
2.4 HISTORIC, SCENIC, AND CULTURAL RESOURCES

2.4.1 General

The following reports attached as Addendum 2B and Addendum 2C and Exhibit 2-1 contain information that is considered confidential information under 10 CFR 2.390. This information must be withheld from public disclosure.

2.4.2 Cultural Resources

Class I Literature Search for Uranerz Energy Corporation's Nichols Ranch ISR Project Permit

File searches were conducted from November 2007 through January 2010, through the Cultural Records Office of the Wyoming State Historic Preservation Office (SHPO) for Sections 7, 8, 17, 18, and 20, T43N, R76W; Sections 30 and 31, T44N, R75W; and Sections 5-8, T43N, R75W. Uranerz Energy Corporation's proposed Nichols Ranch ISR Project occurs within these legal descriptions.

Twelve projects have been conducted within the sections listed above for nine block and three block/linear surveys (Table 2-5). A few recent projects have not been accessioned into the SHPO database; therefore, they do not have accession numbers in Table 2-5. Fifty-four sites have been recorded in the 11 sections listed above. Of these, 46 sites are prehistoric, five sites are historic, and three sites are multicomponent prehistoric/historic. The sites are summarized in Table 2-6. Of the prehistoric sites, 15 are eligible for listing on the National Register of Historic Places (NRHP), 21 are not eligible, ten are not eligible with SHPO concurrence, and one (Site 48CA6153) is unevaluated with SHPO concurrence. The five historic sites are not eligible, one (Site 48JO2951) with SHPO concurrence. Of the three multicomponent sites, one (Site 48CA268, Pumpkin Buttes Traditional Cultural Property [TCP]) is eligible for the NRHP with SHPO concurrence, and two are not eligible with SHPO concurrence.

Table 2-5 Previous Cultural Resource Inventories Within or near Uranerz Energy Corporation's Nichols Ranch ISR Project Permit Area.

Accession No.	Project Name	Contractor ¹	Type ²	Legal Location
76-352-0	Brown's Ranch Uranium Mine	OWSA	B	Section 6, T43N, R75W
77-1-0	Brown's Ranch Uranium Mine	OWSA	B	Section 30, T44N, R75W
79-680-0	Brown's Ranch Uranium Mine	PE	B/L	Section 6, T43N, R75W
80-1209-0	Fed BZ 1	AS	B/L	Section 7, T43N, R76W
81-2054-0	Fed B-R-1	AC	B	Section 6, T43N, R75W
81-2054-0	Parker Fed 34-6 Testing	AEC	B	Section 17, T48N, R71W
4-2191-0	East Bullwhacker CBM POD	SWCA	B	Section 20, T43N, R76W
6-1350-0	Dry Willow CBM POD #1	SWCA	B	Section 31, T44N, R75W
6-1350-2	Dry Willow POD 1 Supplement	SWCA	B	Section 31, T44N, R75W
6-1465-0	Dry Willow POD Block Survey	Arcadis	B	Section 20, T43N, R76W
n/a	80-Acre Parcel in Hank Unit	TRC	B	Section 5, T43N, R76W
n/a	Tex Draw	WLS	B	Sections 7, 8, 17, 18, 20 T43N, R76W

¹ AC = Archeo Consultants; Arcadis = Arcadis U.S. Inc.; AEC = Archaeological Energy Consulting; AS = Archaeological Services; OWSA = Office of the Wyoming State Archaeologist; PE = Powers Elevation, TRC = TRC Environmental Corporation, WLS = Western Land Services
² B = block; B/L = combination block/linear, n/a = Not applicable

Table 2-6 Previously Recorded Sites Within or near Uranerz Energy Corporation's Nichols Ranch ISR Project Permit Area.

