Service road

A short segment of emergency access road was constructed on Forest Service land, measuring about 2573' long (see Attachment 2). Because most of this segment was constructed on a steep hillside the total disturbed width, counting cutslopes and sidecasts is about 45'-50'. As explained above, the Forest Service has instructed that this segment be reclaimed since there is no legal basis for its existence (i.e., no permits, right-of-way, NEPA clearance, etc.) Genwal proposes to reclaim this segment of road next summer (2008) unless instructed otherwise by the Forest Service as a result of future developments regarding the SITLA road situation.

As with all the other roads, Genwal would propose to reclaim the Forest Service road in the standard manner. That is, pull the outslopes up using a trackhoe, and place the material into the cutslope to achieve approximate original contour. The surface would be roughened (pocked) and re-seeded with a final seed mix. An example of this reclamation method can be seen at the existing segment of SITLA road that has already been reclaimed where the road was realigned to the other side of the ridge. This example is quite pertinent since it involved rough steep countryside in many ways similar to the area of the Forest Service road. All work on this segment would be conducted with the oversight of Forest Service representatives.

5) Reclamation schedule

Work on the remaining reclamation is not anticipated to begin until the summer of 2008, probably late June or early July. Crews will not mobilize onto the mountain until after the late spring snow storms are no longer a threat and the ground has dried out sufficiently. Therefore, the start date will be determined based upon on-the-ground conditions. Once work has begun the following schedule is anticipated, based on discussions with the contractor:

a) Pads 2/6/oops road.....4 weeks
b) Remaining access road fro ledge to top.....2 weeks
c) Forest Service road.....1 week
d) SITLA road (if done).....2 weeks

6) Revegetation Success

Due to the emergency nature of the road and pad construction there was no vegetation reference area established to be used as a standard for comparison in determining future revegetation success. The Forest Service standard for success is when 90% of the original ground cover is re-established. Genwal Resources commits to work with Forest Service, SITLA and DOGM to implement an acceptable protocol for determining how and when revegetation success has been met sufficient for final Phase 3 bond release, which under DOGM rules requires a minimum 10 year liability period after initial seeding. This will involve a coordinated effort next summer (2008) with the various agencies to locate a suitable adjacent undisturbed area to be monitored along with the reclaimed site. These concepts can then be incorporated into the reclamation plan.

Genwal also commits to doing annual surveys of the reclaimed site to control and eradicate all noxious weeds as identified by the agencies.

7) Reclamation Cost Estimates

Scamp Excavation has prepared estimates of the cost to reclaim the remaining disturbed areas as follows (see Attachment 11 for details):

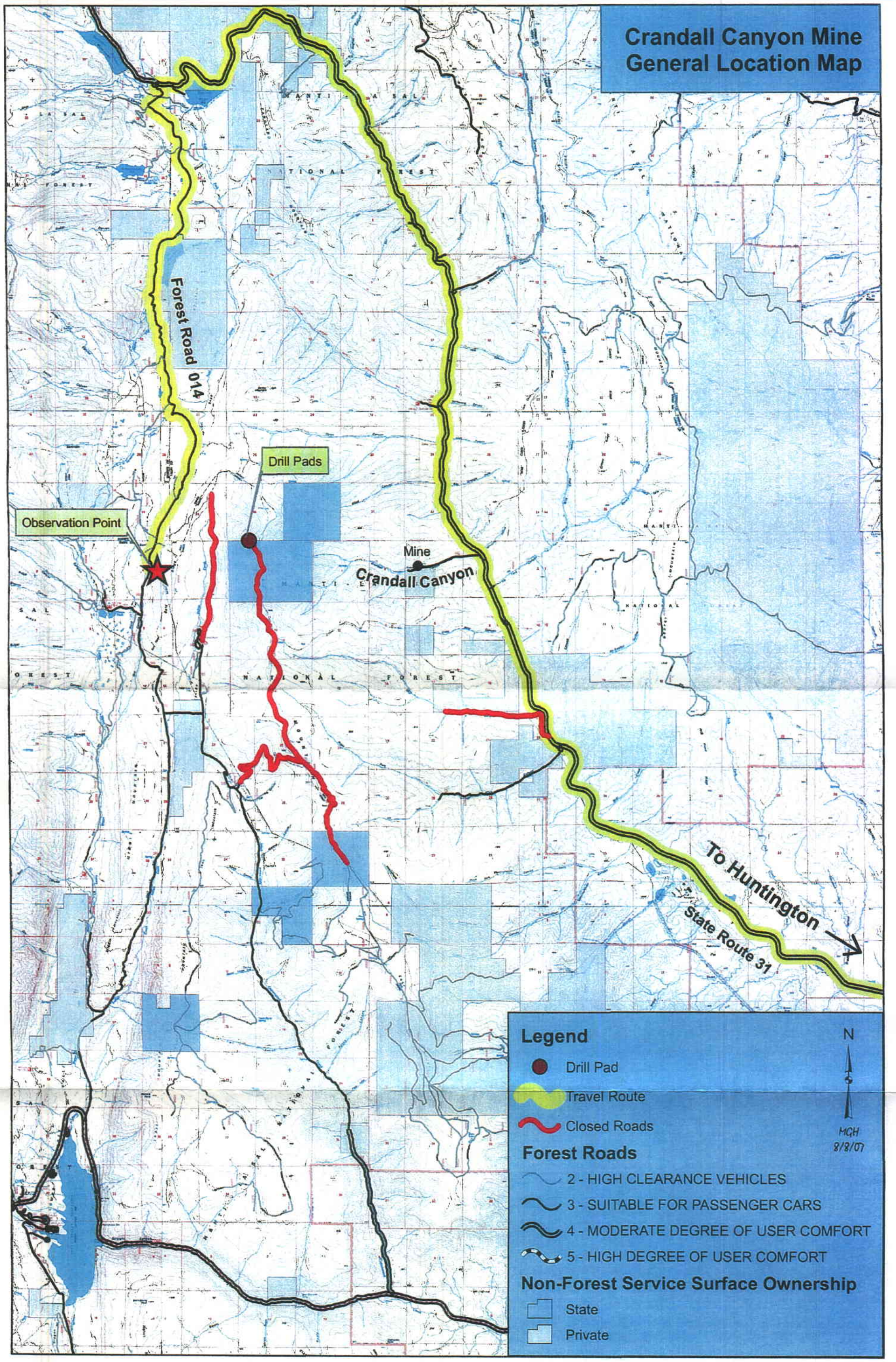
1) Pads and access road	33,800 yd3**	.....$240,000
2) Forest Service road	7600 yd3	.....$38,000
3) SITLA road	17632 yds3	.....$88,000

** Volumes are contractors estimates. Genwal Resources is presently working on a refinement of the earthwork yardage based on digital contour mapping (2' interval) recently acquired from Olympus Aerial Surveys. As a result, these reclamation costs may be updated in the future to reflect more accurate information.

ATTACHMENT 1

GENERAL LOCATION MAP
(PROVIDED BY FOREST SERVICE)

Crandall Canyon Mine
General Location Map

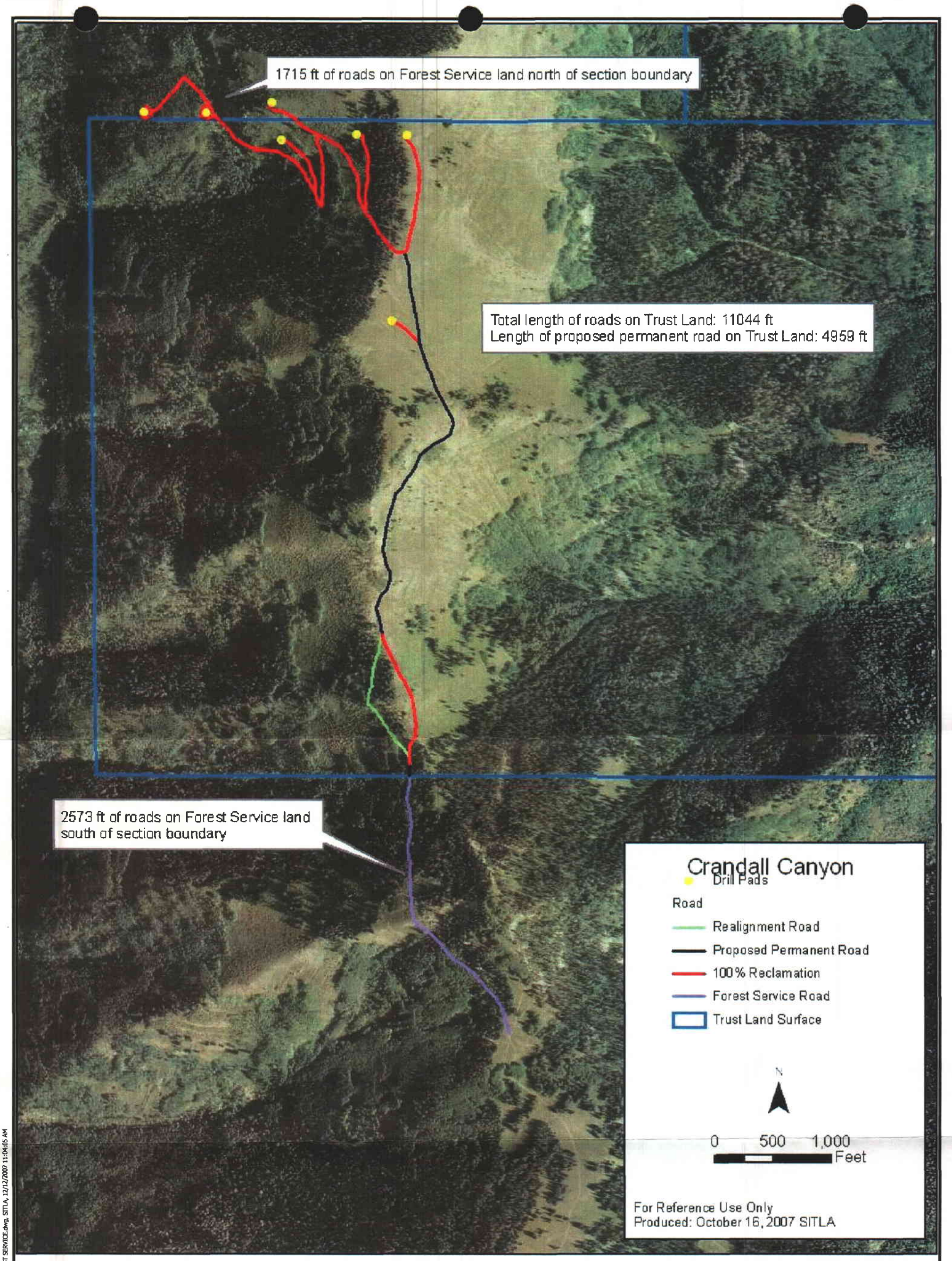


ATTACHMENT #1

GENERAL LOCATION MAP

ATTACHMENT 2

VICINITY PHOTO/ MAP
(PROVIDED BY SITLA)



