


POWERTECH (USA) INC.

John M. Mays
Vice President – Engineering

January 6, 2014

Mr. Ronald A. Burrows, Project Manager
Office of Federal and State Materials and
Environmental Management Programs
U.S. Nuclear Regulatory Commission
Two White Flint North
11545 Rockville Pike
Rockville, MD 20852

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	ASLBP #:	10-898-02-MLA-BD01	Identified: 8/19/2014 Withdrawn: Stricken:
	Docket #:	04009075	
	Exhibit #:	APP-015-A-00-BD01	
	Admitted:	8/19/2014	
	Rejected:		
	Other:		

RE: Revised Technical Report (TR); Powertech (USA) Inc.'s Proposed Dewey-Burdock Project; Docket No. 40-9075

Dear Mr. Burrows:

Powertech (USA) Inc. (Powertech) hereby submits the revised TR for the proposed Dewey-Burdock Project. The enclosed submittal contains one copy of the revised TR bound in nine volumes as follows:

- Technical Report
- Plates Volume I: Plates 1.5-1 through 2.6-8
- Plates Volume II: Plates 2.6-9 through 2.6-12j
- Plates Volume III: Plates 2.6-13 through 5.7-1
- Appendices Volume I: Appendices 2.2-A through 2.5-F
- Appendices Volume II: Appendices 2.6-A through 2.7-H
- Appendices Volume III: Appendices 2.7-J through 2.8-H
- Appendices Volume IV: Appendices 2.8-I through 3.1-A
- Appendices Volume V: Appendices 3.1-B through 7.3-D

The revised TR is presented as a replacement to the TR submitted in February 2009 and Supplemental Report (SR) submitted in August 2009. Changes are indicated by vertical change bars in the left margin, updated footers on changed pages, and in the accompanying change indices. One change index is presented in a page-by-page format and a second is ordered by the TR Request for Additional Information (RAI) responses and other subsequent information, including:

- TR RAI Revised Responses, June 28, 2011: ML112071064
- Numerical Modeling of Hydrogeologic Conditions, February 27, 2012: ML120620195
- Additional Regional Meteorological Data, June 13, 2012: ML12173A038
- Revised Response to TR RAI 5.7.8-3(b), June 27, 2012: ML12179A534
- Action Items from August 30, 2012 Public Meeting, September 18, 2012: ML12263A250

In addition to the change indices, please find attached revised responses to several TR RAIs. A brief description of the revised responses follows:

- TR RAI P&R-10 Response: Corrected several minor errors, including: (1) corrected completion interval of Well 5 from Chilson to Fall River, (2) corrected completion interval and use of Well 614, (3) indicated that Well 635 is not actually a well but a pipeline from Well 5 (and updated well count accordingly), (4) indicated that Well 704 was completed into two different intervals at different times, and (5) removed Wells 116 and 506 from Table P&R-10-2, since they are correctly listed on Table P&R-10-1.
- TR RAI P&R-14(b) Response: Modified to indicate that a copy of the South Dakota Department of Environment and Natural Resources groundwater discharge plan (GDP) permit application was provided to NRC in March 2012.
- TR RAI 2.7-13(f) Response: Corrected the description of Well 61 relative to potential well field areas. The previous response indicated that Well 61 was more than ¼ mile from potential well fields, which was inconsistent with the TR RAI P&R-10 response and Figures TR RAI P&R-10-2 and TR RAI P&R-10-3 showing Well 61 within ¼ mile from potential well fields.
- TR RAI 2.7-15 Response: Modified to describe how duplicate sample results have been included in the surface water and groundwater analytical results appendices rather than in a separate quality assurance review appendix, which was not requested in the RAI.
- TR RAI 5.7.8-17 Response: Modified for consistency with Draft License Condition (LC) 12.10 to indicate that all domestic, stock and irrigation wells within 2 km of well field boundaries (as measured from the perimeter monitoring well rings) will be sampled prior to operations and all domestic and irrigation wells within 2 km of the boundary of each well field will be monitored during operations.

- TR RAI 6.1-4 Response: Revised to indicate that the potential drawdown impact analysis was provided to NRC in February 2012 in the numerical groundwater model report (Appendix 6.1-A in the revised TR), which supersedes the analytical drawdown potential impact analysis for the Inyan Kara aquifer that was submitted as Appendix 6.1-A to the June 2011 TR RAI responses.

Please note that the previously proposed aquifer exemption boundary depicted on enclosed Plates 2.7-2 and 3.1-2 through 3.1-5 does not match the aquifer exemption boundary currently requested from the U.S. Environmental Protection Agency (EPA) in Powertech's Class III UIC permit application. The previously proposed aquifer exemption boundary has not been updated in these plates, since the currently requested boundary is still under review by EPA.

Included with the bound copy of the revised TR is a DVD containing all files used to print the bound copy in Adobe PDF format that meet the NRC requirements for electronic submittals, including optical character recognition (OCR), 300 dpi resolution, and embedded fonts (except for scanned pages). Two of the appendices containing laboratory analytical results (Appendices 2.7-F and 2.7-H) are provided on the DVD only to minimize printing.

Should there be any questions or concerns regarding the enclosed, please contact the undersigned at your earliest convenience.

Respectfully yours,



John Mays

cc: R. Blubaugh
R.F. Clement
M. Hollenbeck

ATTACHMENT 1

CHANGE INDICES

- **Page-by-Page Change Index**
- **Change Index Sorted by TR RAI Responses and Other Subsequent Information**

Page-by-Page Change Index

Page(s)	Item/Location	Revision	Source of Revision
Technical Report			
1-1	Sec. 1.1, ¶ 1, line 1	Added closing parenthesis in "(Powertech (USA))"	Typographical correction
1-2	2nd bullet	Removed reference to South Dakota Administrative Rule 74:29:11	For consistency with South Dakota Codified Law 34A-2-126, which tolled ARSD 74:29:11 in 2011
1-3	Sec. 1.2, ¶ 1, line 4	Changed "stacking" to "staking"	Typographical correction
1-3	Sec. 1.2, ¶ 1, line 7	Clarified that historical uranium production included shallow underground operations in addition to open pits	TR RAI P&R-2 response
1-3	Sec. 1.2, ¶ 4, line 1	Added "leases for"	Minor clarification
1-4	Sec. 1.3, ¶ 2, line 7	Removed references to Hot Springs, SD and Wellington, CO offices	Updated to reflect that these offices are no longer open
1-4	Sec. 1.4, ¶ 1, line 4	Changed "Dewey Road" to "S. Dewey Road"	For consistency with updated figures (e.g., Fig. 3.1-1).
1-5	Figure 1.4-1	Replaced figure and revised figure title	Updated title block, etc. for consistency with other figures
1-6	Sec. 1.6, lines 1-3	Updated geologic nomenclature to clarify that the targeted mineralization occurs in the Fall River Formation and Chilson Member of the Lakota Formation	Minor clarification
1-7	¶ 3, line 3	Added "through"	Typographical correction
1-8	Sec. 1.8, lines 2-3	Clarified that the project annual average flow rate will be limited to 4,000 gpm	TR RAI P&R-14(c) response
1-8	Sec. 1.8, lines 3-4	Clarified that yellowcake production will be limited to 1 million lb/yr	For consistency with draft license condition (LC) 10.2
1-8	Sec. 1.9, ¶ 1, line 1	Clarified the type of license that will be issued by NRC	For consistency with draft license
1-8	Sec. 1.9, ¶ 1, line 3	Clarified that wastewater disposal will occur via deep disposal wells and/or land application	TR RAI P&R-14(b) response
1-8	Sec. 1.9, ¶ 1, lines 5-6	Clarified that either Burdock or Dewey well fields may be developed first	For consistency with draft LC 10.10(A)
1-8	Sec. 1.9, ¶ 2, line 6	Clarified that uranium-loaded resin is the material that may be processed from other ISL projects	Minor clarification

Page-by-Page Change Index

Page(s)	Item/Location	Revision	Source of Revision
1-9	Figure 1.9-1	Revised the projected schedule	For consistency with TR RAI 6.1-11 response
1-10	Sec. 1.10, ¶ 1, lines 2-3	Clarified wastewater disposal options	TR RAI P&R-14(b) response
1-10	Sec. 1.10, ¶ below bullet list	Deleted paragraph describing periodic releases of water from storage ponds	TR RAI P&R-14(b) response
1-10	Sec. 1.10, ¶ below bullet list, line 5	Clarified that AEA-regulated waste will be disposed at an NRC or agreement state-licensed facility	For consistency with draft LC 9.9 and revised Sec. 3.1.9
1-10	Sec. 1.10, ¶ below bullet list, line 7	Clarified that non-AEA-regulated solid waste will be disposed at an appropriately permitted Subtitle D facility	For consistency with Sec. 8.3.2.3
1-10 - 1-11	Sec. 1.11, lines 3-4	Stated that groundwater restoration will be conducted pursuant to 10 CFR 40, Appendix A, Criterion 5	TR RAI 6.1-1 response
1-11	¶ 2, lines 5-6	Clarified that AEA-regulated waste will be disposed at an NRC or agreement state-licensed facility	For consistency with draft LC 9.9 and revised Sec. 3.1.9
1-11	Sec. 1.12, ¶ 1, last line	Added reference to Appendix 6.6-A, Restoration Action Plan	TR RAI MI-4(b) response
1-11 - 1-12	Sec. 1.12, ¶ 2 (entire)	Added commitment to supply a financial assurance mechanism in a form and in an amount approved by NRC staff	TR RAI MI-4(a) response
2-1	Sec. 2.1, ¶ 1, line 3	Clarified that most land is private (small portion managed by BLM)	TR RAI 2.9-15 response
2-1	Sec. 2.1, ¶ 2, line 4	Updated the location of the main access road to the CPP	For consistency with revised Figure 3.1-1
2-1	Sec. 2.1, ¶ 2, line 6	Added "Dewey"	Minor clarification
2-1	Sec. 2.1, ¶ 2, last 3 lines	Revised reference from Figure 2.1-1 to Figures 3.1-1 and 3.1-2, which replaced Figure 2.1-1	TR RAI P&R-13 response
2-2	Figure 2.1-1	Removed Figure 2.1-1, which has been replaced with Figures 3.1-1 and 3.1-2	TR RAI P&R-13 response
2-3	Sec. 2.2.1, line 1	Added "counties"	Minor clarification
2-3	Sec. 2.2.1, lines 2-3	Clarified percentage of BLM land in project area	TR RAI 2.9-15 response
2-3	Sec. 2.2.2, ¶ 1, line 4	Clarified that approximately 390 acres of land are used for hay production	Minor clarification
2-3	Sec. 2.2.2, ¶ 1, lines 6-7	Indicated that pigs and vegetable gardens are also located in the vicinity of the project area	TR RAI 2.9-11 response

Page-by-Page Change Index

Page(s)	Item/Location	Revision	Source of Revision
2-4	¶ 1, line 5	Clarified that the federal land is managed by the BLM	TR RAI 2.9-15 response
2-4	¶ 2, lines 1-7	Clarified hunting access within the project area	TR RAI 2.9-15 response
2-4	Table 2.2-2, row 7	Corrected min. distance from project boundary to BHNF	For consistency with revised Figure 3.1-1
2-4a	All except last ¶	Clarified current and future hunting access with the project area	TR RAI 2.9-15 response
2-4a	last ¶, line 1	Clarified that Table 2.2-3 shows distance to residences from the center of the PAA	Minor clarification
2-4a	last ¶, lines 2-3	Clarified that there are residences within the PAA	TR RAI 5.7.7-13 response
2-5	Sec. 2.2.2.1, lines 5-6	Clarified that there are historical open mine pits in the PAA	TR RAI P&R-2 response
2-5	Sec. 2.2.2.1, lines 8-9	Corrected BNSF acronym	Typographical correction
2-5	Sec. 2.2.2.2, line 1	Corrected S. Dewey Road designation	For consistency with Sec. 1.4
2-6	Sec. 2.2.2.3, ¶ 1, line 2	Corrected "NRC"	Typographical correction
2-6	Sec. 2.2.2.3, ¶ 2, line 2	Corrected "Dawes"	Typographical correction
2-6	Sec. 2.2.3.1, ¶ 2, line 2	Corrected "permit" to "project"	Typographical correction
2-7	¶ 1, line 4	Corrected "permit" to "project"	Typographical correction
2-7	¶ 2, line 3	Corrected that other streams are ephemeral stream channels	TR RAI 2.7-3 response
2-7	¶ 2, lines 4-5	Clarified presence of impoundments within project area	TR RAI 2.9-43(a) response
2-7	¶ 2, line 6	Removed reference to "facility zone"	For consistency with revised Figure 2.7-1
2-8	Figure 2.2-1	Replaced figure	Updated title block, etc. for consistency with other figures; updated title; updated hatching for clarity
2-10	¶ 4, lines 1-2	Clarified stream sampling procedures	TR RAI 2.9-43(b) response
2-10	Sec. 2.2.3.2.1, ¶ 1, lines 2-3	Replaced previous discussion with reference to revised Section 2.7.2.1	For consistency with revised Section 2.7.2.1
2-12	Figure 2.2-2	Replaced figure	Updated title block, etc. for consistency with other figures
2-13	Figure 2.2-3	Replaced figure	Updated title block, etc. for consistency with other figures

Page-by-Page Change Index

Page(s)	Item/Location	Revision	Source of Revision
2-15	Sec. 2.2.3.2.3 (entire)	Updated to summarize well inventory within 2 km of the project boundary	TR RAI P&R-10 response (as revised December 2013)
2-16	Figure 2.2-4	Replaced with figure showing stock and domestic wells within 2 km of the project boundary	For consistency with TR RAI P&R-10 response
2-17	¶ 1 (entire)	Replaced with reference to current water usage estimate in the numerical groundwater model report	February 2012 numerical groundwater model report (ML12062A096)
2-19	¶ 1, line 3	Corrected length of project boundary that occurs along the state line	For consistency with Figure 3.1-1
2-21	Figure 2.3-1	Replaced figure	Updated title block for consistency with other figures
2-24	Table 2.3-2	Revised title to clarify that the distance is from the center of the proposed project area	Minor clarification
2-24	Sec. 2.3.2, ¶ 1, line 5	Clarified that the described population is within the entire two counties and not within the PAA	Minor clarification
2-26	Figure 2.3-2	Replaced figure	Made legend legible
2-29	¶ 1, lines 3-4 and ¶ 2, line 5	Removed negative signs when discussing population decreases	Minor clarification
2-31	Sec. 2.3.2.2, ¶ 1, line 2	Clarified that the described school districts are "in and around" the PAA	Minor clarification
2-37	Figure 2.3-6	Replaced figure and added source	Minor formatting revisions to figure plus source added for clarification
2-58	Sec. 2.5.1, ¶ 3, lines 5-6	Revised the dates for the site-specific analysis and removed reference to Chadron, NE site	TR RAI 2.5-1(a) and 2.5-1(b) responses
2-58	Sec. 2.5.1, ¶ 4 (entire)	Revised to correct reference from Plate 2.5-1 to Figure 2.5-12, added description of Newcastle site and omitted reference to Oral, SD site	TR RAI 2.5-1(a) and 2.5-1(b) responses
2-59	Table 2.5-1	Added details for the Newcastle WRC site and made minor typographical corrections to X and Y coordinates	TR RAI 2.5-1(a) response
2-59 - 2-61	Sec. 2.5.2 (entire, including Figures 2.5-1 and 2.5-2)	Replaced previous regional overview discussion of Chadron site with discussion of Newcastle WRC site	TR RAI 2.5-1(a) and 2.5-1(b) responses

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Page(s)	Item/Location	Revision	Source of Revision
2-61	Sec. 2.5.2.1, line 1	Indicated source of regional temperature data	Minor clarification
2-62	Figure 2.5-3	Corrected source	Typographical correction
2-63	Table 2.5-2	Corrected source	Typographical correction
2-64	¶ 1, lines 2-5	Clarified that averages, minimum and maximum temperatures refer to monthly values	Minor clarification
2-64	Figure 2.5-4	Corrected source	Typographical correction
2-65	Figure 2.5-5	Corrected source	Typographical correction
2-66	Table 2.5-3	Corrected source	Typographical correction
2-67	Table 2.5-4	Corrected source	Typographical correction
2-68	¶ 1, lines 1-2	Replaced discussion of Jewel Cave and Oral sites with Newcastle WRC site	TR RAI 2.5-1(a) and 2.5-1(b) responses
2-68	Figure 2.5-6	Replaced previous Figure 2.5-6 with revised figure depicting data from Newcastle WRC site	TR RAI 2.5-1(a) and 2.5-1(b) responses
2-69	Figure 2.5-7	Removed Figure 2.5-7 depicting temperature variations at Oral site	TR RAI 2.5-1(a) and 2.5-1(b) responses
2-69	Sec. 2.5.2.2, ¶ 1, lines 2-7	Revised text to discuss relative humidity at Newcastle WRC site	TR RAI 2.5-1(a) and 2.5-1(b) responses
2-70	Figure 2.5-7	Replaced previous Figures 2.5-8 and 2.5-9 with new Figure 2.5-7 depicting relative humidity data from the Newcastle WRC site	TR RAI 2.5-1(a) and 2.5-1(b) responses
2-71	Previous ¶ above Sec. 2.5.2.3	Moved to p. 2-69 and revised to discuss Newcastle WRC site	TR RAI 2.5-1(a) and 2.5-1(b) responses
2-71	Sec. 2.5.2.3, ¶ 1, lines 1-2	Clarified information depicted in Figure 2.5-10 and Table 2.5-5	Minor clarification
2-71	Sec. 2.5.2.3, ¶ 1, lines 5-6	Changed "annual accumulated" to "total annual"	Minor clarification
2-71	Sec. 2.5.2.3, ¶ 2 (entire)	Added summary of precipitation data from the Newcastle WRC site	TR RAI 2.5-1(a) and 2.5-1(b) responses
2-71	Figure 2.5-10	Corrected source	Typographical correction
2-72	Table 2.5-5	Corrected source	Typographical correction
2-71	¶ 1, line 4	Changed to "surrounding Black Hills"	Minor clarification
2-72a	Figures 2.5-10a and 2.5-10b	Added Figures 2.5-10a and 2.5-10b depicting precipitation data from the Newcastle WRC site	TR RAI 2.5-1(a) and 2.5-1(b) responses
2-73	Figure 2.5-11	Corrected source	Typographical correction
2-74	Figure 2.5-12	Replaced figure	Revised figure title and updated title block, etc. for consistency with other figures; added source

Page-by-Page Change Index

Page(s)	Item/Location	Revision	Source of Revision
2-75 - 2-75i	Sec. 2.5.2.4 (entire)	Replaced entire section with description of wind patterns at the Newcastle WRC site	TR RAI 2.5-1(c) response and Addendum to TR RAI 2.5-1(c) response
2-76	Figure 2.5-14	Removed Figure 2.5-14 depicting the wind class frequency distribution for Oral, South Dakota	TR RAI 2.5-1(c) response and Addendum to TR RAI 2.5-1(c) response
2-76	Sec. 2.5.2.5, lines 1-2	Updated figure references and clarified "degree" days	Minor clarification
2-77	Figure 2.5-21	Corrected source and updated figure number	Typographical correction
2-77	Figure 2.5-22	Corrected source and updated figure number	Typographical correction
2-78	Figure 2.5-23	Corrected source and updated figure number	Typographical correction
2-78	¶ 1, line 1	Added to reference Figure 2.5-24	TR RAI 2.5-1(a) and 2.5-1(b) responses
2-78	Sec. 2.5.2.6, last line	Updated figure number	Typographical correction
2-78a	Figure 2.5-24	Added Figure 2.5-24 with cooling, heating and growing degree data from the Newcastle WRC site	TR RAI 2.5-1(a) and 2.5-1(b) responses
2-78b	Figure 2.5-25	Corrected source and updated figure number	Typographical correction
2-78b	last ¶	Added discussion of ET data from Casper, WY	For consistency with discussion of Newcastle WRC site
2-78c	All text	Added discussion of ET data from Casper, WY	For consistency with discussion of Newcastle WRC site
2-78c	Figure 2.5-26	Added new figure with ET data from Casper, WY	For consistency with discussion of Newcastle WRC site
2-79	Figure 2.5-18	Moved along with text above figure to p. 2-78b and renumbered figure	Formatting change only
2-79	Sec. 2.5.3, ¶ 2	Clarified configuration and installation of site meteorological station	TR RAI 2.5-2 response
2-79	Sec. 2.5.3, ¶ 3-4	Described the operation and data recovery of the site meteorological station	TR RAI 2.5-10 response
2-80	Table 2.5-6	Revised instrument specifications	TR RAI 2.5-9 response
2-80	Sec. 2.5.3.1, line 4	Updated figure number	Typographical correction
2-81	Figure 2.5-27	Corrected source and updated figure number	Typographical correction
2-81	¶ 1, line 1	Updated figure number	Typographical correction
2-82	Figure 2.5-28	Corrected source and updated figure number	Typographical correction

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Page(s)	Item/Location	Revision	Source of Revision
2-82	¶ 1, line 1	Updated figure number	Typographical correction
2-83	Figure 2.5-29	Corrected source and updated figure number	Typographical correction
2-83	Sec. 2.5.3.2, ¶ 1, line 1	Changed "was" to "were"	Typographical correction
2-83	Sec. 2.5.3.2, ¶ 1, line 2	Omitted description of statistical analysis and referred instead to revised Appendix 2.5-C	TR RAI 2.5-3 response
2-83	Sec. 2.5.3.2, ¶ 1, line 3	Updated average wind speed and frequency of calm winds to match revised wind roses	TR RAI 2.5-4 response and for consistency with revised Table 2.5-7
2-83a	All text	Revised discussion on joint frequency distributions and wind roses	TR RAI 2.5-4, 2.5-5(a), 2.5-5(b), 2.5-6 and 2.5-7 responses
2-84	Table 2.5-7	Revised table to be consistent with revised wind data analysis and to use consistent units; corrected source	TR RAI 2.5-3, 2.5-4 and 2.5-5(a) and 2.5-5(b) responses
2-85	Figures 2.5-30 and 2.5-31	Revised quarterly wind roses	TR RAI 2.5-4 response
2-85a	Figure 2.5-32	New figure depicting annual wind rose	TR RAI 2.5-4 response
2-85b	Figure 2.5-33	New figure depicting monthly wind speeds	TR RAI 2.5-4 response
2-85c	Figure 2.5-34	New figure comparing the annual wind roses at the 10 m and 3 m levels	TR RAI 2.5-4 response
2-85d	Figure 2.5-35	New figure comparing the summer wind roses at the 10 m and 3 m levels	TR RAI 2.5-4 response
2-86	Sec. 2.5.3.3, line 6	Updated figure number	Typographical correction
2-86	Figure 2.5-36	Corrected source and updated figure number	Typographical correction
2-86	Sec. 2.5.3.4, line 2	Updated figure number	Typographical correction
2-87	Figure 2.5-37	Corrected source and updated figure number	Typographical correction
2-87	Sec. 2.5.3.5, line 6	Updated figure number	Typographical correction
2-87a	Figure 2.5-38	Corrected source and updated figure number	Typographical correction
2-87a - 2-87b	Sec. 2.5.3.6, including Tables 2.5-8 and 2.5-9	Added section describing Upper Atmosphere Characterization	TR RAI 2.5-8 response
2-88	Sec. 2.5.4	Added TR RAI response references	Various Sec. 2.5 TR RAI responses
2-88	Sec. 2.6.1	Added a new Section 2.6.1 for regional geology	Typographical correction

Page-by-Page Change Index

Page(s)	Item/Location	Revision	Source of Revision
2-89	Figure 2.6-1	Replaced figure	Updated title block, etc. for consistency with other figures
2-90	Sec. 2.6.1.2, ¶ 2, lines 1-2	Corrected nomenclature - Sundance Formation and Unkpapa Sandstone	For consistency with TR RAI responses (e.g., P&R-8)
2-91	Sec. 2.6.2, ¶ 1, line 1	Added "surface"	Minor clarification
2-91	Sec. 2.6.2, ¶ 1, lines 2-3	Clarified the units making up the Graneros Group	For consistency with TR RAI responses (e.g., P&R-1)
2-91	Sec. 2.6.2, ¶ 2, last line	Replaced reference to Plate 2.6-1 with Figure 2.6-2a (Type Log)	TR RAI P&R-1 response
2-92	Figure 2.6-2	Replaced figure	Updated title block, etc. for consistency with other figures
2-92a	All text	Added description of type log	TR RAI P&R-1 response
2-92b	Figure 2.6-2a	Added revised type log figure	TR RAI P&R-1 response
2-93	Sec. 2.6.2.1, ¶ 1, lines 2-8	Added references to structure contour and isopach maps	TR RAI P&R-4 response and plates from Supplemental Report (SR) and TR RAI responses
2-93	Sec. 2.6.2.2, lines 3-7	Updated text for consistency with TR RAI responses	TR RAI P&R-1 response
2-94	¶ 2 (Sundance Formation and Unkpapa Sandstone description)	Added description of the Sundance Formation and Unkpapa Sandstone	For clarification
2-94 - 2-94a	Morrison Formation description	Expanded discussion on presence, thickness and confining properties of the Morrison Formation and discussion of Cross Section A-A'-A"	TR RAI P&R-4 response
2-94a	Lakota Formation description	Added "they" and corrected spelling of "Minnewaste"	Typographical correction
2-94b	Table 2.6-1a	Added Table 2.6-1a, which lists drill holes penetrating the Morrison Formation	TR RAI P&R-4 response
2-94b - 2-94c	Minnewaste Limestone description	Clarified that the Minnewaste Limestone is not present within the project area	TR RAI 2.6-2 response
2-94c	last ¶, last line	Updated plate numbers	Typographical correction
2-95 - 2-95a	Fuson Member description	Updated description of Fuson Member	TR RAI P&R-6 response
2-95a	Fall River Formation description, ¶ 2, last line	Updated plate number	Typographical correction
2-95a	Skull Creek Shale description, lines 3-4	Clarified that the Skull Creek Shale is part of the Graneros Group	For consistency with TR RAI P&R-1 response

