0029

C/007/013 Incoming

cc: Wayne
Dave

UtahAmerican Energy, Inc.

Lila Canyon Project
P. O. Box 910
East Carbon, Utah 84501
Phone: (435) 888-4000
(435) 650-3157
Fax: (435) 888-4002

August 29, 2008

Daron Haddock
Permit Supervisor
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Re: UtahAmerican Energy, Inc. Horse Canyon Mine 08-009 C/007/013. Special Conditions Met.

Dear Mr. Haddock,

Attached you will find three (3) copies of a "Conditions Satisfied Letter." This letter is to document the work that was done to satisfy the Special Conditions resulting from the settlement between DOGM, SUWA and UEI.

Several of the conditions are ongoing and will not be fully satisfied until two years of data has been collected and others are ongoing for the life of the mine.

Should you have any questions please call.

Sincerely,

R. Jay Marshall

R. Jay Marshall P.E.
Chief Engineer/Project Manager

RECEIVED
SEP 08 2008
DIV. OF OIL, GAS & MINING

Special Conditions
(December 21, 2007)

CONDITIONS SATISFIED
August 29, 2008

1) UtahAmerican Energy Inc. (UEI) will submit water quality data for the Horse Canyon Mine, in an electron format through the Electronic Data Input web site.
(This condition is ongoing.)

2) UEI will follow the Programmatic Agreement if cultural resource sites are discovered within the permit or adjacent areas.
(This condition is ongoing.)

3) UEI will: 1)provide for conducting yearly fly-over raptor surveys: 2) immediately contact UDOGM, USFWS, UDWR and BLM if raptors are tending nests or are nesting in areas near the area to be mined (mining in the subsidence zone and below the cliffs next to the subsidence zone) in the current nesting season or in the coming nesting season (the following year); 3) implement the Best Technology Available (BTA) to provide for the protection of the raptors and their nests. This BTA will be determined by the agencies and then implemented by UEI. Implementation of BTA measures may include fencing of the nests, or avoidance of the area and or may also include the need to apply for a 'take' permit from USFS; and 4) provide a complete report of the yearly surveys to UDOGM.
(This condition is ongoing.)

4) UEI must report actual annual water depletions to OSM-Western Regional Coordinating Center by September 30 of each year.
(This condition is ongoing.)

5) (a) UEI shall, within 30 days (weather permitting and pickup accessibility permitting) of the approval by the Board of the Stipulation for dismissal, locate and make operable two rain gauges within the permit area, including one in the upper elevation area, and one in the surface facility area. Data will be collected no less than monthly during the period from May 1 through October 30 and otherwise monthly unless access is not feasible. Data will be downloaded quarterly and included in the annual report.
On March 11, 2008 the first of two rain gauges was installed and made operational on the surface facility area of Lila Canyon. The rain gauge is located within the undisturbed island within the disturbed area.

two rain gauge installation was delayed until the closure ended on July 15th.

On August 6, 2008 the second of two rain gauges was installed near IPA #2. On August 14, 2008 the second rain gauge was made operational.

The location of the rain gauges are shown on the attached map.

(Monitoring is ongoing)

(b) UEI will by March 31, 2008 (weather and pickup accessibility permitting) place and make operable crest stage gauges and siphon samplers at the sampling locations shown on the attached map #1. UEI will collect two years of additional quarterly surface water quantity and quality baseline information from the gauges. The gauges will be installed, maintained, and inspected as required by normal USGS protocol and on a frequency established by the Division. The division will accompany UEI on the initial placement of the siphon and crest stage gauges.

On March 11, 2008 the first of seven crest gauges was installed in Lila Canyon wash. Jim Smith of DOGM was in attendance.

Due to the delay caused by the raptor closures the remaining crest gauge (numbers 2-7) installation was delayed until the raptor closure ended on July 15th.

Crest gauges numbers 2-7 were installed on August 6th. Dave Darby of DOGM assisted in specifying the locations.

