

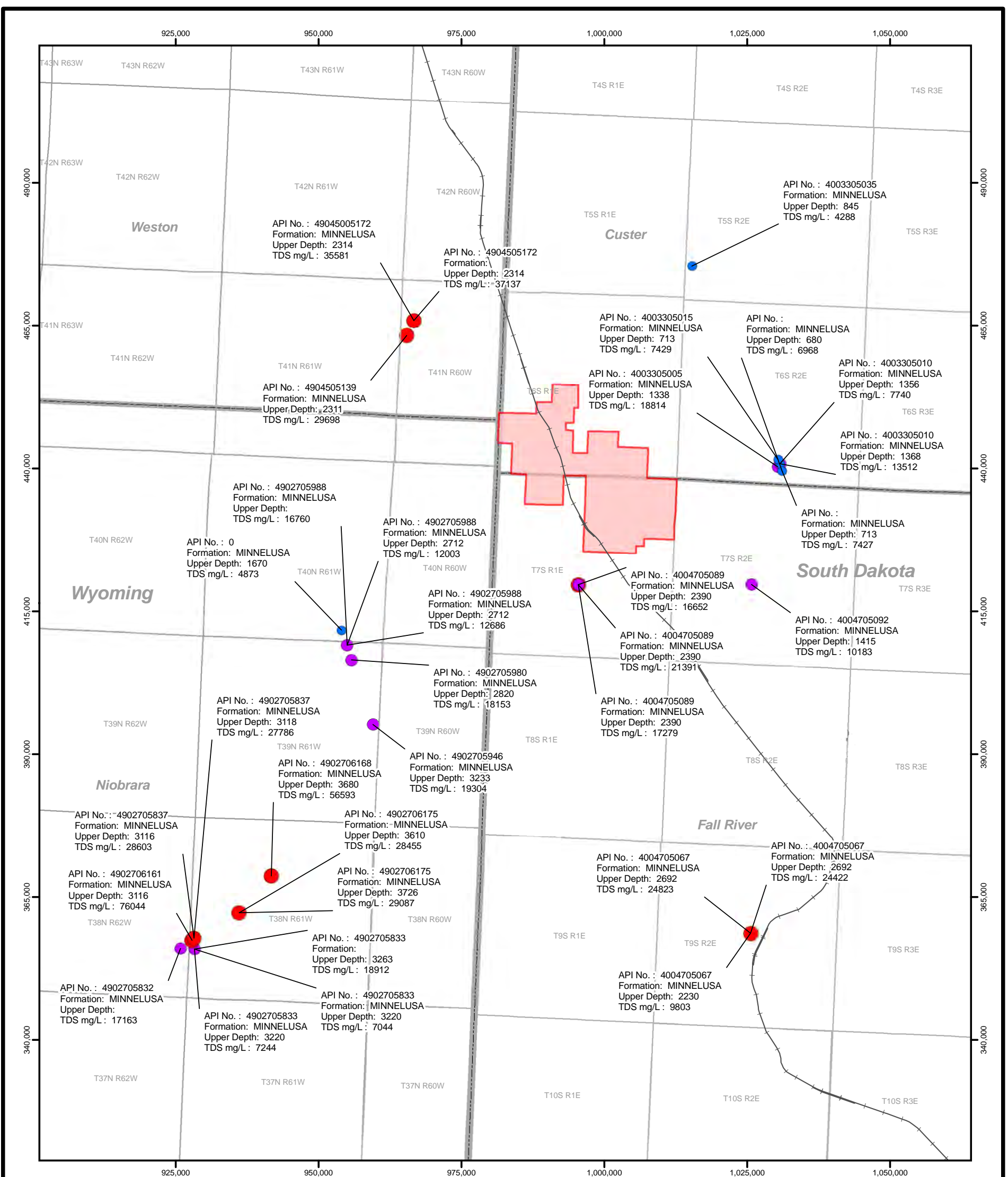
**United States Nuclear Regulatory Commission Official Hearing Exhibit**

**In the Matter of:** POWERTECH USA, INC.  
(Dewey-Burdock In Situ Uranium Recovery Facility)



**ASLBP #:** 10-898-02-MLA-BD01  
**Docket #:** 04009075  
**Exhibit #:** APP-016-U-00-BD01  
**Admitted:** 8/19/2014  
**Rejected:**  
**Other:**

**Identified:** 8/19/2014  
**Withdrawn:**  
**Stricken:**



**Legend**

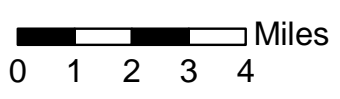
DeweyBurdockPermitBoundary

SD\_DB\_MinnelusaFm\_TDS


- TDS
- 0 - 3,000
  - 3,001 - 10,000
  - 10,001 - 20,000
  - 20,001 - 400,000

WY\_DB\_MinnelusaFm\_TDS

- TDS
- 0 - 3,000
  - 3,001 - 10,000
  - 10,001 - 20,000
  - 20,001 - 400,000



Projection: South Dakota State Plane South, NAD83 (feet)




**POWERTECH (USA) INC.**

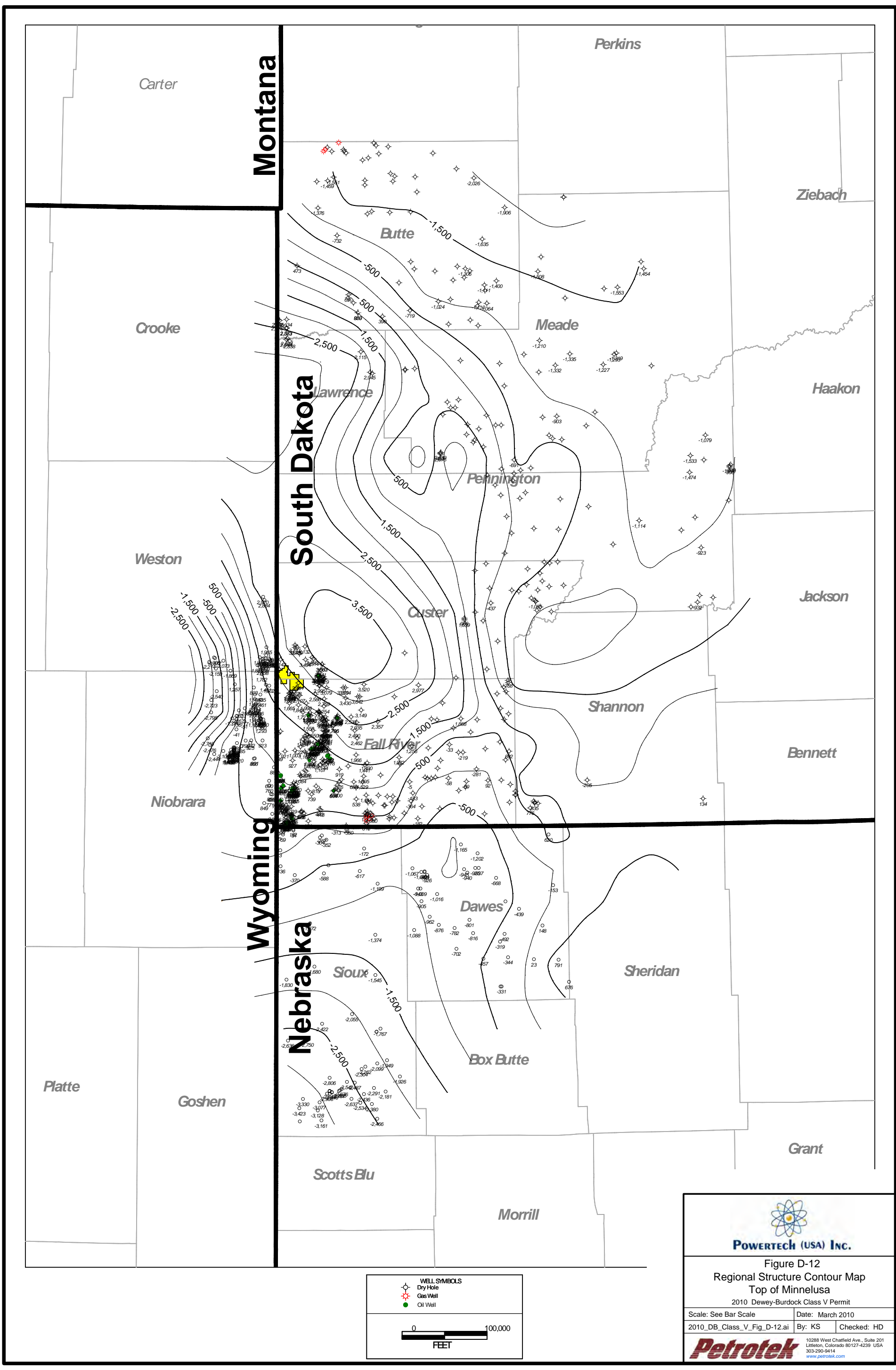
Figure D-11  
Dewey-Burdock Project Area  
TDS Concentrations, Minnelusa Formation