Page-by-Page Change Index

Page(s)	Item/Location	Revision	Source of Revision
2-95a	Mowry Shale description, lines 1-2	Clarified that the Mowry Shale is part of the Graneros Group	For consistency with TR RAI P&R-1 response
2-95b	¶ 1, lines 1-16	Clarified the absence of the Newcastle Sandstone within the project area	TR RAI 2.6-1 response
2-95b	¶ 1, line 19-22	Revised description of Graneros Group thickness and updated plate number	For consistency with TR RAI P&R-1 response
2-95b	Alluvium description, last 2 lines	Added a reference to the isopach map of the alluvium (Plate 2.6-11)	Minor clarification
2-95c - 2-96	Sec. 2.6.2.2.1	Added section describing the stratigraphy of the initial Dewey and Burdock well fields	TR RAI P&R-1, P&R-8 and 2.7-7 responses
2-96 - 2-97c	Section 2.6.3, including Figure 2.6-2b	Expanded description of the mineralogy and associated geochemistry of the mineralized zones	TR RAI 2.6-3 response
2-98	Former text above Sec. 2.6.4	Replaced with revised Sec. 2.6.3 on p. 2-96 through 2-97c	TR RAI 2.6-3 response
2-98	Sec. 2.6.4	Revised section title to include oil and gas and uranium activities	For consistency with TR RAI P&R-2 response
2-98	Sec. 2.6.4.1	Added section describing oil and gas test wells	TR RAI P&R-2 response with typographical correction to indicate 13 test wells within 2 km of the project boundary
2-98	Sec. 2.6.4.2	Updated section number	Typographical correction
2-98a	Figure 2.6-2c	Added figure depicting plugged and abandoned oil and gas test wells	TR RAI P&R-2 response
2-99	¶ 2-3	Added description of underground mine workings	TR RAI P&R-2 response
2-100	Figure 2.6-3	Replaced figure	TR RAI P&R-12(a) response
2-100a - 2-100k	All text, figures and photos	Added description of underground mine workings	TR RAI P&R-2 response
2-100l 2-100x	Section 2.6.5	Added clarification of breccia pipes	TR RAI P&R-12(a) response
2-101	Sec. 2.6.6, 2.6.6.1 and 2.6.6.1.1	Updated section numbers	Typographical correction
2-102	Sec. 2.6.6.1.2 and 2.6.6.1.3	Updated section numbers	Typographical correction
2-102	Sec. 2.6.6.1.3, ¶ 2, lines 2-7	Clarified use of "disturbance area" in this section and Table 2.6-1	Minor clarification
2-103	Table 2.6-1	Clarified use of "disturbance area" in Table 2.6-1	Minor clarification
2-104	Sec. 2.6.6.1.4	Updated section number	Typographical correction
2-106	Sec. 2.6.6.1.5	Updated section number	Typographical correction

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Page(s)	Item/Location	Revision	Source of Revision
2-107	Sec. 2.6.6.2, 2.6.6.2.1, 2.6.6.2.2 and 2.6.6.2.3	Updated section numbers	Typographical correction
2-108	Sec. 2.6.6.2.4	Updated section number	Typographical correction
2-109	Table 2.6-4	Clarified use of "disturbance area" in Table 2.6-4	Minor clarification
2-113	Sec. 2.6.6.2.5 and 2.6.6.2.6	Updated section numbers	Typographical correction
2-115	Sec. 2.6.6.2.7, 2.6.7 and 2.6.7.1	Updated section numbers	Typographical correction
2-115	References	Moved previous Section 2.6.5.2.8 References into Sec. 2.6.8	Formatting change only
2-116	Sec. 2.6.7.1.1	Updated section number	Typographical correction
2-116	Sec. 2.6.7.1.1, ¶ 1, line 4	Added "vicinity"	Minor clarification
2-117	Figure 2.6-4	Replaced figure	Updated title block, etc. for consistency with other figures
2-118	¶ 1, lines 2, 4-6	Revised for consistency with revisions to Appendix 2.6-G	TR RAI P&R-3 response
2-118	¶ 1, lines 7-13, ¶ 2	Updated description of historical earthquakes	TR RAI P&R-3 response
2-118	¶ 3, lines 4, 6-7	Revised for consistency with revisions to Appendix 2.6-G	TR RAI P&R-3 response
2-119	Figure 2.6-5	Replaced figure	Updated title block, etc. for consistency with other figures
2-120	Figure 2.6-6	Replaced figure	Updated title block, etc. for consistency with other figures
2-121	Sec. 2.6.7.1.2, 2.6.7.1.3 and 2.6.7.1.4	Updated section numbers	Typographical correction
2-122	Sec. 2.6.7.2 and 2.6.8	Updated section numbers	Typographical correction
2-122 - 2-122b	Sec. 2.6.8	Updated and consolidated references	For consistency with various TR RAI responses
2-123	Previously listed references	Moved to p. 2-122b	Formatting change only
2-123	Sec. 2.7.1.1, ¶ 1, line 1	Corrected project area	Typographical correction
2-124	Figure 2.7-1	Replaced figure	TR RAI 2.7-1 response
2-125	Sec. 2.7.1.2.1, line 2	Modified elevation range to match Sec. 2.8.2 (p. 2-234)	Minor clarification
2-125	Sec. 2.7.1.3, ¶ 1, line 7	Corrected figure reference	Typographical correction
2-127	Sec. 2.7.1.3.1, line 6	Corrected figure reference	Typographical correction
2-129	Sec. 2.7.1.3.2, lines 5- 6	Clarified that Pass Creek also flows as a result of snowmelt	Minor clarification

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Page(s)	Item/Location	Revision	Source of Revision
2-129	Sec. 2.7.1.3.3, line 1	Clarified that Beaver Creek tributaries are ephemeral in the project area	For consistency with TR RAI 2.7-3 response
2-129	Sec. 2.7.1.3.3, line 10	Corrected plate reference	Typographical correction
2-129 - 2-130	Sec. 2.7.1.3.4	Revised description of proximity to surface water features	TR RAI 2.7-3 response
2-131	¶ 1, lines 1-2	Added "and ephemeral tributaries"	TR RAI 2.7-3 response
2-131	¶ 1, line 4	Clarified that extreme flow were developed only for Beaver and Pass Creeks	For consistency with TR RAI 2.7-3 response
2-131	Sec. 2.7.1.4.2, ¶ 1, line 2	Corrected figure reference	Typographical correction
2-132	Table 2.7-1	Clarified that the results shown pertain to NFF flood estimates	Minor clarification
2-133	Table 2.7-2	Clarified that the results shown pertain to Matlab flood estimates	Minor clarification
2-140	¶ 2, lines 3-6	Added reference to depiction of 100-year flood inundation areas for ephemeral tributaries on Figures 2.7-10 and 2.7-11 and Plate 2.7-1	For consistency with TR RAI 2.7-3 response
2-141	Table 2.7-10	Revised the proximity data of the 100-year flood	For consistency with Plate 2.7-1 and TR RAI 2.7-3 response
2-142	Figure 2.7-10	Replaced figure	Added flood inundation boundaries for ephemeral tributaries as depicted on Plate 2.7-1; updated facility locations for consistency with other figures (e.g., Fig. 2.7-1)
2-143	Figure 2.7-11	Replaced figure	Added flood inundation boundaries for ephemeral tributaries as depicted on Plate 2.7-1; updated facility locations for consistency with other figures (e.g., Fig. 2.7-1)
2-144	Table 2.7-11	Revised the proximity data of the extreme condition flood	For consistency with updated Figures 2.7-12 and 2.7-13
2-145	Figure 2.7-12	Replaced figure	Updated facility locations for consistency with other figures (e.g., Fig. 2.7-1)
2-146	Figure 2.7-13	Replaced figure	Updated facility locations for consistency with other figures (e.g., Fig. 2.7-1)

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Page(s)	Item/Location	Revision	Source of Revision
2-147	Sec. 2.7.1.4.5 (entire)	Revised description of hydrologic modeling of ephemeral drainages and protection from flooding	TR RAI 2.7-3 response
2-148	¶ 1, last line	Replaced "ground water report" with "Section 2.7.2"	Typographical correction
2-149 - 2-184	Sec. 2.7.2 and subsections (all text)	Replaced Section 2.7.2 text	TR RAI P&R-5, P&R-6, P&R-7, P&R-10 (as revised December 2013), P&R-12(b), 2.6-4, 2.7-5, 2.7-8, 2.7-9, 2.7-10, and 2.7-13(a) responses and February 2012 numerical groundwater model report (App. 6.1-A)
2-150 - 2-151	Table 2.7-13	Revised title and added source	Minor clarification
2-155	Figure 2.7-14	New figure	New figure for revised Section 2.7.2
2-155a	Figure 2.7-15	New figure	New figure for revised Section 2.7.2
2-160	Table 2.7-14	Replaced table	TR RAI 2.7-8 response
2-161	Figure 2.7-16	Replaced previous Figure 2.7-14	TR RAI 2.7-5 response
2-162	Figure 2.7-17	Replaced previous Figure 2.7-15	TR RAI 2.7-5 response
2-166	Figure 2.7-18	New figure	Updated title block, etc. for consistency with other figures
2-166b	Figure 2.7-19	New figure	TR RAI 2.7-9 response
2-166c	Figure 2.7-20	New figure	TR RAI 2.7-9 response
2-166d	Figure 2.7-21	New figure	TR RAI 2.7-9 response
2-166f	Figure 2.7-22	New figure	TR RAI 2.7-9 response
2-166g	Figure 2.7-23	New figure	TR RAI 2.7-9 response
2-166h	Figure 2.7-24	New figure	TR RAI 2.7-9 response
2-166i	Figure 2.7-25	New figure	TR RAI 2.7-9 response
2-166k	Figure 2.7-26	New figure	TR RAI P&R-5 response
2-166l	Figure 2.7-27	New figure	TR RAI P&R-5 response
2-169	Figure 2.7-28	Replaced figure	Added 2008 pumping test locations
2-172	Table 2.7-15	Changed "Lakota" to "Chilson"	For consistency with Sec. 2.6
2-173	Table 2.7-16	Changed "Lakota" to "Chilson" and added note definitions	For consistency with Sec. 2.6
2-178	Table 2.7-17	Changed "Lakota" to "Chilson" and "Unkpapa Formation" to "Unkpapa Sandstone"	For consistency with Sec. 2.6
2-180	Figure 2.7-29	New figure	TR RAI P&R-10 response (as revised December 2013), with existing Wells 16 and 506 removed

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Page(s)	Item/Location	Revision	Source of Revision
2-182	¶ 2, lines 6, 7, 9	Replaced "would" with "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
2-183	Table 2.7-18	Replaced table	Updated for consistency with TR RAI P&R-14(c) response
2-183a	Table 2.7-18a	New table	New table based on TR RAI P&R-14(c) response
2-184	Table 2.7-19	Replaced table	Updated for consistency with TR RAI P&R-14(c) response
2-184a	Table 2.7-19a	New table	New table based on TR RAI P&R-14(c) response
2-185	Sec. 2.7.3.1, ¶ 1, line 1	Added "Regulatory"	Minor clarification
2-185	Sec. 2.7.3.1, ¶ 1, lines 3-4	Added a reference to Table 2.7-21, which lists the impoundment sampling sites	TR RAI 2.9-43(a) response
2-185	Sec. 2.7.3.1, ¶ 1, line 5	Added "pre-operational"	Minor clarification
2-185	Sec. 2.7.3.1, ¶ 1, lines 6-9	Clarified that BVC04, CHR05 and BEN01 are not shown on Plate 2.5-1 and added reference to Figure 2.9-11	TR RAI 2.9-20 and 2.9-44 responses
2-185	Table 2.7-20	Moved to p. 2-186a and 2-186b and separated into Table 2.7-20 (streams) and 2.7-21 (impoundments)	TR RAI 2.9-43(a) and (b) responses
2-185	Sec. 2.7.3.1, ¶ 2	Added "Stream Sampling" heading	Minor clarification
2-185	Sec. 2.7.3.1, ¶ 2, line 1	Added "Regulatory"	Minor clarification
2-185	Sec. 2.7.3.1, ¶ 3, lines 1-2	Clarified stream sampling sites	TR RAI 2.9-43(b) response
2-185 - 2-186	Sec. 2.7.3.1, 3 ¶s below bullet list	Described baseline stream monitoring	TR RAI 2.9-43(b) response
2-186	¶ above Impoundment Sampling	Added justification for site UNT01	TR RAI 2.9-46 response
2-186	Impoundment Sampling Section	Added section heading and described baseline impoundment monitoring	TR RAI 2.7-18 and 2.9-43(a) responses

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Page(s)	Item/Location	Revision	Source of Revision
2-186 - 2-187	Former Table 2.7-21	Moved to p. 2-186b	TR RAI 2.9-43(a) response
2-186a	Table 2.7-20	Revised Table 2.7-20 to show monthly sampling at each stream sampling site	TR RAI 2.9-43(b) response
2-186b	Table 2.7-21	Revised Table 2.7-21 to show quarterly sampling at each impoundment and location relative to proposed facilities	TR RAI 2.9-43(a) response
2-187	¶ 1	Added a reference to operational impoundment monitoring described in Section 5.7.8	TR RAI 2.9-43(a) response
2-187	Sec. 2.7.3.1.1, ¶ 1, line 2	Changed "NRC" to "Regulatory Guide"	Typographical correction
2-187	Sec. 2.7.3.1.1, ¶ 1, line 4	Corrected table reference	Typographical correction
2-187	Sec. 2.7.3.1.1, ¶ 1, line 5	Omitted reference to practical quantitation limits	For consistency with revised Table 2.7-22
2-189 - 2-190	Table 2.7-22	Revised Table 2.7-22 to include both surface water and groundwater parameters	For consistency with revised Appendices 2.7-C and 2.7-G
2-191	Former Table 2.7-22	Consolidated to pages 2-189 and 2-190	For consistency with revised Appendices 2.7-C and 2.7-G
2-191	Sec. 2.7.3.1.2, ¶ 1, line 1	Corrected table references	Typographical correction
2-191	Sec. 2.7.3.1.2, ¶ 2, lines 2-3	Corrected Beaver Creek pH results	For consistency with revised Appendix 2.7-C
2-192	Table 2.7-23	Added pH value for 1/11/2008 and corrected pH statistics	For consistency with revised Appendix 2.7-C
2-194 - 2-194a	Text between Table 2.7-26 and Sec. 2.7.3.2	Referenced revised Appendices 2.7-C and 2.7-F and described the data presentation in the appendices	TR RAI 2.7-15 response
2-194a	Sec. 2.7.3.2, line 2	Added "ground"	Minor clarification
2-194b - 2-194d	Table 2.7-27	Added a table summarizing the stream water quality	For consistency with revised Appendix 2.7-C
2-195	Sec. 2.7.3.2.1, ¶ 1, line 8	Corrected figure and table references	Typographical correction
2-195	Sec. 2.7.3.2.1, ¶ 1, lines 9-13	Corrected well information and sampling schedule	For consistency with revised Table 2.7-28 and Appendix 2.7-G
2-195	Sec. 2.7.3.2.1, ¶ 2, lines 1-5, 7-9	Corrected well information and sampling schedule	TR RAI 2.7-21 response and for consistency with revised Tables 2.7-29 and 2.7-30 and Appendix 2.7-G
2-196	Figure 2.7-30	Replaced figure	Revised for consistency with Plate 2.7-2

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Page(s)	Item/Location	Revision	Source of Revision
2-197	Figure 2.7-31	Replaced figure	Revised for consistency with Plate 2.7-2
2-198	Table 2.7-28	Revised table number, well location information, screened interval and well use	For consistency with updated well inventory (Appendices 2.2-A and 2.2-B)
2-198	Table 2.7-29	Revised table number, well location information, screened interval and well use	For consistency with updated well inventory (Appendices 2.2-A and 2.2-B)
2-199	Table 2.7-30	Revised table number, well location information, screened interval and well use	For consistency with updated well inventory (Appendices 2.2-A and 2.2-B)
2-199	¶ 1, line 1	Corrected figure reference	Typographical correction
2-199	¶ 2, line 1	Added reference to Table 2.7-22 for groundwater parameters and omitted previous Table 2.7-30	For consistency with revised Table 2.7-22
2-199	¶ 2, line 2	Changed "NRC" to "Regulatory Guide"	Typographical correction
2-199, 2-201	¶ 3 on p. 2-199 and all text on p. 2-201	Described the procedures used to measure static water level and calculate water level elevations	TR RAI 2.7-6 response
2-200	Figure 2.7-32	Replaced figure	Revised for consistency with Plate 2.7-2
2-202	All text	Described groundwater sampling procedures	For consistency with Section 2.9.8.1
2-203	Former Table 2.7-30	Omitted Table 2.7-30 (replaced with Table 2.7-22)	For consistency with revised Table 2.7-22
2-203	Sec. 2.7.3.2.2, ¶ 1	Added references to Appendices 2.7-G and 2.7-H for groundwater results; revised previous references to Appendices 2.7-H and I to renumbered Appendices 2.7-N and O	TR RAI 2.7-19 response
2-203	Sec. 2.7.3.2.2, ¶ 2	Described groundwater quality data presentation and inclusion of results from 2008 pumping tests	TR RAI 2.7-21 response
2-203	Sec. 2.7.3.2.2, ¶ 3-4	Described Appendix 2.7-G data presentation	TR RAI 2.7-15 response
2-203	Sec. 2.7.3.2.2, ¶ 5	Updated groundwater results discussion for consistency with revisions to Appendix 2.7-G	For consistency with revised Table 2.7-31 and Appendix 2.7-G
2-203	Sec. 2.7.3.2.2, ¶ 6	Introduced Table 2.7-32	TR RAI 2.7-17 response
2-204 - 2-206	Table 2.7-31	Added Table 2.7-31 summarizing groundwater quality by formation	For consistency with updated Appendix 2.7-G

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Page(s)	Item/Location	Revision	Source of Revision
2-207 - 2-207a	Table 2.7-32	Replaced old Table 2.7-35 with revised Table 2.7-32	TR RAI 2.7-17 response with minor footnote correction to reflect that Well 5 and not 635 was sampled
2-208 - 2-216	Sec. 2.7.3.2.2.1, 2.7.3.2.2.2, 2.7.2.2.3 and 2.7.2.2.4	Replaced previous Sections 2.7.3.2.2.1 (Results for Field Parameters) and 2.7.3.2.2 (Results for Laboratory Parameters) with groundwater quality summaries by formation	TR RAI 2.7-16 and 2.7-17 responses and for consistency with Table 2.7-31 and updated Appendix 2.7-G
2-217	Sec. 2.7.3.2.3	Update section number	Typographical correction
2-217	Sec. 2.7.3.2.3, ¶ 1, line 5	Corrected figure reference	Typographical correction
2-217	Sec. 2.7.3.2.3, ¶ 1, lines 6-7	Clarified "Chilson" rather than "Lakota"	Minor clarification
2-217	Sec. 2.7.3.2.3, ¶ 2, lines 3, 5	Corrected table references	Typographical correction
2-217	last bullet	Omitted last bullet describing results for well 2; based on the revised Table 2.7-40, there are no longer outlier values for alkalinity, TDS and conductivity for Well 2	For consistency with revised Table 2.7-40
2-218	¶ 1, line 2	Corrected table reference	Typographical correction
2-219	Figure 2.7-33	Replaced figure	Revised for consistency with Plate 2.7-2
2-220	Table 2.7-38	Updated table number and title; updated aquifer information, and updated number of Powertech (USA) samples	For consistency with revised Appendices 2.2-A and 2.7-G
2-220 - 2-221	Table 2.7-39	Updated table number	Typographical correction
2-221	¶ 1, line 3	Changed "7 percent" to "5 percent"	For consistency with revised Table 2.7-40
2-221	¶ 1, line 5	Corrected figure reference	Typographical correction
2-221	¶ 2, line 1	Changed "8 percent" to "5 percent"	For consistency with revised Table 2.7-40
2-221	¶ 2, line 2	Corrected figure reference	Typographical correction
2-221	¶ 3, line 2	Changed "No. 2" to "No. 7", corrected figure reference and changed "8.11" to "7.94"	For consistency with revised Table 2.7-40
2-222	¶ 1, line 1	Corrected figure reference	Typographical correction
2-222	¶ 1, lines 1-2	Removed previous discussion about outliers at Well 2	For consistency with revised Table 2.7-40

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Page(s)	Item/Location	Revision	Source of Revision
2-223	Table 2.7-40	Updated table number and table title, corrected data transcription errors in TVA data, updated Powertech results and changed "Conductivity" to "Specific Conductance"	For consistency with revised Appendix 2.7-G and Appendix 2.7-J
2-224 - 2-225	Figures 2.7-34 - 2.7-37	Updated figure numbers and titles; revised figures to match updated Table 2.7-40	For consistency with revised Table 2.7-40
2-226	¶ 1, line 3	Corrected figure references	Typographical correction
2-226	¶ 2, lines 2, 6	Changed "Lakota" to "Chilson"	Minor clarification
2-226	¶ 2, lines 3, 7	Corrected figure references	Typographical correction
2-226	¶ 3, line 1	Corrected figure references	Typographical correction
2-226	¶ 3, line 8	Corrected typographical error to indicate that the finding is inconsistent with Gott et al.	Typographical correction
2-227 - 2-230b	Figures 2.7-38 - 2.7-48	Replaced previous Piper diagrams with updated figures	For consistency with revised Appendix 2.7-G and Appendix 2.7-J
2-231 - 2-233a	Sec. 2.7.4	Updated references based on Section 2.7 revisions	For consistency with revised Section 2.7
2-234	Sec. 2.8.2, ¶ 3, line 2	Changed "intermittent" to "ephemeral"	For consistency with Sec. 2.7.1
2-235	Sec. 2.8.3, ¶ 3, line 1	Changed "10 mph" to "9 mph"	For consistency with revised Sec. 2.5.3.2
2-252	Sec. 2.8.5.2.1, ¶ 2	Revised references from Figures 2.8-1 through 2.8-3 to Plate 2.8-2, which depicts the results of the wetland assessment	To avoid duplicate information
2-253 - 2-255	Figures 2.8-1 - 2.8-3	Omitted Figures 2.8-1 through 2.8-3 referring instead to Plate 2.8-2	To avoid duplicate information
2-266	1st reference	Updated USACE 2008 reference	Typographical correction
2-280	Sec. 2.8.5.6.1.1, ¶ 2, lines 4-5	Changed reference from Plate 2.5-1 to Figure 2.9-11	TR RAI 2.9-20 and 2.9-44 responses
2-280 - 2-281	Sec. 2.8.5.6.1.1, ¶ 4-5	Clarified fish sampling plan	TR RAI 2.9-21 response
2-282	Text above last paragraph	Moved from previous p. 2-281	Typographical correction
2-283 - 2-283a	Table 2.8-23	Replaced Table 2.8-23	TR RAI RI-4(a) response
2-284	Former Table 2.8-23	Omitted previous conclusion of Table 2.8-23 (now on p. 2-283a)	Typographical correction
2-302	Sec. 2.8.5.6.1.2.4, ¶ 1, line 2	Revised reference from Table 2.8-30 to Table 2.8-23	TR RAI RI-4(a) response
2-302	Sec. 2.8.5.6.1.2.4, ¶ 2, line 2	Revised reference from Table 2.8-30 to Table 2.8-23	TR RAI RI-4(a) response

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Page(s)	Item/Location	Revision	Source of Revision
2-303	Former Table 2.8-30	Omitted Table 2.8-30 (replaced with revised Table 2.8-23)	TR RAI RI-4(a) response
2-305	Sec. 2.9.1, ¶ 1, lines 2, 4-5	Added introduction to pig and other food sampling conducted in 2011	TR RAI 2.9-11, 2.9-13 and 2.9-16 responses
2-306	Last bullet	Added introduction to pig sampling	TR RAI 2.9-11, 2.9-13 and 2.9-16 responses
2-307	Table 2.9-1, Row C	Added commitment to collect 15 additional soil samples in the Dewey area	TR RAI 2.9-40(a) and (b) responses
2-307	Table 2.9-1, Row I	Summarized additional food sampling	TR RAI 2.9-11, 2.9-13 and 2.9-16 responses
2-307	Table 2.9-1, Row J	Added commitment for soil sampling in local vegetable gardens	TR RAI 2.9-12 response
2-308	Sec. 2.9.2.2.1, ¶ 1 and Survey Methodology heading	Described the locations and dates for the GPS-based gamma surveys	TR RAI 2.9-27(c) response
2-308a	Combining Data from Two Surveys heading and ¶ 1 below heading	Described how all data were gathered in fair weather under similar soil conditions	TR RAI 2.9-38(a) response
2-308a - 2-308b	Remaining ¶s under Combining Data from Two Surveys, including Table 2.9-1a	Provided comparison of 2007 and 2008 gamma survey results	TR RAI 2.9-27(c) response
2-308b - 2-308c	Technical Justification for Transect Spacing heading and all text below heading	Provided justification for the transect spacing used for gamma surveys	TR RAI 2.9-22 response
2-308d	Considering Variations in Background Count Rates during Cleanup Operations heading and text below heading	Added a discussion on variations in background count rates during cleanup operations	TR RAI 2.9-27(c) response
2-309	Figure 2.9-1	Replaced figure	Updated title block, etc. for consistency with other figures
2-311	Figure 2.9-2	Replaced figure	Updated title block, etc. for consistency with other figures
2-312	Sec. 2.9.2.1.3	Updated section title to remove "Grids"	For consistency with TR RAI 2.9-39(a) response

