

## **7 Mineralization (Item 11)**

*Section 7 is extracted in-part from Powertech's Technical Report titled "Updated Technical Report on the Centennial Uranium Project, Weld County, Colorado", dated February 25, 2010. Changes to standardizations, sub-titles, and organization have been made to suit the format of this Technical Report. SRK comments and opinions, where present, contain "SRK" in the pertinent sentences and paragraphs.*

### **7.1 Mineralized Zones**

Uranium deposits are concentrated along the down-dip flank of sand deposits. Alteration depicting the oxidation/reduction contact can occur in several sand units and may be several miles in length. Uranium deposition in significant deposits occurs discontinuously along the redox boundary with individual deposits ranging from several hundred-to a few thousand feet in length. Width of concentration is dependent upon lithology and position within the sand unit. Widths are seldom less than 50ft and are often over 200ft. Thickness of highly concentrated uranium mineral varies from 1 or 2ft in limbs to 10 or 15ft in rolls. Tenor of uranium mineralization may vary from minimal to a few percent at a given point within the ore body.

Multi-element analyses of mineralized core indicate that there are minor amounts of associated minerals such as iron, vanadium, selenium and molybdenum, occurring with the uranium. These associated minerals are found only as trace amounts and therefore should not be of concern in terms of the ISR mining method or restoration of ground water.

### **7.2 Surrounding Rock Types**

SRK notes that underlying and overlying conformable rock types act as fluid-confining barriers that provided for channeling of uranium-bearing fluids and development of the uranium roll-fronts, and will allow for confinement of ISR production fluids. In the case of Centennial, those confining rocks are Late Cretaceous Pierre Shale below the host Fox Hills Sandstone, and Laramie Formation shale overlying the host Fox Hills Sandstone.

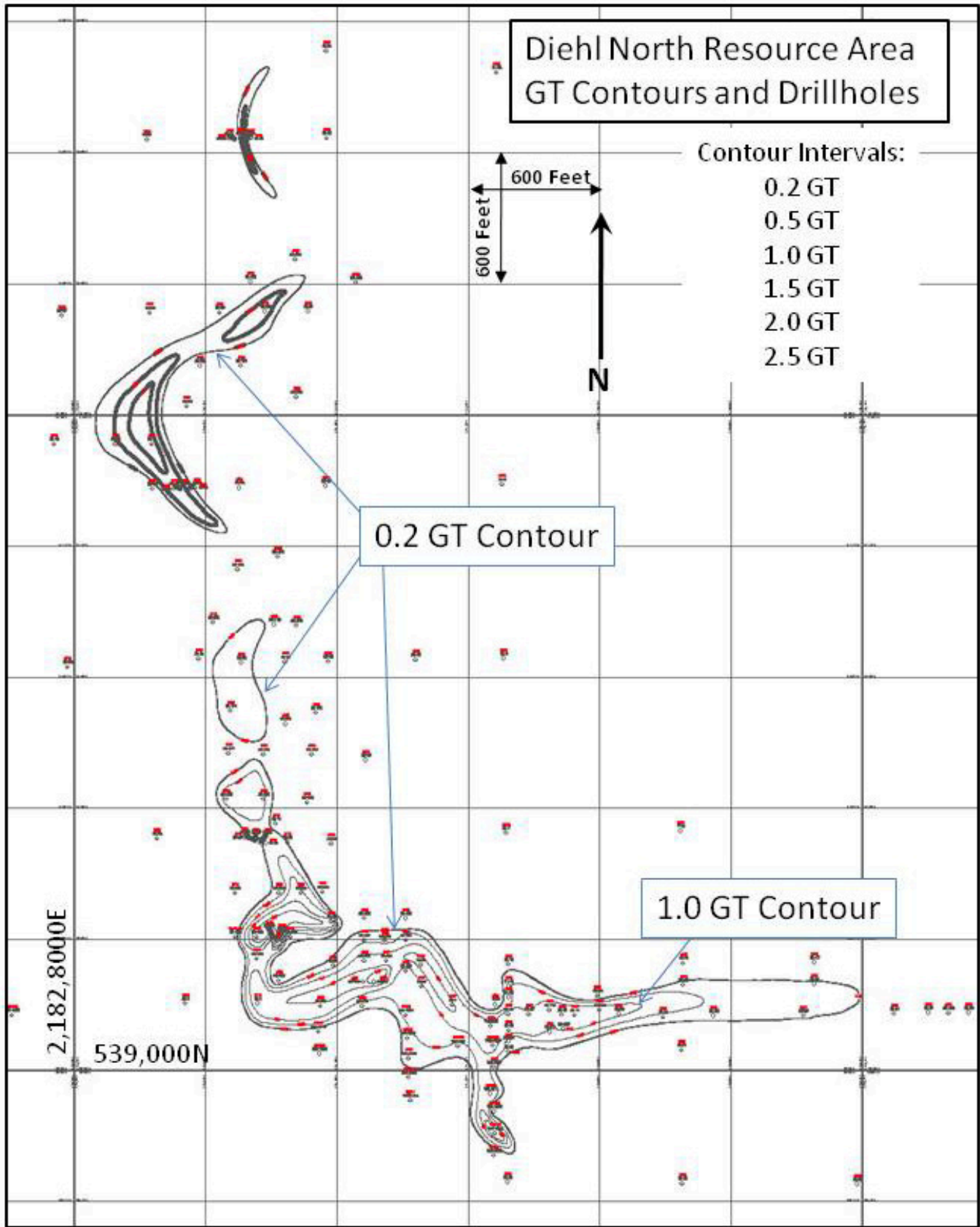
### **7.3 Relevant Geological Controls**

The primary control of uranium mineralization in the Centennial Project is the presence of permeable sandstone within a major marginal marine, barrier bar sand system that is also a groundwater aquifer. A source rock for uranium in juxtaposition to the aquifer is necessary to provide mineral to the system. As described above the uranium-rich White River Formation originally overlay the subcropping sandstone units of the Laramie Formation and Fox Hills Sandstone. The last control is the need for a source of reductant to precipitate dissolved uranium from groundwater solutions. Back barrier swamps and lagoons within the marginal marine depositional environment are responsible for generating extensive reductants in the form of humic acids derived from carbonaceous materials deposited with the sediments.

SRK notes that redox boundary is approximately defined by the generally north-south sinuous location of the mineral deposits as depicted on Figure 2-3, with oxidized rock to the west (up-dip) of the deposits, and reduced rock east (down-dip) of the deposits.

## **7.4 Type, Character and Distribution of Mineralization**

SRK notes that individual uranium deposits are best depicted on plan maps as contour maps of grade x thickness products (GxT or GT maps), as shown in Figure 7-1 for Diehl North. For Centennial, the GT maps show the shape and extent of mineralization, and the 0.2 GT contour represents the limits of mineralization. Greater thicknesses and higher grades of mineralization are noted by higher value GT contours.



**Centennial Project,  
Weld County, Colorado**

**Diehl North Resource – GT  
Contours**

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**Source: Powertech, 2009, modified  
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**Figure: 7-1**

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