2010 Dewey Burdock Class V Permit

Scale: 1:200,000	Date: March 2010
2010 DB_Class_V_Fig-D-11.mxd	By: JLM Checked: HD



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303-290-9414  
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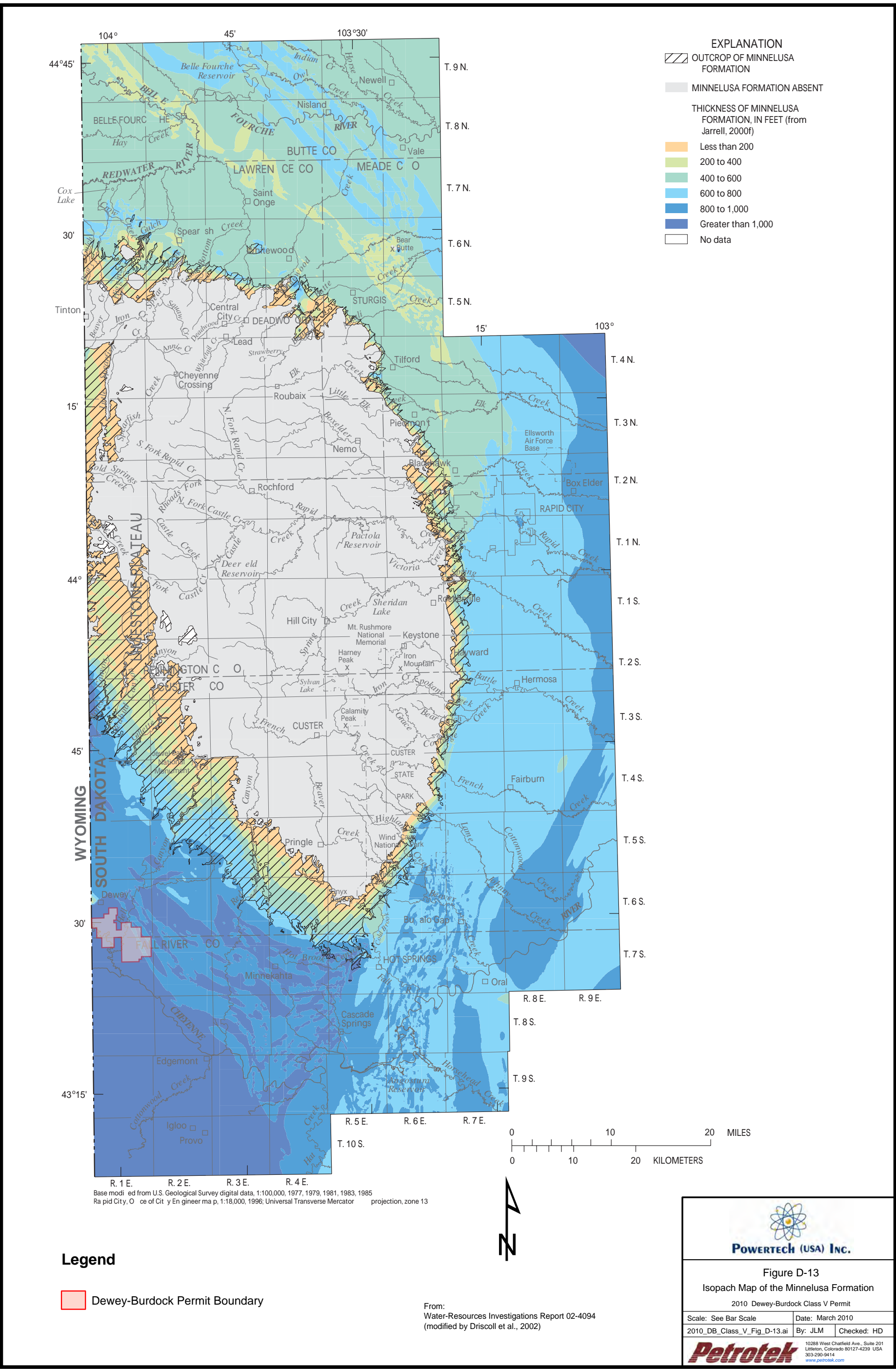
  
**POWERTEK (USA) INC.**

Figure D-12  
Regional Structure Contour Map  
Top of Minnelusa  
2010 Dewey-Burdock Class V Permit