The location of the crest gauges are shown on the attached map.

(c) At the conclusion of the first year, the data will be analyzed, and additional monitoring locations may be required.

(Monitoring is ongoing)

6) (a) By March 31, 2008, UEI will commence a comprehensive, on-the-ground survey for discharges in seeps or springs within the area from the top fo the Sunnyside coal seam of the Book Cliffs escapement in a southwesterly direction to the Emery County Road (old tram road at 5,750 foot elevation) and from Lila Canyon near the proposed mine facilities area to the Williams Draw Fault line near the southern limits of the permit

area.

On April 11th and 12th a spring and seep survey was conducted to satisfy condition 6)(a) above. Results of the survey "Stipulation Response-Seep and Spring Inventory, Rain & Crest Gauges" is attached.

(b) The seeps and springs identified by prior surveys in the permit area and adjacent area (within the areas identified on the attached map #2) shall be located by a GPS survey, along with any newly identified seeps and springs identified by UEI within permit and adjacent areas as provided fo in subpart 5 (a) above.

Results of the survey "Stipulation Response-Seep and Spring Inventory, Rain & Crest Gauges" is attached.

(c) Representative seeps and springs may be selected by UEI, subject to approval by the Division, for monitoring for two years of quarterly water quality and quantity measurements. That monitoring shall be in addition to the monitoring required by the operational plan for those seeps and springs previously identified.

No Springs or Seeps were located requiring monitoring.Results of the survey "Stipulation Response-Seep and Spring Inventory, Rain & Crest Gauges" is attached.

7) If UEI proposes future drilling from the surface into the coal seams for coal evaluation or other purposes, UEi will establish monitoring wells in at least two of those locations and monitor the water level and the water quality for two years. These wells shall be incorporated into a monitoring program in conjunction with the currently proposed monitoring program base on the evaluation in paragraph 8 below.

(This condition is ongoing.)

8) UEI will revise the PHC and Operational Plan, and the Division will revise the CHIA based on the additional data obtained from paragraphs 5,6, and 7 above. The data obtained will be used in further characterizing the surface flows, the ground water systems and the monitoring locations will be incorporated into the surface-water monitoring program for the permit as appropriate to monitor the impact of mining on the surface flows and ground water systems in the area identified in the CHIA.

(This condition is ongoing.)

9) UEI will engage a knowledgeable biologist to conduct a survey of the literature (reports) cited below to determine if potential habitat exists for the Sensitive Species, Western (Boreal) toad (*Bufo boreas*), at any of the springs or seeps within the permit area. For those seeps an springs that meet the criteria

for potential habitat, UEI will engage a knowledgeable biologist to conduct field surveys for *Bufo boreas* at breeding season or at tadpole stage. The two reports are found at: http://dwrcdc.nr.utah.gov/ucdc/ViewReports/vertrpt.htm and are cites as follows:

Vertebrate Information Compiled by the Utah natural Heritage Program: A Progress Report 92003), pp.71 and 72

Inventory of Sensitive Vertebrate and Invertebrate Species: A Progress Report (1997). Pp. 167-169.

UEI's consultant, Derris Jones, is a knowledgeable biologist and conducted a literature survey and determined that "the Lila Canyon Mine site is not western toad habitat and does not warrant surveying for this species."

Western Toad report is attached.

Lila Canyon Mine

East Carbon, UTAH

Stipulation Response - Seep and Spring Inventory, Rain & Crest Gauges

Prepared For:

UtahAmerica Energy Inc.
794 C Canyon Road
East Carbon, UT 84520
435.888.4007 Tel

Prepared by:

Hydrologic Design

Hydrologic Design Inc.
10969 Topview Road
South Jordan, Utah 84095
801.608.2414 Tel
801.576.9259 Fax

Contact:
Tom Suchoski

August 2008

INTRODUCTION:

On January 2, 2008 the DOGM required additional special stipulations on the prior approval of the Lila Canyon Permit. Stipulations 1 through 4 were on-going stipulation from the prior approval. Stipulations 5 through 9 were new stipulations. This report addresses the stipulations 5 (rain and crest gauges and siphon samplers) and 6 (seep and spring) .