Site No.	Legal Location			Site Type	Landowner	NRHP Eligibility Status ¹	Time Period ²	Accession No. ³
	Township	Range	Section					
48CA268 ^{4, 5}	43N, 44N	75W	4, 5, 6, 8, 31	TCP	BLM/Private	E/SHPO	P/H	5-1851
48CA379 ⁵	44N	75W	31	Lithic scatter	Private	NE/SHPO	P	6-1350
48CA5386 ⁵	43N	76W	8	Lithic scatter	Private	NE	P	--
48CA5390 ⁵	43N	76W	17	Lithic scatter	Private	NE/SHPO	P	--
48CA5391 ⁵	43N	76W	17	Lithic scatter	Private	E/SHPO	P	--
48CA5393 ⁵	43N	76W	20	Inscription	Private	NE/SHPO	P	--
48CA5392	43N	76W	20	Lithic scatter	Private	NE/SHPO	P	--
48CA5406 ⁵	43N	76W	17	Lithic scatter	Private	NE/SHPO	P	--

Table 2-6 (Continued)

Site No.	Legal Location			Site Type	Landowner	NRHP Eligibility Status ¹	Time Period ²	Accession No. ³
	Township	Range	Section					
48CA6146 ⁵	44N	75W	31	Open camp	BLM	NE/SHPO	P	6-1350
48CA6147 ⁵	44N	75W	31	Open camp/trash scatter	BLM	NE/SHPO	P/H	6-1350
48CA6148 ⁵	44N	75W	31	Lithic scatter	BLM	NE/SHPO	P	6-1350
48CA6149 ⁵	44N	75W	31	Lithic scatter	BLM	NE/SHPO	P	6-1350
48CA6150	44N	75W	30	Lithic scatter	Private	NE/SHPO	P	6-1350
48CA6151 ⁵	44N	75W	30	Lithic scatter	Private	NE/SHPO	P	6-1350
48CA6153	44N	75W	30	Open camp	Private	U/SHPO	P	6-1350
48CA6155	44N	75W	30	Lithic scatter	Private	NE/SHPO	P	6-1350
48CA6342 ⁵	43N	75W	6	Open camp	BLM	NE	P	--
48CA6343 ⁵	43N	75W	6	Open camp	BLM	NE	P	--
48CA6344 ⁵	43N	75W	6	Open camp	BLM	NE	P	--
48CA6345 ⁵	43N	75W	6	Open camp	BLM	NE	P	--
48CA6474	43N	75W	8	Rockshelter	Private	E	P	--
48CA6475 ⁵	43N	75W	7	Open camp	Private	E	P	--
48CA6476	43N	75W	8	Open camp	Private	E	P	--
48CA6477	43N	75W	7	Lithic scatter	Private	NE	P	--
48CA6478	43N	75W	8	Open camp	Private	E	P	--
48CA6479	43N	75W	8	Open camp	Private	E	P	--
48CA6480	43N	75W	8	Open camp	Private	E	P	--
48CA6481	43N	75W	8	Open camp	Private	E	P	--
48CA6489	43N	75W	8	Open camp	Private	E	P	--
48CA6490 ⁵	43N	75W	6, 7	Open camp	Private	E	P	--
48CA6491 ⁵	43N	75W	7	Lithic scatter	Private	NE	P	--
48CA6498 ⁵	43N	75W	8	Lithic scatter	Private	NE	P	--
48CA6499 ⁵	43N	75W	6, 7	Lithic scatter	Private	NE	P	--
48CA6748 ⁵	43N	75W	6	Open camp	BLM	E	P	--
48CA6749 ⁵	43N	75W	6	Lithic scatter	Private	NE	P	--
48CA6750 ⁵	44N	75W	31	Lithic scatter	BLM	NE	P	--
48CA6751 ⁵	44N	75W	31	Open camp	BLM	E	P	--
48CA6752 ⁵	44N	75W	31	Open camp	BLM	NE	P	--
48CA6753 ⁵	44N	75W	31	Open camp	BLM	E	P	--

Table 2-6 (Continued)

Site No.	Legal Location			Site Type	Landowner	NRHP Eligibility Status ¹	Time Period ²	Accession No. ³
	Township	Range	Section					
48CA6754 ⁵	44N	75W	31	Lithic scatter	BLM	E	P	--
48CA6926 ⁵	43N	75W	5	Lithic scatter	Private	NE	P	--
48CA6927 ⁵	43N	75W	5	Open camp	Private	E	P	--
48JO2944 ⁵	43N	76W	8	Trash scatter	Private	NE	H	--
48JO2945	43N	76W	8	Trash scatter	Private	NE	H	--
48JO2946 ⁵	43N	76W	7, 8	Open camp	Private	NE	P	--
48JO2947	43N	76W	7	Lithic scatter	Private	NE	P	--
48JO2948 ⁵	43N	76W	17	Lithic scatter	Private	NE	P	--
48JO2949 ⁵	43N	76W	17	Trash scatter	Private	NE	H	--
48JO2950 ⁵	43N	76W	17	Trash scatter	Private	NE	H	--
48JO2951	43N	76W	18	Homestead	Private	NE/SHPO	H	--
48JO2953 ⁵	43N	76W	20	Lithic scatter/ building remains	Private	NE/SHPO	P/H	--
48JO2957 ⁵	43N	76W	17	Lithic scatter	Private	NE	P	--
48JO2959	43N	76W	18	Lithic scatter	Private	NE	P	--
48JO2960	43N	76W	18	Lithic scatter	Private	NE	P	--