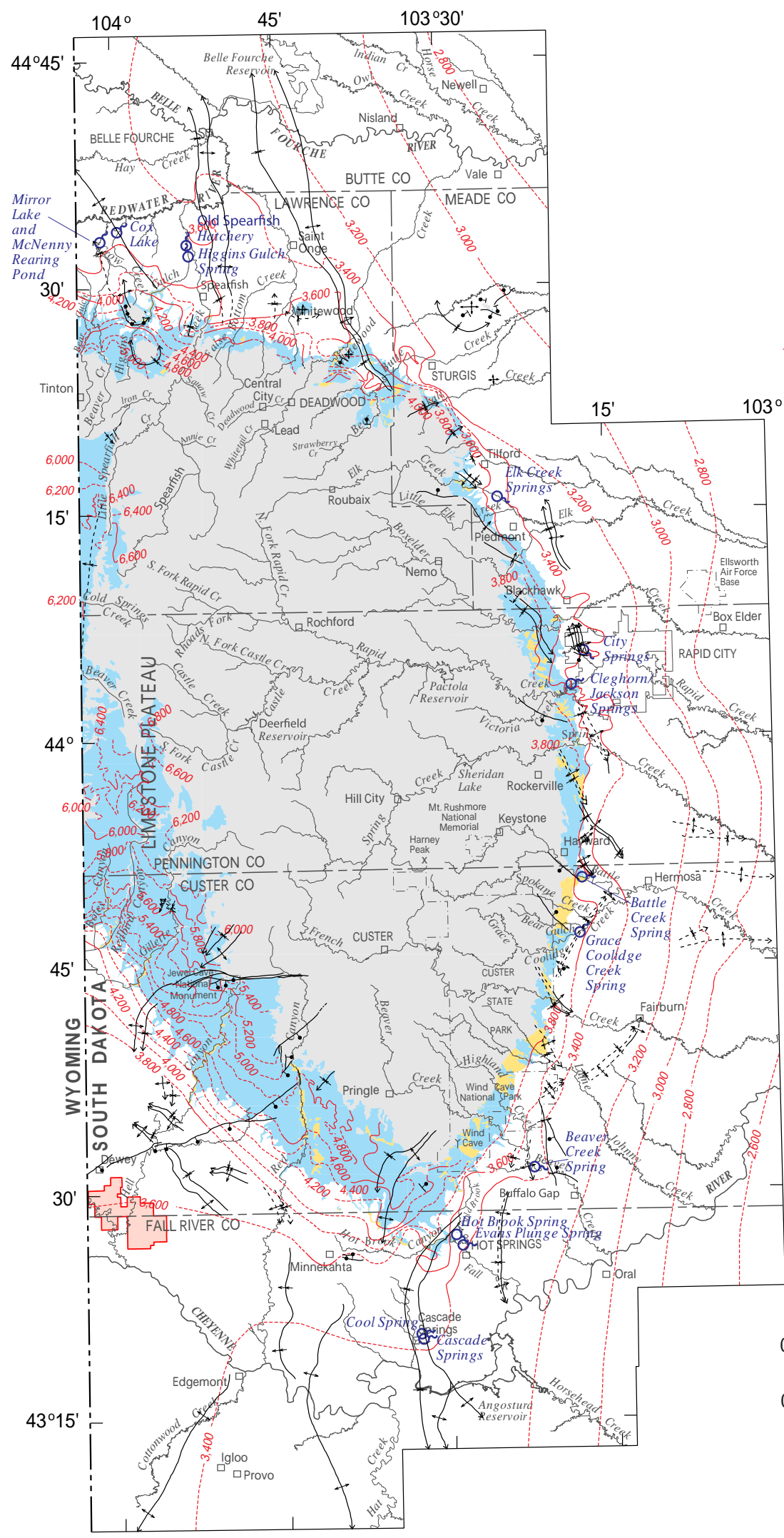
Scale: See Bar Scale	Date: March 2010
2010_DB_Class_V_Fig_D-12.ai	By: KS   Checked: HD

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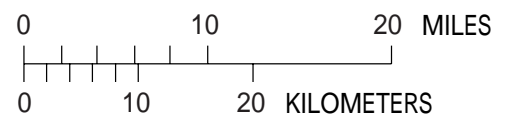


Base modified from U.S. Geological Survey digital data, 1:100,000, 1977, 1979, 1981, 1983, 1985  
Rapid City, Office of City Engineer map, 1:18,000, 1996; Universal Transverse Mercator projection, zone 13





- EXPLANATION**
- OUTCROP OF MINNELUSA FORMATION (modified from Strobel and others, 1999)
  - MINNELUSA FORMATION PRESENT, BUT OVERLAIN BY SURFICIAL DEPOSITS (from Carter and Redden, 1999c)
  - MINNELUSA FORMATION ABSENT (from Carter and Redden, 1999c)
  - 3,000 --- POTENTIOMETRIC CONTOUR-- Shows altitude at which water would have stood in tightly cased, nonpumping wells (modified from Strobel and others, 2000b). Contour interval 200 feet. Dashed where inferred. Datum is sea level
  - - - FAULT--Dashed where approximated. Bar and ball on down-thrown side
  - - - ANTICLINE--Showing trace of axial plane and direction of plunge. Dashed where approximated
  - - - SYNCLINE--Showing trace of axial plane and direction of plunge. Dashed where approximated
  - - - MONOCLINE--Showing trace of axial plane. Dashed where approximated
  - + DOME--Symbol size approximately proportional to size of dome. Dome asymmetry indicated by arrow length
  - ARTESIAN SPRING




Base modified from U.S. Geological Survey digital data, 1:100,000, 1977, 1979, 1981, 1983, 1985  
Rapid City, Office of City Engineer map, 1:18,000, 1996  
Universal Transverse Mercator projection, zone 13

**Legend**

- Dewey-Burdock Permit Boundary

From: Water-Resources Investigations Report 02-4094 (modified by Driscoll et al., 2002)





**POWERTECH (USA) INC.**

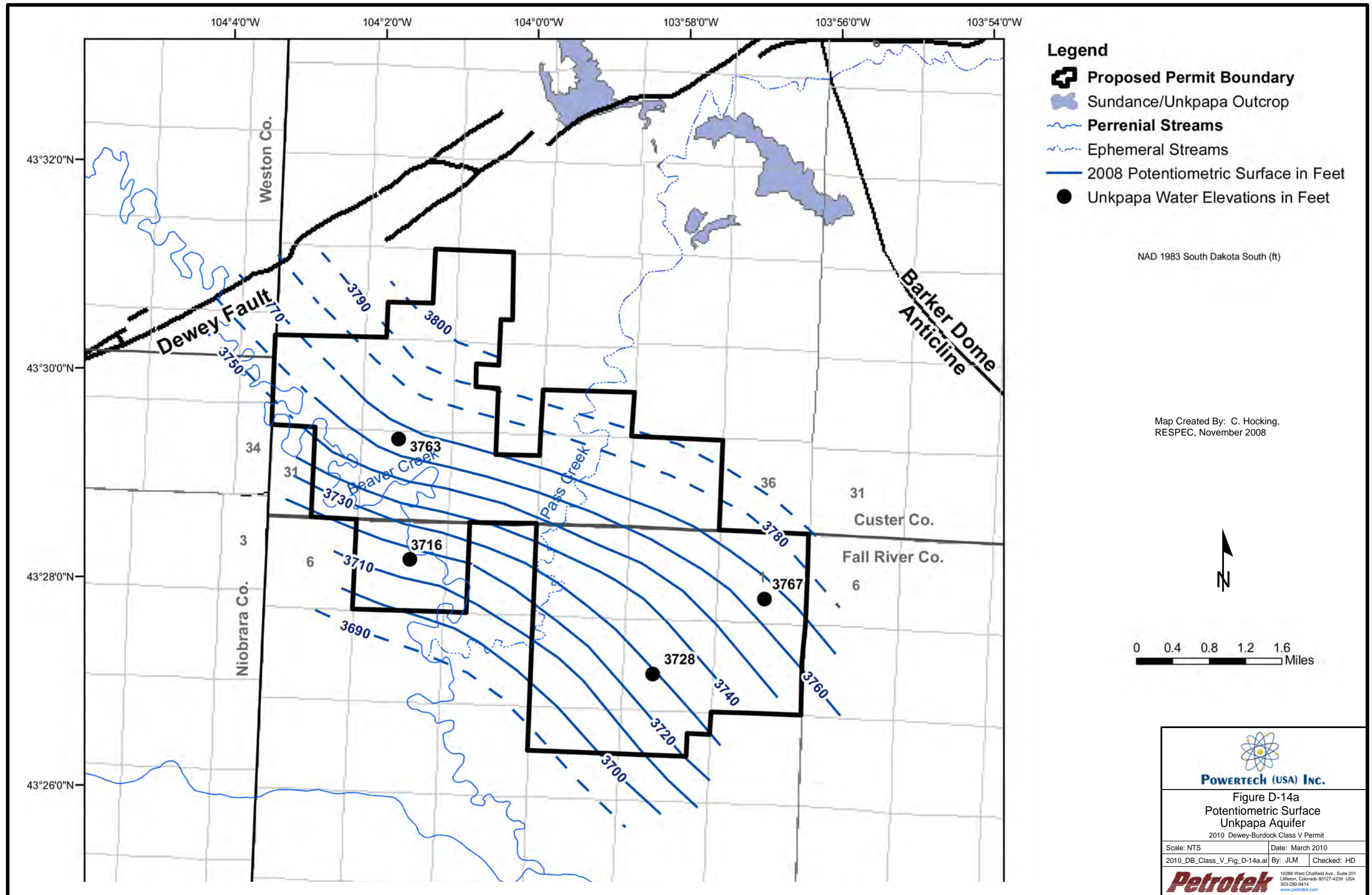
Figure D-14  
Potentiometric Surface of the Minnelusa Formation and Locations of Major Artesian Springs  
2010 Dewey-Burdock Class V Permit