VICINITY PHOTO / MAP

Crandall Canyon Mines
Crandall Canyon
P.O. BOX 1077
PRICE, UTAH

MSHA ID #42-01715

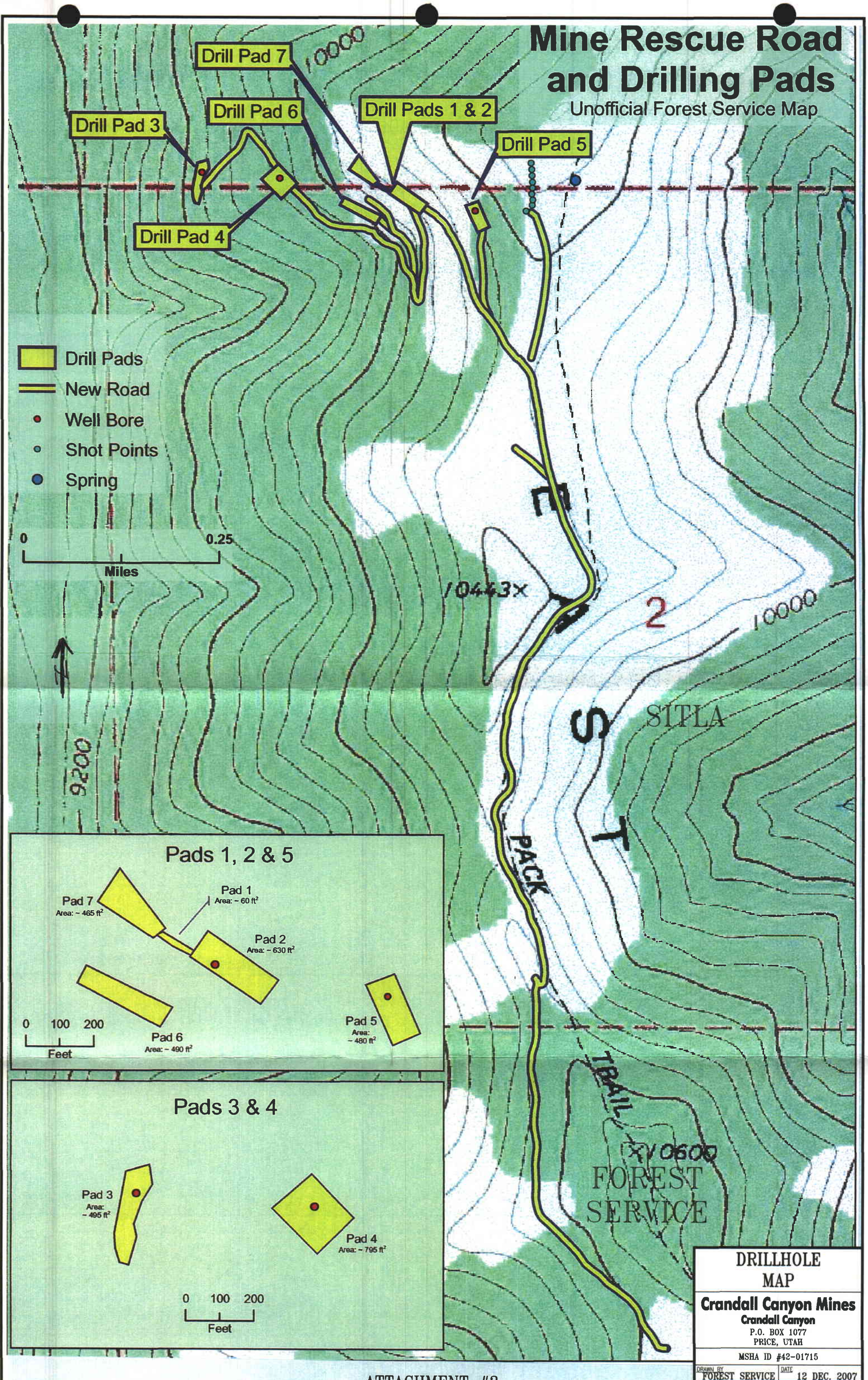
DRAWN BY	DATE
SITLA	12 DEC. 2007
SHEET	1 of 1

ATTACHMENT #2

I:\Shared\Current Drawings\Mine Maps\Crandall Canyon\Accident Reclamation\CC FOREST SERVICE.dwg, SITLA, 12/12/2007 11:04:05 AM

ATTACHMENT 3

DRILL HOLE MAP
(PROVIDED BY FOREST SERVICE)



DRILLHOLE
MAP

Crandall Canyon Mines
Crandall Canyon
P.O. BOX 1077
PRICE, UTAH

MSHA ID #42-01715

DRAWN BY FOREST SERVICE | DATE 12 DEC. 2007
SHEET 1 of 1

ATTACHMENT #3

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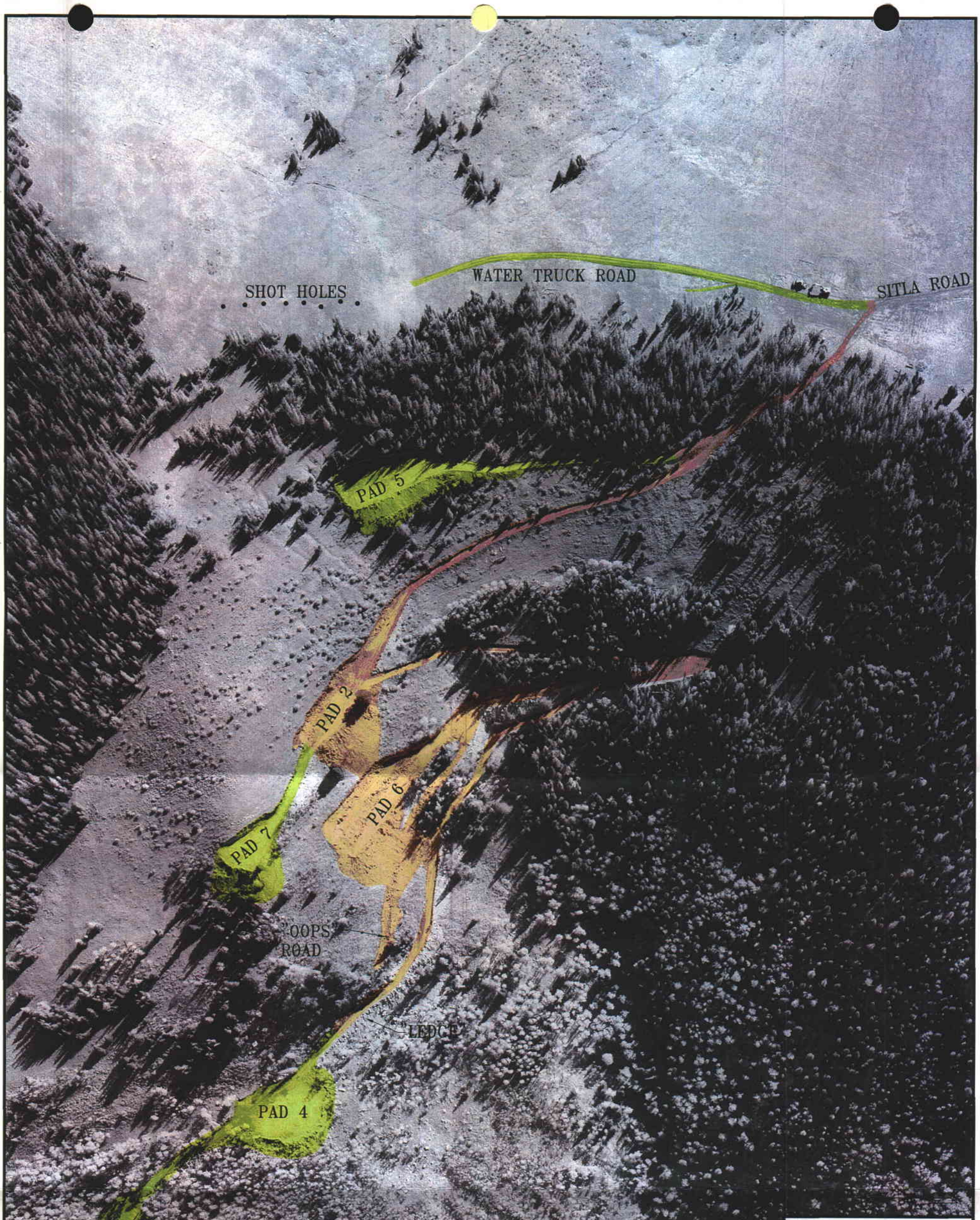
ATTACHMENT 4

DRILLSITE AERIAL PHOTO
(OLYMPUS AERIAL SURVEY)



KEY

RECLAMATION COMPLETED

FUTURE RECLAMATION

DRILL SITE AERIAL PHOTO

Crandall Canyon Mines
Crandall Canyon
P.O. BOX 1077
PRICE, UTAH

MSHA ID #42-01715

DRAWN BY: PJ	SCALE: 1" = 200'
APPROVED BY: DS	DATE: 12 Dec. 2007
SHEET: ATTACHMENT #4	

ATTACHMENT #4

J:\Shared\Current Drawings\Mine Maps\Crandall Canyon\Accident Reclamation\CC Rec Topo.dwg, PHOTO, 12/12/2007 2:10:56 PM

ATTACHMENT 5

DRILLSITE CONTOUR MAP
(OLYMPUS AERIAL SURVEY)

SHOT HOLES

WATER TRUCK ROAD

SITLA ROAD

PAD 5

PAD 2

PAD 6

PAD 7

"OOPS" ROAD

"LEDGE"

PAD 4

PAD 3

KEY

RECLAMATION COMPLETED

FUTURE RECLAMATION

DRILL SITE CONTOUR MAP

Crandall Canyon Mines
Crandall Canyon
P.O. BOX 1077
PRICE, UTAH

MSHA ID #42-01715

DRAWN BY: PJ	SCALE: 1" = 200'
APPROVED BY: DS	DATE: 12 Dec. 2007
SHEET: ATTACHMENT #5	

ATTACHMENT #5

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ATTACHMENT 6

INTER-AGENCY RECLAMATION PLAN MEMO
(PRISCILLA BURTON, DOGM)

UTAH OGM COAL PROGRAM MEETING NOTES

Date: September 7, 2007
Time: 9:30 am – 4:30 pm
Location: East Mountain

To: Internal File, Crandall Canyon Mine, C/015/032, Reclamation of Emergency Mine Rescue Drill Holes.

From: Priscilla Burton

Attendees: Priscilla Burton and Karl Houskeeper, DOGM; Dave Shaver and Mike Glasson, UEI; Tom Lloyd, Manti La Sal National Forest; Adam Robison, SITLA; Shane Campbell, Scamp Excavation Inc.

Purpose: To discuss the reclamation work to be achieved in the next month, weather permitting, and the interim reclamation/stabilization of the remainder of the site for winter.

MEETING SUMMARY:

UEI has notified MSHA that the 7 drill holes will be plugged. A confirmation letter is expected from MSHA. The drill holes will not be plugged until after a planned family ceremony. Sue Wiley, BLM, requests prior notification of plugging, so that she can document the process at each hole.

Work currently underway by UEI: aerial photography of site, hole plugging requirements requisition; site survey by Kodi Ware

Stabilization work that will be started during the week of September 10, 2007 (prior to family ceremony):

1. Fill all remaining mud pits
2. Grade pads 6, 7, 1, 2 and 5 towards cut.
3. At pads 6, 7, 1, 2 and 5 create drainage ditch against cut to direct flow to undisturbed slope.
4. At pads 6, 7, 1, 2 and 5, place excelsior logs at outlet of ditch in undisturbed to filter flow and break velocity.
5. Flatten blast holes along water truck road, and seed.
6. Rip **on the contour** and seed water truck road.

Following hole plugging, the following reclamation was agreed upon for this season.
(Shane plans on using 4 trackhoes, 1 ten wheeler, and a couple of dozers.)

Drill pad #3

Ramp down outslope to shuttle side cast material up to pad with track hoe (60 inch bucket). Spread material on pad with dozer. Scatter fertilizer over the site with a hand applicator. Roughen site (gouge or pock) with 2 ft hoe. At this site surface mulch will consist of grubbed vegetation returned to site surface after pocking.

Drill pad #4

Side cast material will be replaced with a trackhoe on this wide and flat pad. Wood fiber mulch donated by the USFS and fertilizer will be scattered by hand across the site and gouged into the surface with the 2 ft bucket of a hoe.

Drill pads #6, 7, 1, 2, 5

If, the weather allows work to continue after pads 3 & 4 are reclaimed, then pad #7 followed by pad #5 will be reclaimed. However it is more likely that drill pads # 6, 7, 1, 2 and 5 will be delayed until July 2008, when access will be possible. The stabilization of these pads was previously described above.

Stabilize Access Road from Drill pad #4 east to the East Mountain saddle

Reclamation of the road will end approximately 0.1 miles east of drill pad #4 at a high cut in solid rock on the road. Rocks will be set against the toe of the cut. Rocks will also be set in the fill and on the surface of the fill to maintain a rough surface.

On the unreclaimed portion of the access road, water ditches ("blow outs") will be used to convey water off the road through excelsior logs to the outslope of the road. Water ditches will be placed according to the Forest Water Quality Guidelines (FWQG) which indicate a ditch every 100 ft for grades less than 15% and a ditch every 50 ft. for grades greater than 15%. Adam Robison will check placement frequently.

There are three "wet spots" on the road. These potential springs will be watched over the next month to determine whether they are due to the mud pits or whether springs were intercepted that will require treatment (French drain construction) during final reclamation. Construction of a drain would entail placement of 2 – 3 inches of gravel at water contact. Geotextile fabric would be placed over the top of the gravel.

Stabilize Access Road from East Mountain saddle south to pre-existing road

End of season, as exit site, berms will be removed in some locations where heavy snow pack and drifts are expected. i.e. from "hog's back" to the north 0.25 mi. Adam Robison will specify locations to remove berm. Along remaining road, berms will be retained so more soil will not be lost to sidecasting. Water ditches will be placed according to the Forest Water Quality Guidelines (FWQG) mentioned previously.

ACTION ITEMS to be done the week of September 10, 2007:

Priscilla Burton:

- Contact Sherriff Guyman and ask the date of the family ceremony.
- Contact Kevin Strickland, MSHA, relate that MSHA trailer is no longer in a secured area.
- Send Tom's .pdf file of disturbance to Dave and Mike.
- Determine fertilizer type, based upon wood fiber material.