The purpose of this study was to address these stipulations and to specifically:

- Described the installation of rain gauges within the Lila Canyon Mine Permit Area.
- Describe the installation of crest gauges and siphon samplers on selected streams.
- Describe the seep and spring inventory within the selected area and determine if the groundwater resources have been adequately characterized.

RAIN GAUGES

In accordance with stipulation #5, two rain gauges were installed within the Lila Canyon Mine Permit area. One is located to the south of the mine facilities area and one is located on top of the Book Cliffs in the Little Park Wash drainage area (near the IPA #2 well site). The locations of the rain gauges were determined by an Delorme Earthmate PN-20 GPS unit and are shown on Plate 1 and the coordinates and elevations are presented in Table 1. These rain gauges were tipping bucket type rain gauges with a data logger. The data are collected in 0.01" increments with a resolution of 0.01 inches per second. Readings are taken only when precipitation is recorded. The data are stored in the data logger memory until the data are downloaded. When the next sequence is started, the prior data are erased and overwritten.

CREST GAUGES AND SIPHON SAMPLERS

In accordance with stipulation #5, seven (7) sets of crest gauge and siphon sampler were installed on selected drainages within the Lila Canyon Mine Permit area. Crest Gauge 1 was installed on March 11, 2008 and Crest Gauges 2 - 7 were installed on August 1, 2008. The position of the sample sites were determined by either Mr. David Darby and Mr. James Smith, of the DOGM staff, in concurrence with the UEI representatives. Efforts were made to locate the sampling sites in a fairly

uniform section of channel and in a location where the upstream flows would not be affected by channel changes. This was generally possible in all locations except Crest Gauge 1 where the channel was meandering sharply. Once installed, the locations of the sampling sites were determined using an Delorme Earthmate PN-20 GPS unit. Plate 1 shows the location of these sites and Table 1 presents the coordinates and elevations.

The crest gauges were U.S.G.S. Type C, 4-foot crest gauges. These were attached to a 2-inch diameter steel pipe driven into the channel bottom.

The siphon samplers were standard, single-stage samplers and were located adjacent to the crest gauges. These samplers were secured to t-posts driven into the channel bottom. The sampling ports were secured to the t-post and pointed up-channel and the vents were secured to the vertical t-post.

SEEP AND SPRING INVENTORY

In accordance with stipulation #6, a seep and spring inventory was conducted of the area from the top of the Sunnyside coal seam of the Book Cliffs escarpment in a southwesterly direction to the Emery county Road (old tram road at 5750 foot elevation) from Lila Canyon near the proposed mine facilities to the Williams Draw Fault Line near the southern limits of the permit area. Plate 1 (attached) shows the location of the area that was covered by the seep and spring survey.

METHODS: On April 11 and 12, 2008, a spring and seep survey was conducted to address the special condition #5 as described above. The area of study was traversed on foot to determine any seep or spring locations. A team of three individuals consisting of Tom Suchoski, Josh Suchoski, and Jay Marshall walked the area at various elevations from just below the base of the coal seam, at mid slope, and along the bottom of the channel or toe of the slope. In this manner, the area was checked for any water occurrences.

Where water was identified, a GPS reading was taken to locate the site using a DeLorme Earthmate PN-20 GPS unit. An estimate of flow was determined and where sufficient water was available temperature, pH, and conductivity readings were taken. These measurements were taken with a Hanna combination meter, model HI98129.

The GPS data were exported from the DeLorme GPS units on the NAD 27 base in deg.-min. format. These values were then converted to State Plane

coordinates (feet) using the U.S. Army Corps of Engineers, CorpsCon program, version 6.0.1. The data were then plotted on the site area base map using AutoCAD.