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Page(s)	Item/Location	Revision	Source of Revision
2-312	Sec. 2.9.2.1.3, ¶ 2, lines 2-7 and equation	Clarified the input parameters and results for gamma/Ra-226 correlation	TR RAI 2.9-39(a) response
2-312	Sec. 2.9.2.1.4, lines 4-5	Added reference to Appendix 2.9-A for the criteria used to evaluate the acceptability of daily function tests	TR RAI 2.9-23 response
2-312	Sec. 2.9.2.2.1, ¶ 1, lines 3-6	Clarified the statistical analysis used to assess the gamma survey results	TR RAI 2.9-30(a) response
2-313	Figure 2.9-3	Replaced figure	Updated title block, etc. for consistency with other figures
2-314	¶ 3	Clarified the tools used to identify potential gamma survey data outliers	TR RAI 2.9-30(b) response
2-315	¶ 1, line 2	Changed "71,148" to "75,345"	Typographical correction
2-315	¶ 2, line 1	Changed "0.1 and 2" to "0.2 and 3"	For consistency with Appendix 2.9-A
2-317	Figure 2.9-4	Replaced figure	Updated land application areas for consistency with Figure 3.1-1; updated title block, etc. for consistency with other figures
2-318	Figure 2.9-5	Revised the figure to include the error estimates	TR RAI 2.9-32(c) response
2-318	Last ¶, lines 2-4	Clarified the range of calculated exposure rates and the input parameters used to calculate the exposure rates	TR RAI 2.9-32(a) response
2-318a	¶ 1, lines 1-4	Clarified the input parameters used to calculate the exposure rates	TR RAI 2.9-32(a) response
2-318a	¶ 1, lines 4-8	Described Figure 2.9-6	TR RAI 2.9-32(b) response
2-318a	¶ 2	Described error estimates associated with Figure 2.9-6	TR RAI 2.9-32(c) response
2-319	Figure 2.9-6	Replaced figure	TR RAI 2.9-32(b) response
2-320	Sec. 2.9.2.2.3	Replaced discussion of gamma-ray count rate-soil Ra-226 correlation	TR RAI 2.9-38(b) response
2-320	Table 2.9-4	Replaced with TR RAI response table	TR RAI 2.9-38(b) response
2-320a	Figures 2.9-6a and 2.9-6b	Added plots of residuals from TR RAI response	TR RAI 2.9-38(b) response
2-321	Sec. 2.9.2.2.4, lines 5 and 8	Revised exposure rates based on changes to Figure 2.9-6	For consistency with revised Figure 2.9-6
2-321	Sec. 2.9.2.2.5, ¶ 1, line 1	Removed reference to "grid block averages"	For consistency with revised Figure 2.9-7

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Page(s)	Item/Location	Revision	Source of Revision
2-321	Sec. 2.9.2.2.5, ¶ 2	Clarified the intent of Figure 2.9-7 and explained that no interpolation scheme was used	TR RAI 2.9-39(b) response
2-321	Sec. 2.9.2.2.5, ¶ 3	Clarified the error estimates associated with the data presented in Figure 2.9-7	TR RAI 2.9-39(c) response
2-321	Sec. 2.9.2.2.5, ¶ 4, line 1	Omitted "At the same time, "	Minor clarification
2-322	Figure 2.9-7	Replaced figure	TR RAI 2.9-39(b) response
2-323	Sec. 2.9.3.1.1, ¶ 1, line 2	Changed "STR" to "SRP"	Typographical correction
2-323	Sec. 2.9.3.1.1, ¶ 1, line 3	Added closing quotation mark before (NRC 2003)	Typographical correction
2-323 - 2-323a	Sec. 2.9.3.1.1, ¶ 2 and numbered list	Clarified the soil sampling strategy	TR RAI 2.9-40 Clarification and 2.9-34 response
2-323a	¶ 1 below numbered list	Added a reference to Figure 2.9-7a	TR RAI 2.9-34 response
2-323b	Figure 2.9-7a	Added figure demonstrating similarities in soil concentration at different depths	TR RAI 2.9-34 response
2-323c - 2-323h	All text, tables and figures beginning with the 1st full ¶ on p. 2-323c	Provided justification for the number of soil samples collected in the Dewey and Burdock portions of the project area and provided commitment to collect additional soil samples	TR RAI 2.9-40(a) and (b) responses
2-324	¶ 1, lines 6-13	Described input parameters to and results obtained from Visual Sampling Plan (VSP)	TR RAI 2.9-36 response
2-324	1st bullet	Clarified testing method for Ra-226 soil sample analyses	TR RAI 2.9-37(d) response
2-324a	2nd bullet	Described laboratory performance evaluation for uranium in soil	TR RAI 2.9-37(c) response
2-324a	3rd bullet	Corrected the analytical method for lead-210 and described EPA method 909	TR RAI 2.9-37(b) response
2-324a	4th bullet	Described EPA method 3050B for soil digestion	TR RAI 2.9-37(a) response
2-325	Figure 2.9-8	Replaced figure	Replaced with Figure TR RAI 2.9-1-1 from TR RAI 2.9-1 response
2-326	Figure 2.9-9	Replaced figure	Updated title block, etc. for consistency with other figures

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Page(s)	Item/Location	Revision	Source of Revision
2-328	Figure 2.9-10	Replaced figure	Updated land application areas for consistency with Figure 3.1-1; updated title block, etc. for consistency with other figures
2-329	1st bullet	Clarified that "HV" and "AMS" are used interchangeably	TR RAI 2.9-10 response
2-330 - 2-334a	Table 2.9-5	Revised the table to include the LLDs for radionuclide concentrations in soil	TR RAI RI-4(c) response
2-335	Sec. 2.9.3.2.1, ¶ 1	Clarified statistical analyses for Ra-226 soil sampling results	TR RAI 2.9-35(a) response
2-336	Last ¶ under Radium-226 Concentrations in the Land Application Areas	Deleted paragraph comparing concentrations of uranium, lead-210 and thorium-230 between Burdock and Dewey land application areas	For consistency with revised Appendix 2.9-A
2-336a	¶ 1	Described methods considered to evaluate potential outliers	TR RAI 2.9-35(b) response
2-336a - 2-336b	All text and tables except ¶ 1	Described methods considered to evaluate potential outliers	TR RAI 2.9-35(c) response
2-337a	1st full ¶, lines 3-11	Provided justification for reporting lead-210 LLDs above Regulatory Guide 4.14 recommendations	TR RAI 2.9-33 response
2-338	Former text above Sec. 2.9.3.2.2	Moved to p. 2-337a	Typographical correction
2-342	Figure 2.9-11	Replaced figure	Updated title block, etc. for consistency with other figures
2-346	Sec. 2.9.4.2.1, ¶ 1, lines 1-3	Provided a reference to the appendices for sediment sampling analytical results and summary tables, which replace Table 2.9-8	TR RAI RI-4(d) and 2.9-42 responses
2-346	1st ¶, lines 3-end	Clarified that data presented in Appendices 2.9-H and 2.9-K include the error and LLDs associated with the sediment results and that LLDs are not available for TVA data	TR RAI RI-4(d) response
2-347 - 2-348	Former Table 2.9-8	Omitted table, which has been replaced by Appendices 2.9-H and 2.9-K	TR RAI RI-4(d) and 2.9-42 responses
2-349	Sec. 2.9.4.3, ¶ 2, line 1	Corrected typographical error (PSC02 to PSC01)	TR RAI 2.9-41 response
2-350	Former Sec. 2.9.4.4	Moved references to Sec. 2.9.11	Typographical correction
2-350	Sec. 2.9.5.1.1, ¶ 1, 3	Corrected TLD monitoring periods and description of TLDs lost during deployment	TR RAI 2.9-27(b) response

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Page(s)	Item/Location	Revision	Source of Revision
2-350	Sec. 2.9.5.1.1, ¶ 2	Described TLD siting criteria	TR RAI 2.9-24 response
2-351	Sec. 2.9.5.2.1, all but last ¶	Corrected TLD monitoring periods and revised discussion of results	TR RAI 2.9-27(b) response
2-351	Sec. 2.9.5.2.1, last ¶	Described TLD analytical reports	TR RAI 2.9-25 response
2-351a	All text	Described why annual average dose equivalents were not calculated at AMS-01, AMS-02, AMS-03 and AMS-06 and clarified monitoring period for AMS-01	TR RAI 2.9-26, 2.9-28 and 2.9-29 responses
2-352	Table 2.9-10	Corrected TLD monitoring periods, added adjusted dose rate and updated projected annual dose	TR RAI 2.9-27(b) response
2-357	Figure 2.9-13	Replaced figure	Replaced grid block averages with point data for consistency with revised Figure 2.9-7
2-358	Sec. 2.9.6.1, ¶ 1, lines 2-5	Revised to indicate sampling occurred continuously for 366 days except for minimal down time of AMSs	TR RAI 2.9-4 and 2.9-8 responses
2-358	Sec. 2.9.6.1, text and numbered list below ¶ 1	Added criteria used to establish AMS locations	TR RAI 2.9-1 and 2.9-24 responses
2-358a - 2-358b	Table 2.9-11a, Figure 2.9-14	Added table comparing AMS locations to Regulatory Guide 4.14 recommendations and figure showing the wind direction frequency	TR RAI 2.9-1 response
2-358c	¶ 1-2	Added criteria used to establish AMS locations	TR RAI 2.9-1 response
2-358c	Bullets 1-2	Corrected the monitoring period dates	TR RAI 2.9-7 response
2-358d	Table 2.9-11b	Added table comparing the predicted radionuclide concentrations at the AMS locations	TR RAI 2.9-1 response
2-358e	Text and numbered list above Air Particulate Sampler Calibration Methods	Provided justification for the bi-weekly air particulate filter collection schedule	TR RAI 2.9-2 response
2-358e - 2-358f	Air Particulate Sampler Calibration Methods	Described calibration methods	TR RAI 2.9-3 response
2-358f	Sample Analysis and Calculation of Results heading	Added new section heading to distinguish subsequent text from prior section	Minor clarification

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Page(s)	Item/Location	Revision	Source of Revision
2-358f	¶ 3-4 including equation	Described the calculation used to convert the laboratory air particulate uranium concentrations to microcuries per milliliter	TR RAI 2.9-6 response
2-359	¶ 1, line 5	Corrected the effluent limit for thorium-230	TR RAI 2.9-9 response
2-359	Sec. 2.9.6.2, Bullets 1-4	Corrected range of U-nat, Th-230, Ra-226 and Pb-210 concentrations to match revised Table 2.9-12	TR RAI 2.9-5 response
2-359	Section 2.9.6.2, ¶ 3	Changed "Natural" to "average natural" and typical concentration from 10^{-16} to 10^{-15} to match revised Table 2.9-13	TR RAI 2.9-5 response
2-361 - 2-362	Table 2.9-12	Replaced table	TR RAI 2.9-5 response
2-363	Table 2.9-13	Replaced table	TR RAI 2.9-5 response
2-364	Bullets 1, 3-4	Corrected the percentages for consistency with revised Table 2.9-12	TR RAI 2.9-5 response
2-364	¶ below bullet list, line 2	Changed "that" to "than"	Typographical correction
2-364 - 2-364b	¶ below bullet list, line 3 and next 4 ¶s including equations	Added justification for U-nat LLDs in monitoring periods 1-2 that exceeded RG 4.14 LLDs	TR RAI 2.9-5 response
2-366	Sec. 2.9.8	Revised section title to include surface water	For consistency with TR RAI 2.7-19 response
2-366	Sec. 2.9.8, ¶ 1-3	Updated figure and table reference numbers and discussion of groundwater sampling	For consistency with revised Section 2.7.3.2.1
2-367	Sec. 2.9.8.1, ¶ 1-2	Provided a reference to Sections 2.7.3.1.3 and 2.7.3.2.2 for groundwater and surface water, respectively, and summarized the analytical suite	TR RAI 2.7-19 response
2-367	Sec. 2.9.8.1, ¶ 4, line 3	Changed Well 635 to Well 5	For consistency with revised well inventory (App. 2.2-A)
2-367	Sec. 2.9.8.1, ¶ 6, line 2	Changed Well 635 to Well 5	For consistency with revised well inventory (App. 2.2-A)
2-369	Sec. 2.9.8.2	Revised section title to include surface water	For consistency with TR RAI 2.7-19 response
2-369	Sec. 2.9.8.2, 1st sentence and bullet list	Replaced reference to Tables 2.9-16 and 2.9-17 with references to various appendices for surface and groundwater analytical results and summary tables	TR RAI RI-4(b) and 2.7-19 responses

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Page(s)	Item/Location	Revision	Source of Revision
2-369 - 2-369a	Sec. 2.9.8.2, 2 ¶s below bullet list	Described the format of the data in Appendices 2.9-I and 2.9-J	TR RAI RI-4(b) response
2-369a	2nd full ¶ and equation	Described how the MDC is used in place of the LLD	TR RAI 2.9-50 response
2-369b	Line 1, Surface Water heading and ¶ 1 below heading	Added new introduction to description of surface water radiological results	For consistency with TR RAI 2.9-47 through 2.9-49 responses
2-369b	Surface Water ¶ 2 and bullet list	Described the results from BVC01	TR RAI 2.9-48 response
2-369b - 2-369c	Last ¶ on 2-369b through bullet list on 2-369c	Described the results from PSC01 and UNT01	TR RAI 2.9-47 response
2-369c 2-369e	¶ after bullet list on 2-369c through Sub11 discussion	Described the baseline impoundment monitoring results	TR RAI 2.7-20 and 2.9-49 responses
2-369e	Groundwater heading	Added heading for summary of groundwater radiological monitoring results	Minor clarification
2-369e	Groundwater, ¶ 1	Replaced reference to Tables 2.9-16 and 2.9-17 with references to Appendix 2.9-J for radiological groundwater results; removed "dissolved"	TR RAI RI-4(b) response
2-369e - 2-369f	Relationships between Dissolved, Suspended and Total Fractions	Described the relationships between the dissolved, suspended and total fractions of radionuclide concentrations in groundwater and surface water	TR RAI 2.7-19 response
2-370 - 2-371	Former Tables 2.9-16 and 2.9-17	Omitted tables (replaced with Appendices 2.9-I and 2.9-J)	TR RAI RI-4(b) response
2-372	Sec. 2.9.9, ¶ 2	Indicated that grasses were the only type of forage sampled for radionuclides	TR RAI 2.9-18 response
2-372	Sec. 2.9.9, ¶ 3	Clarified vegetation sampling locations	TR RAI 2.9-19 response
2-377	Sec. 2.9.10, ¶ 1, line 1	Added "initially"	TR RAI 2.9-13 response
2-377	Sec. 2.9.10, ¶ 2-3	Described additional investigations for food sources	TR RAI 2.9-11, 2.9-13 and 2.9-14 responses
2-377a	Figure 2.9-15	Added figure showing the updated assessment of land use for food sources	TR RAI 2.9-11 response
2-377b	All except last ¶	Described initial and subsequent samples collected and commitment for future sampling	TR RAI 2.9-13 response

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Page(s)	Item/Location	Revision	Source of Revision
2-377b	Last ¶	Described the reporting format in Table 2.9-19 and App. 2.9-A, Table 10-1	TR RAI 2.9-17(a) response
2-378	Table 2.9-19	Updated DBAT-01 through DBAT-03 results to show that these are initial samples; revised presentation of U-nat concentrations	TR RAI 2.9-13 and 2.9-17(a) responses
2-378a	Table 2.9-19 (Concl.)	Added 2011 sample results	TR RAI 2.9-13 and 2.9-17(a) responses
2-379	Line 3	Added "initial"	TR RAI 2.9-17(b) response
2-379 - 2-380	2-379 ¶ 2 through 2-380 ¶ 1, including Equation 2.5 and Table 2.9-20	Provided justification for alternatives to the LLDs recommended in Regulatory Guide 4.14 for tissue samples	TR RAI 2.9-17(b) response
2-380	¶ 2	Described why meat LLDs varied	TR RAI 2.9-17(c) response
2-380 - 2-382	Last ¶ on 2-380 through 2-382 including equations and Table 2.9-21	Described methods to sample vegetable garden soil	TR RAI 2.9-12 response
2-383 - 2-384	Sec. 2.9.11	Added a reference section with references associated with RAI response	Various TR RAI responses
3-2	¶ 3	Introduced Figures 3.1-1 thru 3.1-3 and what is depicted on the figures	TR RAI P&R-1 and P&R-13 responses
3-2a	Figure 3.1-1	New figure	Created 11x17 figure from TR RAI Exhibit 3.1-2
3-2b	Figure 3.1-2	New figure	Created 11x17 figure from TR RAI Exhibit 3.1-3
3-2c	Figure 3.1-3	New figure	Created 11x17 figure from TR RAI Exhibit 3.1-4
3-4	Sec. 3.1.1.1, ¶ 3-4	Corrected plate references	For consistency with the addition of SR plates to TR
3-5	¶ 2, line 2	Corrected plate reference	Typographical correction
3-5	¶ 2, lines 2-3	Revised plate and figure references	Typographical correction
3-6	Figure 3.1-4	Replaced figure	Changed figure number; updated title block, etc. for consistency with other figures
3-7	Figure 3.1-5	Replaced figure	Changed figure number; updated title block, etc. for consistency with other figures
3-8	¶ 1, line 3	Clarified that pipelines will be buried below the frost line	TR RAI MI-5 and 2.7-3 responses

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Page(s)	Item/Location	Revision	Source of Revision
3-8	¶ 1, line 10	Changed figure reference to Figures 3.1-1 and 3.1-2, which depict the facilities and initial well field areas for the land application and deep disposal well options, respectively	For consistency with new Figures 3.1-1 and 3.1-2
3-8	¶ 2, line 5	Corrected plate reference	Typographical correction
3-8	¶ 3, line 2	Corrected plate references	For consistency with the addition of SR plates to TR
3-8	¶ 3, line 3	Changed "mineralized" to "production"	TR RAI 5.7.8-9 response
3-8 - 3-8a	3-8 last ¶ through bullet list	Defined "greatest potential for excursion"	TR RAI 5.7.8-9 response
3-8a - 3-8b	Sec. 3.1.1.1.1	Added description of well field development with respect to historical mine workings	TR RAI P&R-2 and 5.7.8-4 responses
3-8b - 3-8d	Sec. 3.1.1.1.2	Added description of well field development with respect to partially saturated conditions	TR RAI P&R-5 and 3.1-2 responses
3-8d	¶ 1, line 3	Changed "would" to "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
3-9	Sec. 3.1.2.2, ¶ 2, line 3	Revised figure reference	Typographical correction
3-11	Figure 3.1-6	Replaced figure	Changed figure number; updated title block, etc. for consistency with other figures
3-13	¶ 1, line 1	Revised the text to reference Sec. 5.7.1.3.4 for well plugging procedures	TR RAI P&R-9 response
3-13	¶ 1, lines 2-3	Clarified when a repaired well can be put into use	TR RAI P&R-9 response
3-13	¶ 3, line 4	Changed "EPA and DENR" to "regulatory agencies"	Minor clarification
3-13	¶ 3, line 5	Omitted reference to ARSD 74:55 regulations, which have been tolled	Minor clarification
3-13	Last ¶, line 2	Revised figure reference	Typographical correction
3-14	¶ 1, lines 4, 5 and 7	Changed "leachate" to "lixiviant"	TR RAI 3.1-5 response
3-14	¶ 2, line 3	Changed "minimum" to "maximum"	TR RAI 5.7.8-10 response

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Page(s)	Item/Location	Revision	Source of Revision
3-14	¶ 2, lines 5-6	Added reference to Section 5.7.8.4.3 for perimeter monitor well spacing justification	TR RAI 5.7.8-10 response
3-14	¶ 3	Added references to hydrogeologic data packages in Sec. 3.1.3.3 and protection from surface water in Sec. 3.1.7; added statement that adequate monitor well access will be available during storm events	TR RAI MI-5, 2.7-2, 2.7-3 and 5.7.8-14 responses
3-15	Figure 3.1-7	Replaced figure	Changed figure number; updated title block, etc. for consistency with other figures
3-16	Sec. 3.1.3.1.1, ¶ 1, line 3	Changed "unit" to "units" and "aquifer" to "aquifers"	TR RAI 5.7.8-12 response
3-16	Sec. 3.1.3.1.1, ¶ 1, lines 5, 9	Changed "leach fluids" to "lixiviant"	For consistency with TR RAI 3.1-5 response
3-16	Sec. 3.1.3.1.1, ¶ 1, lines 6, 8, 12-13	Added "and underlying"	TR RAI 5.7.8-8 and 5.7.8-12 responses
3-16	Sec. 3.1.3.1.1, ¶ 1, line 10	Corrected "three or five" to "three to five"	Typographical correction
3-16	Sec. 3.1.3.1.1, ¶ 1	Deleted end of paragraph that previously described well layout (replaced with new sections below)	TR RAI 5.7.8-12 response
3-16 - 3-16a	General Monitor Well Layout	Added section describing general monitor well layout	TR RAI 5.7.8-9 and 5.7.8-12 responses
3-16a - 3-16b	Conceptual Monitor Well Layout - Initial Burdock Well Fields	Added section describing the conceptual monitor well layout for the initial Burdock well fields	TR RAI 5.7.8-12 response
3-16b	Conceptual Monitor Well Layout - Initial Dewey Well Fields	Added section describing the conceptual monitor well layout for the initial Dewey well fields	TR RAI 5.7.8-12 response
3-17	Conclusion	Added section referencing hydrogeologic data packages and pump testing procedures in Sec. 3.1.3; added concluding paragraph on the effectiveness of excursion monitoring	TR RAI 5.7.8-9 and 5.7.8-12 responses
3-17 - 3-17a	Sec. 3.1.3.1.1.1	Added discussion on monitoring the Unkpapa Sandstone	TR RAI 2.7-16 and 5.7.8-13 responses
3-18	Figure 3.1-8	Replaced figure	TR RAI 5.7.8-12 response
3-18a	Figure 3.1-9	Added figure	TR RAI 5.7.8-12 response
3-18b	Figure 3.1-10	Added figure	TR RAI 5.7.8-12 response
3-18c	Figure 3.1-11	Added figure	TR RAI 5.7.8-12 response
3-18d	Figure 3.1-12	Added figure	TR RAI 5.7.8-12 response

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Page(s)	Item/Location	Revision	Source of Revision
3-19	Sec. 3.1.3.1.2, ¶ 1, lines 9-10	Clarified UCL constituents	TR RAI 5.7.8-7(a) response
3-19	Sec. 3.1.3.1.2, ¶ 1, line 17	Changed "Monitor" to "monitor"	Typographical correction
3-19	Sec. 3.1.3.1.2, ¶ 1, line 18	Changed "leach fluids" to "lixiviant"	For consistency with TR RAI 3.1-5 response
3-19	Sec. 3.1.3.1.2, ¶ 1, lines 19-20	Added reference to Sec. 5.7.8.4.3 for perimeter monitor well spacing justification	TR RAI 5.7.8-10 response
3-19	Sec. 3.1.3.1.2, ¶ 1, line 24	Added "as described below"	Minor clarification
3-19 - 3-20	Sec. 3.1.3.1.2, ¶ 2 thru end of section	Added description of perimeter monitor wells screened interval	TR RAI 5.7.8-9 and 5.7.8-12 responses
3-20	Former Figure 3.1-6	Omitted figure (replaced with new Figure 3.1-6 on p. 3-11)	For consistency with revised Figure 3.1-6
3-20	¶ 3, last line	Changed "would" to "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
3-20a - 3-20d	Sec. 3.1.3.2	Added section describing pump testing procedures	TR RAI 5.7.8-14 response
3-20d - 3-20e	Sec. 3.1.3.3	Added section describing well field hydrogeologic data packages	TR RAI 5.7.8-14 response
3-20e	Sec. 3.1.4	Added section describing hydraulic well field control	TR RAI 3.1-4 response
3-21	Sec. 3.1.5	Revised section number	Typographical correction
3-21	Sec. 3.1.6	Added new section to encompass various aspects of liquid waste disposal system design	For consistency with revised Sections 3.1.6.1 through 3.1.6.4
3-21	Sec. 3.1.6, ¶ 1	Clarified the type of waste (liquid) and disposal methods. Added a reference to Section 4.2.2.4 for additional details on liquid waste disposal	TR RAI P&R-14(b) response
3-21 - 3-21b	Sec. 3.1.6.1, all except last ¶	Replaced previous pond design discussion with revised pond design overview	TR RAI 3.1-7 response
3-21b	¶ before Sec. 3.1.6.1.1	Described seismic stability analyses	TR RAI P&R-3 response
3-21b - 3-21e	Sec. 3.1.6.1.1, Radium Settling Ponds	Described radium settling pond design	TR RAI P&R-14(f) response

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Page(s)	Item/Location	Revision	Source of Revision
3-21f - 3-21g	Central Plant Pond	Described central plant pond design	TR RAI P&R-14(g) response
3-22	Sec. 3.1.6.1.2	Revised section number	Typographical correction
3-22	Sec. 3.1.6.1.2, ¶ 1, line 2	Changed reference from Figure 3.1-7 to Appendix 3.1-A, which includes figures depicting liners and leak detection systems	For consistency with Appendix 3.1-A
3-22	Sec. 3.1.6.1.2, ¶ 1, line 7	Added reference to the new discussion on pond inspections	TR RAI P&R-14(i) response
3-22 - 3-23	Pond Inspection	Added description of pond inspections	TR RAI P&R-14(i) response
3-23 - 3-25a	Sec. 3.1.6.1.3	Added section describing pond construction specifications and quality control	TR RAI P&R-14(h) response
3-23	Figure 3.1-7	Omitted former Figure 3.1-7 (replaced by reference to figures in App. 3.1-A)	For consistency with Appendix 3.1-A
3-25	Figure 3.1-8	Omitted former Figure 3.1-8 (replaced by new Figure 3.1-2)	For consistency with new Figure 3.1-2
3-25a - 3-25b	Sec. 3.1.6.2	Added section summarizing land application system design	TR RAI P&R-14(c) and 3.1-7 responses
3-25b	Sec. 3.1.6.2.1	Added section describing relationships between land application areas and well fields	TR RAI 3.1-8 response
3-25c	Figure 3.1-13	Added figure	TR RAI 3.1-8 response
3-25d	Figure 3.1-14	Added figure	TR RAI 3.1-8 response
3-25e - 3-25g	Sec. 3.1.6.3	Added section describing deep disposal well design	TR RAI P&R-14(e) response
3-25g - 3-25i	Sec. 3.1.6.4	Added section describing liquid waste quality and treatment	TR RAI P&R-14(d) response
3-26	Sec. 3.1.7	Revised section number	Typographical correction
3-26	Sec. 3.1.7, ¶ 1-3	Revised description of protection from flooding	TR RAI MI-5, MI-6 and 2.7-3 responses
3-26	Sec. 3.1.8	Revised section number	Typographical correction
3-26	Sec. 3.1.8, last ¶	Added a reference to Section 3.1.6.1.3, which describes the pond construction quality control program	TR RAI P&R-14(h) response
3-27	Sec. 3.1.9	Revised section number	Typographical correction
3-27	Sec. 3.1.9	Replaced previous section describing 11e.(2) byproduct material disposal agreement	TR RAI P&R-15 response
3-27	Sec. 3.2, ¶ 1, line 2	Revised figure references	For consistency with Figures 3.1-1 and 3.1-2
3-27	Sec. 3.2, ¶ 3	Added description of seismic design for buildings	TR RAI P&R-3 response