Scale: See Bar Scale	Date: March 2010
2010_DB_Class_V_Fig_D-14.ai	By: JLM Checked: HD

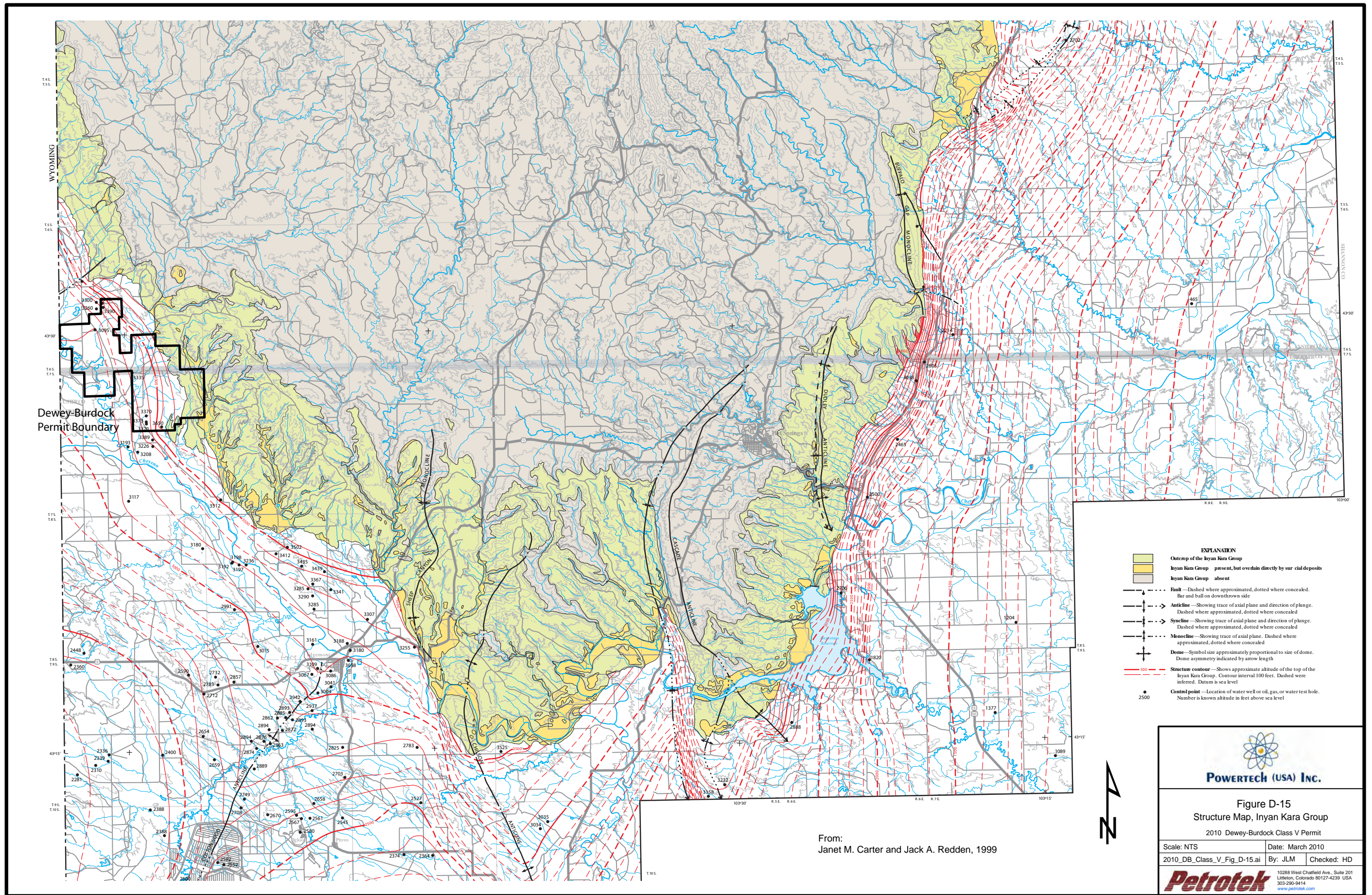
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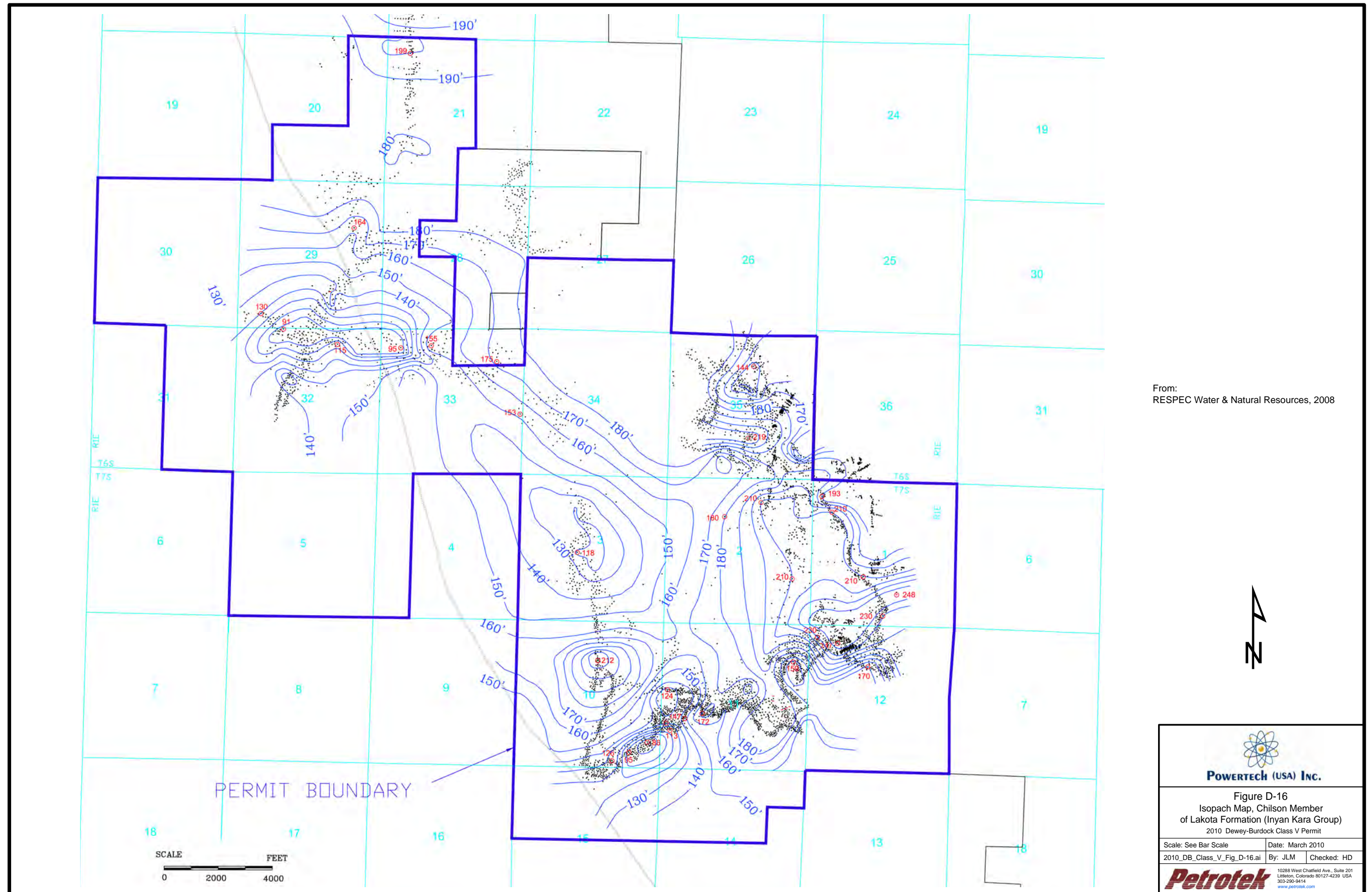