RESULTS: Within the survey area, a series of 5 seeps were identified that were in addition to the seeps previously identified. All of these seeps were located within the Stinky Spring Canyon. Most occurrences were in close proximity to previously identified sites. It was difficult to tell whether these were separate occurrences or if they were different expressions of the same water.

Points JS-1 and JS-2 were separate occurrences. JS-1 was a wet spot high up on a cliff face and appeared to be the result of formation contact expression (i.e., sandstone layer overlying shale layer). JS-2 was located up the side canyon to Stinky Spring and was also a formation contact expression.

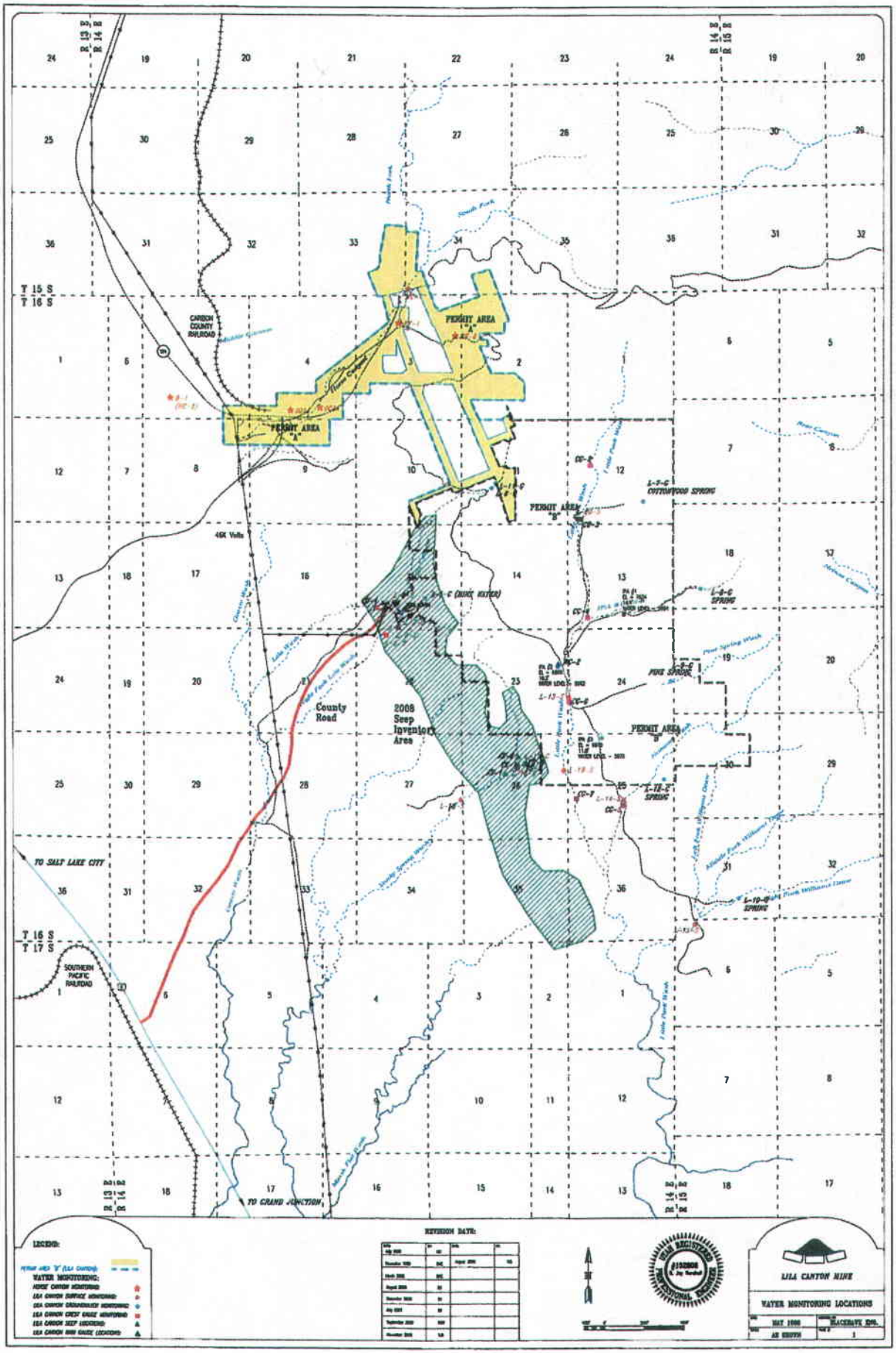
Plate 1 shows the location of the seep occurrences. Table 1 shows the coordinates and elevations of the seeps. Also, the table presents the flows and associated data.