Shane Campbell:

- Contact Horace Petty to have dead cow removed from USFS access road.
- Put back ATV gates at Indian Campground
- Take "Road Closed" signs down.

Mike Glasson:

- Provide MSDS sheets to Priscilla Burton, Tom Lloyd and Adam Robison.
- Contact Sue Wiley, 636-3651, prior to hole plugging so that she can be present to observe the entire process.

Tom Lloyd:

- Provide preferred seed mix, alternate mix, and cover crop (if necessary due to seed shortage) to Adam Robison, for coordination with SITLA. Copy to Priscilla Burton @ DOGM
- Provide information sheets on wood fiber mulch.
- Provide .shp files to Adam Robison for site

Adam Robison:

- Provide preferred seed mix, alternate mix, and cover crop (if necessary due to seed shortage) to Tom Lloyd, for coordination with USFS. Send copy to Priscilla Burton @ DOGM
- Provide product information and contact information for excelsior logs to Shane Campbell. Send copy to Priscilla Burton @ DOGM
- Create contact sheet for all those present. Contact sheet will include Scamp Excavation Inc. job foreman, and emergency contacts for area.
- Information to Shane for closure sign on gate.

Dave Shaver:

- Provide DOGM with copies of correspondence with MSHA concerning hole plugging.
- Contact Sue Wiley, 636-3651, prior to hole plugging so that she can be present to observe the entire process.
- Once consensus is reached between USFS and SITLA, inquire as to availability of seed.

ADDITIONAL COMMENTS: (This section is intended to provide attendees the opportunity to contribute additional and significant information concerning the meeting content that may not have been mentioned during the meeting.)

Adam has agreed to have SITLA generate road profiles so that grade can be determined.

pwb
O:\0150032.cra\Emergency Drill Holes\09072007Meeting Notes.doc

ATTACHMENT 7

INTERIM AND FINAL SEED MIX

Interim Seed Mix

Seed Mix for Crandall Temporary Seed Mix

Revisited September 14, 2007

Species	Variety	Common Name	Pounds/ Acre (PLS)	seeds/lbs	seeds/acre	Seeds/ft^2
Elymus trachycaulus ssp. Trachycaulus	Primar	Slender Wheatgrass	2	159,000.00	318000.0	7.3
Dactylis glomerata	Paiute	Dryland Orchardgrass	2	654,000.00	1308000.0	30.0
Phleum pratense		Timothy	1	1,300,000.00	1300000	29.84
Secale cereale		*Cereal Rye – Delete	~~0~~	18,000.00	594,000.00	13.64
Triticum aestivum x Secale cereale	QuickGuard Sterile Triticale	Triticale	~~69~~	13,000.00	468,000.00	10.74
Lolium Perenne ssp. Multiflorum		Annual Ryegrass	2	227,000.00	454,000.00	10.42
Achillea millefolium	Occidentalis	Westren yarrow	0.25	2,770,000.00	692500.0	15.9
Total			**76.25**		**5134500.0**	**117.9**

* Replace w/ Quick Guard Triticale

Final Seed Mix

Seed Mix for Crandall mine Drill Pads and roads

Revisited September 14, 2007

Species	Variety	Common Name	Pounds/ Acre (PLS)	seeds/lbs	seeds/acre	Seeds/ft^2
Bromus marginatus	var. Garnet	Mountain Brome	2.5	90,000.00	225000.0	5.2
Elymus trachycaulus ssp. Traychycaulus	var. Primar	Slender Wheatgrass	2	159,000.00	318000.0	7.3
Dactylis glomerata	var. Paiute	Dryland Orchardgrass	2	654,000.00	1308000.0	30.0
Poa alpina		Alpine Bluegrass	1	1,000,000.00	1000000.0	23.0
Elymus lanceolatus ssp. Lanceolatus	var. Critana	Thickspike Wheatgrass	2	154,000.00	308000.0	7.1
Phleum pratense		Timothy	1	1,300,000.00	1300000	29.84
Festuca rubra		Red Fescue	1	500,000.00	500,000.00	11.48
Festuca trachyphylla		Hard Fescue	1	565,000.00	565,000.00	12.97
Secale cereale		Cereal Rye	9	18,000.00	162,000.00	3.72
Triticum aestivum x Secale cereale	QuickGuard Sterile Triticale	Triticale	10	13,000.00	130,000.00	2.98
Heliiomris multiflora		Showey Goldeneye	0.25	1,055,000.00	263,750.00	6.05
Vicia americana		American vetch	0.5	33,000.00	16,500.00	0.38
Artemisia ludoviciana		Prairie sage	0.1	4,500,000.00	450,000.00	10.33
Achillea millefolium	var. occidentalis	Westren yarrow	0.2	2,770,000.00	554000.0	12.7
Total			**32.55**		**7100250.0**	**163.0**

ATTACHMENT 8

WOOD STRAW INFORMATION
(FOREST CONCEPTS, LLC)

3320 West Valley Hwy. N., Suite D-110
Auburn, WA 98001-2457
Phone: 1-877-838-4759
(253) 333-9663
FAX: (253) 833-2639
web: www.forestconcepts.com
web: www.woodstraw.com

Forest Concepts, LLC

Innovative & Environmentally Friendly Forest Products and Natural Resource Services

Model LS64-100

WoodStraw™ brand engineered erosion control mulch

Technical Specification (3-26-07)

General Description:

Wood-strand erosion control mulch – An all-wood long-strand material comprised of a blend of loose thin wood pieces, each with a high length-to-width ratio such that the pieces form a protective matrix when distributed on the soil. Model LS64-100 is comprised of wood strands that have the following nominal properties:

"L" Length: 6.3 inch (160mm)
"S" Length: 2.5 inch (64mm)
Width: 3/16 inch (4.7mm)
Thickness: 1/10 inch (2.5mm)
Ratio of L:S 50:50 by area (mass)



Labeling:

Each pallet is marked with manufacturer's name, model number for blend, lot number, and predominant wood species. The standard wood species is Douglas fir. Cottonwood (Populus sp.) is available on special order.

Technical Description:

A manufactured all-wood long-strand soil erosion control mulch that is a blend of geometrically regular wood elements that have a straw-like form and function. The components of the blend shall be as specified in the Manufacturer's technical data for the model number specified. The materials are baled in green or air-dried condition and inherently free of noxious weed seeds and other additives detrimental to plant life.

Packaging:

Wood-strand mulch is packaged in bales tied with poly bale twine.

- Regular bales are 14" x 18" x 18"-22" and have a target weight of 50 lbs with a range of 40-60 lbs.
- Large bales are 30" x 40" x 42"-54" and have a target weight of 575 lbs with a range of 500-650 lbs.

Application:

- Hand Crews
- Straw Blowers
- Helicopter Aerial Application

Estimated Coverage Rate:

Coverage rate per bale is a function of application method and site conditions. Estimates are based on 1/100 acre plots on a smooth surface. We cannot guarantee actual coverage rates per bale under field conditions.

Note: Bale size was reduced to improve handling at request of USDA Forest Service on May 15, 2006.

Coverage Objective	Regular Bales		Large Bales	
	Sq Ft per Bale	Bales per Acre	Sq Ft per Bale	Bales per Acre
50% soil cover	290	150	3,351	13
70% soil cover	158	276	1,815	24

* 70% Coverage recommended for slopes over 33%, highly sensitive areas, wind-blown areas and highly erosive soils.

Other:

- **WoodStraw™** is a trademark of Forest Concepts, LLC
- This material is protected by US Patent 6,729,068. Other patents may be pending or in preparation.
- Specifications, terms, pricing and design are subject to change without notice and without liability therefore.
- All sales are subject to the General Terms of Sale that are in effect at the time of accepting an order.
- Development was supported in-part by the Small Business Innovation Research program of the U.S. Department of Agriculture, grant number # 2003-33610-13997. Additional scientific research provided by USDA Forest Service Rocky Mountain Research Station, Moscow Idaho.

Forest Concepts, LLC
WoodStraw™ wood-strand erosion control material

3320 West Valley Hwy. N., Ste. D110
Auburn, WA 98001
Phone: 1 (877) 838-4759
(253) 333-9663
FAX: (253) 833-2639
web: www.forestconcepts.com

Innovative Forest Products and Natural Resource Services

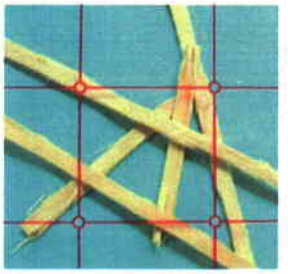
Measuring Ground Coverage Rate for Erosion Control Mulch

Rev: February 19, 2007

The percent ground cover is an important determinant of the initial effectiveness for long-strand erosion control materials. The percent ground cover is a dominant factor when modeling wind and rainfall erosion using programs such as WEPP.

We know that the variance of percent cover across a treated are is high with hand, machine and aerial spreading methods. A coefficient of variation (CV) of 25% or more is typical for small plots, and higher CVs are common across landscape scale projects. Thus, to obtain a reasonable estimate of the average coverage, many data points need to be collected. We recommend at least eight (8) measurements for areas of less than 1/10 acre and at least twelve (12) measurements per acre for larger areas.

The "point intercept grid" method is among the preferred ways to measure the application rate (expressed as percent ground cover) and uniformity (expressed as CV). The method requires a clear sheet of polycarbonate or similar material that is embossed or perforated with a uniform grid of intersecting lines, small diameter holes or small dots. The size of the grid sheet should be at least 200mm (8 inches) in each direction. The Forest Concepts grid sheet is small enough to carry in the field and has 48 measurement points on a 6 x 8 grid.



Using the grid sheet:
Place the grid sheet randomly on the ground in an area where mulch has been applied. From a sight-line directly above the grid, count the points on the grid that intersect with pieces of mulch. A grid point is counted if more than half of its area is above a piece of erosion-control material. (Do not count non-functional chaff since it will blow away or be incorporated into the soil within the first few minutes of rain). A point is not counted if it is above bare soil or if less than half of its area corresponds with a piece of erosion-control material. Record the number of points counted on a field data sheet.

(When training a new observer, both the grid points that correspond with mulch and the points that do not are counted, tabulated and checked against the total number of points on the grid (48, in our case) to confirm consistency and that all points are being counted.)

Mark the locations of each measurement on a site map. This will allow you to create "contour" plots of the data if that information helps explain sources of variation across the application area.

Calculate the average percent cover, standard deviation and CV (standard deviation expressed as a percentage of the mean). The average percent cover should then be compared to the contract specifications. The contract specifications may also specify allowable variance of cover by including a maximum permissible standard deviation and/or CV. Note that the CV is sensitive to the number of observations made, so a CV specification may also require specification of an appropriate sampling strategy.

forestconcepts

3320 West Valley Hwy N, Suite D-110
Auburn, WA 98001
(253) 333-9663
www.woodstraw.com

Innovative and Environmentally Friendly Forest Products & Services

WoodStraw™ Wood Strand Erosion Control Mulch

BLM – Utah – Pilot Peak Fire – February 2007

- Aerial application of 675 tons of Woodstraw™
- Protect Threatened Lahotan Cutthroat
- BLM Contact – Dave Fresques – Civil Engineering Technician
  - David_Fresques@blm.gov – 801-977-4329

Forest Concepts, LLC

1911 SW Campus Drive, #655
Federal Way, WA 98023
Phone: (253) 838-4759
(253) 838-7229
FAX: (253) 815-9900
web: www.forestconcepts.com

Innovative Forest Products and Natural Resource Services

WoodStraw™ long-strand erosion control Mulch
School Fire – October 2005

Area of helimulching with wood-strand erosion control mulch.

ATTACHMENT 9

SITLA MEMO REGARDING ROAD STATUS

Shaver, Dave

From: John Blake [jblake@utah.gov]
Sent: Wednesday, October 17, 2007 8:12 AM
To: Pam Grubaugh-Littig
Cc: James_Kohler@blm.gov; Shaver, Dave; jalexander@fs.fed.us; Adam Robison; Rick Wilcox; Tom Faddies; Tom Mitchell
Subject: Crandall Canyon Access Road

CrandallCanyon_Realignment.jpg...

MEMORANDUM

TO: Pamela Grubaugh-Littig
SMCRA Permit Supervisor
DOGM

More than one mile of access road was recently constructed within Section 2, T16S, R6E, SLB&M, Emery County, Utah, in support of the Crandall Canyon mine rescue effort. The School and Institutional Trust Lands Administration ("SITLA") is the owner of the surface and mineral estates and administers the land for multiple uses. SITLA believes that much of the access road that was constructed may be very useful in furthering the development of, oil & gas, timber and other natural resources in the lands, both now and in the post mining era. SITLA therefore desires to designate certain portions of the access road as a permanent post mining land use feature upon Section 2. SITLA requests that such designated portions of access road not be reclaimed now, or in the foreseeable future, and that the SMCRA permit be amended accordingly.