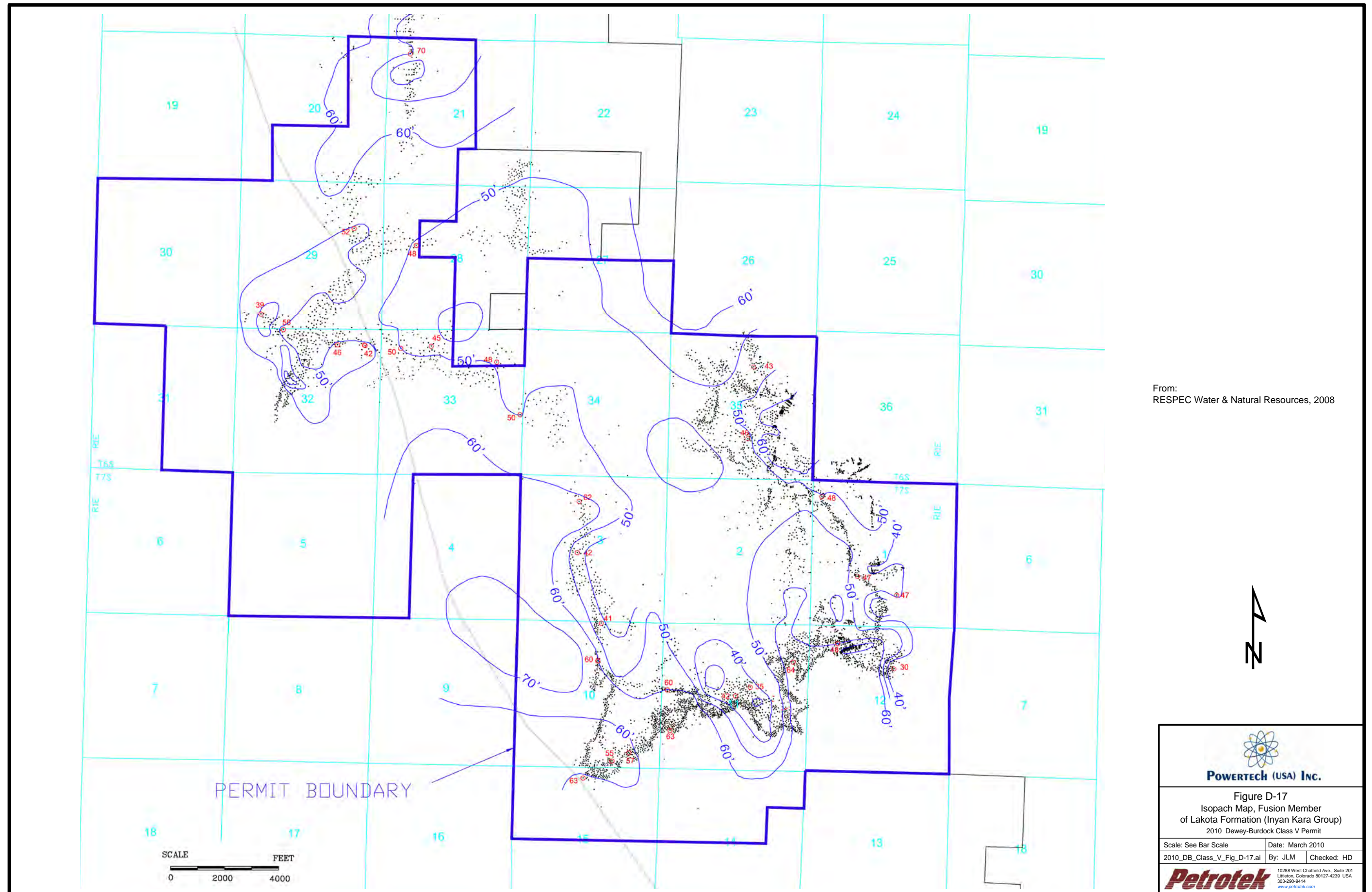






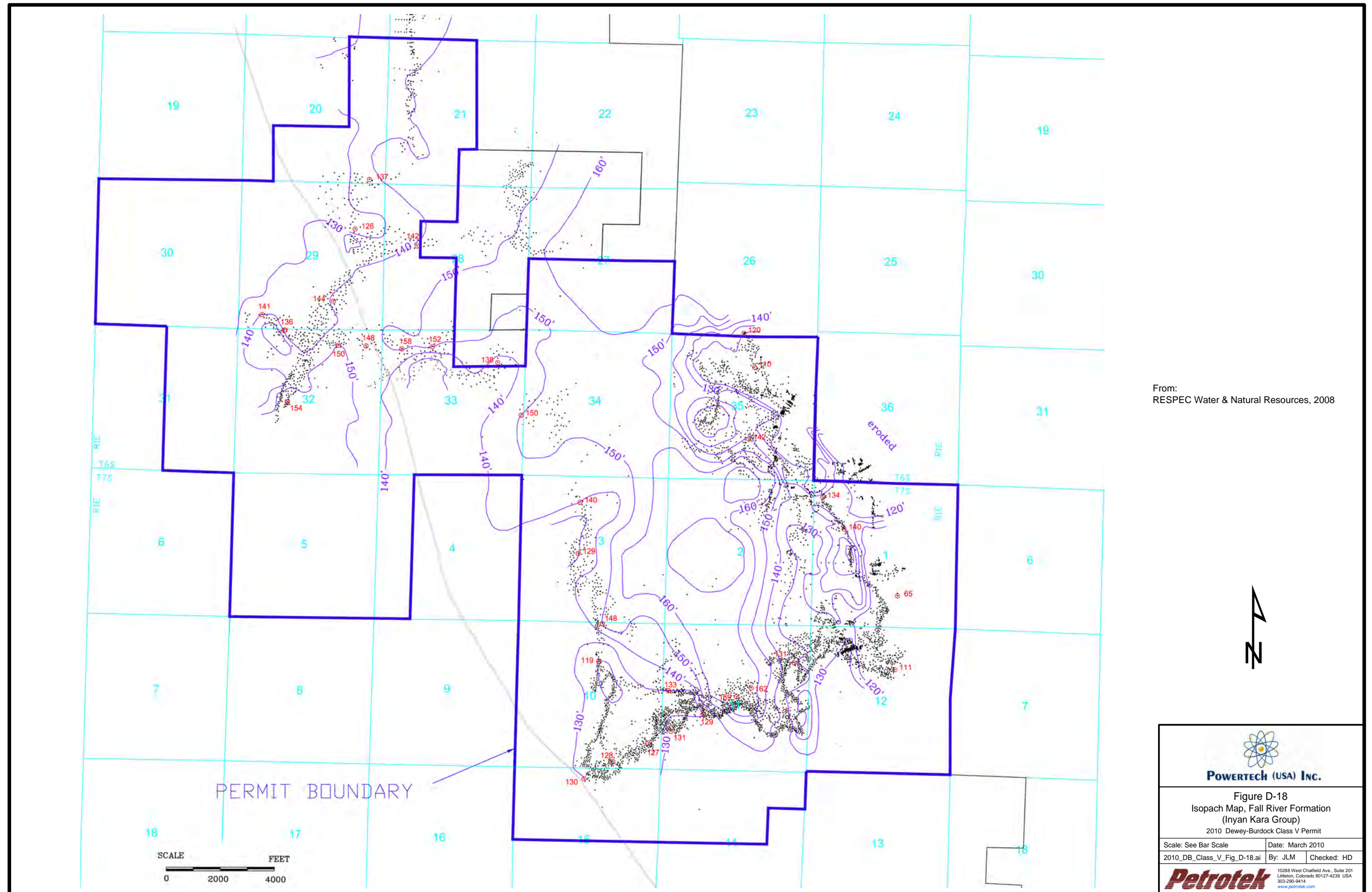
From:  
RESPEC Water & Natural Resources, 2008







From:  
RESPEC Water & Natural Resources, 2008

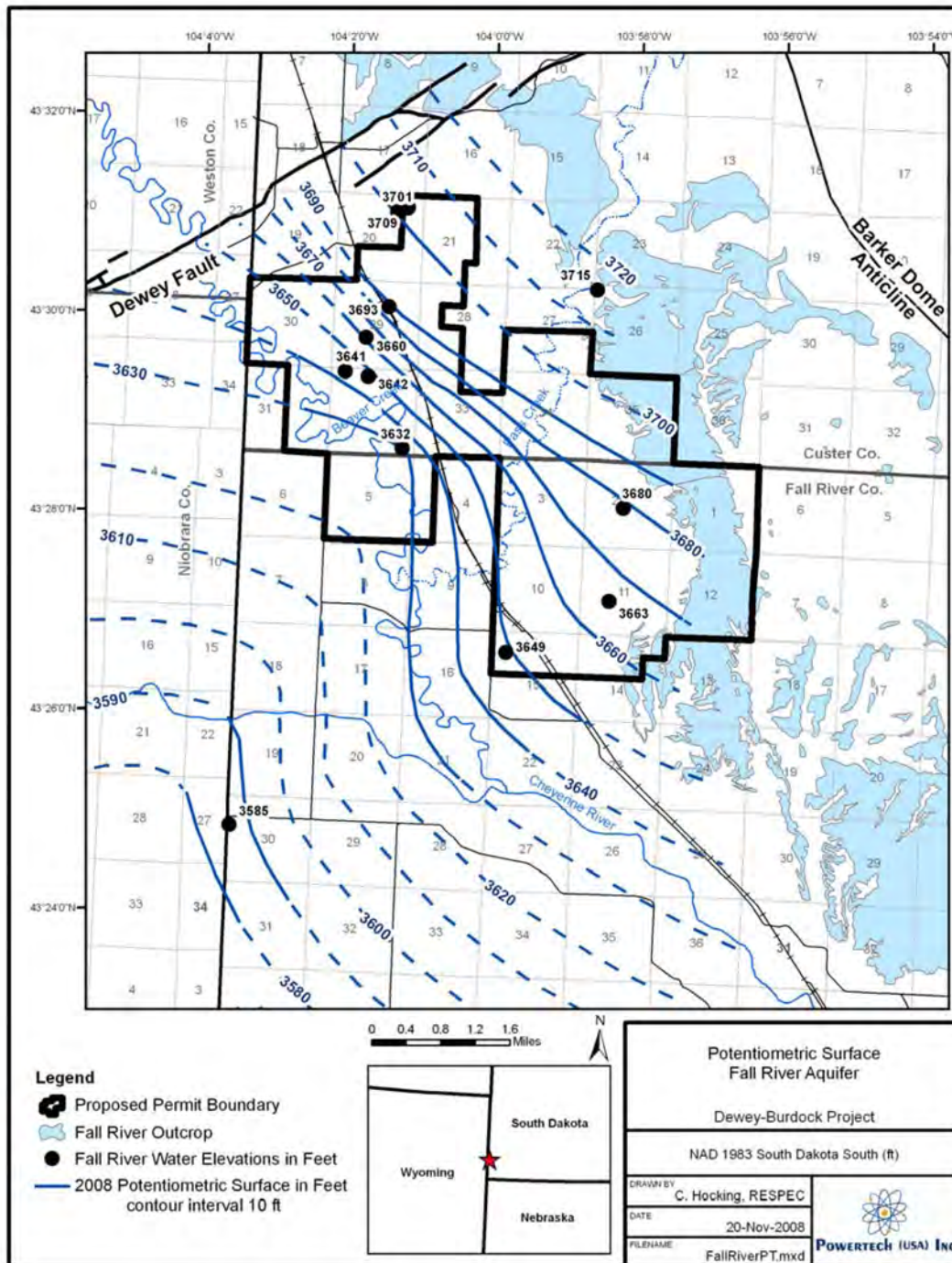




From:  
RESPEC Water & Natural Resources, 2008



 <b>POWERTEK (USA) INC.</b>		
<b>Figure D-18</b> Isopach Map, Fall River Formation (Inyan Kara Group) 2010 Dewey-Burdock Class V Permit		
Scale: See Bar Scale	Date: March 2010	
2010_DB_Class_V_Fig_D-18.ai	By: JLM	Checked: HD
 <small>10288 West Chatfield Ave., Suite 201 Littleton, Colorado 80127-4239 USA 303-290-9414 www.petrotek.com</small>		