As can be seen, the flows were extremely small and in three locations the rocks were damp with no flowing water. In the locations where flows were sufficient to collect a sample, the conductivity was greater than the meter could read and pH values were quite basic. Such water quality would not be suitable for wildlife. Few if any indications that wildlife had used these sources could be seen.

TABLE 1

Lila Canyon - Water Monitoring Coordinate Data

Site	Latitude	Longitude	Stateplane N (feet)	Stateplane E (feet)	Elevation (ft.)	# of satellites	Error margin (+/-)	Flow Rat	Cond.	Temp	pH
IPA #1	39° 25.514' N	110° 18.439' W	399946.05	2336903.63	7049	6	22				
IPA #2	39° 25.088' N	110° 19.144' W	397316.3	2333618.88	6872	6	17				
IPA #3	39° 24.488' N	110° 18.718' W	393701.03	2335672.92	6820	7	17				
L-01-S	39° 25.6457' N	110° 20.8662' W	400595.57	2325467.03	5826	8	19				
L-02-S	39° 25.5230' N	110° 20.7040' W	399860.709	2326240.081	5934	8	19				
L-07-G	39° 26.450' N	110° 18.223' W	405640.88	2337844.49	7354	5	19				
L-08-G	39° 25.717' N	110° 17.621' W	401229.84	2340737.86	7049	5	45				
L-09-G	39° 24.958' N	110° 17.952' W	396601.96	2339241.56	7036	6	18				
L-11-G	39° 26.618' N	110° 19.781' W	406563.58	2330498.28	7220	4	35				
L-12-G	39° 24.143' N	110° 18.038' W	391649.72	2338902.98	6762	6	29				
L-13-S	39° 24.831' N	110° 19.032' W	395763.35	2334166.82	6820	6	18				
L-14-S	39° 23.960' N	110° 18.472' W	390511.64	2336874	6678	8	19				
L-16-G	39° 24.2498' N	110° 19.5893' W	392201.033	2331589.099	5792	8	19				
L-17-G	39° 24.2957' N	110° 19.4968' W	392485.352	2332021.029	5896	8	19				
L-18-S	39° 23.9966' N	110° 20.1881' W	390627.335	2328789.29	5513	8	19				
L-19-S	39° 24.228' N	110° 19.094' W	392099.45	2333923.26	6700	5	18				
L-20-S	39° 26.314' N	110° 18.916' W	404771.98	2334593.76	7153	9	15				
RAIN GAUGES - APRIL 2008 & AUGUST 2008											
RG-1	39° 25.5620' N	110° 20.8216' W	400090.286	2325683.408	5946	8	19				
RG-2	39° 25.1101' N	110° 19.1383' W	397450.92	2333644.12	6875	8	19				
SPRING & SEEP - APRIL 2008											
JS-1	39° 24.2052' N	110° 19.7143' W	391922.606	2331004.009	5793	8	19	damp	-	-	-
JS-2	39° 24.3467' N	110° 19.5807' W	392789.721	2331621.879	5932	8	19	0.01	+4000	54.3	9.03
TS-1	39° 24.2667' N	110° 19.5851' W	392303.871	2331607.531	5873	8	19	0.01	+4000	40.2	8.68
TS-2	39° 24.2848' N	110° 19.5101' W	392418.37	2331959.268	6005	8	19	damp	-	-	-
TS-3	39° 24.2899' N	110° 19.5168' W	392448.911	2331927.311	5992	8	19	damp	-	-	-
CREST GAUGES - AUGUST 2008											
Lila CG1	39° 25.6006' N	110° 21.0658' W	400309.785	2324530.799	5739	8	19				
Lila CG2	39° 26.7540' N	110° 18.7754' W	407451.416	2335220.175	7303	8	19				
Lila CG3	39° 26.3110' N	110° 18.8839' W	404755.876	2334745.274	7233	8	19				
Lila CG4	39° 25.4918' N	110° 18.8207' W	399787.62	2335108.598	6968	8	19				
Lila CG5	39° 23.9398' N	110° 18.4462' W	390390.749	2336997.324	6675	8	19				
Lila CG6	39° 24.8083' N	110° 18.9742' W	395629.264	2334440.693	6809	8	19				
Lila CG7	39° 23.9969' N	110° 18.9549' W	390705.618	2334596.861	6656	8	19				