SITLA will work closely with DOGM and with the current mine operator in stabilizing those portions of the access road that are designated by SITLA to remain open. All other portions of the access road that are not designated by SITLA to remain open should be reclaimed by the mine operator as soon as possible. SITLA will accept responsibility for the potions of access road that it designates to remain open, after the stabilization work is completed, and the mine operator may then be relieved of further responsibility in this regard.

I am attaching a color map showing which portions of the access road that SITLA designates to remain open as a permanent land use feature within Section 2, T16S, R6E, SLB&M. The boundary of Section 2 is outlined in blue line on the map. The portions of the access road designated by SITLA to remain open and to be stabilized within Section 2 are drawn as black and green lines upon the map. The portions of access road to be immediately reclaimed by the mine operator are shown as red lines upon the map. The line shown in purple is a road upon US Forest Service lands leading to Section 2 from the South. SITLA requests that this road also remain open for ingress and egress of Section 2.

Your favorable and timely consideration of this request is appreciated.

John T. Blake
Minerals Specialist
SITLA

Shaver, Dave

From: John Blake [jblake@utah.gov]
Sent: Thursday, October 18, 2007 3:28 PM
To: Pam Grubaugh-Littig
Cc: James_Kohler@blm.gov; Shaver, Dave; jalexander@fs.fed.us; Adam Robison; Rick Wilcox; Tom Faddies; Tom Mitchell
Subject: Crandall Canyon Access Road, P.S.

MEMORANDUM POST SCRIPT

TO: Pamela Grubaugh-Littig
SMCRA Permit Supervisor
DOGM

Please allow me to add a caveat to my Memorandum dated October 16, 2007 regarding the Crandall Canyon Access Road. I said that SITLA would accept responsibility for the portions of access road that it designates to remain open within Section 2, T16S, R6E, SLB&M. One caveat is that the stabilization work to be performed by the mine operator upon the portions of road to remain open within Section 2 must be completed to a standard that is acceptable to SITLA. Adam Robison will represent SITLA in working with the mine operator to achieve an acceptable standard of stabilization work on the road.

Also, I said that SITLA would like the road upon U.S. Forest Service lands leading to Section 2 from the south to remain open for ingress and egress of Section 2. I would like to add that SITLA believes it would be unlawful to close the access road upon Forest Service lands without first completing a NEPA analysis and documentation of any adverse impacts that may occur from such federal action.

ATTACHMENT 1O

RECLAMATION COST ESTIMATES
(SCAMP EXCAVATION)

	East Mountain Reclamation Costs				Earthworks Costs										
					Forest Service Road										
Equipment	Equipment Costs	Hourly Operating Costs	Equipment Overhead	Operator's/Labor Hourly Wage Rate	Hourly Cost	Number of Men or Equip.	Total Eq. & Lab. Cost	Units	Quanity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Costs
Mobilization	$ 15,000.00					1		Lump Sum						Lump Sum	$15,000.00
350 Trackhoe	$ 6,240.00	$ 140.00	1.00	$ 45.00	$ 185.00	1	$159.00	$/Hr					38	Hr	$7,030.00
420 Trackhoe	$ 5,720.00	$ 140.00	1.00	$ 45.00	$ 185.00	1	$149.00	$/Hr					37	Hr	$6,845.00
Forest Service Road													7600	CY	
Wood Mulch & Seed										Lump Sum					$5,000.00
Laborers			1.00	$ 35.00	$ 35.00	6	$35.00	$/Hr					118	Hr	$4,130.00
Total															$38,005.00

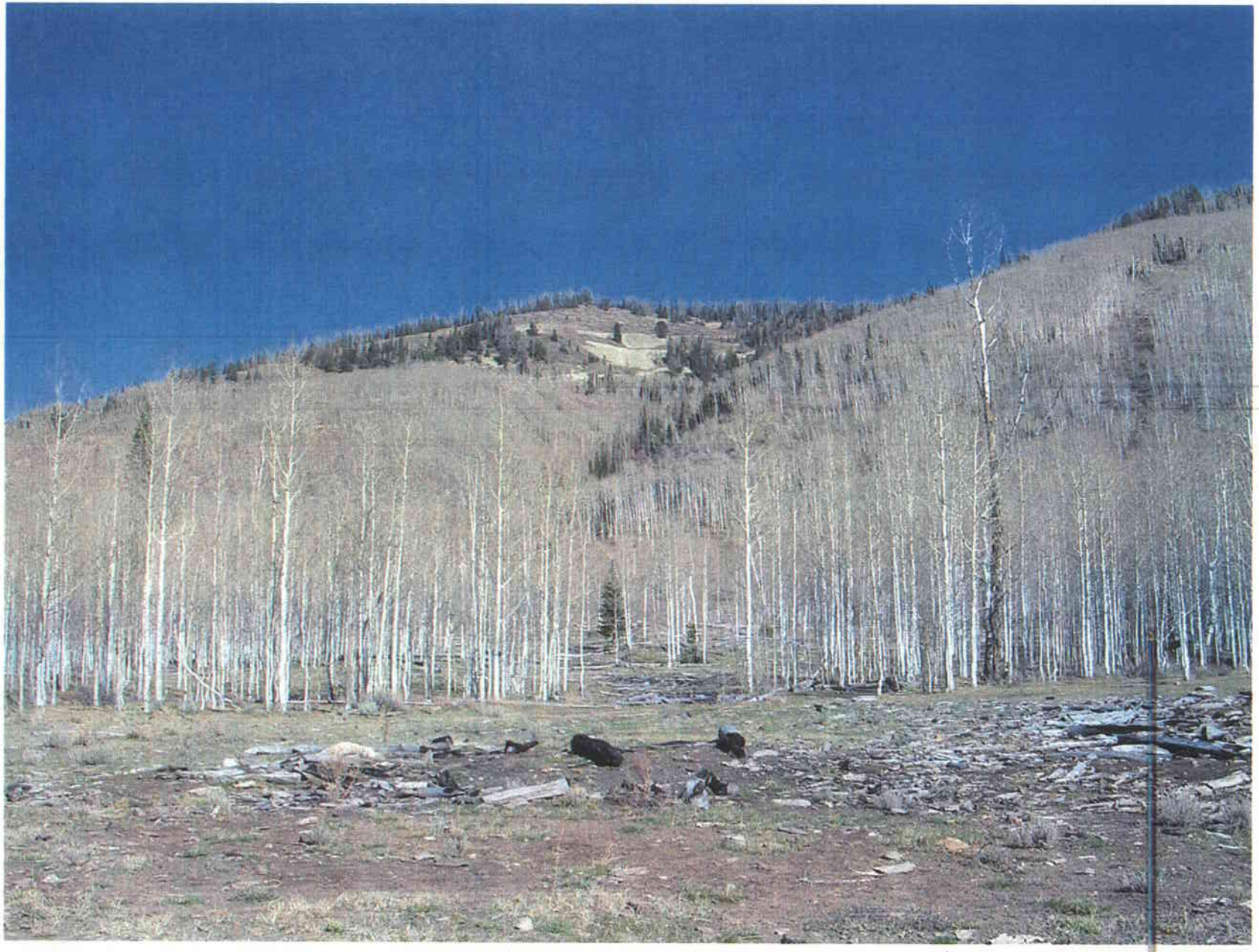
	East Mountain Reclamation Costs				Earthworks Costs										
					Drill Pads, Access Roads										
Equipment	Equipment Costs	Hourly Operating Costs	Equipment Overhead	Operator's/Labor Hourly Wage Rate	Hourly Cost	Number of Men or Equip.	Total Eq. & Lab. Cost	Units	Quanity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Costs
Mobilization	$ 25,000.00					1		Lump Sum						Lump Sum	$25,000.00
350 Trackhoe	$ 6,240.00	$ 140.00	1.00	$ 45.00	$ 185.00	1	$159.00	$/Hr					150	Hr	$27,750.00
420 Trackhoe	$ 5,720.00	$ 140.00	1.00	$ 45.00	$ 185.00	1	$149.00	$/Hr					150	Hr	$27,750.00
35 ton Rock Truck	$ 7,920.00	$ 220.00	1.00	$ 45.00	$ 485.00	2	$399.00	$/Hr					174.5	Hr	$84,632.50
D9 Dozer	$ 6,160.00	$ 240.00	1.00	$ 45.00	$ 285.00	1	$259.00	$/Hr					139.5	Hr	$39,757.50
Reclaim Drill Pads/Asscess Rd													33800	CY	
Wood Mulch & Seed										Lump Sum					$24,000.00
Laborers			1.00	$ 35.00	$ 35.00	6	$35.00	$/Hr					314	Hr	$10,990.00
Total															$239,880.00

	East Mountain Reclamation Costs				Earthworks Costs										
					SITLA Road										
Equipment	Equipment Costs	Hourly Operating Costs	Equipment Overhead	Operator's/Labor Hourly Wage Rate	Hourly Cost	Number of Men or Equip.	Total Eq. & Lab. Cost	Units	Quanity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Costs
Mobilization	$ 20,000.00					1		Lump Sum						Lump Sum	$20,000.00
350 Trackhoe	$ 6,240.00	$ 140.00	1.00	$ 45.00	$ 185.00	1	$159.00	$/Hr					84.5	Hr	$15,632.50
420 Trackhoe	$ 5,720.00	$ 140.00	1.00	$ 45.00	$ 185.00	1	$149.00	$/Hr					84.5	Hr	$15,632.50
D9 Dozer	$ 6,160.00	$ 240.00	1.00	$ 45.00	$ 285.00	1	$259.00	$/Hr					28.5	Hr	$8,122.50
SITLA Road													17632	CY	
Wood Mulch & Seed										Lump Sum					$24,000.00
Laborers			1.00	$ 35.00	$ 35.00	6	$35.00	$/Hr					132	Hr	$4,620.00
Total															$88,007.50

ATTACHMENT 11

DIGITAL PHOTOS
(COURTESY OF PRISCILLA BURTON)

Drill Sites, East Mt.



Drill sites, viewed from Joes Valley

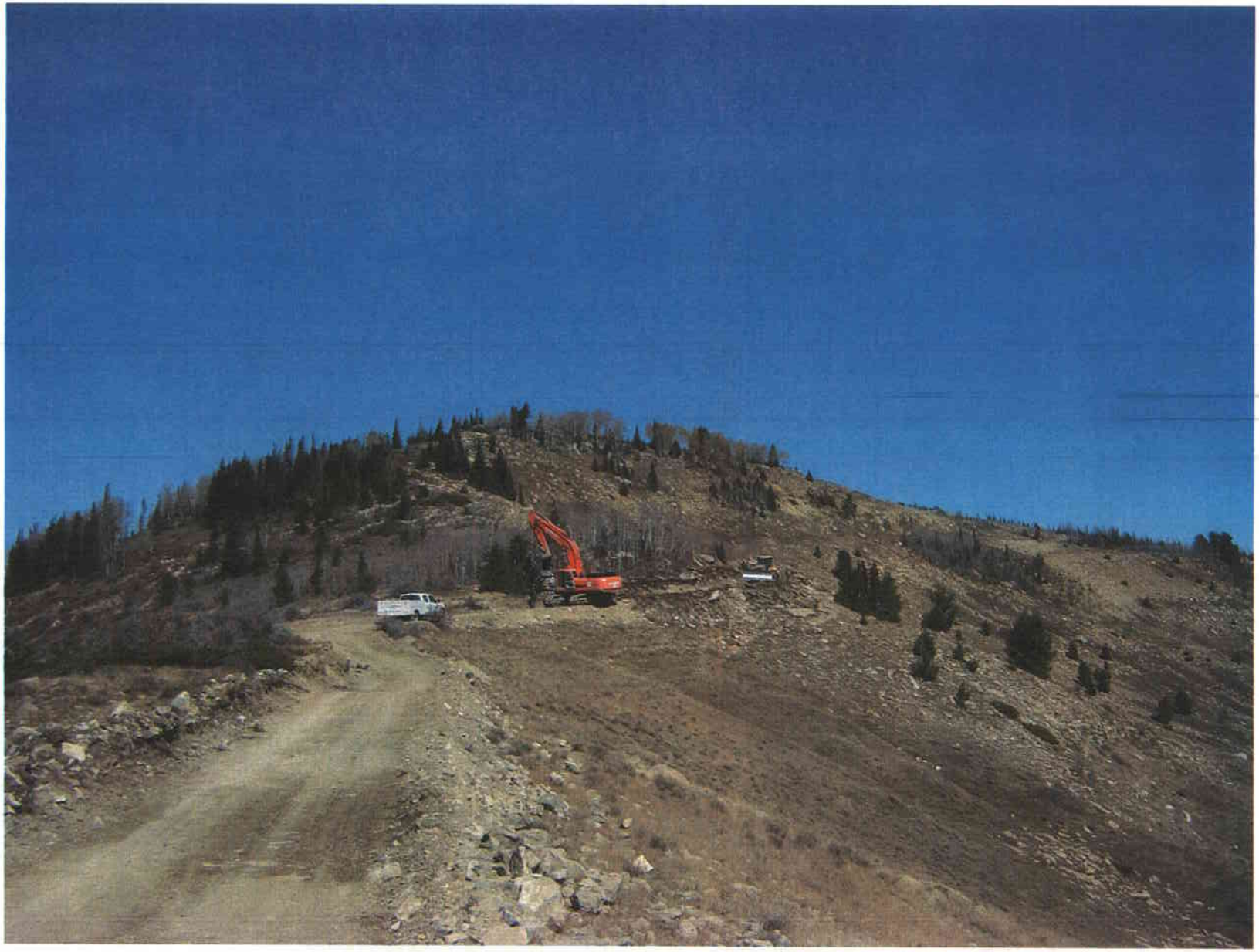
View from drillsites

SITLA road (foreground), reclaimed water truck road (background)