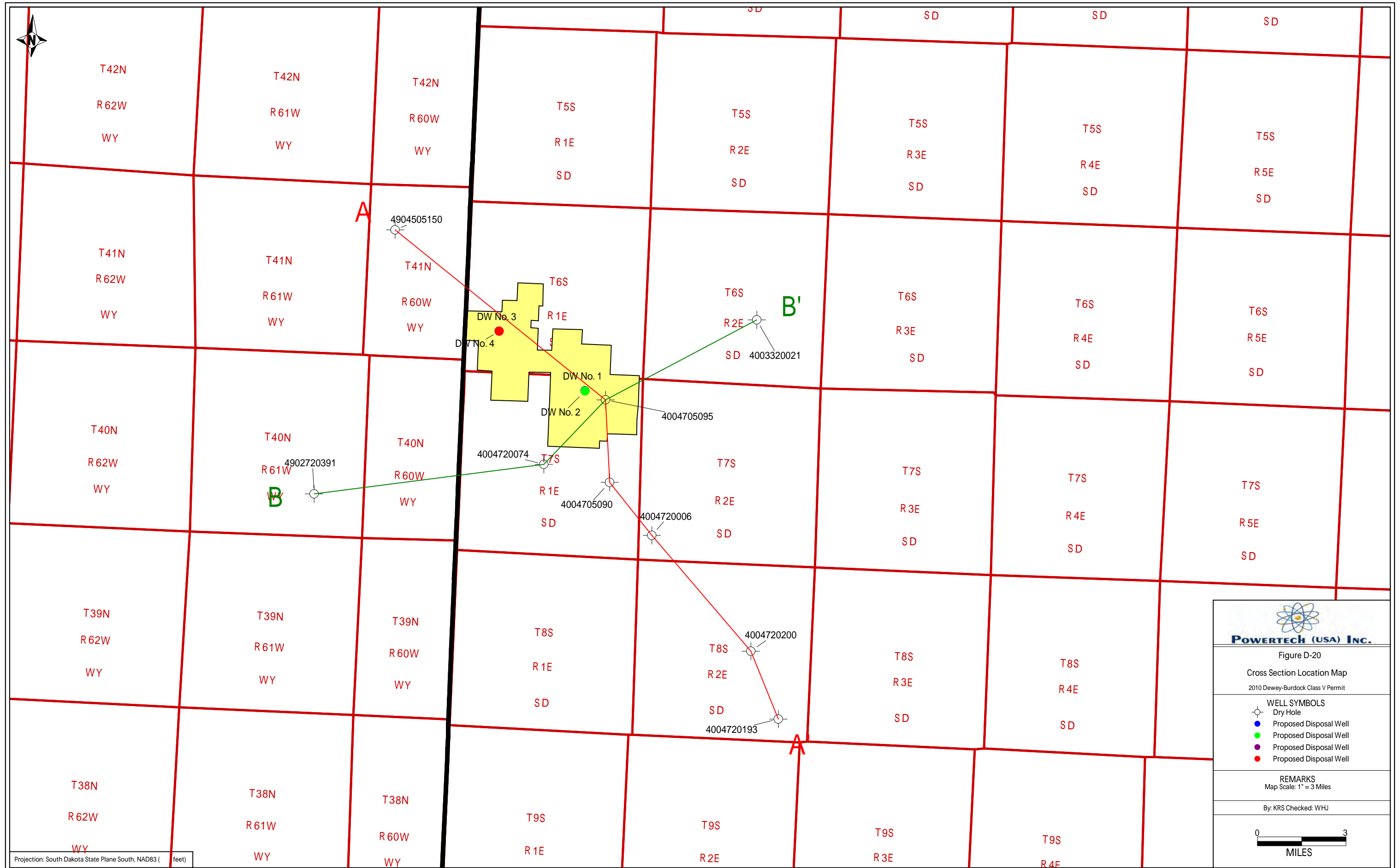


Note: Potentiometric surface based on average water level values at the project site. Contours are dashed where approximate.

Source:  
2009 NRC Application  
Powertech (USA) Inc.  
Figure 2.7-14  
RESPEC Data

<b>POWERTECH (USA) INC.</b>	
Figure D-19 Potentiometric Surface Inyan Kara Group (aka Fall River Aquifer) 2010 Dewey-Burdock Class V Permit	
Scale: See Bar Scale	Date: March 2010
2010_DB_Class_V_Fig_D-19.ai	By: JLM Checked: HD
10288 West Chatfield Ave., Suite 201 Littleton, Colorado 80127-4239 USA 303-290-9414 <a href="http://www.petrotek.com">www.petrotek.com</a>	











  
**POWERTECH (USA) INC.**


Figure D-20  
 Cross Section Location Map  
 2010 Dewey-Burdock Class V Permit

**WELL SYMBOLS**

-  Dry Hole
-  Proposed Disposal Well
-  Proposed Disposal Well
-  Proposed Disposal Well
-  Proposed Disposal Well