T 15 S
T 16 S
T 16 S
T 17 S
CARBON COUNTY RAILROAD
PERMIT AREA "A"
PERMIT AREA "B"
46K Volts
County Road
2008 Seep Inventory Area
TO SALT LAKE CITY
SOUTHERN PACIFIC RAILROAD
TO GRAND JUNCTION
COTTONWOOD SPRING
PINE SPRING
SPRING
LEGEND:
WATER MONITORING:
REVISION DATE:
LILA CANYON MINE
WATER MONITORING LOCATIONS
MAY 1998
AS SHOWN

UTAHAMERICAN ENERGY, INC.

Lila Canyon Mine Facility

Western Toad (Bufo boreas)
Report

Written
March 05, 2008

By:
Derris Jones
Senior Wildlife Biologist

ENVIRONMENTAL INDUSTRIAL SERVICES
Environmental & Engineering Consulting
31 North Main Street * Helper * Utah 84526
Office - 435-472-3814 * Fax - 435-472-8780

1.0 Introduction

UtahAmerican Energy, Inc. (UEI) has contracted EIS Environmental & Engineering Consulting (EIS) to conduct investigation into the need for a Western Toad survey for their Lila Canyon Mine Facility. The proposed area is located south of East Carbon, Utah. This area also consists of land administered by the State of Utah, private owners, and the Bureau of Land Management (BLM). These proposed facilities are required to be surveyed for a variety of threatened, endangered, and sensitive (TES) plant and animal species. Several TES species have been identified by the BLM through past studies as occurring, or potentially occurring within the UEI project area. Using established protocols, qualified Field Biologists of EIS conducted inventories for several proposed Threatened and Endangered Species at all areas of concern within the project area. The inventory for this Project was conducted on May 03, 2007.
Recently UEI agreed to investigate the need to survey for western toads in the same area of concern. The western toad was not included on the original list of TES species because of the marginal nature of potential habitat. Due to a settlement on litigation, UEI has agreed to look at existing habitat and determine if the need to survey for this species is warranted.

2.0 Status

Currently the western toad is classified as a sensitive species in Utah. Nationally the Southern Rocky Mountain population of the boreal toad at one time was listed as a candidate species for listing or warranted for listing as endangered but precluded. In 2005, following a 12-month finding the United States Fish and Wildlife Service removed western toads as a candidate because the Southern Rocky Mountain population was not recognized as species, subspecies, or Distinct Population Segment. Utah DWR has developed a conservation strategy for the western toads.

3.0 Distribution

Historically the western toad was found in high plateaus of 21 Utah counties, but only about 10 counties hold significant populations now. Predicted habitat in southeastern Utah is generally restricted to the Manti-La Sal and Fish Lake National Forests. Recent surveys indicate a small population on the South Horn Mountain in western Emery County. Historic records show western toads inhabiting along the east side of the Wasatch Plateau around into the Bookcliffs. No recent surveys have been done in the Bookcliff range, and no known breeding populations have been documented in the last 50 years.