¹ E = eligible; NE = not eligible; E/SHPO = eligible with SHPO concurrence; NE/SHPO = not eligible with SHPO concurrence; U/SHPO = unevaluated with SHPO concurrence.

² H = historic; P = prehistoric; P/H = multicomponent prehistoric/historic.

³ -- = sites that are not yet accessioned with projects, sites associated with projects that have not yet been accessioned in the cultural records office, and sites with projects that do not extend into this section.

⁴ 48CA268 was not listed in the SHPO database at the time of file search.

⁵ Site is located in the permit boundary and illustrated on Exhibit 3-1.

The entire area encompassed by the Nichols Ranch Unit permit boundary (within Sections 7, 8, 17, 18, and 20, T43N, R76W) was inventoried at the Class III level by Western Land Services, Sheridan, Wyoming, for the Tex Draw CBM POD, which has been approved by the BLM (personal communication, December 22, 2009, with Clint Crago, Archaeologist, BLM Buffalo Field Office).

Within the Hank Unit permit boundary, all of Section 30 and all but the SENE, NESE, and SESE of Section 31 were inventoried for the Dry Willow 1 POD, which has been approved by BLM

(personal communication, November 21, 2007, with Clint Crago, Archaeologist, BLM Buffalo Field Office). The SENE, NESE, and SESE of Section 31 were inventoried in 2007 for the Uranerz Energy Corporation's Hank In-situ Uranium Project, but it has not been reviewed by BLM. All of Sections 6-8 T43N, R75W, were inventoried at the Class III level in 2006 by Arcadis U.S., Inc. for the Dry Willow Phase 4 POD.

Impact Assessment/Project Effect to Cultural Resources

Of the 54 sites previously identified within and near the Nichols Ranch and Hank Units, 37 of these sites are located within the permit boundary of the Nichols Ranch and Hank Units (13 sites are in the Nichols Ranch Unit and 24 sites are in the Hank Unit (see Table 2-5 and Exhibit 2-1). Of these 37 sites within the Nichols Ranch permit area, 9 sites are eligible for the NRHP: one within the Nichols Ranch Unit and 8 within the Hank Unit (see Table 2-6a). They include multicomponent Site 48CA268 (Pumpkin Buttes TCP), which occurs within and adjacent to the east side of the Hank Unit (Exhibit 2-1).

Project Effects to Cultural Resource Sites within the Nichols Ranch Unit

There is one NRHP-eligible cultural resource site within the Nichols Ranch Unit and there will be no adverse effects to NRHP-eligible cultural resource (Site 48CA5390). Uranerz will avoid this site during ground disturbing activities and there will be no adverse effects to this site. To provide further protection to the one NRHP eligible site that is located within or near the projected wellfield (specifically site 48CA5391), Uranerz will delineate this site and will mark it with green colored plastic snow fence material. The fencing material will not be highly visible and no signs will be installed but the fencing material will protect this site from inadvertent disturbance. Uranerz will also provide small openings (6 to 8 ft) in the fencing to allow livestock and wildlife to move freely in, out, and through the site.

In addition, the Nichols Unit will not adversely affect the setting, feeling, and association of Site 48CA268 because it occurs almost 5.0 mi west of the Pumpkin Buttes TCP (see Exhibit 2-1). The Programmatic Agreement prepared for this site has determined that only ground disturbing activities within 2.0 mi of the appropriate base elevations of Site 48CA268

will have an adverse effect to the contributing setting surrounding the TCP. Therefore, project-related activities in the Nichols Ranch Unit will not have an adverse effect to Site 48CA268.