**REMARKS**  
 Map Scale: 1" = 3 Miles

By: KRS Checked: WHJ

  
 0 3  
 MILES



**A**  
Subsea  
Depth(ft)  
4500

4904505150  
T41N R60W S7

<9.17MI>

4004705095  
T7S R1E S2

<2.80MI>

4004705090  
T7S S24

<2.29MI>

4004720006  
T5S R1E S27

<5.17MI>

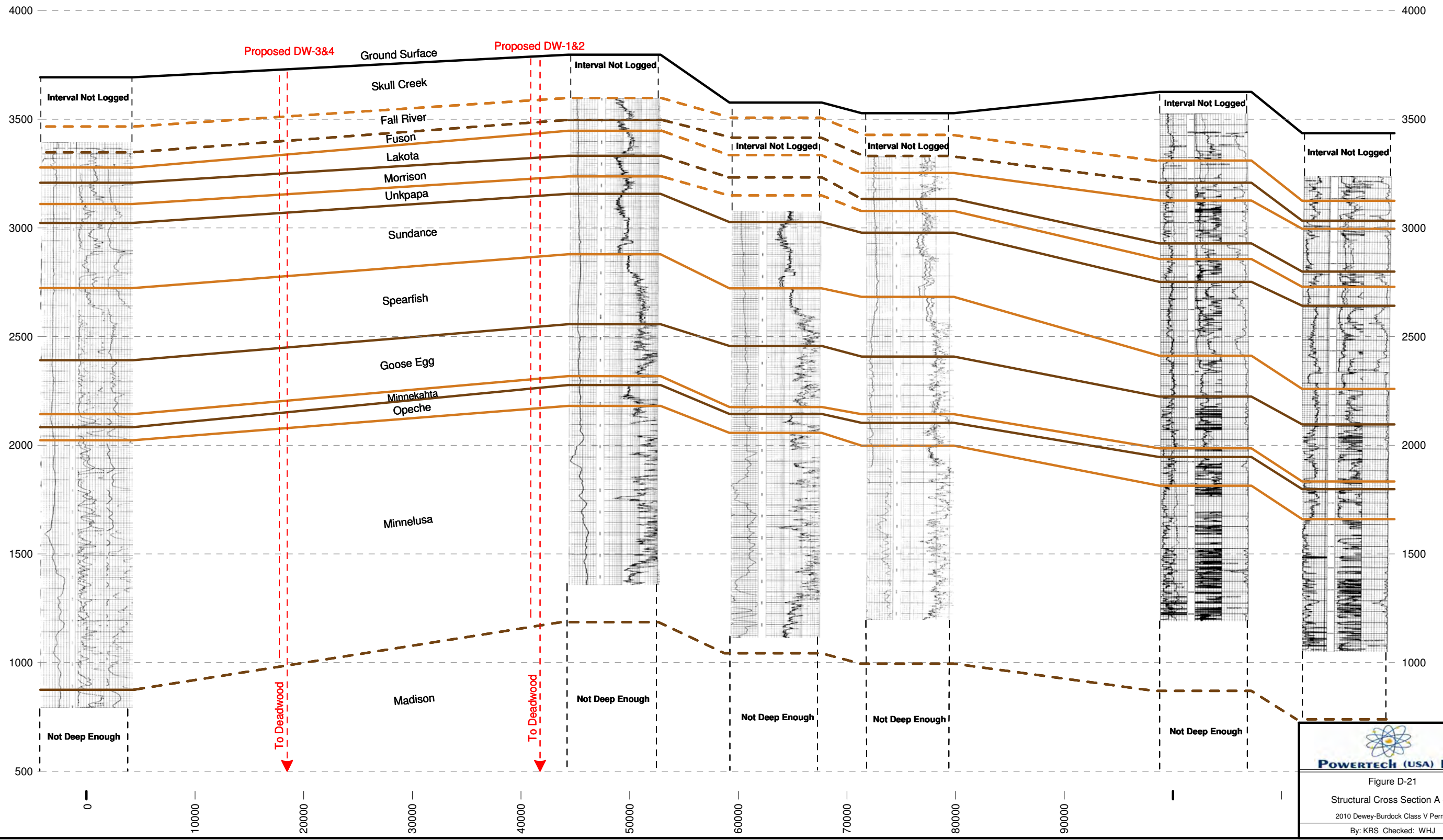
4004720200  
T8S R2E S23


<2.48MI>

4004720193  
T8S R2E S36

**A'**  
Subsea  
Depth(ft)  
4500

Approximate Location of Dewey Burdock Permit Boundary



  
**POWERTECH (USA) INC.**  
 Figure D-21  
 Structural Cross Section A - A  
 2010 Dewey-Burdock Class V Permit  
 By: KRS Checked: WHJ

**B**

Subsea Depth(ft)  
4500  
4902720391  
T40N R61W S26

4004720074  
T7S R1E S21

4004705095  
T7S R1E S2

4003320021  
T6S R2E S22

**B'**

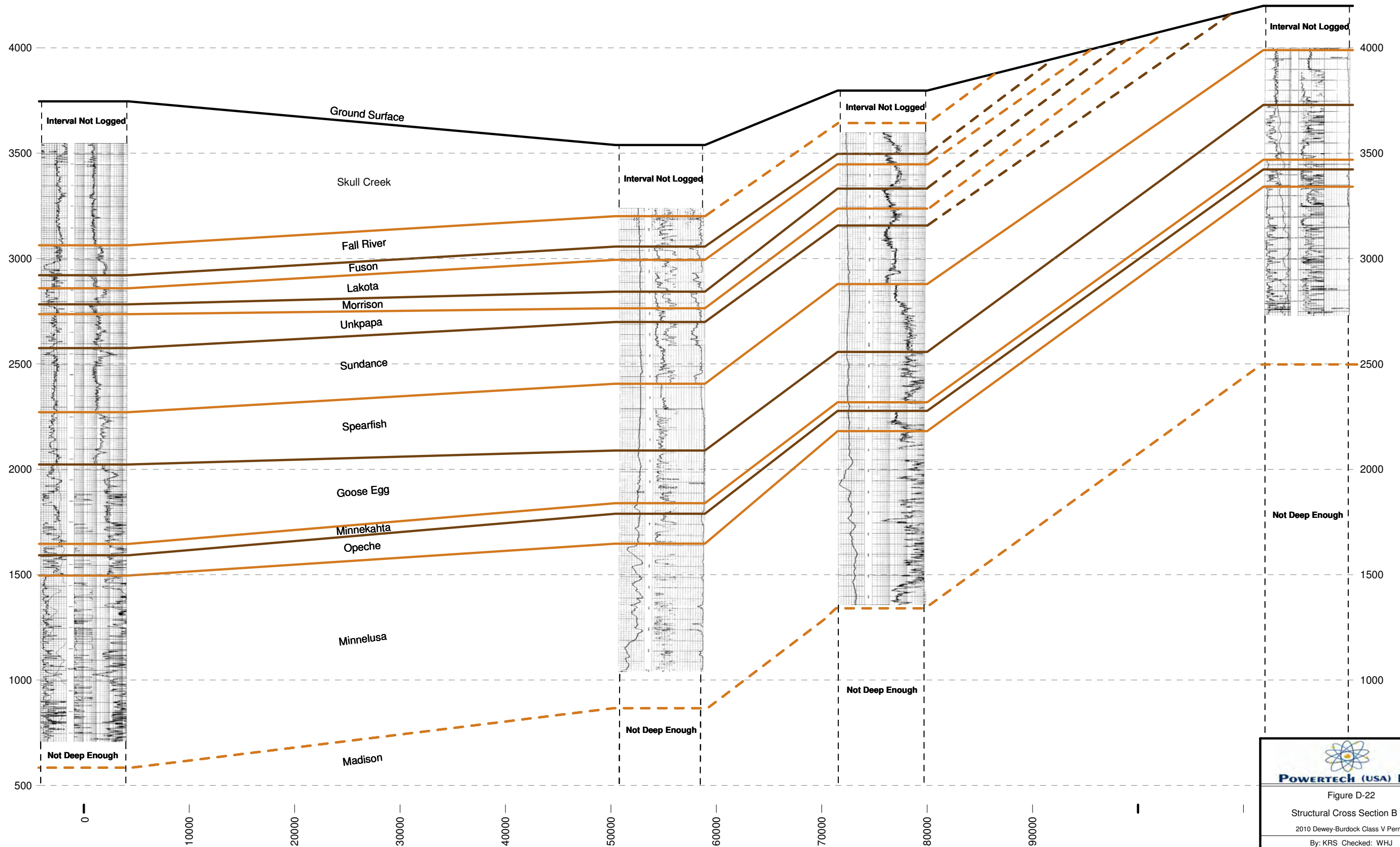
Subsea Depth(ft)  
4500


<7.85MI>

<3.03MI>

<5.80MI>

Approximate Location of Dewey Burdock Permit Boundary



  
**POWERTECH (USA) INC.**  
 Figure D-22  
 Structural Cross Section B - B  
 2010 Dewey-Burdock Class V Permit  
 By: KRS Checked: WHJ

**2.E NAME AND DEPTH OF USDWs**

For Class II Wells (Not Applicable to this Application)