Reclaimed water truck road

Shot holes, pre reclamation

SITLA road



SITLA road

SITLA road before reclamation (background)

SITLA road before reclamation and realignment

Unreclaimed segment of SITLA road (now reclaimed)

SITLA road

Reclaimed section of SITLA road

Reclaimed SITLA road (left), newly constructed segment (right)

Reclaimed SITLA road (foreground), existing SITLA road (background)

Reclaimed SITLA road

Reclaimed and realigned SITLA road

Reclaimed SITLA road

Realigned SITLA road

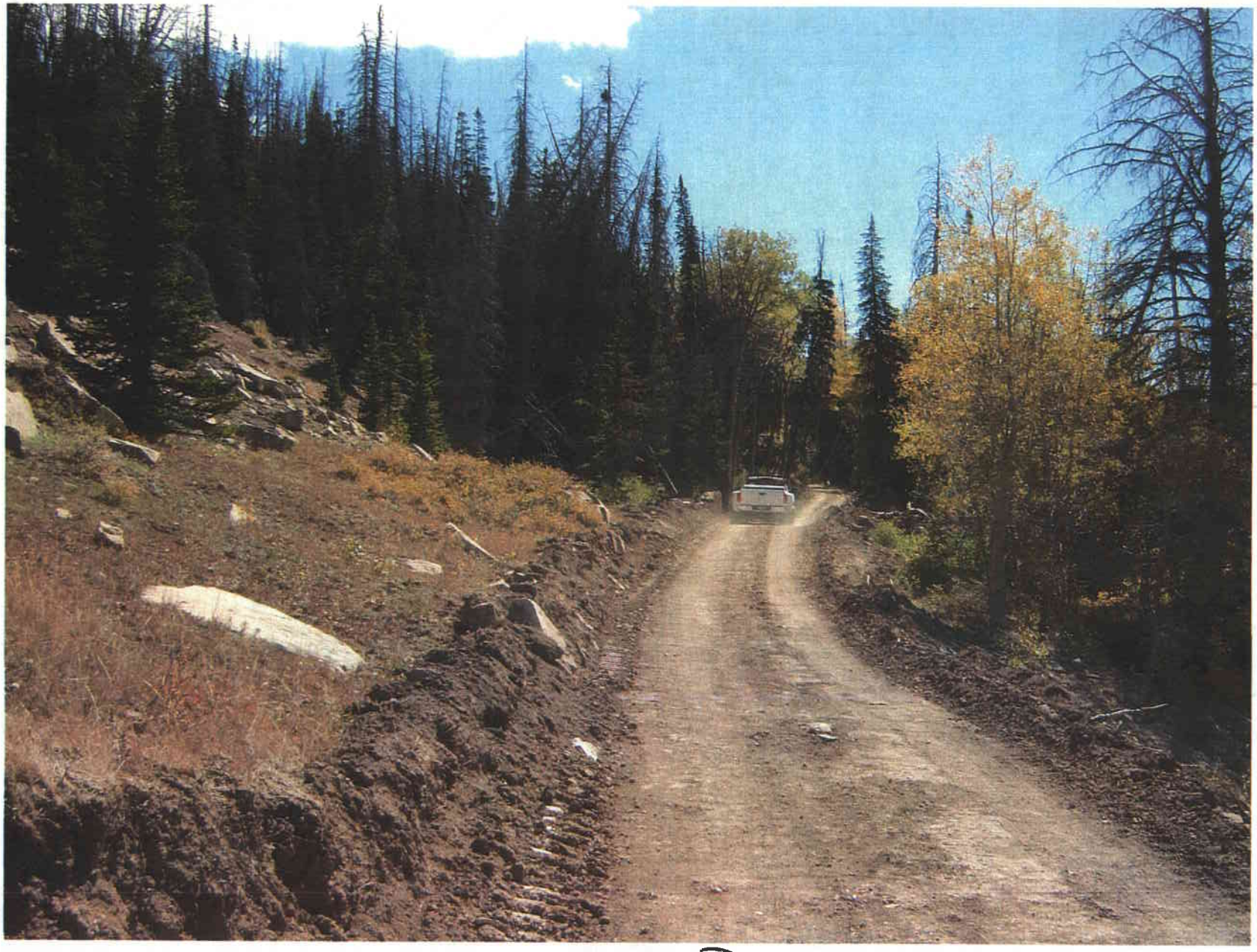
Reclaimed SITLA road

Realigned SITLA road (left), reclaimed section (right)

Realigned SITLA road

Reclaimed SITLA road (foreground), existing SITLA and FS road (background)