Project Effects to Cultural Resources within the Hank Unit

There are eight NRHP-eligible cultural resource sites within the Nichols Ranch Unit and there will be no adverse effects to any of the eight NRHP-eligible cultural resources (Sites 48CA268, 48CA6475, 48CA6490, 48CA6748, 48CA6751, 48CA6753, 48CA6754, and 48CA6927). Uranerz will avoid these sites during ground disturbing activities and there will be no adverse effects to any of these sites. To provide further protection to the two eligible sites that are located within the projected wellfield (specifically sites 48CA6754 and 48CA6727), Uranerz will delineate these sites and will mark them with green colored plastic snow fence material. The fencing material will not be highly visible and no signs will be installed but the fencing material will protect these sites from inadvertent disturbance. Uranerz will also provide small openings (6 to 8 ft) in the fencing to allow livestock and wildlife to move freely in, out, and through the site.

Additionally, Uranerz will comply with the mitigation measures stipulated in the 2009 Programmatic Agreement for in-situ uranium operations for the Pumpkin Butte TCP. Detailed information concerning specific mitigation measures is presented in Section 2.4.4. Therefore, there will be no adverse effect to the Pumpkin Butte TCP (Site 48CA268) from project-related activities in the Hank Unit. Table 2-6a summarizes the NRHP eligibility and project effect to the eight NRHP-eligible sites.

Table 2-6a NRHP-eligible Sites within the Hank Unit.

Site Number	Time Period	NRHP Eligibility	Project Effects
48CA268	Prehistoric/Historic	Eligible	No adverse effect with avoidance
48CA6475	Prehistoric	Eligible	No adverse effect with avoidance
48CA6490	Prehistoric	Eligible	No adverse effect with avoidance
48CA6748	Prehistoric	Eligible	No adverse effect with avoidance
48CA6751	Prehistoric	Eligible	No adverse effect with avoidance
48CA6753	Prehistoric	Eligible	No adverse effect with avoidance
48CA6754	Prehistoric	Eligible	No adverse effect with avoidance
48CA6927	Prehistoric	Eligible	No adverse effect with avoidance

2.4.3 Paleontological Resources

A Paleontological survey was conducted for the Nichols Ranch ISR Project. From the survey performed, the Nichols Ranch ISR Project was concluded to have no major impact to significant fossil remains because of the geology and poor exposures of fossil bearing sediments. One recommendation from the survey is to have a monitor present to oversee any major ground disturbing events when more than a few feet of surface are removed. Uranerz Energy Corporation will comply with this recommendation when conducting any construction that will involve the removal of several feet of soil. Additionally, if any fossil remains are found during any construction activities, Uranerz Energy Corporation will immediately contact the appropriate state and federal agencies.

The complete paleontological survey is attached as Addendum 2C.

2.4.4 Cultural Resource Mitigation

Uranerz will comply with the following cultural resource mitigation measures and these mitigation measures apply to all areas and activities covered by this permit application.

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- (1) Uranerz will not conduct any ground-disturbing work in areas that have not been previously inventoried and cleared for cultural resources.
 - (2) Uranerz will protect all cultural properties that have been determined eligible to the National Register of Historic Places within the permit area from ground-disturbing activities. To protect those eligible sites that are located within or near the projected well field (specifically sites 48CA6754, 48CA6927, and 48CA5391), Uranerz will delineate these sites and will mark them with green colored plastic snow fence material. The fencing material will not be highly visible and no signs will be installed but the fencing material will protect these sites from inadvertent disturbance. Uranerz will also provide small openings (6-8 ft) in the fencing to allow livestock and wildlife to move freely in, out, and through the site.
 - (3) If Uranerz determines that it must conduct ground disturbing activities within the boundaries of an eligible site, Uranerz will notify NRC, SHPO, and WDEQ-LQD and Uranerz will prepare an appropriate cultural resource mitigation plan and submit said plan to the NRC and SHPO for review and approval. Once approved the mitigation plan will be implemented before any ground disturbing activities are undertaken. Any such approved mitigation plan(s) will be subsequently incorporated into the permit document.
 - (4) If cultural resources are discovered during operations, Uranerz will immediately stop ground-disturbing activities in the area of the discovery and will immediately notify the WDEQ-LQD, NRC, and the SHPO. Within two (2) working days of notification, the WDEQ-LQD, the NRC, and the SHPO will evaluate or have evaluated any discovered cultural resources and will determine if any action may be required to protect or preserve such discoveries.
 - (5) All cultural resources will remain under the jurisdiction of the private landowner or the United States government depending on the where the cultural resource(s) were discovered.
 - (6) Uranerz will instruct all employees, contractors, subcontractors and any additional parties involved in the project that they are not to search for archaeological materials (i.e., arrow head hunting).
 - (7) If Native American human remains, funerary objects, or objects of cultural patrimony are encountered, Uranerz will stop all work in the immediate area and will immediately notify NRC and WDEQ-LQD and the NRC will comply with Section 3 of the native American Graves Protection and Repatriation ACT and its implementing regulations at 43 CFR Part 10. If Native American human remains, funerary objects, or objects of cultural patrimony are encountered as a result of a NRC undertaking on private surface, the remains will be evaluated as a historic property and procedures. Existing state and local laws will be followed pertaining to discovery of Native American human remains, funerary objects, or objects of cultural patrimony on private surface.