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Page(s)	Item/Location	Revision	Source of Revision
3-28	Former Figure 3.2-1	Omitted former Figure 3.2-1 (replaced by Figures 3.1-1 and 3.1-2)	For consistency with Figures 3.1-1 and 3.1-2
3-29	Figure 3.2-2	Replaced figure	For consistency with revised Figure 5.7-8 and TR RAI 5.7.1-3(c) response
3-30	Figure 3.2-3	Replaced figure	For consistency with revised Figure 5.7-6 and TR RAI 5.7.1-3(c) response
3-31	Sec. 3.2.1, ¶ 2, last line	Revised figure references	For consistency with Figures 3.1-1 and 3.1-2
3-31	Sec. 3.2.1, ¶ 3	Added description of potential plant-to-plant pipelines	TR P&R-13 response
3-32	Figure 3.2-4	Replaced figure	TR RAI MI-1(b) response
3-33	Figure 3.2-5	Replaced figure	TR RAI MI-1(b) response
3-34	Figure 3.2-6	Replaced figure	Updated title block, etc. for consistency with other figures
3-35	Sec. 3.2.2, last ¶, lines 5-6	Revised reference to Sec. 3.1.6 for liquid waste disposal options	For consistency with revised Section 3.1.6
3-36	¶ above Sec. 3.2.2.1	Deleted "mine unit"	TR RAI P&R-1 response
3-36	Sec. 3.2.2.1, line 2	Changed "land application" to "deep disposal well"	TR RAI P&R-14(b) response
3-36	Ion Exchange Vessels, ¶ 2, line 1	Clarified the text to indicate there is one SF and one CPP	Minor clarification
3-36	Production Bleed RO System	Changed "WDW" to "Deep Disposal Well"	Typographical correction
3-38	Line 1	Changed "SFs" to "SF"	Minor clarification
3-39	Shaker Screen Water Tank, line 7	Deleted "stack" since there will not be any stacks associated with the project	TR RAI 5.7.7-1(a) response
3-39	Resin Transfer Water Tank, line 6	Deleted "stack" since there will not be any stacks associated with the project	TR RAI 5.7.7-1(a) response
3-41	Elution Columns, ¶ 2, line 6	Deleted "stack" since there will not be any stacks associated with the project	TR RAI 5.7.7-1(a) response
3-41	Elution Tanks, line 5	Deleted "stack" since there will not be any stacks associated with the project	TR RAI 5.7.7-1(a) response
3-43	Line 1	Deleted "stack" since there will not be any stacks associated with the project	TR RAI 5.7.7-1(a) response
3-44	Sec. 3.2.6, ¶ 1, line 1	Changed dryer temperature from "450°F" to "250°F"	For consistency with Sec. 4.1.2.1

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Page(s)	Item/Location	Revision	Source of Revision
3-45	Vacuum Dryer, ¶ 2	Added a reference to Section 4.1.2.2 which describes dryer monitoring and logging procedures	TR RAI MI-2 response
3-47 - 3-47b	Sec. 3.2.8	Revised chemical storage and feeding system description	TR RAI MI-1(a) and MI-1(b) responses
3-47c	Figure 3.2-7	Added figure	TR RAI MI-1(b) response
3-47c	Figure 3.2-8	Added figure	TR RAI MI-1(b) response
3-48	Sodium Chloride Tanks, line 6	Deleted "stack" since there will not be any stacks associated with the project	TR RAI 5.7.7-1(a) response
3-48	Sodium Carbonate Tanks, line 3	Deleted "stack" since there will not be any stacks associated with the project	TR RAI 5.7.7-1(a) response
3-49	Sec. 3.2.8.3, ¶ 1	Revised description of the acid storage and feeding system	TR RAI MI-1(a) response
3-49	Acid Storage Tank	Revised description of the location and venting of the acid storage tank	TR RAI MI-1(a) and MI-1(c) responses
3-49a	Sec. 3.2.8.4	Revised description of the sodium hydroxide storage and feeding system	TR RAI MI-1(a) response
3-50	Sec. 3.2.8.5	Revised description of the hydrogen peroxide storage and feeding system	TR RAI MI-1(a) response
3-51	Sec. 3.2.8.6	Revised description of the oxygen storage and feeding system	TR RAI MI-1(a) response
3-51a	Sec. 3.2.8.8, lines 3-4	Added description of the barium chloride storage location	TR RAI MI-1(b) response
3-53	¶ 2, line 2	Revised the location of the pumped wastewater (liquid waste disposal system)	For consistency with revised Section 3.1.6
3-53	¶ 3, lines 3-4	Revised "low TDS wastewater pond" to "radium settling ponds"	For consistency with revised Section 3.1.6
3-53	Solids Removal Tank, line 3	Deleted "stack" since there will not be any stacks associated with the project	TR RAI 5.7.7-1(a) response
3-53	High TDS Wastewater Tank, line 3	Deleted "stack" since there will not be any stacks associated with the project	TR RAI 5.7.7-1(a) response
3-54	Radium Precipitation Tank, line 2	Revised "wastewater pond" to "radium settling ponds"	For consistency with revised Section 3.1.6
3-54	Section 3.2.11, ¶ 4, line 4	Deleted "stack" since there will not be any stacks associated with the project	TR RAI 5.7.7-1(a) response
3-55 - 3-55a	Sec. 3.2.12, all except last ¶	Revised description of instrumentation, controls, and alarms	TR RAI 3.1-1 response

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Page(s)	Item/Location	Revision	Source of Revision
3-55a - 3-55b	Sec. 3.2.12, last ¶	Described the controls for shutdown of the deep disposal wells	TR RAI P&R-14(k) response
3-55b - 3-55c	Sec. 3.2.13	Added section describing backup power	TR RAI MI-3 response
3-56	4th bullet	Revised description of mandatory PPE	TR RAI 5.7.3-8 response
3-57	Section 3.5, line 1	Deleted "mine" before "schedule"	Minor clarification
3-57	Sec. 3.5, lines 4-5	Added a reference to Figure 6.1-1 for detailed schedule	TR RAI 6.1-11 response
3-58	Kirby and Salutsky reference	Added reference	TR RAI P&R-14(d) response
4-2	¶ 1, lines 4-5	Clarified the radon release points	TR RAI 5.7.7-1(a) response
4-2	¶ 2, lines 5-6	Clarified the effluent release points	TR RAI 5.7.7-1(a) response
4-2	¶ 3, line 2	Revised "stack" to "vent" since there will be no stacks associated with the project	TR RAI 5.7.7-1(a) response
4-3	¶ 3, lines 5-6	Added reference to Section 5.7.3.1 for description of ventilation during favorable weather conditions	TR RAI 4.1-1(b) response
4-3 - 4-3a	Last 2 ¶ above Sec. 4.1.2	Added summary of ALARA considerations	TR RAI 4.1-4 response
4-3a	Sec. 4.1.2, line 5	Added reference to Section 5.7.3.2 for description of yellowcake solubility	TR RAI 5.7.3-6(a) response
4-4	¶ 1, line 8	Changed "would" to "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
4-5 - 4-6	Sect.4.1.2.2, ¶ 1	Clarified discharge locations associated with yellowcake drying and packaging	TR RAI 4.1-2 response
4-6	¶ 2, line 1	Changed "This point" to "Points"	TR RAI 4.1-2 response
4-6	¶ 4, lines 2-6	Described procedures for verifying that emission control system is performing within specifications	TR RAI MI-2 response
4-6	Sec. 4.2	Moved to p. 4-6c	Typographical correction
4-6a - 4-6c	Sec. 4.1.4	Added section describing accident scenarios	TR RAI 4.1-5 response

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4-6b	Numbered list, #3-5	Changed "would" to "will" (11 occurrences)	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
4-7	1st bullet	Clarified the types of liquid wastes that the project will generate	TR RAI P&R-14(b) response
4-7	2nd bullet	Added "; and" to the end of the bullet	Typographical correction
4-7	3rd bullet	Deleted "; and"	Typographical correction
4-7	Sec. 4.2.1.1, lines 2, 5-8	Revised description of liquid waste disposal options	TR RAI P&R-14(b) response
4-7	Sec. 4.2.1.2	Revised aquifer restoration description	TR RAI 6.1-4 response
4-8	Sec. 4.2.1.4, line 2	Changed "Pollution" to "Pollutant"	Typographical correction
4-8	Sec. 4.2.2, ¶ 2, line 3	Changed "would" to "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
4-8 - 4-8a	Sec. 4.2.2	Added introduction to two liquid waste disposal options	TR RAI P&R-14(b) response
4-8a	Sec. 4.2.2.1, ¶ 4, lines 1-2	Changed "would" to "will" (2 occurrences)	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
4-8a - 4-9	Sec. 4.2.2.1	Revised land application description	TR RAI P&R-14(b) (as revised December 2013) and P&R-14(c) responses
4-18	Bullet #4	Changed "Lakota" to "Chilson"	Minor clarification
4-19	Table 4.2-7	Corrected nickel estimates	Typographical correction
4-19	Table 4.2-7	Changed "Sodium Absorption" to "Sodium Adsorption"	Typographical correction
4-20	Bullet #12	Revised the modeled irrigation season	For consistency with Appendix 3.1-A

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Page(s)	Item/Location	Revision	Source of Revision
4-20	Bullet #13	Revised the modeled crop assumption (bare soil)	For consistency with Appendix 3.1-A
4-20	Bullet #14	Summarized the modeled flow rates	TR RAI P&R-14(b) response and for consistency with Appendix 3.1-A
4-21	Bullet #15	Clarified where the irrigation tailwater and runoff will be conveyed	For consistency with Appendix 3.1-A
4-21	Bullet #16	Added "storage"	For consistency with Appendix 3.1-A
4-22	All text	Revised description of pond sizing calculations	For consistency with Appendix 3.1-A
4-23 - 4-24	Text between Table 4.2-8 and Sec. 4.2.2.1.4	Omitted (revised text is on p. 4-22)	For consistency with Appendix 3.1-A
4-24 - 4-25	Sec. 4.2.2.1.4	Revised the SPAW model results discussion	TR RAI P&R-14(b) response and for consistency with Appendix 3.1-A
4-24	Sec. 4.2.2.1.4, Field Model Results, ¶ 3, line 2	Replaced reference to Appendix 4.2-A with reference to Appendix D of Appendix 3.1-A (SPAW Model Results)	For consistency with Appendix 3.1-A
4-24	Sec. 4.2.2.1.4, Field Model Results, ¶ 3, line 3	Corrected figure reference	For consistency with new Figure 3.1-1
4-25	Sec. 4.2.2.1.5, lines 1-3	Clarified permitting and monitoring requirements for land application	For consistency with TR RAI P&R-14(b) response
4-25	Sec. 4.2.2.1.5, lines 5-6	Changed "the 'Operations and Monitoring Plan' (Knight Piésold, 2008)" to "Section 6 of the Groundwater Discharge Plan permit application."	For consistency with LC 10.12
4-26	Sec. 4.2.2.1.5.1, line 1	Clarified the formation that will be used to supplement freshwater	Minor clarification
4-26	Sec. 4.2.2.1.5.1, line 2	Changed "settling ponds" to "storage ponds"	For consistency with revised Section 3.1.6
4-26	Sec. 4.2.2.1.5.1, lines 3-4	Clarified that sampling will be done in accordance with SD DENR requirements	For consistency with LC 10.12
4-26	Sec. 4.2.2.1.5.1, ¶ 2	Clarified that sampling will be done in accordance with SD DENR requirements	For consistency with LC 10.12
4-26	Sec. 4.2.2.1.5.2, lines 1-2	Clarified that sampling will be done in accordance with SD DENR requirements	For consistency with LC 10.12

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Page(s)	Item/Location	Revision	Source of Revision
4-26	Sec. 4.2.2.1.5.2, line 2	Changed "settling ponds" to "storage ponds"	For consistency with revised Section 3.1.6
4-26	Sec. 4.2.2.1.5.3, line 1	Changed reference from Figure 2.9-8 to Figure 5.7-10, which depicts the operational air monitoring locations	For consistency with revised Figure 5.7-10
4-26	Sec. 4.2.2.1.5.4, ¶ 1	Clarified that sampling will be done in accordance with SD DENR requirements	For consistency with LC 10.12
4-27	¶ 1	Clarified that sampling will be done in accordance with SD DENR requirements	For consistency with LC 10.12
4-27	Sec. 4.2.2.1.5.5	Clarified that sampling will be done in accordance with SD DENR requirements	For consistency with LC 10.12
4-27	Sec. 4.2.2.1.5.6	Clarified that surface water monitoring will occur at the operational monitoring sites and corrected Figure 5.7-1 to Plate 5.7-1	For consistency with new Plate 5.7-1
4-27	Sec. 4.2.2.1.5.7	Clarified that sampling will be done in accordance with SD DENR requirements	For consistency with LC 10.12
4-27	Sec. 4.2.2.2	Changed title from "Waste Disposal Well" to "Deep Disposal Wells"	For consistency with revised Sec. 3.1.6
4-27 - 4-27a	Sec. 4.2.2.2	Revised the deep disposal well description	TR RAI P&R-14(b) response
4-27a	Sec. 4.2.2.3	Described the combined liquid waste disposal option	TR RAI P&R-14(b) response
4-27b - 4-28	Sec. 4.2.2.4	Added section describing the water balance	TR RAI P&R-14(c) response
4-29	¶ 2, line 5	Clarified that pipelines will be buried below the frost line	TR RAI MI-5 and 2.7-3 responses
4-29	¶ 2, lines 9-12	Added summary of freeze protection provisions	TR RAI 7.0-2 response
4-29	¶ 3, lines 1-2	Added reference to Section 3.2.12 for description of leak detection systems in the well fields, pipelines, and header houses	Minor clarification
4-29	Sec. 4.2.3.2, ¶ 2, line 2	Provided additional details on the chemical storage tank curbing	For consistency with Section 3.2.8

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Page(s)	Item/Location	Revision	Source of Revision
4-29	Sec. 4.2.3.2, ¶ 3, line 1	Changed "would" to "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
4-29	Sec. 4.2.3.2, ¶ 3, lines 3-4	Added a reference to Section 7.5.7 for description of curb capacity	TR RAI P&R-14(j) response
4-30	Sec. 4.2.3.3	Changed "Waste" to "Deep" in section title	Typographical correction
4-30	Sec. 4.2.3.3, lines 3-5	Added reference to Sec. 3.2.12 for description of instrumentation and control systems for the deep disposal wells	TR RAI P&R-14(k) response
4-30	Sec. 4.4.1	Changed "Radioactive Wastes" to "11e.(2) Byproduct Material"	Typographical correction
5-1	Sec. 5.1.1, line 3	Changed "Vice President of Environment, Health, and Safety" to "Vice President of Environmental Health & Safety"	Updated title
5-1	Sec. 5.1.1, line 3	Changed "Mine Manager" to "Facility Manager"	TR RAI RI-1 response
5-2	Figure 5.1-1	Changed "Vice President of Environment, Health, and Safety" to "Vice President of Environmental Health & Safety", "Mine Manager" to "Facility Manager", "Vice President - Exploration" to "Vice President - Geology and Exploration", and "Radiation Safety Officer (Centennial)" to "Radiation Safety Officer"	TR RAI RI-1 response; updated titles
5-3	Figure 5.1-2	Changed "Mine Manager" to "Facility Manager"	TR RAI RI-1 response
5-4	Sec. 5.1.3, section title and line 1	Changed "Vice President of Environment, Health, and Safety" to "Vice President of Environmental Health & Safety"	Updated title
5-4	Sec. 5.1.4, title and lines 1, 3, 6 and 8	Changed "Mine Manager" to "Facility Manager"	TR RAI RI-1 response
5-4	Sec. 5.1.4, lines 9-11	Defined "RSO"; clarified that the facility manager may not unilaterally override the RSO's decisions	TR RAI RI-1 response

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Page(s)	Item/Location	Revision	Source of Revision
5-5	¶ 2, lines 1-4	Clarified the RSO responsibilities and authority	TR RAI RI-1 response
5-5	¶ 3	Changed "Vice President of Environment, Health, and Safety" to "Vice President of Environmental Health & Safety"	Updated title
5-5	Sec. 5.1.6	Added section on the Radiation Safety Technician including qualifications and authority	TR RAI RI-2 and RI-3 responses
5-5	Sec. 5.2.1, ¶ 2, lines 1, 3	Changed "the RSO designee" to "RST"	For consistency with TR RAI RI-2 and RI-3 responses
5-6	Sec. 5.2.2, ¶ 1, line 2	Changed "radiological" to "radiation" in RWP	For consistency with List of Acronyms and Abbreviations and TR RI-2 response
5-6	Sec. 5.2.2, ¶ below numbered list	Described RST authority for reviewing and approving RWPs	TR RAI RI-2 response
5-6	Sec. 5.2.3, ¶ 1, line 3	Changed "Mine Manager" to "Facility Manager"	TR RAI RI-1 response
5-7	¶ 1, lines 5-12	Described SERP evaluation of the well field hydrogeologic data packages	TR RAI 5.7.8-14 response
5-7	¶ 2, line 2	Changed "Mine Manager" to "Facility Manager"	TR RAI RI-1 response
5-7	¶ 2, line 3	Changed "Vice President of Environment, Health, and Safety" to "Vice President of Environmental Health & Safety"	Updated title
5-7	Sec. 5.2.5, last bullet	Deleted "tailings piles and"	TR RAI 5.2-4 response
5-8	Sec. 5.2.6, ¶ 1 and first bullet list	Added commitment to develop written procedures to address reporting requirements	TR RAI 5.2-1 response
5-8a	¶ 2 and following bullet list	Described specific incident reporting requirements	TR RAI 5.2-1 response
5-8b	Bullet 1	Added commitment to provide an annual land use survey	TR RAI 5.2-2 response
5-8b	Sec. 5.2.7	Added section describing commitments to administer historic and cultural resources inventory and to immediately cease any work resulting in the discovery of previously unknown cultural artifacts	TR RAI 5.2-3 response
5-9	Bullet list previously above Sec. 5.3	Moved to p. 5-8a	Typographical correction

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Page(s)	Item/Location	Revision	Source of Revision
5-9	Sec. 5.3	Described conformance with RG 8.31 and RG 8.10	TR RAI 5.3-1(b) response
5-9a	Section 5.3.1, ¶ 1, line 1	Changed "an RSO designee" to "RST"	TR RAI RI-3 response
5-9a	Sec. 5.3.1, ¶ 2	Described criteria for RST to replace RSO for daily inspections	TR RAI RI-3 response
5-9a	Sec. 5.3.2, ¶ 1, line 1	Changed "Mine Manager" to "Facility Manager"	TR RAI RI-1 response
5-10	First line	Changed "someone designated by the RSO" to "RST"	TR RAI RI-3 response
5-10	Sec. 5.3.3, ¶ 2, line 5	Changed "Mine Manager" to "Facility Manager"	TR RAI RI-1 response
5-10	Sec. 5.3.4	Changed section name	For consistency with TR RAI 5.3-1(a) response
5-10 - 5-10c	Sec. 5.3.4, p. 5-10 through ¶ 1 on p. 5-10c	Described the ALARA program	TR RAI 5.3-1(a) response
5-10c	Annual ALARA and Radiation Protection Program Audit	Added heading	For consistency with TR RAI 5.3-1(a) response
5-10c	Annual ALARA and Radiation Protection Program Audit, ¶ 2, line 1	Changed "Vice President of Environment, Health, and Safety" to "Vice President of Environmental Health & Safety"	Updated title
5-10c	Annual ALARA and Radiation Protection Program Audit, ¶ 2, line 2	Changed "Mine Manager" to "Facility Manager"	TR RAI RI-1 response
5-11 - 5-11a	Sec. 5.4, minimum qualifications for RST	Changed "Health Physics Technician" to "RST" and added qualifications	TR RAI RI-3 response
5-12	Lines 1, 4 and 7	Updated RST training and education requirements	TR RAI RI-3 response
5-12	Sec. 5.5, line 3-4	Added reference to Appendix 5.5-A for written radiological safety instructions to workers	TR RAI 5.5-3 response
5-13a	¶ 2	Added commitment for developing training program for nonradiological hazards	TR RAI 5.5-2 response
5-13a	Prenatal and Fetal Exposure Policy	Added description of prenatal and fetal exposure policy	TR RAI 5.5-1 response
5-14	Former text above Sec. 5.5.2	Moved to p. 5-13a	Typographical correction
5-16	Sec. 5.7.1.1, ¶ 1, lines 4-8	Clarified use of a vacuum dryer to meet ALARA requirements	TR RAI MI-2 response

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Page(s)	Item/Location	Revision	Source of Revision
5-17	¶ 2	Revised description of dryer monitoring and inspection procedures	TR RAI MI-2 response
5-17	¶ 5, line 1	Changed "SF plants" to "SF"	Minor clarification
5-17	¶ 8	Revised to include a discussion of the ventilation surveys	TR RAI MI-2 and 4.1-3 responses
5-18	Liquid Process Waste, ¶ 1, lines 1-3	Revised the list of liquid effluents	TR RAI P&R-14(b) response
5-18	Liquid Process Waste, ¶ 1, lines 3-4	Added reference to Section 4.2 for description of the liquid waste disposal options and water balance diagrams	TR RAI P&R-14(b) and P&R-14(c) responses
5-18	Liquid Process Waste, ¶ 2-3	Revised description of liquid waste disposal options	TR RAI P&R-14(b) and P&R-14(c) responses
5-18	Aquifer Restoration	Revised summary of aquifer restoration methods	TR RAI 6.1-4 response
5-19	Former ¶ 1	Deleted previous ¶ 1 and replaced with Aquifer Restoration discussion on p. 5-18	TR RAI 6.1-4 response
5-20 - 5-20a	All text	Added additional description of curbed areas and methods for preventing tank failures	TR RAI P&R-14(j) response
5-20b	Subsurface Releases, ¶ 2, lines 7-9	Clarified excursion monitoring frequency	TR RAI 5.7.8-15 and 6.1-8 responses and for consistency with LC 11.5
5-21	2nd bullet list, bullet 1	Clarified plugging and abandonment commitment for historical wells and exploration holes	TR RAI P&R-9 response
5-21a	Sec. 5.7.1.3.1, ¶ 1-3	Described procedures for evaluating potential impacts to water supply wells and removing domestic and stock wells from private use	TR RAI P&R-10 response
5-21b	¶ 1	Summarized operational monitoring of water supply wells	TR RAI 2.7-12 response
5-21b - 5-21d	5-21b ¶ 2 through 5-21d ¶ 1	Described procedures to protect specific wells	TR RAI 2.7-13(b), (c), (d) and (g) and 2.7-14 responses
5-21d	Sec. 5.7.1.3.2	Added section describing wells to be removed from private use prior to ISR operations	TR RAI P&R-10 and 2.7-13(e) and (f) (as revised December 2013) responses
5-21d	Sec. 5.7.1.3.3	Added section describing well replacement procedures	TR RAI P&R-10 and 2.7-12 responses

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Page(s)	Item/Location	Revision	Source of Revision
5-21e	Figure 5.7-1	Added new figure depicting the wells to be removed from use	TR RAI P&R-10 response, with minor revisions to Wells 16 and 43 to match new Plate 2.7-2
5-21f	¶ 1 including quotation	Described lease agreements	TR RAI P&R-10 and 2.7-11 responses
5-21f	¶ 2 (below quotation)	Added reference to Figure 5.7-1a for example well replacement	TR RAI P&R-10 response
5-21f	Sec. 5.7.1.3.4	Added section describing exploration hole mitigation procedures	TR RAI P&R-9 response
5-21g	Figure 5.7-1a	Added figure depicting an example of water supply replacement	TR RAI P&R-10 response
5-21h - 5-22	All text through p. 5-22 ¶ 1	Continued section describing exploration hole mitigation procedures	TR RAI P&R-9 response
5-22	Sec. 5.7.1.4, last sentence	Deleted redundant final sentence	Typographical correction
5-23	Section 5.7.2.1	Clarified the external radiation monitoring program and included revised figure references	TR RAI 5.7.2-5 response
5-24	Former Figure 5.7-1	Replaced former Figure 5.7-1 (Operational Environmental Monitoring Sites) with other figures depicting operational monitoring locations	For consistency with revised or new Figures 5.7-2 through 5.7-5, Figure 5.7-10, Figures 5.7.8-1 through 5.7.8-6 and Plate 5.7-1
5-25	Sec. 5.7.2.2, ¶ 1, lines 3-11 and Table 5.7.2-1	Described the number and category of personnel included in the external radiation monitoring program	TR RAI 5.7.2-4 response
5-25	Sec. 5.7.2.2, ¶ 1, line 8	Changed "would" to "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
5-25a	¶ 3, line 1	Deleted 1st sentence (replaced by discussion on p. 5-25)	TR RAI 5.7.2-4 response
5-25a	Sec. 5.7.2.2.1	Added section describing the employee monitoring as it relates to individuals entering high radiation areas	TR RAI 5.7.2-3 response