Property line between SITLA road and Forest Service road



Forest Service Road

Beginning of Forest Service road

Drillhole plugging material at staging area

Drill hole 5 being plugged

Drillhole 6 being plugged

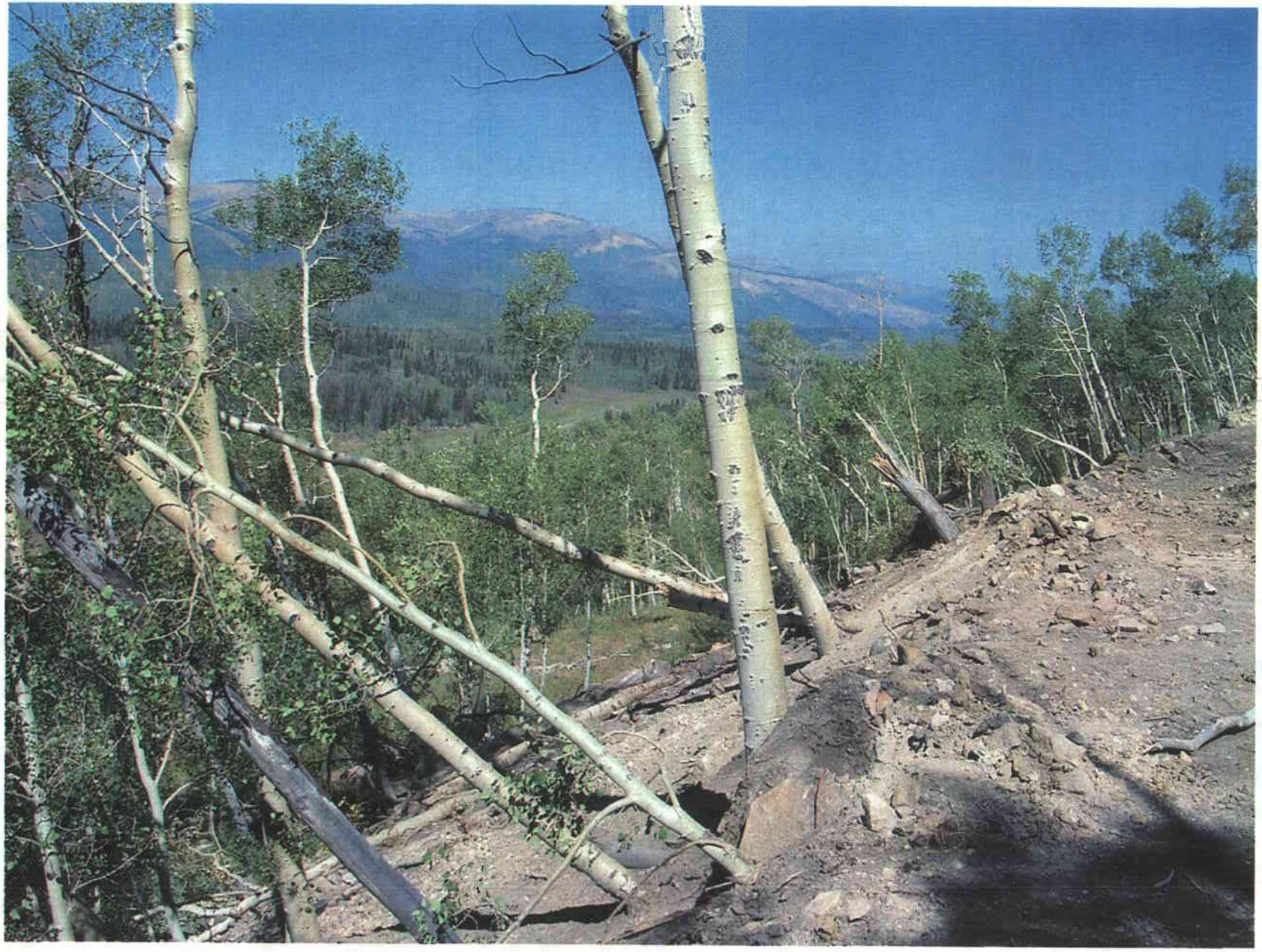
Unreclaimed road into Pad 2

Pad 2 pre-reclamation

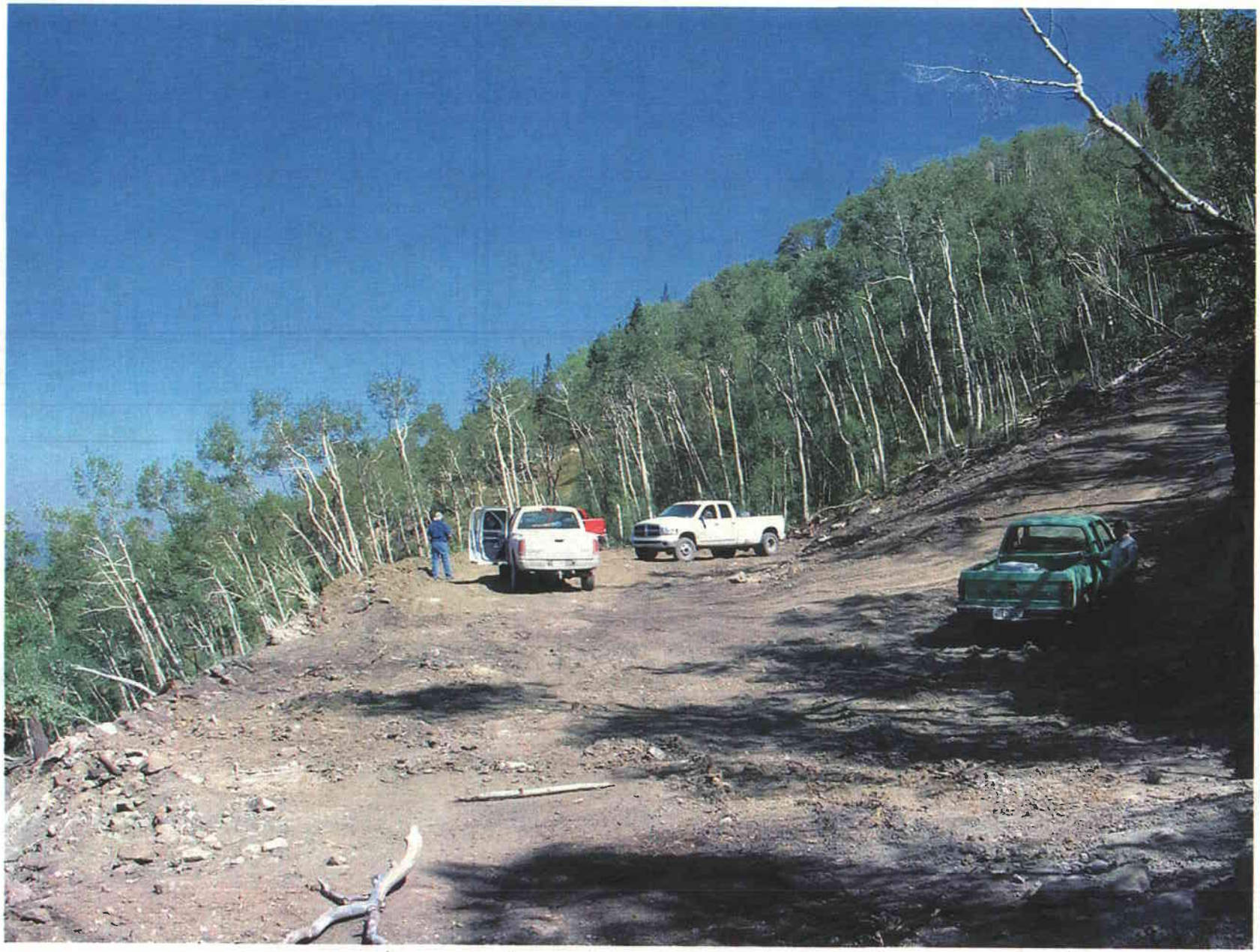
Pad 2, pre-reclamation

Pad 3 pre-reclamation

Pad 3 pre reclamation



Pad 3 outslope, pre-reclamation



Pad 3 and road, pre-reclamation

Pad 3 pre-reclamation

Road at ledge above Pad 4

Unreclaimed road from ledge down to Pad 4

Road to Pad 4, pre reclamation

Unreclaimed road between Pad 6 and Pad 4

Pad 4 and road to lodge, pre-reclamation

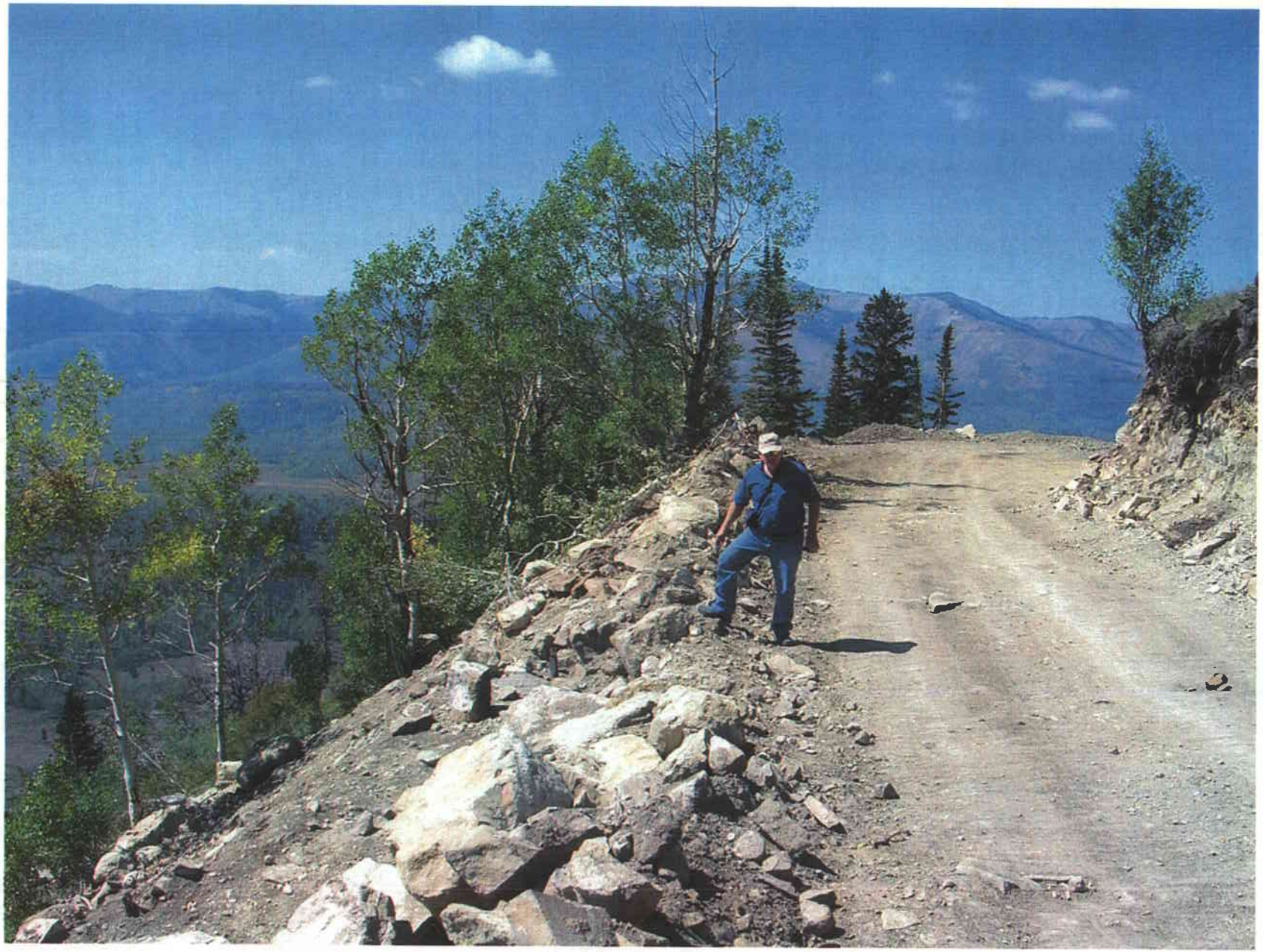
Pad 4, pre reclamation

Partially reclaimed Pad 5

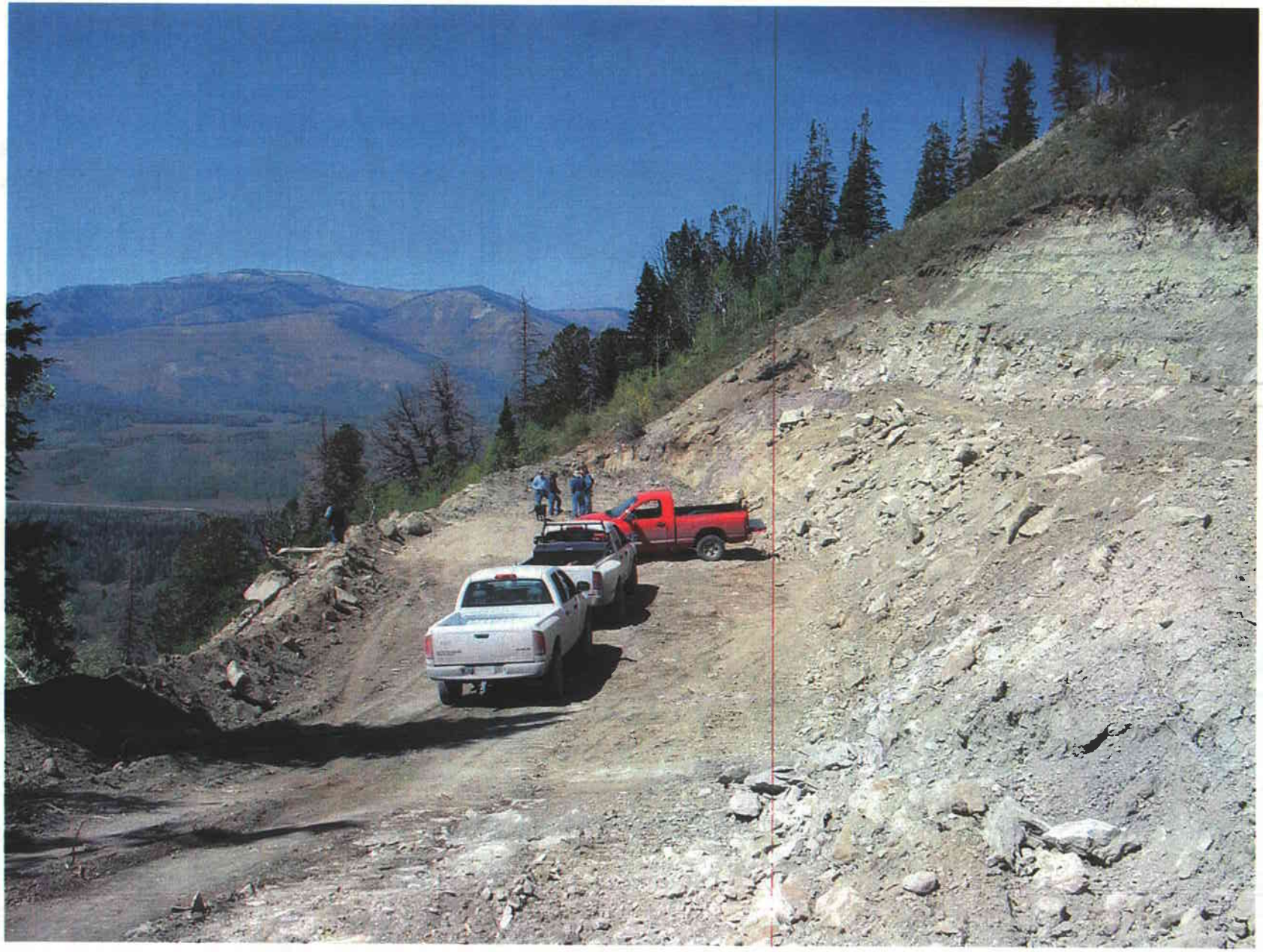