4.0 Life Histories and Ecology

4.1 Elevation Range

Western toad is generally considered to occupy relatively high elevation habitats compared to other western amphibians. In Colorado, the documented elevation range of boreal toad is 2,164 to 3,640 m and toads are most often observed between 2,250 and 3,600 m (Campbell 1970a, Livo and Yeakely 1997). In southeastern Wyoming, historic records previously ranged up to 3,200 m but records of current occurrence currently do not exceed 2,925 m (Livo and Yeakely 1997).
The DIVISION has records of historic boreal toad occurrence in Utah at elevations from 1,570 to 3,220 m (Thompson et al. 2004). Based on a query of museum holdings, Ross et al. (1995) found that elevation information was available for 29 of the 100 reported specimens. The elevation of the collection localities for these specimens ranged from 1,374 to 3,136 m, but Ross et al. (1995) questioned the validity of the lower elevation records based on a lack of supporting museum specimens and the absence of typical boreal toad habitat at the reported localities. The current distribution suggests that the actual historic minimum elevation of boreal toad in Utah is probably not lower than 1,570 m. Differential habitat use between the sexes has been documented in the Paunsagunt Plateau and Sevier Plateau from preliminary radio telemetry studies conducted by the US Forest Service (S. Brazier, pers. comm.)

4.2 Habitat Requirements

Although boreal toad habitats in Colorado seem to be closely associated with lodge pole pine or spruce fir forests (Campbell 1970b), occupied wetlands in Utah are surrounded by a variety of upland vegetation communities, including sagebrush and grassland, Pinyon-juniper, mountain shrubs, and coniferous forest (Scott et al. 1993). Extensive observations of upland and winter habitat use in Utah have not been completed. However, toads have been observed using small mammal burrows in drier upland areas (Fridell et al. 2000). Radio-telemetry studies in Colorado indicate that toads occupy upland montane forests and rocky areas near spring seeps (Jones et al. 1998). Campbell (1970b) noted that boreal toads are relatively independent of water compared to other amphibians, but they must re-hydrate daily. In Utah, breeding habitats include low velocity, low gradient streams, off-channel marshes, beaver ponds, small lakes, reservoirs, stock ponds, wet meadows, seeps, and associated woodlands (Fridell et al. 2000, Thompson and Chase 2001).
Habitat use patterns after breeding are likely dependent on characteristics of the upland environment and may differ between the sexes (Campbell 1970b, Campbell 1976). Female toads may use habitats that are drier and more distant from breeding habitats compared to males (Jones et al. 1998). In a study of Oregon populations (Samallow 1980), males were abundant in and near water bodies throughout the warm months. Females were generally found in surrounding forested areas except during the brief breeding period. Campbell (1970b) indicated that male boreal toads in Colorado preferentially use moist areas, whereas females are more common in drier habitats. Differential habitat use between sexes has not been documented in Utah.
Currently, hibernacula in Utah have not been described. To date, only one hibernacula was discovered in the Paunsagunt Plateau. In Colorado, Campbell (1970c) found five separate hibernacula along a stream with perennial flow. Each hibernaculum consisted of a small chamber beneath or adjacent to large boulders. A continuous flow of groundwater 1 to 4 cm beneath the chamber floor maintained hibernacula air temperatures above 0.0°C, despite ambient temperatures during winter measured as low

as -31°C. The five hibernacula were used by a minimum of 30 toads during a single winter and there was apparently no mortality. Campbell(1970c) speculated that this sort of hibernaculum is probably uncommon and that most of the toads in the study area either traveled relatively long distances to find other similar hibernacula, or they used hibernacula with different characteristics. In other areas, hibernating boreal toads have been found using ground squirrel (*Spermophilus lateralis*) burrows to avoid freezing during the winter (Jones et al. 1998). Other possible hibernation sites, particularly for metamorphs, are beaver lodges and dams (Loeffler 2001).