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Page(s)	Item/Location	Revision	Source of Revision
5-25a	Sec. 5.7.2.2.1, lines 7, 9, 11	Changed "would" to "will" (3 occurrences)	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
5-26	Former ¶ above Sec. 5.7.2.3	Moved to p. 5-25a	Typographical correction
5-26	Sec. 5.7.2.3, ¶ 3 and Table 5.7.2-2	Added description of the gamma dose rate survey equipment	TR RAI 5.7.2-1 response
5-27	Sec. 5.7.2.4	Added section describing action levels for gamma dose rates and dosimeter results	TR RAI 5.7.2-2 response
5-28	Figure 5.7-2	Replaced figure	TR RAI 5.7.2-5 response
5-29	Figure 5.7-3	Replaced figure	TR RAI 5.7.2-5 response
5-30	Figure 5.7-4	Replaced figure	TR RAI 5.7.2-5 response
5-31	Figure 5.7-5	Replaced figure	TR RAI 5.7.2-5 response
5-32	Sec. 5.7.3, lines 5-7	Added description of air particulate monitoring during the first year of operations	TR RAI 5.7.3-1(c) response
5-32	Sec. 5.7.3.1, ¶ 2, lines 2, 4, 9 and 13-15	Revised description of radon decay product monitoring	TR RAI 5.7.3-1(c) response
5-33	Figure 5.7-6	Replaced figure	TR RAI 5.7.3-1(c) response
5-34	Figure 5.7-7	Replaced figure	TR RAI 5.7.3-1(c) response
5-35	Figure 5.7-8	Replaced figure	TR RAI 5.7.3-1(c) response
5-36	Figure 5.7-9	Replaced figure	TR RAI 5.7.3-1(c) response
5-36a	¶ 1, lines 3-4	Clarified the LLD for radon decay product measurements	TR RAI 5.7.3-2 response
5-36a	¶ 2	Described how airflow patterns will be established within the facilities	TR RAI 5.7.3-1(a) response
5-36a	¶ 3 - 4	Described how open doorways and convection vents will affect radon effluent airflow and employee exposure	TR RAI 4.1-1(b) response
5-37	Sec. 5.7.3.2, ¶ 1, line 3	Changed dryer temperature from "450°F" to "250°F"	For consistency with Sec. 4.1.2.1
5-37	Sec. 5.7.3.2, ¶ 1, lines 5-14	Described justification for considering yellowcake as soluble for radiation protection purposes	TR RAI 5.7.3-6(a) response
5-37	Sec. 5.7.3.2, ¶ 2	Described conformance with NRC staff guidance on solubility of hydrogen peroxide precipitated yellowcake	TR RAI 5.7.3-6(b) response

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Page(s)	Item/Location	Revision	Source of Revision
5-37 - 5-37a	Sec. 5.7.3.2, ¶ 4-7	Revised description of measurement and calculation procedures	TR RAI 5.7.4-3 response
5-37a	¶ 5	Described the ALARA goal for uranium intake	TR RAI 5.7.3-7 response
5-37a	¶ 7	Described airborne particulate monitoring locations	TR RAI 5.7.3-3(a) response
5-37a	¶ 8	Described evaluation of air sampling locations throughout the life of the facility	TR RAI 5.7.3-3(c) response
5-37b	Figure 5.7-9a	Added figure depicting the quarterly air particulate sampling locations	TR RAI 5.7.3-3(a) response
5-37c - 5-37e	¶ 4 on p. 5-37c through end of p. 5-37e	Added technical justification for using the LLD equation from RG 8.25 for air particulate samples	TR RAI 5.7.3-4 response
5-38	Former text and equations above Sec. 5.7.3.3	Replaced with discussion and equations on p. 5-37c through 5-37e	TR RAI 5.7.3-4 response
5-38	Sec. 5.7.3.3, ¶ 2-3	Described respiratory protection program	TR RAI 5.7.3-8 response
5-38 - 5-38a	Sec. 5.7.3.4	Added section describing the air monitoring program during the first year of operation	TR RAI 5.7.3-3(d) response
5-38a	Sec. 5.7.3.5	Added section describing action levels for air sampling locations	TR RAI 5.7.3-5 response
5-38a	Sec. 5.7.3.6	Added section describing monitoring for areas not designated as airborne radioactivity areas	TR RAI 5.7.3-3(e) response
5-39 - 5-39a	Sect. 5.7.4.1 through ¶ 2 on p. 5-39a	Described the two methods used to calculate CEDEs	TR RAI 5.7.4-1(b) response
5-39a	¶ 4 thru equation	Described calculation of the intake due to inhalation	TR RAI 5.7.4-1(a) response
5-39a - 5-39b	p. 5-39a last ¶ through p. 5-39b ¶ below 1st equation	Described exposure calculations if mixtures of radionuclides are encountered	TR RAI 5.7.4-2 response
5-39b	Two ¶s above Sec. 5.7.4.2	Added estimate of airborne radionuclide concentrations	TR RAI 5.7.4-6 response
5-39b	Sec. 5.7.4.2, Equation 5.9	Changed equation number	Typographical correction
5-39c	¶ 2	Described the parameters used to evaluate inhalation exposure to radon decay products and natural uranium	TR RAI 5.7.4-1(c) response

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Page(s)	Item/Location	Revision	Source of Revision
5-39c	Sec. 5.7.4.3	Revised to include a description of the prenatal radiation exposure program	TR RAI 5.7.4-4 response
5-39c - 5-39d	Sec. 5.7.4.4	Added section describing reporting and recordkeeping of worker doses	TR RAI 5.7.4-5 response
5-39d	Sec. 5.7.5, ¶ 1-3	Added technical justification for relying on urinalysis as a primary bioassay technique	TR RAI 5.7.5-1 response
5-39d	Sec. 5.7.5, ¶ 4	Indicated the employees to be included in the bioassay program	TR RAI 5.7.5-3 response
5-39e - 5-39f	Dose Calculations	Described uranium intake dose calculations	TR RAI 5.7.5-2 response
5-39f	Corrective Action	Described corrective actions to be taken when positive bioassay results are confirmed	TR RAI 5.7.5-4 response
5-39f	Reporting and Recordkeeping	Added description of reporting and recordkeeping for the bioassay program	TR RAI 5.7.5-5 response
5-40	Former text above Sec. 5.7.6	Moved to p. 5-39d to 5-39e	Typographical correction
5-40	Sec. 5.7.6, ¶ 1, lines 4-9	Revised description of contamination control program to address classification of restricted areas	TR RAI 5.7.6-4 response
5-40	Sec. 5.7.6.1, ¶ 1, line 1, 4	Revised ¶ to define restricted areas	Minor clarification
5-40	Sec. 5.7.6.1, ¶ 4	Added description of limits and action levels for areas with beta-gamma contamination	TR RAI 5.7.6-5 response
5-41	Sec. 5.7.6.2, ¶ 2, lines 1-3	Described monitoring procedures for personnel existing restricted areas with potential removable surface contamination	TR RAI 5.7.6-2 response
5-41	Sec. 5.7.6.2, ¶ 3	Clarified that alpha contamination monitoring accounts for beta-gamma contamination	TR RAI 5.7.6-1 response
5-41	Sec. 5.7.6.2, ¶ 4	Described who will conduct skin decontaminations and verify that background levels have achieved	TR RAI 5.7.6-3 response
5-41	Sec. 5.7.6.3, lines 3-5	Specified the staff that will survey items leaving the restricted areas	TR RAI 5.7.6-6 response
5-41a	¶ 2	Described procedures for determining the radioactivity of interior surfaces of pipes, drain lines or ducts	TR RAI 5.7.6-9 response

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5-41a	¶ 3	Described minimization of radioactive contamination prior to covering	TR RAI 5.7.6-8 response
5-42	Sec. 5.7.6.6	Added section describing reporting and recordkeeping for the contamination control program	TR RAI 5.7.6-7 response
5-42 - 5-42a	Sec. 5.7.7, ¶ 1	Added commitment to develop, implement and maintain monitoring and QA/QC programs ensure data consistency	TR RAI 5.7.7-17 response
5-42a	¶ 2-5	Described how concentrations of radon and radon decay products will be determined ALARA	TR RAI 5.7.7-1(b) response
5-42a	Sec. 5.7.7.1, ¶ 1	Described operational air monitoring locations	TR RAI 2.9-1, 5.7.7-2, 5.7.7-4 and 5.7.7-5 responses
5-42a - 5-43	Sec. 5.7.7.1, ¶ 2-4	Described filter change schedule	TR RAI 5.7.7-3 response
5-43	¶ 4, lines 1-2	Clarified sampling of release points	TR RAI 5.7.7-1(a) response
5-43	¶ 5	Described radon sampling procedures	TR RAI 5.7.7-6 response
5-44	Figure 5.7-10	Replaced figure	TR RAI 5.7.7-2 response
5-44a	Sec. 5.7.7.1.1	Added section describing estimation of airborne release of radon	TR RAI 5.7.7-16 response
5-44a - 5-44b	Sec. 5.7.7.1.2, ¶ 1-3	Added section describing estimation of public exposure to radon decay products	TR RAI 5.7.7-15 response
5-44b	Last 2 ¶	Described estimate of annual TEDE in and around project area	TR RAI 5.7.7-13 response
5-44c	Figure 5.7-11	New figure showing MILDOS isodose lines	TR RAI 5.7.7-13 response
5-44d	¶ 1	Described estimate of annual TEDE in and around project area	TR RAI 5.7.7-13 response
5-44d	¶ 2	Described potential dose to member of the public	TR RAI 5.7.7-14 response
5-44d	¶ 3	Described how doses to members of the public will be ALARA	TR RAI 4.1-1(a) response
5-44d	¶ 4	Compared calculated doses to information in NUREG-1910	TR RAI 4.1-1(a) and 5.7.7-13 responses
5-45	Former ¶ above Sec. 5.7.7.2	Moved to p. 5-43	Typographical correction
5-45	Sec. 5.7.7.2, ¶ 1	Added introductory paragraph summarizing information in section and committing to attaining LLDs in RG 4.14 or alternate LLDs if agreed to by NRC	TR RAI 5.7.7-17 response

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5-45	Vegetation	Revised operational vegetation sampling description	TR RAI 5.7.7-11 response
5-45	Crops	Added description of operational crop sampling	TR RAI 5.7.7-10(c) response
5-45a	Livestock and Fish	Added description of operational livestock and fish sampling	TR RAI 5.7.7-10(a) response
5-45b	Game Animals	Added description of operational game animals sampling	TR RAI 5.7.7-10(b) response
5-45b	Sec. 5.7.7.3, lines 3-4	Clarified the LLDs for operational surface soil monitoring	TR RAI 5.7.7-17 response
5-45b	Sec. 5.7.7.4	Added section describing the operational direct radiation monitoring program	TR RAI 5.7.7-12 response
5-45b	Sec. 5.7.7.5	Added section describing the operational sediment monitoring program	TR RAI 5.7.7-9 response
5-45b	Sec. 5.7.8.1, line 4	Changed "would" to "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
5-45b - 5-45f	Sec. 5.7.8.1 through p. 5-45f ¶ 1	Added section describing the operational surface water monitoring program	TR RAI 2.9-43(a) and (b), 5.7.8-1, 5.7.8-2 and 5.7.8-18(a) and (b) responses
5-45f - 5-45g	Operational Surface Water Sampling Methods and Parameters	Described sampling methods and parameters	TR RAI 5.7.8-1 and 5.7.8-19 responses
5-45g - 5-45h	Sec. 5.7.8.2 through 2nd to last ¶ on p. 5-45h	Added section describing the operational groundwater monitoring program	TR RAI 5.7.8-17 response (as revised December 2013)
5-45h	Operational Groundwater Sampling Methods and Parameters	Added description of sampling methods and parameters	TR RAI 5.7.8-19 response
5-45i	Table 5.7.8-4	Added monitor well table	TR RAI 5.7.8-17 response
5-45j	Figure 5.7.8-1	Added figure	TR RAI 5.7.8-17 response
5-45k	Figure 5.7.8-2	Added figure	TR RAI 5.7.8-17 response, with Well 635 removed for consistency with Appendix 2.2-A
5-45l	Figure 5.7.8-3	Added figure	TR RAI 5.7.8-17 response
5-45m	Figure 5.7.8-4	Added figure	TR RAI 5.7.8-17 response

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5-45n	Figure 5.7.8-5	Added figure	TR RAI 5.7.8-17 response
5-45o	Figure 5.7.8-6	Added figure	TR RAI 5.7.8-17 response
5-45p	¶ 1-3	Added description of sampling methods and parameters	TR RAI 5.7.8-19 response
5-45p - 5-45q	Sec. 5.7.8.3	Added section describing well field production zone baseline groundwater monitoring	TR RAI 5.7.8-3(b) [as amended in June 2012], 5.7.8-5 and 5.7.8-6 responses
5-45q	Sec. 5.7.8.4	Added section to describe excursion monitoring	TR RAI 5.7.8-8 response
5-45q - 5-45r	Sec. 5.7.8.4.1	Added section describing baseline monitoring for establishing UCLs	TR RAI 5.7.8-8 response
5-45r	Sec. 5.7.8.4.2, ¶ 1	Described excursion indicators	TR RAI 5.7.8-7(a), (b) and (c) responses
5-45r	Sec. 5.7.8.4.2, ¶ 2	Described how UCLs will be calculated	TR RAI 5.7.8-8 response
5-45r - 5-45t	Sec. 5.7.8.4.3, all text through p. 5-45t ¶ 2	Added section describing excursion monitor wells	TR RAI 5.7.8-10 response
5-45t	¶ 3-5	Described perimeter monitoring for stacked roll fronts	TR RAI 5.7.8-11 response
5-45u	Sec. 5.7.8.4.4	Added section describing excursion monitoring sampling	TR RAI 5.7.8-15 response
5-45u	Sec. 5.7.8.4.5, ¶ 2, line 6	Changed "would" to "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
5-45u - 5-45v	Sec. 5.7.8.4.5	Added section describing corrective actions to control excursions	TR RAI 5.7.8-16 response
5-45v	Sec. 5.7.9, ¶ 1-2	Revised section to provide additional details on the quality assurance project plan (QAPP)	TR RAI P&R-16, 5.7.9, 6.2-1(c) and 6.4-8 responses
5-45v	Section 5.7.9, ¶ 4, line 1	Deleted " ."	Typographical correction
5-45v	Section 5.7.9, ¶ 4, line 5	Changed "Mine Manager" to "Facility Manager"	TR RAI RI-1 response
5-46	Figure 5.7-12	Replaced previous bullet list with revised outline of QAPP	TR RAI P&R-16 response
5-47	Former text above Sec. 5.7.10	Moved to p. 5-45v	Typographical correction

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Page(s)	Item/Location	Revision	Source of Revision
6-1 - 6-1b	Sec. 6.1.1, ¶ 2 through ¶ below numbered list on p. 6-1b	Described groundwater restoration criteria and ACL requirements	TR RAI 6.1-1 and 6.1-2 responses
6-1b	¶ 2	Added a discussion of statistical methods that would be employed to establish baseline levels	TR RAI 5.7.8-3(b) and TR RAI 5.7.8-3(b) Revised
6-2	Table 6.1-1	Revised table to include all analytes listed in Table 2.7.3-1 of NUREG-1569	TR RAI 6.1-3 response
6-3	Sec. 6.1.2, ¶ 1 and 1st bullet	Moved from p. 6-2	Typographical correction
6-3	¶ 2, last sentence	Omitted last sentence describing groundwater restoration at Crow Butte	For consistency with revised Sec. 6.1.5
6-4 - 6-4b	Sec. 6.1.3, 6.1.3.1, 6.1.3.2 and 6.1.3.3	Described groundwater restoration methods in each liquid waste disposal option	TR RAI 6.1-4 response
6-4b	Sec. 6.1.3.4, ¶ 1-2	Added a description of flare control throughout the life of a well field	TR RAI 6.1-4 and 6.1-5 responses
6-4b	Sec. 6.1.3.4, ¶ 3	Described flare capture	TR RAI 6.1-4 response (as revised December 2013)
6-5	Former text above Sec. 6.1.4	Replaced with revised text on p. 6-4 through 6-4b	Typographical correction
6-5	Sec. 6.1.4, lines 1, 4-10	Described revised schedule and compliance with 10 CFR 40.42	TR RAI 3.1-3 and 6.1-11 responses
6-6	Figure 6.1-1	Replaced figure	TR RAI 6.1-11 response
6-7 - 6-7a	Sec. 6.1.5	Revised the section to discuss the effectiveness of RO treatment with permeate injection	TR RAI 6.1-6 response
6-7a - 6-8	Sec. 6.1.6	Added section describing pore volume calculations	TR RAI 6.1-7 response, with commitment to calculate pore volumes based on actual well screen lengths (in ML12263A250)
6-8	Sec. 6.1.7	Updated section number	Typographical correction
6-8	Sec. 6.1.7, ¶ 2, line 2	Revised liquid waste disposal summary	TR RAI 6.1-4 response
6-8	Sec. 6.1.7, ¶ 2, line 4	Deleted the sentence that indicated radium removal would only be required in the land application option	TR RAI 6.1-4 response
6-9	Sec. 6.1.8 and 6.1.8.1	Updated section numbers	Typographical correction
6-9	Sec. 6.1.8.1 through Notification	Revised description of monitoring during active restoration	TR RAI 6.1-8 response

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6-9 - 6-9a	Monitoring the Progress of Active Restoration	Described procedures to monitor the effectiveness of aquifer restoration	TR RAI 6.1-9 response
6-9a	Sec. 6.1.8.2	Updated section number	Typographical correction
6-9a - 6-9b	Sec. 6.1.8.2	Revised description of restoration stability monitoring	TR RAI 6.1-10 response
6-10	Sec. 6.1.9	Updated section number	Typographical correction
6-10	Sec. 6.1.9, ¶ 1, last line through end	Revised description of well plugging and abandonment	TR RAI P&R-9 response, with revised ARSD reference for well plugging
6-11 - 6-13	Figure 6.1-2, Figure 6.1-3 and former text	Omitted figures and text	For consistency with revised Sec. 6.1.9
6-14	Former text above Sec. 6.1.10	Omitted text	For consistency with revised Sec. 6.1.9
6-14	Sec. 6.1.10	Updated section number	Typographical correction
6-14	Sec. 6.1.10, lines 3-4	Omitted "Class I", discussed alternate liquid waste disposal option (land application) and referenced Sec. 4.2 for detailed description of liquid waste disposal options	TR RAI 6.1-4 response
6-15 - 6-17	Figure 6.1-4, Figure 6.1-5 and former text	Added intentionally blank pages since reference was added to Sec. 4.2 for detailed description of liquid waste disposal options	For consistency with revised Sec. 6.1.10
6-18	Sec. 6.1.11	Updated section number	Typographical correction
6-18	Sec. 6.1.11	Updated references based on Section 6.1 revisions	Various TR RAI responses
6-19	Sec. 6.2	Deleted former Sec. 6.2.1 Introduction	For consistency with other changes to Sec. 6.2
6-19 - 6-19a	Sec. 6.2.1	Added section describing pre-reclamation radiological surveys	TR RAI 6.2-1(a), 6.2-2(a) and 6.2-2(b) responses
6-21	Sec. 6.3.1	Revised description of surface contamination release limits	TR RAI P&R-17 and 6.3-2 responses
6-22	Sec. 6.3.2, ¶ 1, lines 4-8	Provided commitment to prepare procedures for performing radioactivity measurements on interior pipe surfaces, etc.	TR RAI P&R-17 response
6-22	Sec. 6.3.2, ¶ 3	Described how materials with potential surface contamination will be treated	TR RAI 6.3-3 response
6-23	First bullet	Changed "above" to "below"	TR RAI 6.3-1 response
6-23a	Sec. 6.3.5	Added section describing plans for decommissioning non-radiological hazardous constituents	TR RAI 6.2-1(b) response
6-24	Sec. 6.4.1, ¶ 1	Added land cleanup commitments	TR RAI P&R-16 response

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Page(s)	Item/Location	Revision	Source of Revision
6-27	¶ before 2nd equation	Moved above 2nd equation	TR RAI 6.4-3 response
6-32	¶ 2, line 3	Changed "presents" to "presence"	Typographical correction
6-32	Sec. 6.4.2, ¶ 2	Added commitment to submit a decommissioning plan with methodology for pre- and post-reclamation gamma ray surveys	TR RAI 6.4-6 response
6-32	Section 6.4.2, ¶ 3	Described areas to be surveyed	TR RAI P&R-16 response
6-33	Sec. 6.4.3 ¶ 1-2	Revised surface soil cleanup commitments	TR RAI 6.4-1 response
6-33a	¶ 1, lines 4-13	Clarified what defines the affected areas and conformance with NUREG-1569, Acceptance Criterion 6.4.3(5)	TR RAI 6.4-4 and 6.4-5 responses
6-33a	¶ 2	Described commitment to provide TEDE calculation in the decommissioning plan	TR RAI 6.4-7 response
6-33a	¶ 2, line 5	Changed "would" to "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
6-33a	Sec. 6.4.4, ¶ 1	Revised description of QAPP	TR RAI 5.7.9, 6.2-1(c), and 6.4-8 responses
6-34a - 6-35b	All text and Table 6.6-1	Revised financial assurance cost estimate description	TR RAI P&R-15 and MI-4(a), (b), (c), (d), and (e) responses
6-36	Lyntek, 2010 reference	Added reference	TR RAI MI-4(c) response
7-2	Sec. 7.1.2, ¶ 3	Clarified current and future hunting access with the project area	TR RAI 2.9-15 response
7-6	¶ 1, line 3	Changed dryer temperature from "450°F" to "250°F"	For consistency with Sec. 4.1.2.1
7-6	Sec. 7.2.2, ¶ 2	Clarified current and future hunting access with the project area	TR RAI 2.9-15 response
7-7	Sec. 7.2.3.1, ¶ 2, line 2	Updated section reference from 2.6.6 to 2.6.7	For consistency with revised Sec. 2.6.7
7-7	Sec. 7.2.3.2, ¶ 1, line 2	Updated section reference from 2.6.5 to 2.6.6	For consistency with revised Sec. 2.6.6
7-10	Table 7.2-1	Corrected EPS, RSC and SAR footnote numbers	Typographical correction
7-12	Sec. 7.2.3.2.3	Changed section name from "WASTE DISPOSAL WELL" to "Deep Disposal Wells"	For consistency with revised Sec. 4.2

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7-12	Sec. 7.2.3.2.3, line 3	Deleted "/state" since EPA is the only agency regulating Class III UIC permits in SD	SD UIC regulations were tolled in 2011 according to South Dakota Codified Law 34A-2-126
7-12	Sec. 7.2.3.2.3, line 8	Deleted "I or" since the deep disposal wells are classified as Class V only	For consistency with revised Sec. 4.2
7-13	Line 1	Deleted "/state" since EPA is the only agency regulating Class III UIC permits in SD	SD UIC regulations were tolled in 2011 according to South Dakota Codified Law 34A-2-126
7-13	Sec. 7.2.3.2.4	Title capitalization in section title	Typographical correction
7-15	Sec. 7.2.5.1	Revised to include results from 2012 numerical groundwater model included in Appendix 6.1-A	Numerical Modeling of Hydrogeologic Conditions, February 2012 (ML12062A096)
7-16 - 7-18	Sec. 7.2.5.1 (cont'd)	Added intentionally blank pages, since previous information was replaced with numerical groundwater model report	Numerical Modeling of Hydrogeologic Conditions, February 2012 (ML12062A096)
7-19	Former text above Sec. 7.2.5.1.1	Omitted text (replaced by discussion on p. 7-15)	Numerical Modeling of Hydrogeologic Conditions, February 2012 (ML12062A096)
7-19	Sec. 7.2.5.1.1	Updated section number	Typographical correction
7-20	Line 2	Changed "neural" to "neutral"	Typographical correction
7-20	Sec. 7.2.5.3 heading and line 1	Omitted "Leach Fluid"	For consistency with TR RAI 3.1-5 response
7-21	Sec. 7.2.5.4, last 2 lines	Completed original sentence with "aquifers" and added reference to Sec. 3.2.12 for additional information on the instrumentation and control systems	For consistency with revised Sec. 3.2.12
7-28	Line 3	Changed "excess processing water" to "treated wastewater"	For consistency with revised Sec. 4.2
7-36	Sec. 7.2.9, ¶ 2, line 4	Changed "Darrow" to "Dawes"	Typographical correction
7-37	Sec. 7.3, ¶ 3, line 1	Changed "will dispose" to "may dispose"	For consistency with revised Sec. 4.2
7-40	Sec. 7.3.2, ¶ 2, lines 2-3	Revised summary of liquid waste disposal options	For consistency with revised Sec. 4.2
7-41 - 7-41a	Table 7.3-1	Revised table to reflect the updated MILDOS-AREA input parameters	TR RAI 5.7.7-13 response and for consistency with revised Appendix 7.3-C
7-42	Sec. 7.3.3.1, ¶ 2, lines 3-4	Clarified the land application area used in the updated MILDOS-AREA model	For consistency with Appendix 7.3-C

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7-45	Table 7.3-2	Revised table to reflect the updated MILDOS-AREA release rates	For consistency with Appendix 7.3-A
7-45	Sec. 7.3.3.2, line 1	Changed "emanation" to "releases"	Typographical correction
7-46	Lines 2-3	Changed "Mining Unit" to "Well Field"	TR RAI P&R-1 response
7-46	Sec. 7.3.3.2.1, Last ¶, line 1	Changed "Equations 7.8-10" to "Equations 7.8 through 7.10"	Minor clarification
7-46	Sec. 7.3.3.2.1, Last ¶, lines 2-3	Revised the Rn-222 release rates from the updated MILDOS-AREA results	For consistency with Appendix 7.3-A
7-47	Sec. 7.3.3.2.2, Last ¶, line 1	Changed "Equations 7.11-12" to "Equations 7.11, 7.12"	Minor clarification
7-48	¶ 1, lines 7-9	Clarified that the bleed from the production well field may be treated or disposed and added the Rn-222 attributable to deep well disposal	For consistency with revised Appendix 7.3-A
7-48	Sec. 7.3.3.2.3, line 2	Changed "Equations 7.11-12" to "Equations 7.11 and 7.12"	Minor clarification
7-48	Sec. 7.3.3.2.3, line 6	Changed "production" to "restoration"	Typographical correction
7-48	Sec. 7.3.3.2.3, lines 6-8	Described Rn-222 attributable to deep well disposal	For consistency with revised Appendix 7.3-B
7-48	Sec. 7.3.3.2.4, ¶ 2	Changed "radon" to "Rn-222" and added "from" between "released" and "new"	Typographical correction
7-49	Sec. 7.3.3.2.5, ¶ 2	Changed "new well field development" to "from resin transfers"	Typographical correction
7-49	Sec. 7.3.3.2.5, last ¶	Changed "Equations 7.13-16" to "Equations 7.13 through 7.16"	Minor clarification
7-50	Table 7.3-3	Revised the Rn-222 release rates from the updated MILDOS-AREA results and added a footnote to the table clarifying the results	For consistency with revised Appendix 7.3-A
7-50	Sec. 7.3.3.3, ¶ 1, lines 3-4	Clarified the coordinates and distances in Table 7.3-4	Minor clarification
7-51	Table 7.3-4, 2nd to last row	Changed "Englebert" to "Andersen" and updated distances	For consistency with revised Appendix 7.3-A
7-52	Sec. 7.3.3.5, ¶ 1, last line	Changed "waste" to "deep"	For consistency with revised Sec. 4.2
7-52 - 7-53	Sec. 7.3.3.5, bullet list	Revised the TEDE results based on the updated MILDOS-AREA model	For consistency with revised Appendix 7.3-A

