Uranerz
ENERGY CORPORATION

June 24, 2010

Mr. Ron Linton, Project Manager
U.S. Nuclear Regulatory Commission
Office of Federal and State Materials and Environmental Management Programs
Mail Stop T-8F5
11545 Rockville Pike
Rockville, MD 20852-2738

Re: Uranerz Energy Corporation Nichols Ranch ISR Project Source Material License Application Responses to the Wyoming Department of Environmental Quality – Land Quality Division Fourth Consolidated Technical Review.

Dear Mr. Linton,

Attached to this letter is Uranerz Energy Corporations responses to the Wyoming Department of Environmental Quality – Land Quality Division (WDEQ-LQD) Fourth Consolidated Technical Review dated June 3, 2010. The responses address the comments that the WDEQ-LQD had concerning technical aspects of the Uranerz Energy Corporation Nichols Ranch ISR Project Permit to Mine Application.

If you have any questions regarding the provided responses, please contact me at 307-265-8900 or by email at mthomas@uranerz.com

Sincerely,

Michael P. Thomas
Environmental, Safety, and Health Manager
Uranerz Energy Corporation

Attachments

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Uranerz
ENERGY CORPORATION

June 24, 2010

Mr. Glenn Mooney
Project Manager
Department of Environmental Quality – Land Quality Division
2100 West 5th Street
Sheridan, WY 82801

Re: 4th Consolidated Completeness Review Responses

Dear Mr. Mooney,

Attached to this letter are Uranerz Energy Corporations responses to the Wyoming Department of Environmental Quality – Land Quality Division (WDEQ-LQD) Fourth Consolidated Technical Review dated June 3, 2010. The responses address the comments that the WDEQ-LQD had concerning the technical aspects of the Uranerz Energy Corporation Nichols Ranch ISR Project Permit to Mine Application. All information to address the comments is enclosed, with index sheets, for revision and insertion into the Nichols Ranch ISR Project Permit to Mine application.

Additional information that was not part of the Fourth Consolidated Review has also been provided. The additional information is as follows:

- Figures D6-3 and Figure D6-4 – These figures were updated to reflect the most current information available at the time of this letter.

If you have any questions regarding the provided comments and information, please contact me at 307-265-8900 or by email at mthomas@uranerz.com

Sincerely,

Michael P. Thomas
Environmental, Safety, and Health Manager
Uranerz Energy Corporation

Attachments
Encl.

cc: Kerry Aggen – BLM Buffalo Field Office
Ron Linton – Nuclear Regulatory Commission, Project Manager, Rockville MD (letter and responses only)

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The following information is the Uranerz (URZ) responses to the 4th Consolidated Technical Review comments provided to Uranerz by the WDEQ-LQD in a letter dated June 3, 2010.

1-G e ii. The NE¼NE¼ (Lot 5) Section 31, T.44N., R.75W. is listed on Page C-14 of this section as an area where Uranerz has no right-to-mine. Uranerz stated they had removed the wellfield from Lot 5 but Figure 1-8 is unchanged in this area and the well field is still show as being located in Lot 5.

Lot 6 is now listed on Page C-8 in the right-to-mine section of Appendix C.

Please provide a revised Figure 1-8. (GM)

URZ Response:

A revised Figure 1-8 has been enclosed with these responses. The permit boundary was adjusted to follow the red section lines of the background topo map. The wellfield was also adjusted to remove it from Lot 5 located in the NE1/4NE1/4 Section 31, T44N, R75W.

48-M. Well 6 and BC-1A are listed on the revised Page D6G.1-4 as located in the NW¼SW¼ of Section 22, T.43N., R.76W., however these wells location are still not shown on Exhibit D6-1 or Exhibit D6-2, please correct. (MT)

URZ Response:

Exhibit D6-1 has been revised to show wells 6 and BC-1A. The well labeled as "1" has been removed as this well was the same as the P1 well. Exhibit D6-2 also has been revised to show the Pumpkin Buttes Ranch House well located in Section 4 of T43N, R75W.

Both exhibits are enclosed with these responses.

114-M. Mine Plan, Section 3.4, Lixiviant Control: Uranerz response doesn't really address my original comment (i.e., Please elaborate on why Uranerz feels that the 3% bleed at the Hank ranch unit will control the lixiviant in an unconfined aquifer. Please include literature reference or case history, if possible). Uranerz seems to make the argument that control is easier in a confined system than an unconfined system, but then concludes that it's easier in an unconfined system. If

all things consider being comparable, the cone of depression resulting a wellfield in a confined aquifer would be deeper and have much more areal extent than the cone of depression in an unconfined aquifer. Accordingly, it would seem the control of lixiviant at the Hank Site will be harder to maintain control and recover an excursion than at the Nichols site due to the much larger storage value that exists in the unconfined F Sand at the Hank site. Please revise response to address my original comment and provide permit text explaining why a bleed of 3% was modeled. (MT)

URZ Response:

The control of solutions at the Hank site will be easier to maintain than at the Nichols site due to a larger anticipated bleed rate necessary to overcome the slower cone of depression development resulting from the much larger storage value that exists in the unconfined F Sand at the Hank site. The piezometric surfaces from the numerical model simulations show that a steep gradient is developed in the unconfined aquifer due to the combination of a larger bleed rate and a large storage value. These results are presented in Figure MPH.1-5 for after one year of operation, Figure MPH.1-10 after 120 days of operation and Figure MPH.1-13 after 30 days of operations. Each of these three piezometric surface maps show that for these varying time periods of pumping a steep piezometric surface has been developed adjacent to the Hank wellfield which will enhance the control of solutions adjacent to this well unit. The much smaller storage value for a confined aquifer allows the water-level heads to change much quicker and, therefore, allows for imbalances to affect reversals adjacent to a wellfield quicker than in the unconfined aquifer condition.

As indicated previously, a larger (3%) bleed rate is anticipated for the Hank Unit to accelerate the development of the cone of depression at the wellfield and to increase the magnitude of the gradient reversal to the wellfield. Since the primary function of the larger bleed rate is to create the necessary gradient reversal in a timely manner, it can be argued that the bleed rate could be reduced to a level which maintains reversal once the cone of depression is established.

The USGS WTAQ program was used to predict the drawdowns from an unconfined and confined wellfield for 3% and 1% bleed rates, respectively. The aquifer property used for this comparison is a uniform transmissivity for both aquifers of 667 gal/day/ft. A specific yield of 0.14 for the unconfined aquifer and a storage coefficient of 1.8E-4 for both the confined and unconfined aquifer were used. A common aquifer thickness

of 90 feet and a completion of 70-80 feet below the top of the aquifer were used. A total time of 365 days was used for these calculations. A reasonable rate for a portion of the wellfield at the 1% bleed rate is 10 gpm. Therefore, for the 3% bleed a comparable stress rate for the unconfined aquifer would be 30 gpm. Drawdowns were calculated for these two aquifer configurations with the WTAQ program for the confined and unconfined conditions at 100, 200, 300, 400 and 500 feet from the edge of the wellfield. The attached figure shows the calculated drawdowns that would result for the confined aquifer in red and the amount of drawdown for the unconfined aquifer in blue. The drawdown depression would be greater for the confined aquifer beyond 200 feet but the change in drawdowns between adjacent points directly affects the gradients and is more important relative to containment. The change in the drawdowns between each 100 feet interval is also presented. A greater change in drawdown will result in a greater change in the reversal gradient; therefore, the unconfined aquifer would have the longest gradient change between the 100 and 200 feet outward distances. The gradient change between the 400 and 500 feet increments for the unconfined aquifer is essentially equal to the gradient change between the 200 and 300 feet increment for the confined aquifer. The gradient changes are significantly steeper in all of the unconfined aquifer increments than the respective confined aquifer increments, generally by factors of 2 to 3. This shows that at the 3% bleed rate, the unconfined aquifer will create steeper gradients adjacent to its wellfield and therefore, should control lixiviant easier than the confined aquifer.

Section 3.4 Lixiviant Control of the Mine Plan was also revised to discuss the use of the 1% and 3% bleed rates. Revised Mine Plan pages MP-17a and MP-17b are enclosed with these responses.

146-G. Figure 1-8, Hank Unit, Proposed Monitor Well Locations

The permit boundary depicted on this map does not run along the section lines which are the actual boundary, but have been shifted to the west, sometimes by hundreds of feet. Uranerz stated they have corrected the problem, but the map remains unchanged. Please correct. (See also Comment 1-G(e)(ii) above) (GM)

URZ Response:

See the above response for Comment 1-G(e)(ii).

148-G. Reclamation Plan – Addendum A, Reclamation Surety Estimate

Uranerz has recalculated the bond estimate using more up-to-date disposal costs. However, much of the remaining estimate uses 2007 costs. Also some costs are not based on Land Quality Division Guideline 12 costs. The costs where no other amounts are available should be recalculated by adding the US Dept. of Commerce Consumer Cost Index increases for the appropriate time interval. For those tasks for which Guideline 12 costs are available, such as building demolition, foundation removal or dirt moving, use Guideline 12. (GM)

URZ Response:

The Surety Estimate found in Addendum A of the Reclamation Plan has been revised. Costs were updated to 2010 dollars by incorporating more of the WDEQ Guideline 12 costs and adjusting all costs for inflation using a Producer Price Index (PPI) escalator. The PPI rather than the Consumer Price Index was used since it is more appropriate for industrial applications than the consumer price index with measures changes in price of food, retail purchases, etc.

The revised surety estimate is enclosed with these responses.