In addition, Uranerz will comply with the following mitigation measures stipulated in the Programmatic Agreement for the Pumpkin Butte TCP and those activities associated with in-situ uranium operations. These mitigation measures pertain to undertakings within two miles of the base elevation of the Pumpkin Buttes TCP and will include all project-related activities in the Hank Unit. The following mitigation measures have been adopted from the approved Programmatic Agreement for the Pumpkin Buttes TCP.

- (1) Uranerz will instruct all employees, contractors, subcontractors and any additional parties involved in the project to avoid the Pumpkin Buttes TCP.
- (2) No ground disturbing activities will occur on the tops and sides of Pumpkin Buttes. The tops and bases of the buttes are defined as follows, based on 1:24,000 USGS topographic quadrangles for the area:

North Middle Butte: Top = 6,000-ft contour line; Base = 5,500-ft contour line
South Middle Butte: Top = 5,920-ft contour line; Base = 5,500-ft contour line

- (3) For all activities associated with any future project modification, Uranerz will obtain authorization from the NRC and SHPO before conducting ground disturbing activities. Uranerz and NRC will implement measures to reduce the visual contrast for any changes to the project.
- (4) Prior to the NRC and WDEQ-LQD authorization of additional construction activities, Uranerz will:
 1. Perform a Class III cultural resource inventory, biological, and/or other inventories as required;
 2. Submit detailed construction plans; and
 3. Participate in an on-site evaluation (if necessary).
- (5) The gravel surface of resource roads of new roads will be a color that does not create a visual contrast to the surrounding topography.
- (6) All gathering pipelines will be coridored next to or within roads, wherever possible. Existing disturbance areas will be used for pipeline corridors where practicable.

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- (7) Wherever practicable, areas of existing disturbance will be used. To minimize visual contrast, well locations will not be placed in areas of dense sagebrush or other vegetation unless absolutely necessary. Brush hogging or other vegetation removal on drilling locations within areas of dense sagebrush or other vegetation will be feathered to reduce visual contrast and limited to 30 feet in diameter. All above ground infrastructure related to well production will be painted in a color that best blends in with the surrounding topography. These colors are typically Covert Green (PANTONE for Architecture Color Guide 18-0617 TPX) or Carlsbad Canyon (Munsell Soil Color 2.5Y 6/2). It may be determined that different colors are required on a site specific determination based on visual assessment.
 - (8) Wherever practicable, power lines servicing wells will be buried and buried power lines will be placed inside, or within five feet of the trench utilized for pipelines. Construction of over head power lines within two miles from the base elevation of the Pumpkin Buttes will be designed to reduce visual contrast.
 - (9) All permanent above-ground structures (e.g., production equipment, tanks, etc.) not subject to safety requirements will be painted to blend with the natural color of the landscape. The color will simulate the standard environmental colors established by the BLM for visual resource management. These colors are typically Covert Green (PANTONE for Architecture Color Guide 18-0617 TPX) or Carlsbad Canyon (Munsell Soil Color 2.5Y 6/2). It may be determined that different colors are required on a site specific determination based on visual assessment.

As stated above in the first paragraph of this section, Uranerz will comply with the mitigation measures presented above; therefore, there will be no adverse effect to the Pumpkin Buttes TCP with regard to the APE for direct effects, and there will be no adverse effect to the APE for visual effects surrounding the TCP.

2.4.5 Scenic Resources

Because the Nichols Ranch ISR Project is located almost entirely on private land in a remote location, the operations aesthetic impact is limited to only the landowner and those that have