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Page(s)	Item/Location	Revision	Source of Revision
7-54	Table 7.3-5	Revised the title and table to reflect the updated MILDOS-AREA results, added a footnote to clarify the results and changed "Englebert" to "Andersen"	For consistency with revised Appendix 7.3-A
7-55	Sec. 7.3.3.6, ¶ 3, line 2	Changed "7.5E-6" to "0.000007" based on MILDOS-AREA model results	For consistency with revised Appendix 7.3-A
7-55	Table 7.3-6	Revised the table to reflect the updated MILDOS-AREA results	For consistency with revised Appendix 7.3-A
7-56	Table 7.3-7 and ¶ below table	Revised the title, table and discussion to reflect the updated MILDOS-AREA results	For consistency with revised Appendix 7.3-A
7-56	Sec. 7.3.3.8.1, ¶ 2-3	Updated the soil concentrations used in the RESRAD model	For consistency with revised Table 7.3-2 and revised Appendix 7.3-A
7-57	¶ 2, lines 2-4	Revised the dose rates calculated from the RESRAD model	For consistency with new Appendix 7.3-D
7-57	Sec. 7.3.3.8.2, ¶ 1, line 2	Changed "though" to "through"	Typographical correction
7-60	¶ 1, lines 2-3	Updated the summary of liquid waste disposal options	For consistency with revised Sec. 4.2
7-60 - 7-60a	Sec. 7.5.1	Revised to identify those chemicals used in uranium processing that have the potential to impact radiological safety	TR RAI MI-1(a) response
7-60a	Sec. 7.5.1.1	Added section describing site-specific conditions potentially affecting chemical risk	TR RAI 7.0-2 response
7-61	Former text above Sec. 7.5.2	Omitted (now addressed on p. 7-60 through 7-60a)	TR RAI MI-1(a) response
7-61	Sec. 7.5.2.1, ¶ 1, lines 1-2	Deleted "leach fluid"	For consistency with TR RAI 3.1-5 response
7-61	Sec. 7.5.2.1, ¶ 3	Summarized excursion mitigation measures	TR RAI 5.7.8-9 response
7-62	Sec. 7.5.3, ¶ 1, line 2	Added "or restoration fluid" and changed "process fluid" to "liquid"	Minor clarification
7-62	Sec. 7.5.3, ¶ 1, lines 4-11	Summarized instrumentation and control measures to reduce potential for well field spills	TR RAI 3.1-1 response

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Page(s)	Item/Location	Revision	Source of Revision
7-62	Sec. 7.5.3, ¶ 1, line 12	Changed "would" to "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
7-62	Sec. 7.5.3, ¶ 1, line 14	Clarified that pipelines will be buried below the frost line	TR RAI MI-5 and 2.7-3 responses
7-62	Sec. 7.5.3, ¶ 2, lines 5-7	Summarized spill protection measures in header houses	TR RAI 3.1-1 response
7-63	Sec. 7.5.4.1, ¶ 4, line 3	Changed "would" to "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
7-64	¶ 1, line 3	Changed "preformed" to "performed"	Typographical correction
7-64	¶ 1, line 4	Changed "would" to "will"	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
7-64	Sec. 7.5.4.2, ¶ 1, lines 1-2	Revised to indicate that uranium-loaded resin may be transported to the PAA	For consistency with Sec. 1.9 (p. 1-8)
7-65	Sec. 7.5.4.4	Changed "Radioactive Wastes" to "11e.(2) Byproduct Material" in section title	Typographical correction
7-65 - 7-65a	Sec. 7.5.5, lines 14-16 on p. 7-65 through ¶ 2 on p. 7-65a	Added description of emergency procedures for a tornado	TR RAI 7.0-4 response

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Page(s)	Item/Location	Revision	Source of Revision
7-65a	¶ 2, lines 9, 11, 12	Changed "would" to "will" (3 occurrences)	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
7-65a	¶ 4	Added description of seismic design for buildings and other structures	TR RAI P&R-3 response
7-65b - 7-65d	Sec. 7.5.6	Added section describing accident consequences and mitigation for fires and explosions	TR RAI 7.0-3 response
7-65c	6th bullet, lines 2, 3	Changed "would" to "will" (2 occurrences)	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
7-65d	Sec. 7.5.7, bullet b, lines 3, 4, 8	Changed "would" to "will" (4 occurrences)	Per Powertech's commitment in its comments on the 2nd draft license to evaluate all instances of "would" and replace it with "will" or "shall" when denoting a commitment
7-65d - 7-65e	Sec. 7.5.7	Added section describing potential major pipe or tank rupture risk and mitigation measures	TR RAI 7.0-1 response
7-66	Former text above Sec. 7.6	Moved to p. 7-65a	Typographical correction
8-2	¶ 1, line 2	Changed "Figure 3.2-1" to "Figures 3.1-1 and 3.1-2"	For consistency with new Figures 3.1-1 and 3.1-2
8-2 - 8-3	Sec. 8.3.1.1, ¶ 2	Replaced description of monitoring well layout and design for stacked roll fronts with reference to Sec. 3.1.3 and 5.7.8.4.3	For consistency with revised Sec. 3.1.3 and 5.7.8.4.3
8-3 - 8-4	Sec. 8.3.2.2, ¶ 2	Revised description of aquifer restoration methods	TR RAI 6.1-4 response
8-4	Sec. 8.3.2.3	Revised description of liquid waste disposal options	For consistency with revised Section 4.2

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Page(s)	Item/Location	Revision	Source of Revision
8-11	Table 8.6-1, Radiological Health Impacts	Revised the results to reflect the updated MILDOS-AREA results	For consistency with revised Sec. 7.3
9-3	Sec. 9.2.2.3, ¶ 2, line 4	Corrected length of project boundary that occurs along the state line	For consistency with Figure 3.1-1
9-5	Sec. 9.3.1, ¶ 1, line 2	Corrected table reference	Typographical correction
9-11	Sec. 9.4.2.1, ¶ 1, lines 3-5	Clarified restrictions on hunting access	TR RAI 2.9-15 response
10-1	Table 10.1-1	Changed "Figure" to "Table"	Typographical correction
Plates Volume I - Plates 1.5-1 through 2.6-8			
Plate 1.5-1	Mineral Ownership	No change from original TR plate	TR Plate 1.5-1
Plate 1.5-2	Surface Use Agreements	No change from original TR plate	TR Plate 1.5-2
Plate 2.5-1	Environmental Sampling Locations	Removed PS-1, CR-1 and BC-1; renamed HV to AMS; renamed Hydro ID 635 to 5; renamed Hydro ID 4002A to 4002; added Hydro IDs 49, 682, 684-687, 690-693, 703-706	TR Plate 2.5-1, modified based on TR RAI P&R-10 (as revised December 2013), 2.9-10 and 2.9-45 responses and for consistency with revised Appendices 2.2-A and 2.7-G
Plate 2.6-1	Structure Map, Top of the Unkpapa	Changed plate # from original TR plate; no other changes	TR Plate 2.6-4
Plate 2.6-2	Structure on Top of Morrison	Changed plate # from TR RAI response exhibit; corrected Fall River County label southwest of project area	TR RAI response Exh. 2.6-1
Plate 2.6-2a	Structure to the Top of Morrison, Burdock Area	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.6-7
Plate 2.6-3	Structure Map - Top of the Chilson Member of the Lakota Formation	Changed plate # from Supplemental Report (SR) exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 3.2-2, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 2.6-3a	Structure Map - Top of the Chilson Member of the Lakota Formation, Dewey Well Field 1	Changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 3.2-8, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 2.6-3b	Structure Map - Top of the Chilson Member of the Lakota Formation Burdock Well Field 1	Changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 3.2-11, with nomenclature change for consistency with TR RAI P&R-1 response

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Page(s)	Item/Location	Revision	Source of Revision
Plate 2.6-4	Structure Map - Top of the Fuson Shale	Changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"; changed "Fuson Formation" to "Fuson Shale"	SR Exh. 2.2-3, with nomenclature changes for consistency with TR RAI P&R-1 and P&R-6 responses
Plate 2.6-4a	Top of Fuson, Structure Contour Map, Dewey Well Field 1	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.6-6
Plate 2.6-5	Structure Map - Top of the Fall River Formation	Changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 2.2-2, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 2.6-6	Isopach Map of the Morrison Formation	Changed plate # from TR RAI response exhibit; corrected Fall River County label southwest of project area	TR RAI response Exh. 2.6-2
Plate 2.6-7	Isopach of the Chilson Member of the Lakota Formation	Changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 3.2-5, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 2.6-7a	Isopach of the Chilson Member of the Lakota Formation, Burdock Well Field 1	Changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 3.2-12, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 2.6-8	Isopach of the Fuson Shale	Created revised isopach map per commitment in TR RAI response	TR RAI P&R-6 response (replaces TR Plate 2.6-7 and SR Exh. 3.2-3, 3.2-10 and 3.2-13)
Plates Volume II - Plates 2.6-9 through 2.6-12j			
Plate 2.6-9	Isopach of the Fall River Formation	Changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 3.2-4, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 2.6-9a	Isopach of the Fall River Formation, Dewey Well Field 1	Changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 3.2-9, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 2.6-10	Isopach of the Upper Confining Graneros Group	Changed plate # from SR Appendix plate; changed title to include "Graneros Group"; changed "Mine Unit" to "Well Field"	SR Appendix B, Plate 315, with nomenclature changes for consistency with TR RAI P&R-1 response
Plate 2.6-11	Alluvium Isopach	Changed plate # from TR RAI response exhibit; corrected Fall River County label southwest of project area	TR RAI response Exh. 2.6-8

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Page(s)	Item/Location	Revision	Source of Revision
Plate 2.6-12	Cross Section Index Map	Changed plate # from TR RAI response exhibit; corrected Fall River County label southwest of project area	TR RAI response Exh. 2.7-1
Plate 2.6-12a	Cross Section A - A'	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.7-1a
Plate 2.6-12b	Cross Section B - B'	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.7-1b
Plate 2.6-12c	Cross Section C - C'	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.7-1c
Plate 2.6-12d	Cross Section D - D'	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.7-1d
Plate 2.6-12e	Cross Section E - E'	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.7-1e
Plate 2.6-12f	Cross Section F - F'	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.7-1f
Plate 2.6-12g	Cross Section G - G'	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.7-1g
Plate 2.6-12h	Cross Section H - H'	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.7-1h
Plate 2.6-12j	Cross Section J - J'	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.7-1j
Plates Volume III - Plates 2.6-13 through 5.7-1			
Plate 2.6-13	Cross Section of the Morrison Formation	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.6-3
Plate 2.6-14	Geologic Map Jewel Cave SW	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.6-4
Plate 2.6-15	Location of Breccia Pipes Proposed by USGS Professional Paper 763	Changed plate # from TR RAI response exhibit; no other changes	TR RAI response Exh. 2.6-5
Plate 2.6-16	Soil Map	No changes to plate content	TR Plate 2.6-15
Plate 2.7-1	Aerial Extent of 100-year Flood and Proposed Facilities and Potential Well Fields	Changed plate # from TR RAI response exhibit; corrected Fall River County label southwest of project area	TR RAI response Exh. 2.7-3
Plate 2.7-2	Wells within 2 km of Project Boundary	Changed plate # from TR RAI response exhibit; changed Well 5 from Chilson to Fall River; removed former Well 635; added Well 108; corrected Fall River County label southwest of project area	TR RAI response Exh. 3.1-1 and TR RAI P&R-10 response (as revised December 2013)
Plate 2.8-1	Vegetation Communities Map	No changes to plate content	TR Plate 2.8-1

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Page(s)	Item/Location	Revision	Source of Revision
Plate 2.8-2	Wetland Assessment Map	No changes to plate content	TR Plate 2.8-2
Plate 2.8-3	Wildlife Features	No change from original TR plate	TR Plate 2.8-3
Plate 3.1-1	Aquifer Exemption Boundaries Proposed in 2009	Added "Proposed in 2009" to plate name to clarify that these are not the currently proposed aquifer exemption boundaries; changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 2.1-1, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 3.1-2	Typical Well Field Layout, Dewey Area	Changed title; changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 3.1-6, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 3.1-3	Typical Well Field Layout, Burdock Area	Changed title; changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 3.1-7, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 3.1-4	Typical Well Field and Header House Layout, Dewey Area	Changed title; changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 3.1-8, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 3.1-5	Typical Well Field and Header House Layout, Burdock Area	Changed title; changed plate # from SR exhibit; changed "Mine Unit" to "Well Field"	SR Exh. 3.1-9, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 3.1-6	Typical Header House, 100' and 70' Well Field	Changed title; changed plate # from original TR plate; changed "Mine Unit" to "Well Field"	TR Plate 3.1-2, with nomenclature change for consistency with TR RAI P&R-1 response
Plate 5.7-1	Operational Surface Water Monitoring Locations	Changed plate # from TR RAI response exhibit; corrected Fall River County label southwest of project area; corrected northing and easting labels	TR RAI response Exh. 5.7-1 and TR RAI 5.7.8-2 response
TR, SR or TR RAI Response Plates/Exhibits Omitted from Revised TR			
TR Plate 2.6-1	Typical Log	Omitted	Replaced by Figure 2.6-2a
TR Plate 2.6-5	Generalized Cross Section	Omitted	Replaced by Figures D-21 and D-22 in Appendix 2.7-L
SR Exh. 3.1-2	Proposed Facilities and Well Fields Land Application Option	Omitted	Replaced by Fig. 3.1-1

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Page(s)	Item/Location	Revision	Source of Revision
SR Exh. 3.1-2	Proposed Facilities and Well Fields Deep Disposal Well Option	Omitted	Replaced by Fig. 3.1-2
SR Exh. 3.1-4	Future Mine Units	Omitted	Replaced by Fig. 3.1-3
SR Exh. 3.1-10	Location of the Historical Mines and Overburden Piles	Omitted	Replaced by Fig. 2.6-3a
SR Exh. 3.2-1	Proposed Well Fields	Omitted	Replaced by Fig. 3.1-3
TR RAI Response Exh. 3.1-2	Proposed Facilities and Potential Initial Well Field Areas Land Application Option	Omitted	Replaced by Fig. 3.1-1
TR RAI Response Exh. 3.1-3	Proposed Facilities and Potential Initial Well Field Areas Deep Disposal Well Option	Omitted	Replaced by Fig. 3.1-2
TR RAI Response Exh. 3.1-4	Potential Well Field Areas	Omitted	Replaced by Fig. 3.1-3
Appendices Volume I - Appendix 2.2-A through 2.5-F			
Appendix 2.2-A	Well Location Data	Replaced with tables from RAI response	TR RAI P&R-10 response (as revised December 2013)
Appendix 2.2-B	Well Inventory	Provided well completion records and associated documentation as committed in RAI response	TR RAI P&R-10 response (as revised December 2013)
Appendix 2.4-A	Cultural Resources Report	Corrected spelling of "Supplemental" on cover sheet; no other changes	TR Appendix 2.4-A, with typographical correction
Appendix 2.4-B	Memorandum of Agreement	No change from original TR appendix	TR Appendix 2.4-B
Appendix 2.5-A	Support Information for Newcastle, Wyoming Meteorological Monitoring Site	Replaced original TR Appendix 2.5-A (Chadron data) with information from Newcastle, Wyoming since it is more representative of the project	For consistency with TR RAI 2.5-1(a) response
Appendix 2.5-B	Statistical Reports for Dewey-Burdock Meteorological Site	No change from original TR appendix	TR Appendix 2.5-B

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Page(s)	Item/Location	Revision	Source of Revision
Appendix 2.5-C	Support Information for Dewey-Burdock Meteorological Monitoring Site	Replaced original TR Appendix 2.5-C with discussion of stability class and JFD from RAI response	TR RAI 2.5-3 response
Appendix 2.5-D	Newcastle Meteorological Station Audit Reports	Added RAI response appendix plus additional audit reports and SOPs submitted to NRC in June 2012	TR RAI Response App. 2.5-D, TR RAI 2.5-1(a) response and additional data submitted June 13, 2012 (ML12173A038)
Appendix 2.5-E	Statistical Methodology for Assessing Representativeness of Wind Data	Added RAI response appendix plus additional information submitted to NRC in June 2012	TR RAI Response App. 2.5-E, TR RAI 2.5-1(c) response and additional data submitted June 13, 2012 (ML12173A038)
Appendix 2.5-F	Dewey-Burdock Meteorological Station Operation and Maintenance	Added RAI response appendix	TR RAI Response App. 2.5-F and TR RAI 2.5-10 response
Appendices Volume II - Appendix 2.6-A through 2.7-H			
Appendix 2.6-A	Exploration Drill Holes within One-Mile Perimeter around the Dewey-Burdock Project	No change from original TR appendix	TR Appendix 2.6-A
Appendix 2.6-B	Soil Mapping Unit Descriptions	No change from original TR appendix	TR Appendix 2.6-B
Appendix 2.6-C	Soil Series Descriptions	No change from original TR appendix	TR Appendix 2.6-C
Appendix 2.6-D	Original Laboratory Data Sheets	No change from original TR appendix	TR Appendix 2.6-D
Appendix 2.6-E	Prime Farmland Designation	No change from original TR appendix	TR Appendix 2.6-E
Appendix 2.6-F	Site Photographs	Corrected "Addendum" to "Appendix" in title page; no other changes from original TR Appendix	TR Appendix 2.6-F
Appendix 2.6-G	USGS Earthquake Database Results	Replaced original TR appendix with RAI response appendix	TR RAI Response App. 2.6-G and TR RAI P&R-3 response
Appendix 2.6-H	Morrison Formation Drill Hole Logs	Added RAI response appendix; corrected typographical error on DB09-21-1 (formerly labeled DB08-21-1 on p. 24)	TR RAI Response App. 2.6-H and P&R-4 response
Appendix 2.7-A	Water Levels in Inyan Kara Wells	Replaced with table from February 2012 Numerical Groundwater Model Report (Appendix 6.1-A; ML120620195)	Table 3-1 in TR App. 6.1-A

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Appendix 2.7-B	2008 Pumping Tests: Results and Analysis	Included replacement tables from RAI response appendix	TR RAI Response App. 2.7-B and TR RAI P&R-11 and 5.7.8-10 responses
Appendix 2.7-C	Surface Water Quality Summary Tables	Replaced original TR Appendix 2.7-C with TR RAI response appendix, modified to include additional total radionuclide results that were inadvertently omitted from previous version	TR RAI Response App. 2.7-C and TR RAI 2.7-15, 2.9-43a, 2.9-43b, 2.9-48, 2.9-49 and 2.9-50 responses
Appendix 2.7-D	Minimum and Maximum Results for Sampled Constituents above PQL	No change from original TR appendix	TR Appendix 2.7-D
Appendix 2.7-E	Percent Detections by Constituent Comparison between Streams and Subimpoundments	No change from original TR appendix	TR Appendix 2.7-E
Appendix 2.7-F	Surface Water Quality Analytical Results	Added RAI response appendix; corrected page numbering at 2.7-F-5 through 2.7-F-8	TR RAI Response App. 2.7-F and TR RAI 2.7-15 response
Appendix 2.7-G	Groundwater Quality Summary Tables	Replaced with RAI response appendix with the following changes: corrected Well 635 to Well 5, differentiated Well 704 Unkpapa/Chilson, removed Well 135 (outside project area), and added shading for values exceeding MCLs or secondary standards	TR RAI Response App. 2.7-G and TR RAI RI-4 and 2.7-15 responses
Appendix 2.7-H	Groundwater Quality Analytical Results	Replaced with RAI response appendix; corrected index for consistency with revised App. 2.7-G	TR RAI Response App. 2.7-H and TR RAI RI-4, 2.7-15, 2.7-16, 2.7-21, 2.7-22 and 2.7-23 responses
Appendices Volume III - Appendix 2.7-J through 2.8-H			
Appendix 2.7-J	TVA Groundwater Quality Data	No change from original TR appendix	TR Appendix 2.7-J
Appendix 2.7-K	TVA Pump Tests (Bogg, 1983 and Boggs & Jenkins, 1980)	Added RAI response appendix	TR RAI Response App. 2.7-K and TR RAI P&R-7 response
Appendix 2.7-L	Class V UIC Application	Added RAI response appendix	TR RAI Response App. 2.7-L and TR RAI P&R-14(b), 14(e) and 14(k) responses

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Appendix 2.7-M	Dewey-Burdock Project Flood Analysis	Added RAI response appendix	TR RAI Response App. 2.7-M and TR RAI 2.7-3, 2.7-4 and MI-5 responses
Appendix 2.7-N	Statistics for Groundwater Constituents at or Above PQL	Changed appendix # from original TR appendix; no other changes	TR Appendix 2.7-H
Appendix 2.7-O	Minimum and Maximum Results for Sampled Constituents above PQL	Changed appendix # and omitted former well location and construction information (p. 14-159), which has been replaced by Appendices 2.2-A and 2.2-B	TR Appendix 2.7-I
Appendix 2.8-A	Submitted Methodology	No change from original TR appendix	TR Appendix 2.8-A
Appendix 2.8-B	Vegetation Species Summary	No change from original TR appendix	TR Appendix 2.8-B
Appendix 2.8-C	Vegetation Cover Summaries	No change from original TR appendix	TR Appendix 2.8-C
Appendix 2.8-D	Vegetation Density Summaries	No change from original TR appendix	TR Appendix 2.8-D
Appendix 2.8-E	Ponderosa Pine Woodland Tree Density Summary	No change from original TR appendix	TR Appendix 2.8-E
Appendix 2.8-F	Wetland Photographs	No change from original TR appendix	TR Appendix 2.8-F
Appendix 2.8-G	Wetland Determination Data Forms- Great Plains Region	No change from original TR appendix	TR Appendix 2.8-G
Appendix 2.8-H	Lab Results - Energy Laboratories, Inc.	No change from original TR appendix	TR Appendix 2.8-H
Appendices Volume IV - Appendix 2.8-I through 3.1-A			
Appendix 2.8-I	Compiled Habitat Data Forms	No change from original TR appendix	TR Appendix 2.8-I
Appendix 2.8-J	Fish Collection Data Forms	No change from original TR appendix	TR Appendix 2.8-J
Appendix 2.9-A Cover	Title	Added "(REVISED)"	General update
Appendix 2.9-A Cover	Date	Updated date	General update
Appendix 2.9-A signature page	Title	Added "(REVISED)"	General update

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Page(s)	Item/Location	Revision	Source of Revision
Appendix 2.9-A signature page	Prepared for:	Updated to Powertech (USA) from Knight-Piesold	ERG updated App. 2.9-A as a contractor to Powertech (USA)
Appendix 2.9-A signature page	Proj. Mgr. Approval:	Deleted Knight-Piesold	ERG updated App. 2.9-A as a contractor to Powertech (USA)
Appendix 2.9-A signature page	Author Approval	Added "Certified"	General update
Appendix 2.9-A signature page	Footer	Updated revision and date	General update
Appendix 2.9-A p. i	Table of Contents	Updated page numbers	General update
Appendix 2.9-A p. ii	List of Tables	Added tables from TR RAI responses	For consistency with revised tables
Appendix 2.9-A p. iii	List of Figures	Added figures and revised figure titles from TR RAI responses	For consistency with revised figures
Appendix 2.9-A p. iv	Acronyms and Abbreviations	Changed "Powertech Uranium (Corporation)" to "Powertech (USA), Inc."	Typographical correction
Appendix 2.9-A p. 3	5th bullet	Indicated beef and pigs were sampled	TR RAI 2.9-11, 2.9-13 and 2.9-16 responses
Appendix 2.9-A p. 3	Sec. 3.0	Revised to include July 2008 survey	For consistency with Sec. 3.1
Appendix 2.9-A p. 3	Sec. 3.1	Clarified transect spacing and referenced Figure 3-4 showing the relative locations of the 2007 and 2008 surveys	TR RAI 2.9-27(c)(i) response
Appendix 2.9-A p. 4-5	p. 4, ¶ 3-5 p. 5, ¶ 1-4	Included criteria used to evaluate the acceptability of the daily function tests	TR RAI 2.9-23 response
Appendix 2.9-A p. 5-6	Technical Justification for Transect Spacing	Added technical justification for transect spacing	TR RAI 2.9-22 response (except 2nd ¶)