Partially reclaimed Pad 5

Partially reclaimed Pad 5

Partially reclaimed Pad 5



Road leading to Pad 6



Pad 6 pre reclamation

Pad 7 pre reclamation

Pad 7, pre reclamation

Looking from reclaimed Pad 5 to reclaimed Pad 7 and unreclaimed Pad 2

Partially reclaimed road above Pad 3

Reclaimed Pad 3 prior to wood straw

Reclaimed Pad 3 prior to wood straw

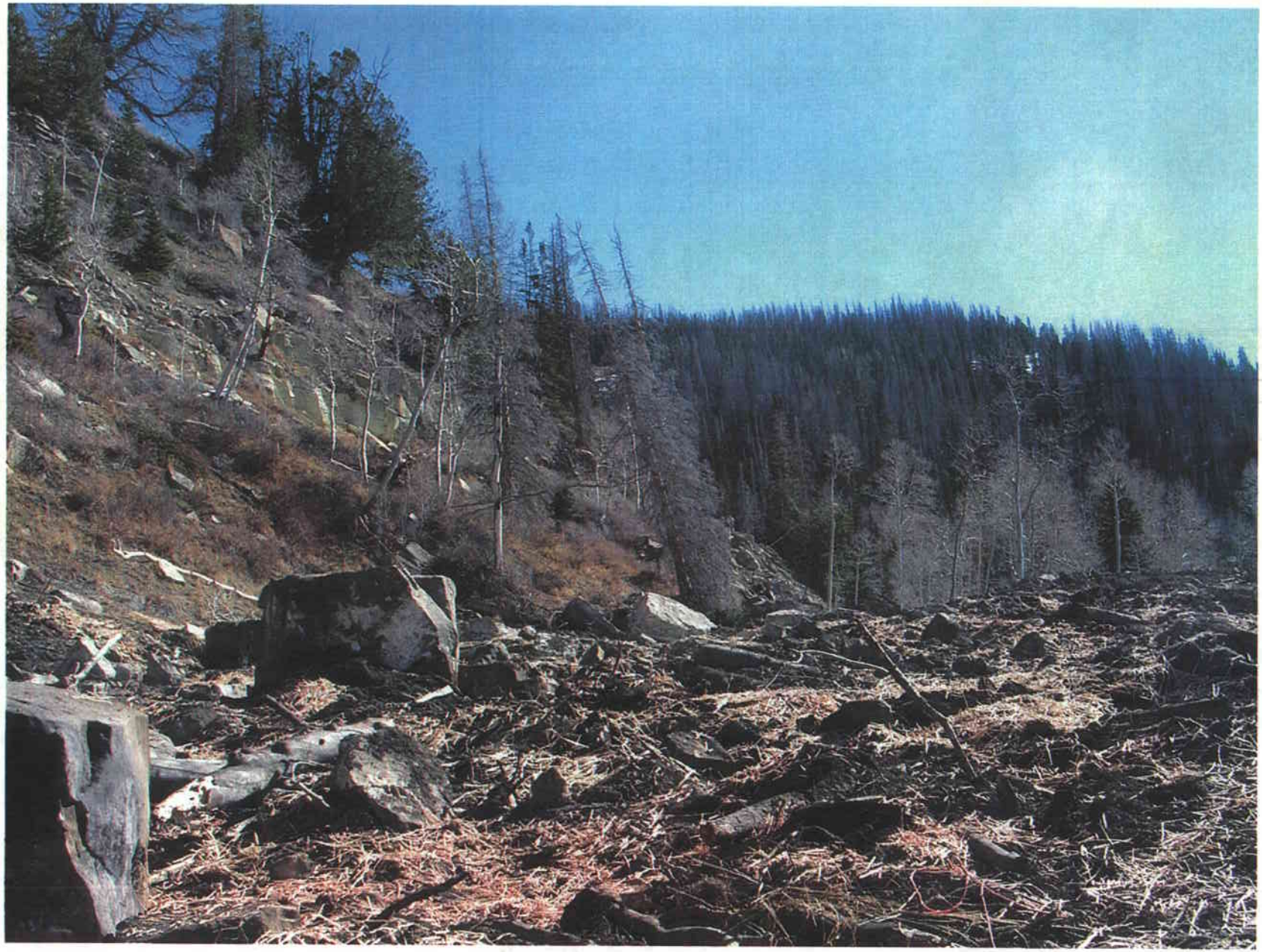
Reclaimed Road above Pad 3

Reclaimed Pad 3

Reclaimed Road below Pad 4

Reclaimed Pad 4 and access road below ledge

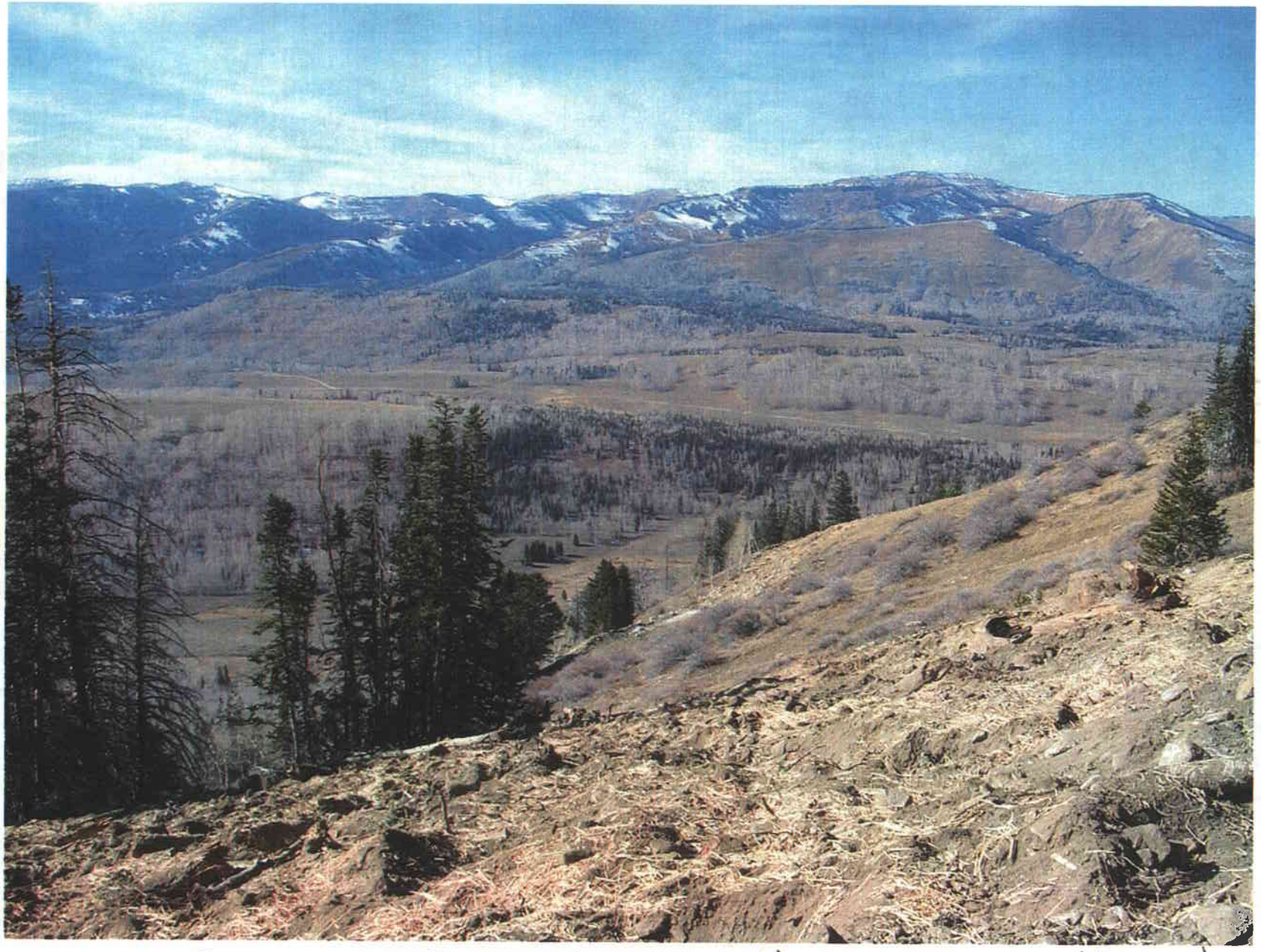
Reclaimed road between Pad 4 and Pad 3



Reclaimed Pad 4, road to ledge in background

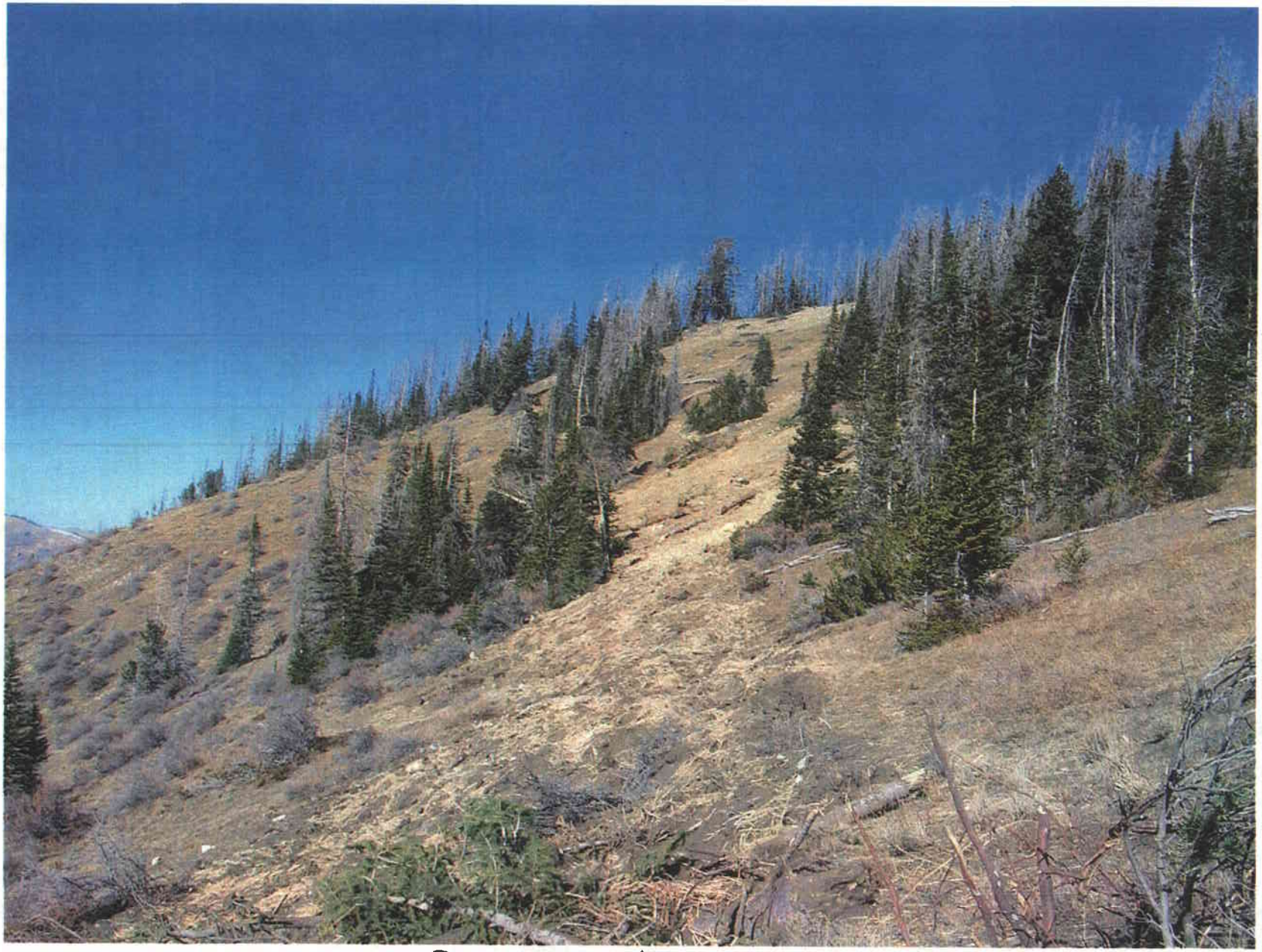
Reclaimed Pad 5

Reclaimed access road From Pad 5



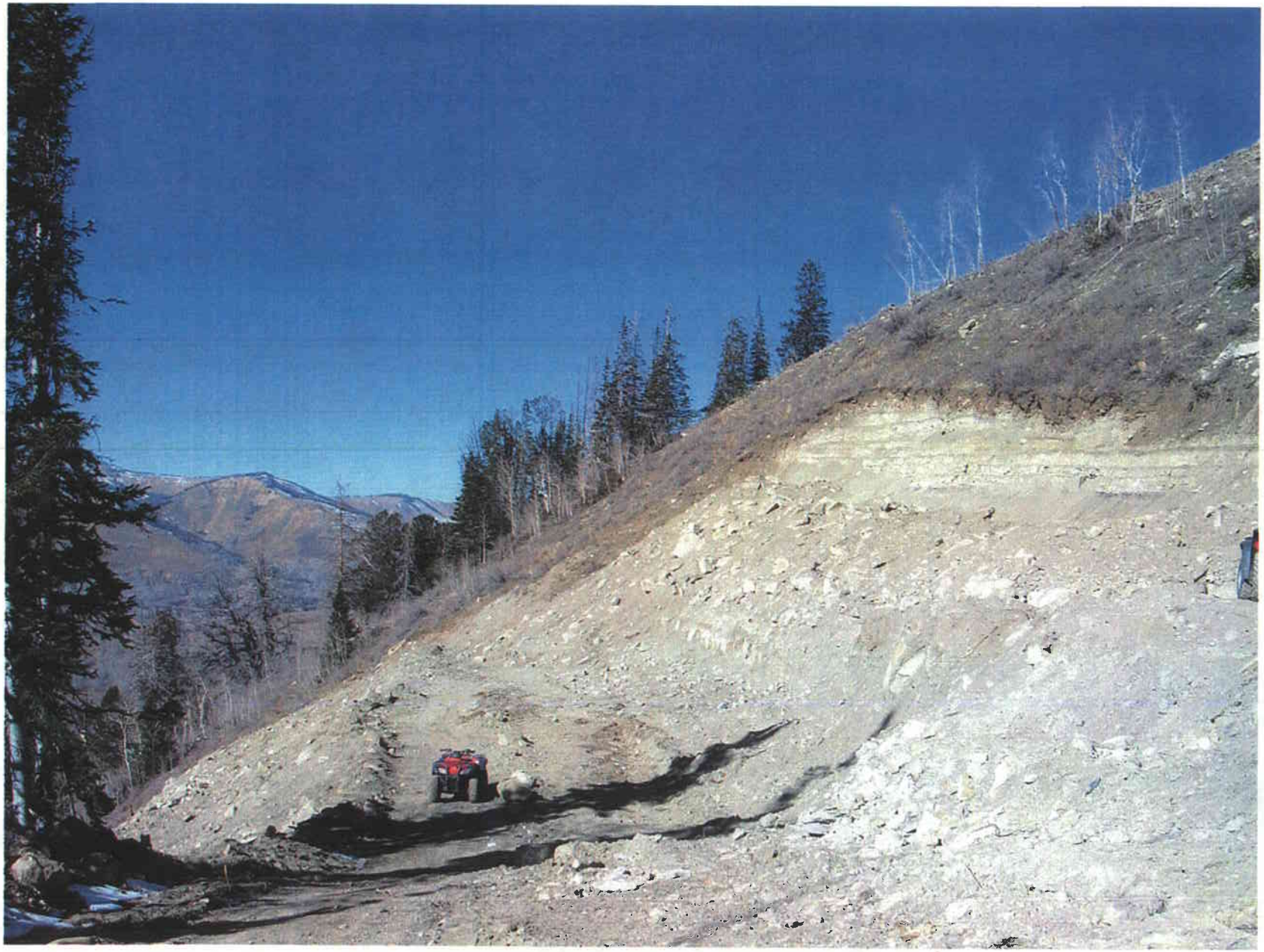
Reclaimed Pad 5 (foreground) and Pad 7 (below)