Burrows represent critical microhabitats for boreal toad and other amphibians, especially in warmer, drier climates (Carey 1978, Smits 1984). Burrows are important for maintaining stable body temperatures despite extreme ambient temperatures (Smits 1984). Smits (1984) found that toads always remained in the deepest burrow locations during winter, resulting in relatively low and stable body temperatures. During summer, burrows may be used to prevent water loss and dehydration.

Breeding habitat requires open water at least 6 inches deep. Aquatic or flooded plant life offers cover for the eggs. Local populations tend to return to the same area each year for breeding. Springs, slow moving streams, lakes and wetlands are the preferred breeding habitat, however some populations have been found living in gravel pits that held runoff water only during the spring.

5.0 Threats

These amphibians are more influenced by changes in environment than other taxonomic groups. The loss of a specific stump or burrow can have a great effect on fitness. Areas with human activity brings common ravens and raccoons, both are associated with massive predation during young stages of the toad's life cycle. The local population gathers in one small area, and the concentrated collection of toads provides an easy meal for predators. Freezing temperatures, lowering water levels, and loss of vegetative cover surrounding the water may also lead to young die off of young toads. Chytrid fungus has been implicated in severe western toad die-offs else where in the range (Loeffler 2001) and poses a potential significant threat to western toads in Utah.

6.0 Habitat Description of Lila Mine Site

Elevation of the Mine site runs from 5900 ft to 6200 ft above sea level. Vegetation is sparse Juniper with an Atriplex shrub understory. Grasses present are Hilaria jamesii, and Stipa comota for warm season grasses and Orizopsis hymenoides, and Elymus Salinas for cool season grasses. Bromus techtorum is the dominant non-native grass species.

Soils are of alluvium deposit from the immediate cliff face to the Southeast. These soils originate from sandstone and are very coarse and porous.

No ponds with 6-inch depth and vegetation exist on or near the mine site. No perennial source of water is present on the mine site. One small drainage could run water for a short period with large precipitation events.

7.0 Discussion of western toad potential

Elevation range of the mine site falls within potential western toad habitat. Although the literature suggests western toads have been located in the Bookcliffs range, when you look at the locations for the toads, Bulger Creek, Kuyune, Price and Helper are the locations given for Bookcliffs. The latest date for any of these records is 1950. These locations are more closely associated with the Wasatch Plateau than with the Bookcliffs. The three habitat types used by western toads, breeding ponds, summer range, and winter refugia, are all lacking or at best marginal in the Lila Mine site. Due to precipitation patterns, porous soils, and steep gradient it is doubtful if breeding habitat could be maintained if it existed. Summer range is usually described as montane forest at elevations exceeding 7000 feet above sea level. Although western toads have been found in Utah below 5500 feet, this is normally associated with a riparian habitat type. The Lila mine site is Ecotone between Juniper and salt desert shrub communities. Winter hibernacula would be difficult to find due to the dry rocky conditions associated with the mine site. Small mammal burrows used by western toads in some areas would be difficult to find below the freeze line as most winters snow conditions do not lend themselves to insulation.

It is the opinion of DWR, BLM and this author that the Lila Canyon Mine site is not western toad habitat and does not warrant surveying for this species.

References:

Campbell, J. B. 1970a. New elevational records for the boreal toad (*Bufo boreas boreas*). *Arctic and Alpine Research* 2:157-159.

Campbell, J. B. 1970b. *Life history of* Bufo boreas boreas *in the Colorado Front Range.* Phd dissertation, University of Colorado, Boulder, CO.

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Carey, C. 1978. Factors affecting body temperatures of toads. *Oecologica* 35:197-219.

Fridell, R. A., K. M. Comella, G. N. Garnett, B. A. Zettle, T. K. Smith, and D. L. Harstad. 2000. *Boreal toad (Bufo boreas boreas) distribution surveys in southwestern Utah 1994 - 1998.* Publication Number 00-10, Utah Division of Wildlife Resources, Salt Lake City, UT.

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