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Page(s)	Item/Location	Revision	Source of Revision
Appendix 2.9-A p. 6	Combining Data from Two Surveys ¶ 1	Clarified effect weather and soil moisture had on gamma survey and correlation data;	TR RAI 2.9-38(a) response
Appendix 2.9-A p. 6	Combining Data from Two Surveys ¶ 2-3	Addressed combining 2007/2008 data	TR RAI 2.9-27(c)(ii) response
Appendix 2.9-A p. 7	Sec. 3.2, ¶ 1	Clarified statistical analyses for GPS-based gamma surveys	TR RAI 2.9-30(a) response
Appendix 2.9-A p. 7	Sec. 3.2, ¶ 2, line 3	Updated Table 3-1 to 3-2	Typographical correction
Appendix 2.9-A p. 7	Sec. 3.2, ¶ 4	Described use of box plots and IQRs to identify potential outliers	TR RAI 2.9-30(b) response
Appendix 2.9-A p. 7	Sec. 3.2.1, line 1	Updated Table 3-1 to 3-2	Typographical correction
Appendix 2.9-A p. 8	Sec. 3.2.2, line 1	Updated Table 3-1 to 3-2	Typographical correction
Appendix 2.9-A p. 8	Sec. 3.2.2, line 2	Revised # observations	Typographical correction
Appendix 2.9-A p. 8	Sec. 3.2.2, ¶ 2, line 3	Added "area"	Typographical correction
Appendix 2.9-A p. 8	Sec. 3.2.2, ¶ 2, line 4	Added "the Northeast Anomalous Area"	Minor clarification
Appendix 2.9-A p. 8	Sec. 3.2.3	Changed from 3.2.2 to 3.2.3	Typographical correction
Appendix 2.9-A p. 8	Sec. 3.2.3, line 3	Added "un-reclaimed" and "rocky outcrops"	Minor clarification
Appendix 2.9-A p. 8	Sec. 3.2.4	Changed from 3.2.3 to 3.2.4	Typographical correction
Appendix 2.9-A p. 9	Sec. 3.2.5	Changed from 3.2.4 to 3.2.5	Typographical correction
Appendix 2.9-A p. 9	Sec. 3.2.5, line 2	Updated Table 3-2 to 3-3	Typographical correction

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Page(s)	Item/Location	Revision	Source of Revision
Appendix 2.9-A p. 9-10	Sec. 4.0	Described general soil sampling strategy	TR RAI 2.9-40 response (clarification)
Appendix 2.9-A p. 10	Sec. 4.1, ¶ 3, line 2	Added "VSP"	Minor clarification
Appendix 2.9-A p. 11	¶ 3, line 1	Replaced "Visual Sampling Plan, Version 5.0" with "VSP"	Minor clarification
Appendix 2.9-A p. 11	¶ 4	Described input parameters to, and results obtained from, VSP	TR RAI 2.9-36 response
Appendix 2.9-A p. 11	1st bullet	Clarified testing method for Ra-226 soil sample analyses	TR RAI 2.9-37(d) response
Appendix 2.9-A p. 12	1st bullet	Described laboratory performance evaluation for uranium in soil	TR RAI 2.9-37(c) response
Appendix 2.9-A p. 12	2nd bullet	Described EPA Method 909	TR RAI 2.9-37(b) response
Appendix 2.9-A p. 12	3rd bullet	Described EPA Method 3050B	TR RAI 2.9-37(a) response
Appendix 2.9-A p. 12	Sec. 4.2, 1st bullet	Clarified that "HV" and "AMS" are used interchangeably	TR RAI 2.9-10 response
Appendix 2.9-A p. 13	Sec. 4.3	Clarified statistical analyses for Ra-226 soil sampling results	TR RAI 2.9-35(a) response
Appendix 2.9-A p. 15	Sec. 4.3.5, Discussion of Outliers, ¶ 1	Described methods considered to evaluate potential outliers	TR RAI 2.9-35(b) response
Appendix 2.9-A p. 15-16	Sec. 4.3.5, Discussion of Outliers, ¶ 2-5	Described methods considered to evaluate potential outliers	TR RAI 2.9-35(c) response
Appendix 2.9-A p. 17	Sec. 4.5, line 2	Updated Table 4-2 to 4-4	Typographical correction
Appendix 2.9-A p. 17	Sec. 4.5, Former last ¶	Deleted statements comparing Burdock and Dewey land application area results	Not relevant, since the radium-226 concentration in soil will drive cleanup criteria
Appendix 2.9-A p. 17	Sec. 4.6.1, line 2	Updated Table 4-3 to 4-5	Typographical correction

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Appendix 2.9-A p. 17	Sec. 4.6.1, line 4	Updated Table 4-3 to 4-5	Typographical correction
Appendix 2.9-A p. 19	¶ above Sec. 5.0	Added justification for Pb-210 LLDs above RG 4.14 LLDs	TR RAI 2.9-33 response
Appendix 2.9-A p. 20	Various	Updated discussion on regression equations	TR RAI 2.9-38(b) and 2.9-38(c) responses
Appendix 2.9-A p. 20	2nd to last line	Updated Figure 5-3 to 5-5	Typographical correction
Appendix 2.9-A p. 21-22	Sec. 7.1, ¶ 1	Described vegetation sampling locations	TR RAI 2.9-19 response
Appendix 2.9-A p. 22	¶ 2	Revised to indicate grasses were the only type of forage sampled	TR RAI 2.9-18 response
Appendix 2.9-A p. 22	Sec. 7.2, last ¶, line 2	Added "two"	Typographical correction
Appendix 2.9-A p. 22	Sec. 8.0, ¶ 2, lines 3-4	Revised to indicate the reasons for minimal down time of AMSs	TR RAI 2.9-8 response
Appendix 2.9-A p. 22-23	Sec. 8.0, ¶ 2-3 and numbered list	Added criteria used to establish AMS locations	TR RAI 2.9-1 and 2.9-24 responses
Appendix 2.9-A p. 23	Sec. 8.1.1, ¶ 1	Corrected that air particulate sampling was conducted for 366 days and to indicate the reasons for minimal down time	TR RAI 2.9-4 and 2.9-8 responses
Appendix 2.9-A p. 23-24	Sec. 8.1.1, ¶ 2 and numbered list	Added justification for bi-weekly air particulate filter collection	TR RAI 2.9-2 response
Appendix 2.9-A p. 24	Line above bullet list	Corrected that air particulate sampling was conducted for 366 days	TR RAI 2.9-4 response
Appendix 2.9-A p. 24-25	¶ above 1st equation on p. 24, 2nd equation and accompanying text	Described calculation used to convert laboratory reported uranium concentration to microcuries per liter	TR RAI 2.9-6 response
Appendix 2.9-A p. 25	¶ above Sec. 8.1.2, line 4	Corrected Th-230 effluent limit	TR RAI 2.9-9 response

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Appendix 2.9-A p. 25-26	Sec. 8.2.1, 1st bullet list	Corrected range of U-nat, Th-230, Ra-226 and Pb-210 concentrations to match revised Table 2.9-12 submitted with TR RAI 2.9-5	TR RAI 2.9-5 response
Appendix 2.9-A p. 26	¶ below 1st bullet list, lines 2-3	Changed "Natural" to "Average natural" and typical concentration from 10^{-16} to 10^{-15} to match Table 2.9-13 submitted with TR RAI 2.9-5	TR RAI 2.9-5 response
Appendix 2.9-A p. 26	2nd bullet list	Updated values to match Table 2.9-12 submitted with TR RAI 2.9-5	TR RAI 2.9-5 response
Appendix 2.9-A p. 26	2nd to last ¶, line 2	Changed "that" to "than"	Typographical correction
Appendix 2.9-A p. 26-28	p. 26, last 2 ¶s through p. 28, ¶ 1	Added justification for U-nat LLDs in monitoring periods 1-2 that exceeded RG 4.14 LLDs	TR RAI 2.9-5 response
Appendix 2.9-A p. 29	¶ above Sec. 9.2, line 1	Changed "an" to "a"	Typographical correction
Appendix 2.9-A p. 29	¶ above Sec. 9.2, line 3	Removed reference to grid block averages	TR RAI 2.9-32(b) response
Appendix 2.9-A p. 29-30	Sec. 9.2	Corrected TLD monitoring periods and evaluation of results	TR RAI 2.9-27(b) response
Appendix 2.9-A p. 31	Sec. 10.0, ¶ 1-4	Updated food sampling description and commitments for future sampling	TR RAI 2.9-13, 2.9-14 and 2.9-16 responses
Appendix 2.9-A p. 31-32	p. 31, last ¶ through p. 32, end of Sec. 10.0	Provided justification for alternatives to LLDs recommended in RG 4.14	TR RAI 2.9-17(b) and 2.9-17(c) responses
Appendix 2.9-A p. 34	Last bullet in Sec. 11.0	Updated calculated exposure rate using TLDs	TR RAI 2.9-27(b) response
Appendix 2.9-A p. 34	Sec. 12	Updated Sec. 11.0 to 12.0	Typographical correction
Appendix 2.9-A p. 34-35	Sec. 12	Added references from TR RAI responses	Various TR RAI responses
Appendix 2.9-A Table 2-1	p. 2, row I	Removed sentence, "The first two of three rounds of measurements is documented herein."	Typographical correction

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Appendix 2.9-A Table 2-1	p. 2, row J	Updated livestock sampling	TR RAI 2.9-13 and 2.9-16 responses
Appendix 2.9-A Table 3-1	Entire table	Added Table 3-1	TR RAI 2.9-27(c) response
Appendix 2.9-A Table 3-2	Table number	Updated Table 3-1 to 3-2	Typographical correction
Appendix 2.9-A Table 3-3	Table number	Updated Table 3-2 to 3-3	Typographical correction
Appendix 2.9-A Table 4-1	Entire table	Updated Table 4-1	TR RAI RI-4(c) response
Appendix 2.9-A Table 4-2	Entire table	Added Table 4-2	TR RAI 2.9-35(c) response
Appendix 2.9-A Table 4-3	Entire table	Added Table 4-3	TR RAI 2.9-35(c) response
Appendix 2.9-A Table 4-4	Table number	Updated Table 4-2 to 4-4	Typographical correction
Appendix 2.9-A Table 4-5	Table number	Updated Table 4-3 to 4-5	Typographical correction
Appendix 2.9-A Table 5-1	Entire table	Updated Table 5-1	TR RAI 2.9-38(b) response
Appendix 2.9-A Table 8-1	Entire table	Updated Table 8-1	TR RAI 2.9-5 and RI-4(e) responses
Appendix 2.9-A Table 9-1	Entire table	Updated Table 9-1	TR RAI 2.9-27(b) response
Appendix 2.9-A Table 10-1	DBAT-01, 02, 03	Updated to clarify these are initial livestock samples	TR RAI 2.9-13 and 2.9-17(a) responses
Appendix 2.9-A Table 10-1	Second page	Added 2011 sample results	TR RAI 2.9-13 and 2.9-17(a) responses

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Appendix 2.9-A Table 10-2	Entire table	Added Table 10-2	TR RAI 2.9-17(b) response
Appendix 2.9-A Fig. 3-3	Entire figure	Updated land application areas	For consistency with new TR Figure 3.1-1
Appendix 2.9-A Fig. 3-4	Entire figure	Added Figure 3-4	TR RAI 2.9-27(c)(i) response
Appendix 2.9-A Fig. 4-3	Entire figure	Updated land application areas	For consistency with new TR Figure 3.1-1
Appendix 2.9-A Fig. 5-3	Entire figure	Added Figure 5-3	TR RAI 2.9-38(b) response
Appendix 2.9-A Fig. 5-4	Entire figure	Added Figure 5-4	TR RAI 2.9-38(b) response
Appendix 2.9-A Fig. 5-5	Entire figure	Updated Figure 5-3 to 5-5; replaced figure to remove grid blocks	TR RAI 2.9-39(b) response
Appendix 2.9-A Fig. 8-1	Entire figure	Updated Figure 8-1 to remove grid blocks	TR RAI 2.9-39(b) response
Appendix 2.9-A Fig. 9-2	Entire figure	Updated Figure 9-2 to add confidence intervals	TR RAI 2.9-32(c) response
Appendix 2.9-A Fig. 9-3	Entire figure	Updated Figure 9-3 to remove grid blocks	TR RAI 2.9-32(b) response
Appendix 2.9-B	Air Particulate Sampler Operation and Maintenance Manual	Added TR RAI response appendix	TR RAI Response App. 2.9-B and TR RAI 2.9-3 response
Appendix 2.9-C	TLD Analytical Results	Added TR RAI response appendix	TR RAI Response App. 2.9-C and TR RAI 2.9-25 response
Appendix 2.9-D	EPA Method 3050B	Added TR RAI response appendix	TR RAI response App. 2.9-D and TR RAI 2.9-37(a) response
Appendix 2.9-E	EPA Method 909	Added TR RAI response appendix	TR RAI Response App. 2.9-E and TR RAI 2.9-37(b) response

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Appendix 2.9-F	Performance Evaluation for Analyzing Uranium in Soil using EPA Method 6020A	Added TR RAI response appendix	TR RAI Response App. 2.9-F and TR RAI 2.9-37(c) response
Appendix 2.9-G	Testing Method used for Ra-226 Soil Sample Analysis	Added TR RAI response appendix	TR RAI Response App. 2.9-G and TR RAI 2.9-37(d) response
Appendix 2.9-H	Sediment Sampling Analytical Results	Added TR RAI response appendix	TR RAI Response App. 2.9-H and TR RAI 2.9-42 response
Appendix 2.9-I	Radionuclide Concentrations in Surface Water	Added TR RAI response appendix	TR RAI Response App. 2.9-I and TR RAI 2.9-50 response
Appendix 2.9-J	Radionuclide Concentrations in Groundwater	Added TR RAI response appendix	TR RAI Response App. 2.9-J and TR RAI RI-4(b) response
Appendix 2.9-K	Radionuclide Concentrations in Sediment	Added TR RAI response appendix	TR RAI Response App. 2.9-K and TR RAI RI-4(d) response
Appendix 2.9-L	Statistical Analysis of Baseline Gamma Survey Data	Created new appendix from RAI response	TR RAI 2.9-30(a) response
Appendix 2.9-M	Statistical Analysis of Baseline Ra-226 Soil Sampling Results	Created new appendix from RAI response	TR RAI 2.9-35(a) response
Appendix 3.1-A	Pond Design Report	No change from SR appendix	SR Appendix B
Appendices Volume V - Appendix 3.1-B through 7.3-D			
Appendix 3.1-B	Pond Construction Specifications, Testing and QA/QC Procedures	Added TR RAI response appendix; changed appendix number	TR RAI Response App. 3.1-A and TR RAI P&R-14(h) and MI-6 responses
Appendix 5.5-A	Written Radiological Safety Instructions to Workers	Created new appendix from RAI response	TR RAI 5.5-3 response
Appendix 6.1-A	Numerical Groundwater Model	Added appendix from February 2012 submittal to NRC	February 2012 numerical groundwater model report (ML120620195)
Appendix 6.4-A	Radium Benchmark Dose Assessment	Corrected typographical error for the NRC, 1992 reference on p. 10 - NUREG/CRR to NUREG/CR; no other changes from original TR appendix	TR Appendix 6.4-A, with typographical correction

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Appendix 6.6-A	Restoration Action Plan	Consolidated financial assurance information from TR; incorporated RAI response Appendix 6.6-A	TR RAI Response App. 6.6-A and TR RAI P&R-9, P&R-14(b), P&R-16, MI-4(a), 4(b), 4(c), 4(d), 6.1-4, 6.1-7, 6.1-9, 6.1-10, 6.2-1(a), (b), 6.2-2(a), (b), 6.3-2, 6.3-3, 6.4-1, 6.4-4, 6.4-5, 6.4-6 and 6.4-7 responses
Appendix 6.6-B	Numerical Modeling of Groundwater Conditions Related to In Situ Recovery	Added TR RAI response appendix	TR RAI Response App. 6.6-B and TR RAI MI-4(d), 5.7.8-10 and 6.1-7 responses
Appendix 7.1-A	Approved Jurisdictional Determinations	No change from original TR appendix	TR Appendix 7.1-A
Appendix 7.3-A	MILDOS Area Simulation for Land Application	Replaced original TR appendix with MILDOS outputs based on updated MILDOS inputs in Appendix 7.3-C	TR RAI 5.7.7-13 response and for consistency with revised Appendix 7.3-C
Appendix 7.3-B	MILDOS Area Simulation for Deep Disposal Well	Replaced original TR appendix with MILDOS outputs based on updated MILDOS inputs in Appendix 7.3-C	TR RAI 5.7.7-13 response and for consistency with revised Appendix 7.3-C
Appendix 7.3-C	MILDOS-AREA Input Parameters	Added TR RAI response appendix	TR RAI Response App. 7.3-C and TR RAI 5.7.7-13 response
Appendix 7.3-D	RESRAD Land Application Modeling Results	Added appendix from information in Appendix D of the SR	SR Appendix D

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Revised Response to TR RAI 5.7.8-3(b), June 27, 2012 (ML12179A534)	
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ATTACHMENT 2

REVISED TR RAI RESPONSES

- **P&R-10**
- **P&R-14(b)**
- **2.7-13(f)**
- **2.7-15**
- **5.7.8-17**
- **6.1-4**

TR RAI P&R-10

Clarify the exact number and locations of wells.

Background: Staff is uncertain of the total number of wells within 2 kilometers of the project area and whether or not the 26 abandoned wells are a subset of the total. Additionally, NRC staff is uncertain of the number of livestock or domestic wells. The Technical Report Supplement indicated that the applicant has the right to replace three Inyan Kara stock wells (ID#s 17, 49, and 628) prior to initiation of operations. These wells are located within the proposed aquifer exemption area and would be replaced with water wells that are not completed within the proposed zones of operations. Staff notes that there is a fourth well (#61) within the aquifer exemption area and in the middle of the Burdock Well field #1. The staff is unsure of the status of this well. Additionally, the application did not clarify the procedure to replace any nearby well.

Needed: Please provide a table listing the well ID, location, coordinates, and aquifer for each of the following groups within and near the license area: livestock wells, domestic wells, wells with other uses, and wells with unknown uses. Please clarify that the lease agreement applies to all wells within the licensed area and those procedures that will be used to relocate and/or monitor any impacts. If a well is to be replaced, please provide the staff with an example of a proposed location.

TR RAI P&R-10 Response

Revised tables presenting the inventory of all wells within 2 km (1.2 miles) of the project boundary are provided within this response. Well completion records and associated documentation will be provided in Appendix 2.2-B in the revised TR. Exhibit 3.1-1 of the TR has been revised to include all wells within 2 km of the project boundary and is included with this response package. The revised Exhibit 3.1-1 also will be included with the revised TR. The following information will be incorporated into the revised TR.

Well Inventory

Historical records and field investigations of the project area and 2 km surrounding area were used to develop the well inventory. A preliminary investigation of the wells was completed in 2007, and additional surveys were conducted in 2011 to evaluate the use and condition of the wells. A total of 106 wells are currently identified within 2 km of the project area. There are also 26 wells with historical records that are currently not present at the surface and 8 wells with historical records that have been visually confirmed as plugged and abandoned.

Table P&R-10-1 presents the well inventory within 2 km of the project boundary. Those wells have one of the following uses:

- Domestic: Are currently used or can reasonably be expected to be used for drinking water use, including wells which are also used for livestock watering (19 wells).
- Stock: Watering of livestock is sole use; well cannot be used for drinking water use (i.e., no piping to domestic water system, etc.) (41 wells)

| Monitor: Sole use is for monitoring (46 wells)

In Table P&R-10-1, no wells are identified as “other types of use” or “unknown use.”

Table P&R-10-2 lists the wells identified in historical records that were not evident at the surface during the field investigations. These wells are depicted on Figure TR RAI P&R-10-1. Several of these wells are suspected to be plugged and abandoned. Powertech will continue to search for these wells. During design of well fields, pump testing will be designed to locate any such wells and to detect any potential impacts from such wells on the ISR operations.

Table TR RAI P&R-10-3 provides all of the wells within 2 km of the project area that have been confirmed plugged and abandoned by Powertech. Each well was visually inspected, and it has been determined that cement was placed within the well bore.

Lease Agreements

Lease agreements for the entire project area currently allow Powertech to remove and replace the water supply wells as needed. The following is an excerpt from the lease agreements with each landowner. (Note: all lease agreements formerly held by Denver Uranium have been assigned to Powertech.)

“DENVER URANIUM shall compensate LESSOR for water wells owned by LESSOR at the execution of this lease, as follows: Any such water which falls within an area to be mined by DENVER URANIUM, shall be removed from LESSOR’s use. Prior to removal, DENVER URANIUM shall arrange for the drilling of a replacement water well or wells, outside of the mining area, in locations mutually agreed upon between LESSOR and DENVER URANIUM, as may be necessary to provide water in a quantity equal to the original well and of a quality which is suitable for all uses the original water well served at the time such well was removed from LESSOR’s use.”

Well Replacement Procedures

During the design of each potential well field, all nearby water supply wells will be evaluated for the potential to be impacted by ISR operations or the potential to interfere with ISR operations. If needed, this evaluation will also include groundwater modeling. The results of the evaluation will be contained within a well replacement plan described in the hydrogeologic data package for each well field.

At a minimum, all domestic wells within the project area and all stock wells within ¼ mile of well fields will be removed from private use. Depending on the well construction, location and screen depth, Powertech may continue to use the well for monitoring or plug and abandon the well.

The well owner will be notified in writing prior to removing any well from private use. Powertech will work with the well owner to determine whether a replacement well or alternate water supply is more appropriate.

Replacement wells will be located an appropriate distance from the potential well fields and will target an aquifer outside of the ore zone that provides water in a quantity equal to that of the original well and of a quality which is suitable for the same uses as the original well, subject to the lease agreement and South Dakota State water law.

An example of a replacement well is provided in Figure TR RAI P&R-10-2, which shows use of the proposed project Madison well to supply water by pipeline to local stock tanks.

Wells to be Removed from Use

All existing domestic wells within the project area will be removed from private use prior to ISR operations, including wells 13, 16, 40, 42, 43, 703, 704, 4002. Depending on the well construction, location and screen depth, Powertech may continue to use the wells for monitoring or plug and abandon the wells.

Stock wells within the project area will be evaluated as potential well fields are designed. At a minimum all stock wells that are within $\frac{1}{4}$ mile of any well field will be removed from private use prior to operation of that well field. In addition, stock wells that could be adversely affected by or could adversely affect ISR operations will be removed from private use. The stock wells currently anticipated to be removed from private use include wells 17, 38, 49, 61, 618, and 668. Currently, well 628 is not expected to be removed from private use as it is more than $\frac{1}{4}$ mile from any potential well field areas. Additional delineation drilling after license issuance may change the extent of the potential well field areas or provide additional well field areas within the project area. Therefore, each potential well field will be evaluated with regard to existing nearby stock water use and an evaluation will be included within the well field hydrogeologic data package for each well field.

Figure TR RAI P&R-10-3 shows the location of all domestic and stock wells currently anticipated to be removed from private use.

Prior to ISR operations, Powertech will assume control of all wells within the project area boundary listed as "monitor" in Table TR RAI P&R-10-1. These will be secured at the well heads to prevent unauthorized use.

Table TR RAI P&R-10-1: Wells within 2 km of the Project Boundary

Hydro ID	Township	Range	Section	1/4 - 1/4 Location	Coordinates East ¹	Coordinates North ¹	Screened Location ²	Well Use
1	7	1	9	SESE	1027696	429227	Chilson	Stock
2	7	1	16	SESE	1026724	423922	Chilson	Domestic
3	7	1	22	SWNW	1028593	421104	Chilson	Stock
4	7	1	15	SESE	1032516	423080	Unknown	Stock
5	7	1	14	NENW	1035181	427284	Fall River	Stock
6	7	1	14	NESE	1037218	425012	Unknown	Stock
7	7	1	23	NWNW	1033304	422417	Fall River	Domestic
8	7	1	23	SWSE	1036052	418515	Fall River	Domestic
9	7	1	23	NENE	1038003	421806	Fall River	Stock
12	7	1	4	SESE	1026978	434378	Chilson	Stock
13	7	1	3	NWNW	1028360	438470	Chilson	Domestic
14	7	1	2	NWSW	1033704	434723	Fall River	Stock
15	7	1	2	NENW	1035304	438317	Chilson	Stock
16	7	1	1	NESW	1041428	434446	Chilson	Domestic
17	7	1	12	SESW	1040223	431329	Fall River	Stock
18	7	1	9	SWSW	1022812	428960	Fall River	Domestic
37	7	2	18	NWSW	1044183	423947	Unknown	Stock
38	6	1	33	SWNW	1024328	442289	Fall River	Stock
40	6	1	30	SWNW	1013415	447182	Inyan Kara	Domestic
41	6	1	31	SWNE	1015385	442081	Unknown	Stock
42	7	1	5	SWNE	1021144	436481	Chilson	Domestic
43	6	1	34	SWSE	1031123	439436	Chilson	Domestic
49	6	1	32	NWNW	1018932	444022	Fall River	Stock
51	7	1	9	SENE	1027411	431487	Chilson	Stock
61	7	1	11	NWSE	1036832	429987	Chilson	Stock
96	41N	60W	22	SWSW	1011630	451853	Chilson	Domestic
102	6	1	18	SWNE	1016825	458312	Chilson	Domestic
106	6	1	18	NENE	1018099	459625	Unknown	Stock
107	6	1	18	SWNE	1017018	458158	Fall River	Domestic
108	6	1	18	SWNE	1016478	458698	Fall River	Domestic
109	6	1	17	NENW	1020801	459625	Chilson	Domestic
110	6	1	17	NENE	1023777	459643	Chilson	Stock
111	6	1	17	NWNE	1022074	459586	Fall River	Stock
112	6	1	16	SESE	1027864	455881	Fall River	Stock
113	7	2	6	NESW	1046437	434417	Unknown	Stock
114	7	2	7	SESW	1045410	428654	Unkpapa	Stock
115	6	1	18	SENE	1017697	457640	Fall River	Domestic
116	6	1	18	SENE	1017992	458111	Fall River	Stock
117	6	1	8	SWSE	1022177	460796	Unknown	Stock
138	6	1	18	NENE	1017537	459030	Fall River	Domestic
147	6	1	17	NESW	1020879	456566	Chilson	Monitor
220	6	1	19	SENE	1017872	452334	Unknown	Stock
270	6	1	19	NWSW	1014108	451942	Unknown	Stock
436	6	1	20	NWNE	1021450	454700	Fall River	Monitor
506	7	2	8	SWNW	1050129	430704	Unkpapa	Stock
510	7	1	12	SESE	1042933	428178	Chilson	Stock
609	6	1	29	SWNE	1021735	447808	Chilson	Monitor
610	6	1	29	SWNE	1021599	447969	Fall River	Monitor
611	6	1	20	NWNE	1021835	453954	Chilson	Monitor
612	6	1	20	NWNE	1021755	454128	Chilson	Monitor
613	6	1	20	NWNE	1022125	453775	Fall River	Monitor

Table TR RAI P&R-10-1: Wells within 2 km of the Project Boundary (Continued)