1-T Addendum MP-G: Nichols Ranch Numerical Groundwater Modeling, Section MPG.1.2.2.1, Flare Evaluation, pg. 6: It appears that Figure MPG.1-15 should have been referenced instead of MPG.1-14. Please correct if appropriate. (MT)

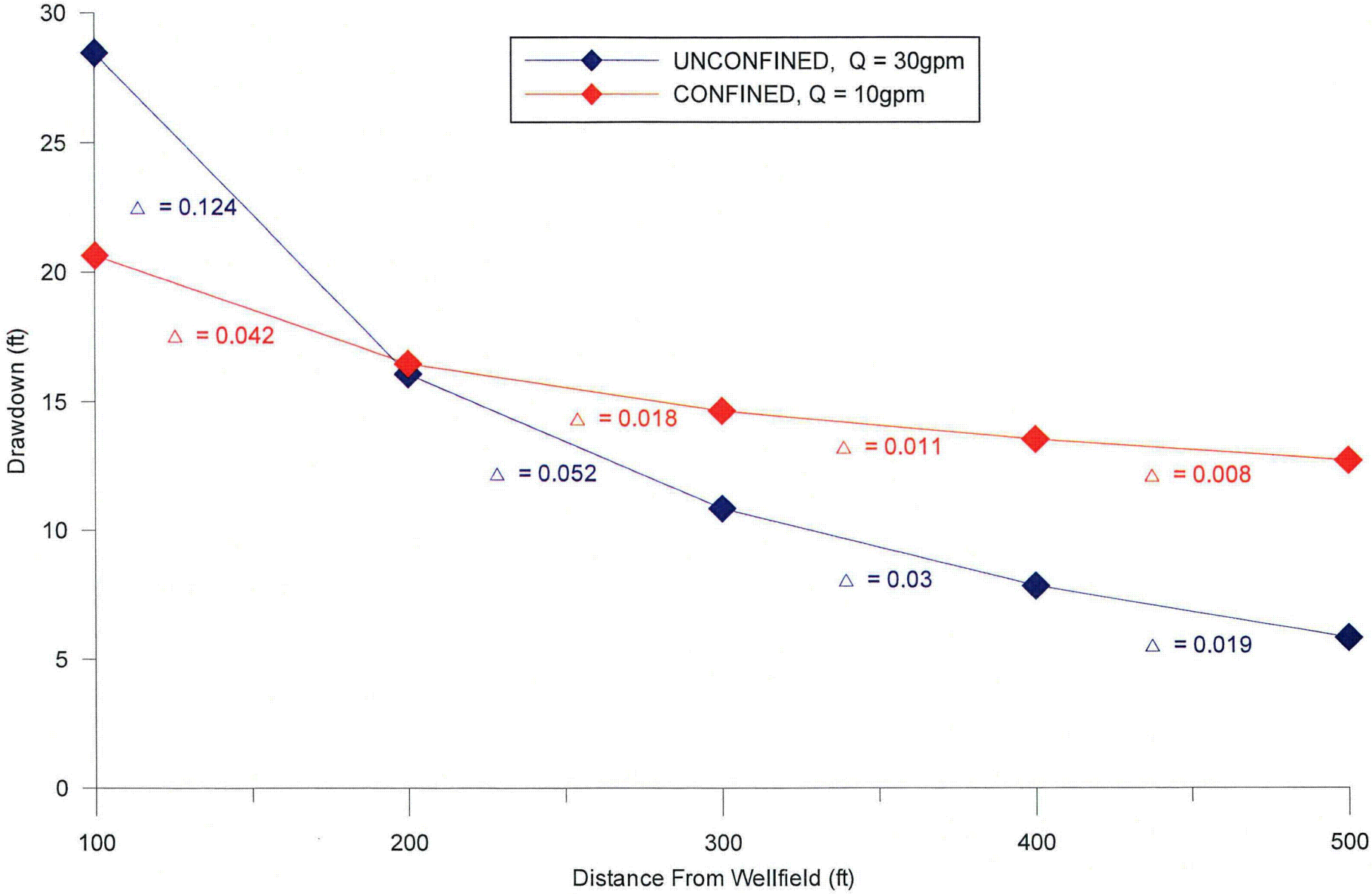
URZ Response:

Addendum MP-G, Section MPG 1.2.2.1, Flare Evaluation, pg. 6 has been revised so that Figure MPG.1-15 is correctly reference instead of Figure MPG.1-14. The corrected page is enclosed with these responses.

2-T Addendum MP-H: Hank Numerical Groundwater Modeling, Section MPH.1.1.1.1.2, Aquifer Properties, pg. 2: This text states "The hydraulic conductivity was set a 1.0 foot/day..." Also, in Addendum 6C, pg. D6C.0-1 the text states "A transmissivity of 667 gal/ft/day is thought to be the most representative value for the F Sand". These afore-mentioned text conflict with the text on Appendix D-6, Hank Unit,, page D6-6 "...the hydraulic conductively of 0.6 ft/day is also thought to best represent the F sand". Please explain this apparent discrepancy and/or revise text accordingly, if appropriate. (MT)

URZ Response:

The aquifer properties for the Hank Unit on page D6-6 of Appendix D6 has been revised to be consistent with the text found in Addendum MP-H and Addendum D6C. The aquifer properties were revised because of additional pumps tests conducted at the Hank Unit that resulted in the current aquifer properties that were found in Addendums D6C and MP-G. A revised page D6-6 is enclosed with these responses.



DRAWDOWN IN OBSERVATION WELLS

FOR RESPONSE 114-M