Reclaimed Pad 5

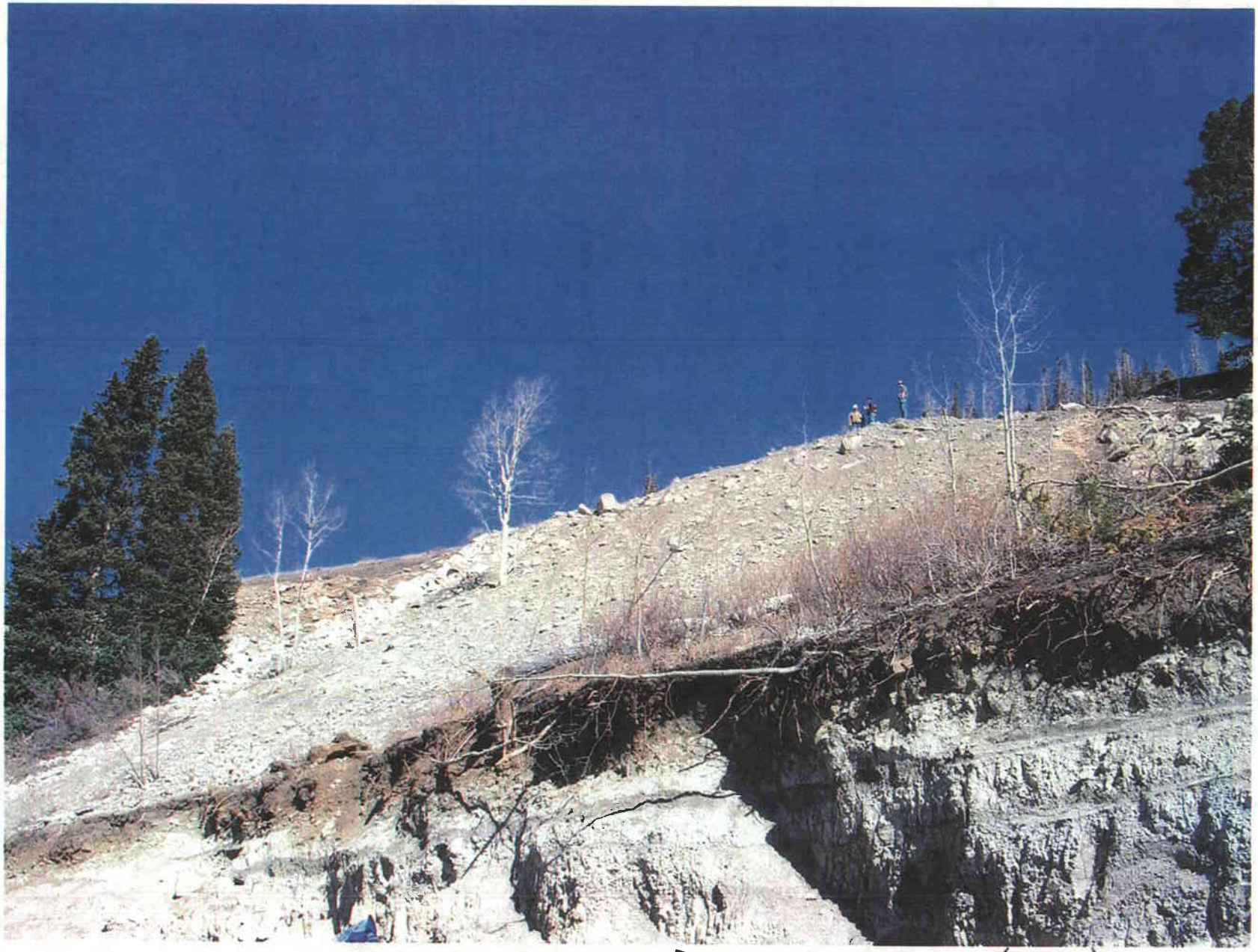


Reclaimed Pad 5 and access road

Reclaimed road into Pad 5



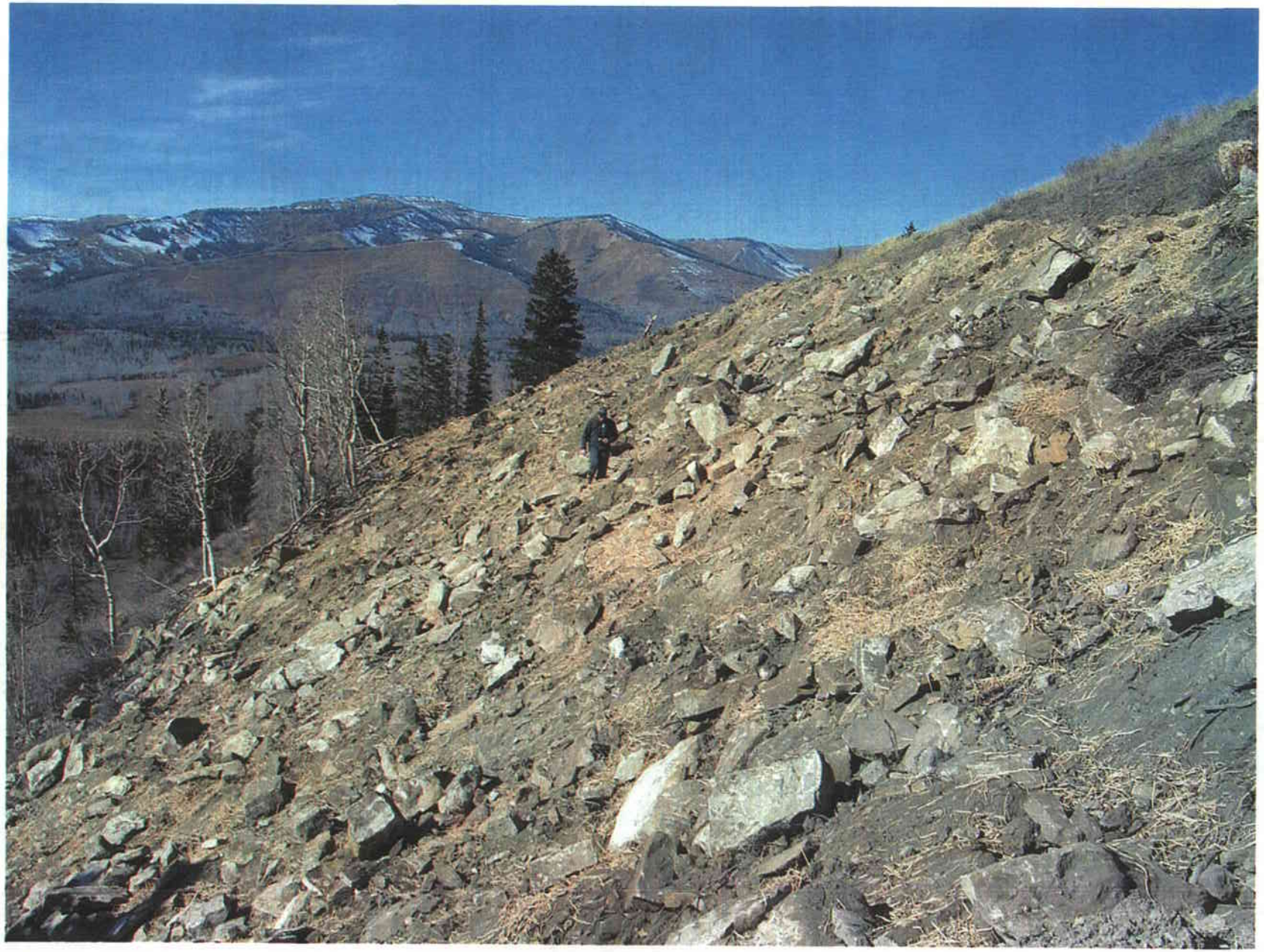
Pad 6, partially reclaimed



Pad 6 (bottom), Pad 2 outslope (top)

Interim drain ditch, Pad 6

Pad 6, partially reclaimed



Reclaimed Pad 7

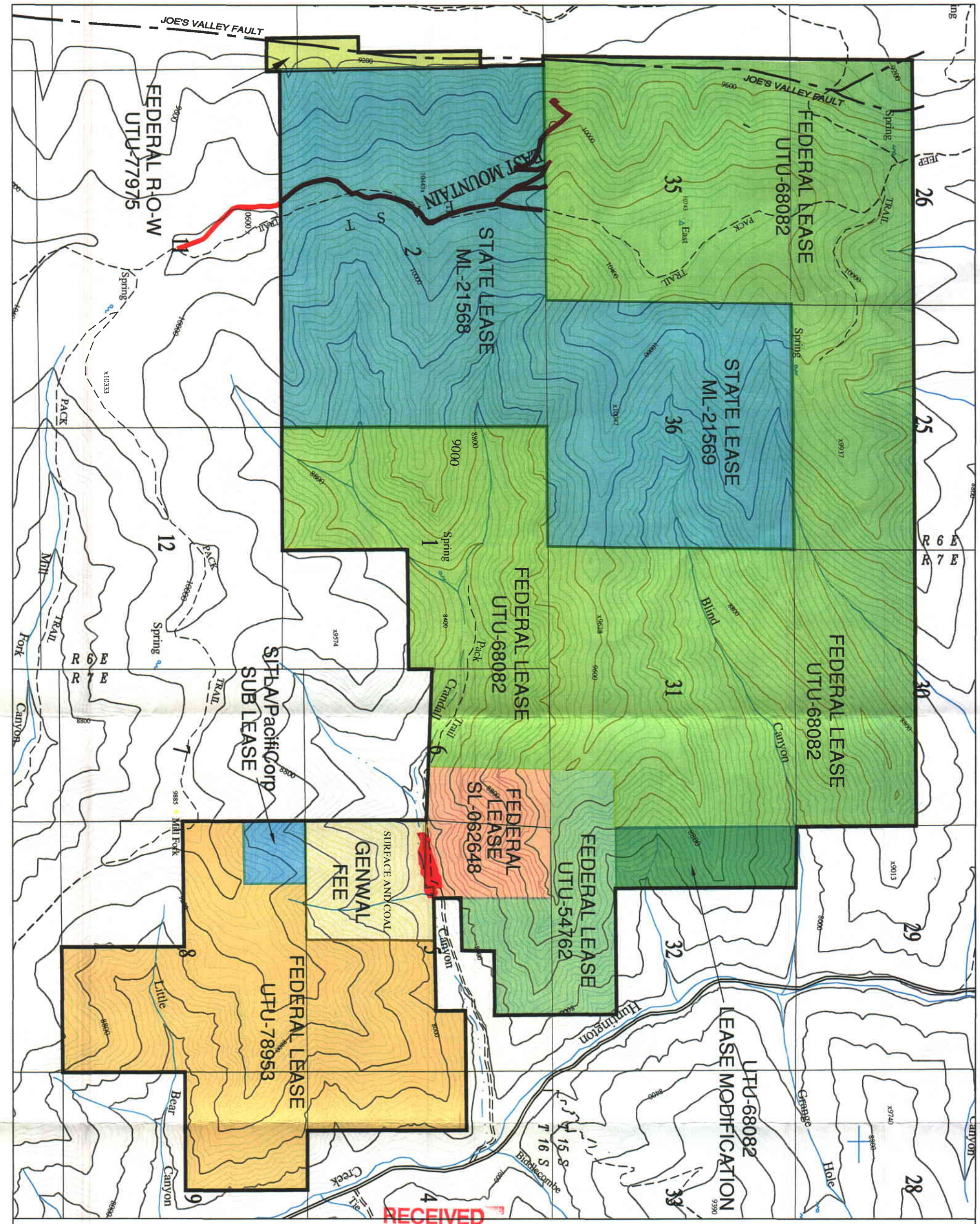
Reclaimed Pad 7, north end

Typical wood straw application

Typical excelsior erosion log

Drainpipe at seep at ledge

G:\Shared\Current Drawings\Mine Maps\Crandall Canyon\Accident Reclamation\CC LEASE MAP.dwg, Layout4, 12/17/2007 2:01:02 PM



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DEC 21 2007

DIV. OF OIL, GAS & MINING

LEGEND

UDOGM PERMIT BOUNDARY

MINE SURFACE FACILITIES

THE PERMIT AREA IS ENTIRELY WITHIN THE MANTI - LA SAL NATIONAL FOREST

EMERGENCY RESCUE DRILLHOLE ACCESS ROAD (RECLAMATION IN PROGRESS)

UTAH REGISTERED PROFESSIONAL ENGINEER #6449561 David W. Hibbs 12/15/07

GENWAL™ RESOURCES, INC.

P.O. Box 1077, 794 North "C" Canyon Rd, Price Utah

Telephone: (435) 888-4000

CRANDALL CANYON MINE
LEASE / PERMIT AREA MAP

REV: 9	ACAD: LEASE SOCRAN9
DATE: 12-17-07	BY: JDS
SCALE: 1"=2000'	PLATE #: 1-1

PLATE 1-1

LEASE/PERMIT AREA MAP