Hydro ID	Township	Range	Section	1/4 - 1/4 Location	Coordinates East ¹	Coordinates North ¹	Screened Location ²	Well Use
614	6	1	20	NWNE	1022185	453769	Fuson	Monitor
615	6	1	20	NWNE	1022172	453708	Chilson	Monitor
616	6	1	20	SWNE	1022132	453134	Chilson	Monitor
617	6	1	20	NENW	1021026	453582	Chilson	Monitor
618	7	1	2	SENE	1038074	435906	Unknown	Stock
619	7	1	2	SENE	1034866	436729	Chilson	Stock
620	6	1	35	NWNW	1033951	443209	Chilson	Stock
622	6	1	20	NENE	1022776	454033	Chilson	Monitor
623	6	1	20	NENE	1022686	454311	Fall River	Monitor
628	6	1	20	SESE	1022496	449718	Fall River	Stock
631	6	1	23	SWSW	1034177	449309	Fall River	Stock
635 ³	7	1	14	NENW	1004085	427131	NA	NA
637	7	1	11	NESE	1038075	430320	Unknown	Monitor
638	7	1	2	NENE	1038269	437976	Fall River	Monitor
639	7	2	7	SENE	1045704	430722	Unknown	Stock
640	7	1	12	SESE	1043010	427965	Unknown	Stock
642	7	1	12	SESE	1042926	428042	Unknown	Stock
645	7	1	16	NENE	1027681	427998	Unknown	Stock
650	7	1	1	SESE	1043781	433331	Chilson	Stock
656	6	1	31	SENE	1014230	442000	Unknown	Stock
657	6	1	20	NWNE	1021483	454729	Chilson	Monitor
662	7	1	11	SESW	1035381	428928	Unknown	Monitor
668	7	1	15	NWNE	1031029	427450	Inyan Kara	Stock
676	6	1	34	SESW	1030846	439891	Alluvial	Monitor
677	7	1	4	SWSW	1023527	434077	Alluvial	Monitor
678	7	1	9	SWNE	1026522	431925	Alluvial	Monitor
679	6	1	27	NWSE	1032294	446245	Alluvial	Monitor
680	7	1	11	NESW	1035078	429969	Chilson	Monitor
681	6	1	32	NENW	1020330	443725	Fall River	Monitor
682	7	1	11	SENE	1035139	431257	Chilson	Monitor
683	6	1	29	NESW	1020212	446104	Fall River	Monitor
684	7	1	11	NESW	1035191	429744	Chilson	Monitor
685	6	1	32	NWNE	1020690	443409	Fall River	Monitor
686	7	1	11	NESW	1034970	429749	Chilson	Monitor
687	6	1	32	NENW	1020081	443724	Fall River	Monitor
688	7	1	11	NESW	1035027	429974	Fall River	Monitor
689	6	1	32	NENW	1020316	443789	Chilson	Monitor
690	7	1	11	NESW	1035114	429970	Unkpapa	Monitor
691	6	1	32	NENW	1020364	443698	Fall River	Monitor
692	7	1	11	NESW	1035075	430014	Chilson	Monitor
693	6	1	32	NENW	1020327	443661	Unkpapa	Monitor
694	7	1	15	NWNW	1028717	426836	Fall River	Monitor
695	6	1	32	SESE	1022385	439312	Fall River	Monitor
696	7	1	15	NWNW	1028538	427141	Chilson	Monitor
697	6	1	32	SESE	1022350	439347	Chilson	Monitor
698	7	1	2	NESW	1035909	435651	Fall River	Monitor
703	7	1	1	SWSE	1041621	434334	Unkpapa	Domestic

Table TR RAI P&R-10-1: Wells within 2 km of the Project Boundary (Continued)

Hydro ID	Township	Range	Section	1/4 - 1/4 Location	Coordinates East ¹	Coordinates North ¹	Screened Location ²	Well Use
704 ⁴	7	1	5	SWNE	1020966	436647	Chilson (Beginning 2/4/2009)	Domestic
704 ⁴	7	1	5	SWNE	1020966	436647	Unkpapa (Cemented to Chilson 1/28/2009)	Domestic
705	6	1	21	NENE	1028624	453314	Chilson	Monitor
706	6	1	21	NENE	1028589	453276	Fall River	Monitor
707	6	1	34	SWNE	1031935	441809	Alluvial	Monitor
708	7	1	3	SESW	1030254	434094	Alluvial	Monitor
709	7	1	15	SESW	1029286	426603	Alluvial	Monitor
3026	7	1	12	NENE	1043638	432833	Chilson	Monitor
4002	6	1	30	NWSW	1013414	446931	Inyan Kara	Domestic
7002	7	1	23	NWNW	1033333	421931	Chilson	Stock

- Notes:
- ¹ Coordinate system is NAD 27 South Dakota State Plane South
 - ² Inyan Kara indicates that screened interval includes both Chilson and Fall River.
 - ³ 635 is not a well but a pipeline from well 5.
 - ⁴ Hydro ID 704 was originally completed in the Unkpapa aquifer. It was recompleted 1/28/2009 in the Chilson aquifer.

Table TR RAI P&R-10-2: Historical Wells Not Present

Hydro ID	Township (S)	Range (E)	Section	1/4 - 1/4 Location	Easting ¹	Northing ¹	Screened Location ²
10	7	1	13	NENE	1011956	427239	Chilson
39	6	1	29	NENE	991314	448657	Unknown
48	6	1	19	SENW	983693	453037	Unknown
425	7	1	14	SENW	1002848	426208	Chilson
429	6	1	20	SENE	991556	452954	Chilson
431	6	1	20	SENE	991556	452954	Chilson
432	6	1	20	SENE	991556	452954	Chilson
433	6	1	20	SENE	991556	452954	Chilson
502	6	1	27	NWSE	1000389	446361	Alluvial
605 ³	7	1	10	SWSE	1000213	428484	NA
621	6	1	27	NWSE	1000329	446398	Alluvial
634	6	1	34	NESE	1000901	440168	Unknown
646	7	1	15	SWNE	999646	426409	Fall River
651	7	1	14	NWSE	1004408	424246	Chilson
658	7	1	15	SWNE	999633	426398	Chilson
659	7	1	10	SWNE	1000274	431049	Fall River
660	7	1	10	SWNE	1000221	431030	Chilson
661	7	1	12	NENW	1009376	431971	Chilson
663	7	1	10	SWSE	999058	428346	Chilson
664	7	1	10	SWSE	999033	428338	Fall River
669	7	1	15	NWNE	999404	427910	Chilson
670	7	1	15	NWNE	999464	427937	Fuson
671	7	1	15	NWNE	999415	427870	Fall River
672	7	1	15	NWNE	999031	427480	Fall River
673	7	1	15	NWNE	999027	427512	Fuson
674	7	1	15	NWNE	998954	427513	Chilson

Notes: ¹ Coordinate system is NAD 27 South Dakota State Plane South.

² Inyan Kara indicates that screened interval includes both Chilson and Fall River.

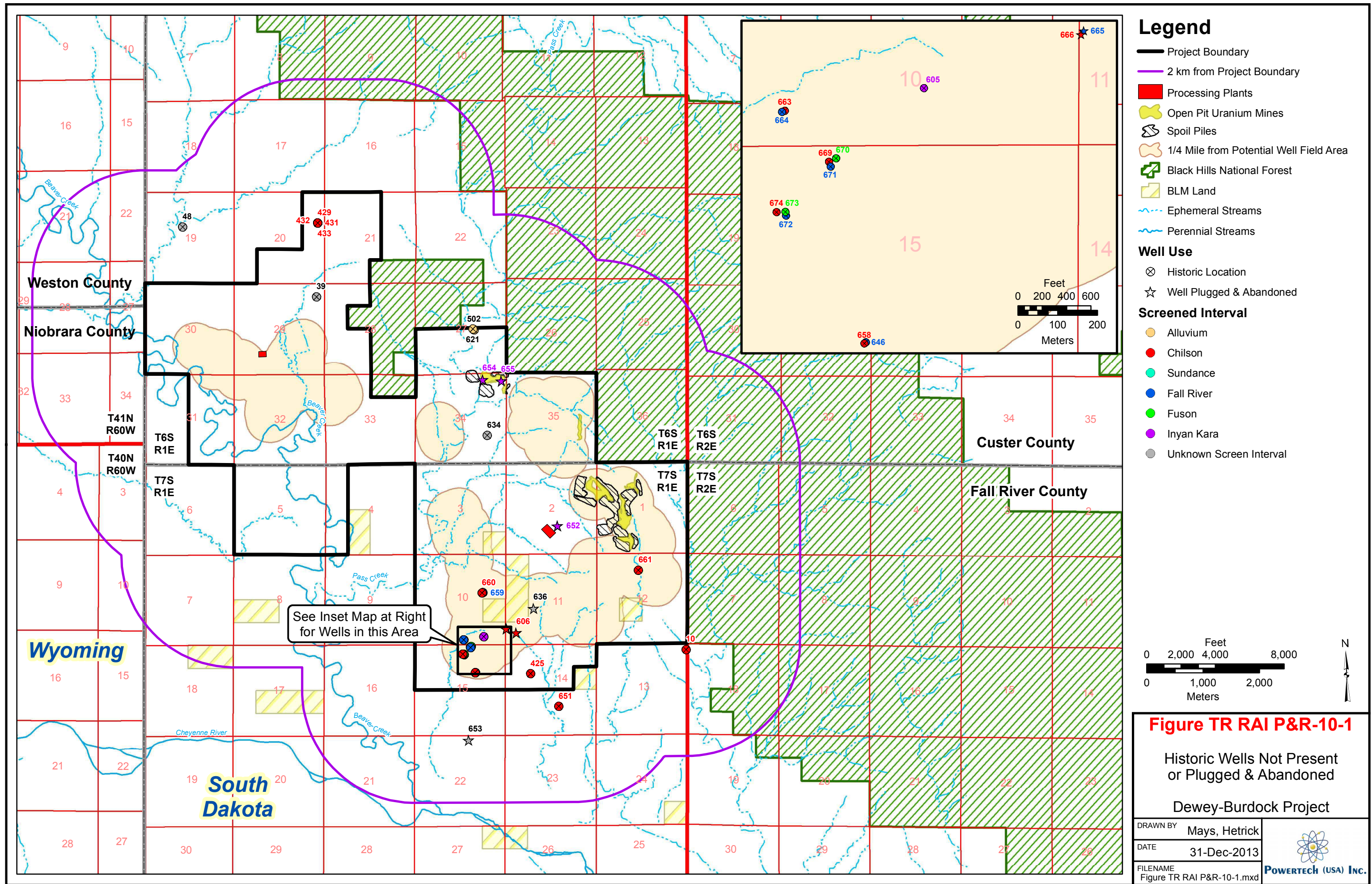
³ 605 is not a well but a pipeline from well 668.

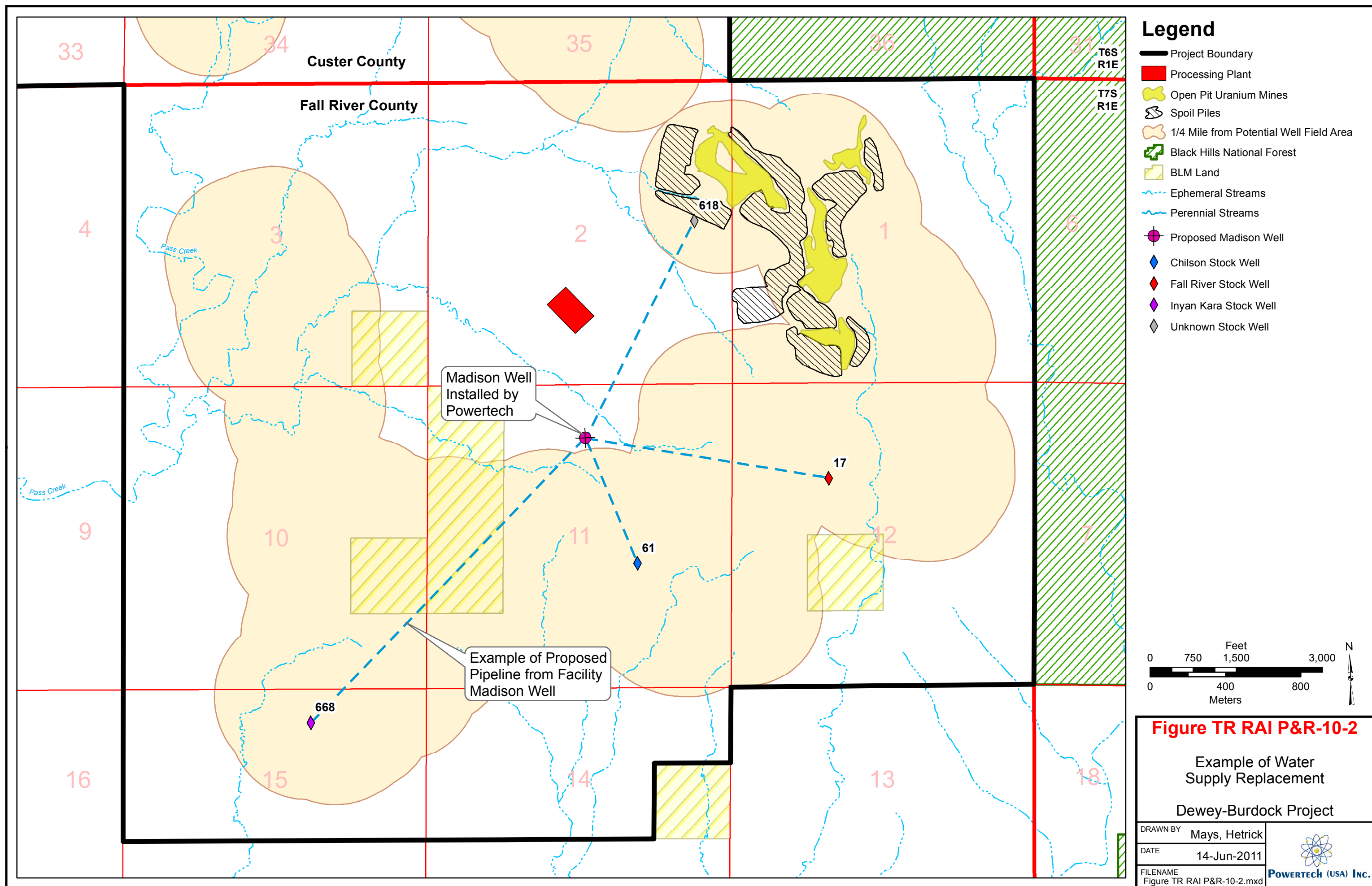
Table TR RAI P&R-10-3: Historical Wells Plugged and Abandoned

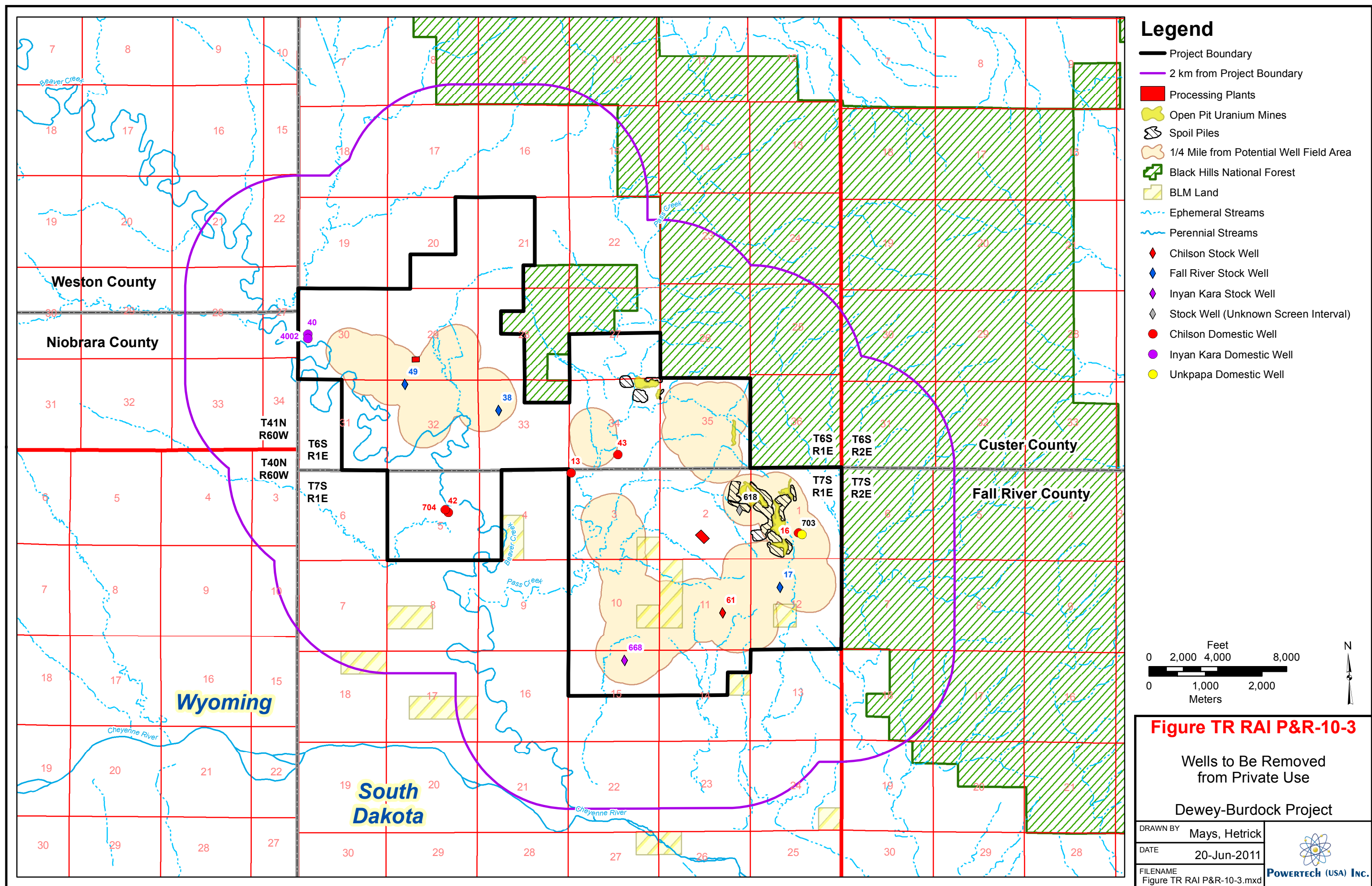
Hydro ID	Township (S)	Range (E)	Section	1/4 - 1/4 Location	Easting ¹	Northing ¹	Screened Location ²
606	7	1	11	SWSW	1033713	428609	Chilson
636	7	1	11	NESW	1034774	429982	Unknown
652	7	1	2	NWSE	1036360	434742	Inyan Kara
653	7	1	22	NWNE	1030679	422487	Unknown
654	6	1	34	NWNE	1032372	443410	Inyan Kara
655	6	1	34	NENE	1033454	443307	Inyan Kara
665	7	1	11	SWSW	1033153	428901	Fall River
666	7	1	11	SWSW	1033128	428870	Chilson

Notes: ¹ Coordinate system is NAD 27 South Dakota State Plane South.

² Inyan Kara indicates that screened interval includes both Chilson and Fall River.







TR RAI P&R-14

Provide revised and additional information on plans for the disposal of liquid wastes.

Background: The NRC needs to determine that liquid effluents generated from the process bleed, process solutions (e.g., backwash, resin transfer waters), wash-down water, well development water, pumping test water, and restoration waters are properly controlled.

TR RAI P&R-14(b)

- b. It appears that the applicant is proposing several options for liquid waste disposal: direct disposal in deep wells; disposal in deep wells after extracting radium in settling ponds; or land application after extracting radium in settling ponds. This is not clearly stated in the application.***

Needed: The applicant (upfront in Section 4.2) needs to clearly state the options being considered and their preference of use.

TR RAI P&R-14(b) Response

Powertech proposes two options for liquid waste disposal at the Dewey-Burdock Project. Liquid waste includes the production bleed, groundwater generated during aquifer restoration, process solutions (such as resin transfer water and brine generated from the elution and precipitation circuits), affected well development water, laboratory wastewater, laundry water, and plant wash down water. The preferred disposal option is underground injection of treated liquid waste in non-hazardous Class V deep disposal wells (DDWs). In this disposal option liquid waste will be treated to satisfy EPA non-hazardous waste requirements and injected into the Minnelusa and/or Deadwood Formations in four to eight DDWs being permitted pursuant to the SDWA through the EPA UIC Program. Further details about the proposed DDW liquid waste disposal option are presented below, including information about the pending UIC permit. Powertech will provide updated information regarding its Class V application when appropriate milestones are reached. Class V injection of treated liquid waste is the preferred disposal option. It is anticipated that all liquid waste will be disposed using this option if sufficient capacity is available in DDWs.

The alternate liquid waste disposal option is land application. This option involves treatment in lined settling ponds followed by seasonal application of treated liquid waste through center pivot sprinklers. Land application would be carried out under a Groundwater Discharge Plan (GDP) permit through the SD DENR. Depending on the availability and capacity of DDWs, Powertech may use land application in conjunction with DDWs or by itself. Additional details about the design and permitting status of the land application system are provided below.

The following detailed descriptions of the liquid waste disposal options represent the current engineering designs and information contained in the Class V DDW permit application, submitted to EPA

in March 2010. TR Sections 4.2 (Liquid Waste), 6.1.9 (Restoration Wastewater Disposal), and 3.1.5 (Pond Design and Land Application) will be updated to reflect the information presented below.

Deep Disposal Well Option

Powertech submitted a Class V UIC permit application to EPA Region 8 in March 2010 for authorization to install and operate four to eight DDWs within the project area. A copy of the permit application is provided in Appendix 2.7-L, which is included with this RAI response package. DDWs will target the Pennsylvanian and Permian-age Minnelusa Formation and the Cambrian-age Deadwood Formation. The targeted injection interval in the Minnelusa Formation ranges from 1,615 to 2,540 feet below ground surface (bgs), and the targeted injection interval in the Deadwood Formation ranges from 3,095 to 3,530 feet bgs.

Powertech has requested an Area Permit authorizing the installation and operation of four to eight DDWs within the project area. The number of wells required will depend on well capacity. Powertech has requested authorization to inject up to 300 gpm in a maximum of eight wells. Proposed locations for the first four wells are provided in Exhibit 3.1-3, which is provided with this response package. The initial four DDWs are proposed at two sites, one near the Dewey Satellite Facility and one near the Burdock CPP. Two disposal wells are proposed at each site with one well targeting the Minnelusa Formation and one targeting the Deadwood Formation. Based on the anticipated porosity, thickness, lateral extent, and permeability of the receiving formations, the capacity of each Class V DDW is expected to range from 50 to 75 gpm.

Prior to Class V DDW disposal, liquid waste will be treated as necessary to comply with non-hazardous Class V UIC requirements. Treatment will typically include removal of uranium and other dissolved species in IX columns followed by radium removal through co-precipitation with barium sulfate in radium settling ponds. Surface facilities near the Burdock CPP and Dewey Satellite Facility related to liquid waste disposal in the DDW option will include radium settling ponds, outlet and surge ponds, a Central Plant Pond located at the Burdock CPP, and surface facilities required for DDW operation such as pretreatment facilities, screen/filters, and high pressure pumps for DDWs. Proposed facilities for the deep disposal option are depicted on Exhibit 3.1-3.

The aquifer restoration method will depend on the liquid waste disposal option. Please refer to the response to TR RAI 6.1-4 for a detailed description of the aquifer restoration methods. In the DDW option, RO treatment with permeate injection will be the primary method of aquifer restoration. Groundwater withdrawn during aquifer restoration will be treated using RO, and the resulting brine will be treated and disposed with other treated liquid waste in DDWs. As described in the water balance

presented in response to TR RAI P&R-14(c), the total liquid waste flow rate will be approximately 47 gpm during uranium recovery without concurrent restoration, approximately 197 gpm during concurrent uranium recovery and restoration, and approximately 150 gpm during aquifer restoration alone. The planned DDW capacity of up to 300 gpm significantly exceeds the anticipated liquid waste flow rate in the DDW option.

Land Application Option

Land application, if used, will be carried out under a GDP permit through SD DENR. A copy of the SD DENR application to permit land application of treated liquid waste was provided to NRC in March 2012 (see ML12089A360). The land application system would consist of irrigation center pivots, associated pumps and piping, radium settling ponds, and outlet and storage ponds.

Two general land application areas are proposed for liquid waste disposal within the project area, one near the Dewey Satellite Facility and one near the Burdock CPP. Each land application area is anticipated to have 315 acres of irrigated area consisting of individual 50-, 25-, and 15-acre center pivots. In addition each site also will have approximately 65 acres of center pivots on standby, which can be used during repairs and maintenance of other center pivots or used on a rotating basis. The total proposed land application area at the project will be 760 acres, with only 630 acres needed for design flow rates. Center pivot irrigation systems will typically operate 24 hours per day during the growing season, which is approximately April through October. During winter months, when land application will not be used, the treated liquid waste stream will be temporarily stored in storage ponds, which will be located near both the Dewey and Burdock processing facilities. The response to TR RAI 3.1-7 contains more specific information concerning pond sizes and functions.

Disposal capacity for the land application system was estimated using the SPAW (Soil-Plant-Atmosphere-Water) model, which was developed by the US Department of Agriculture to simulate the daily hydrologic budget for agricultural landscapes. The inputs to the model include climatic data, soil profile information, and crop growth information. In addition to estimating the water budget for agricultural landscapes, the SPAW model also was used to estimate the water budget for impoundments. Detailed information of the SPAW model inputs and outputs are discussed in Appendix D of the Supplemental Report.

In the land application option, groundwater withdrawn during aquifer restoration would not be treated with RO. Instead, the aquifer restoration water would be disposed directly in land application systems following treatment to remove uranium and radium. The typical liquid waste flows using the land application option are 47 gpm during uranium recovery without concurrent restoration, 547 gpm during

concurrent uranium recovery and aquifer restoration, and about 500 gpm during aquifer restoration only. The SPAW model predicts that each land application area will be able to dispose of approximately 297 gpm from March 29 to May 10, about 653 gpm from May 11 to September 24, and approximately 297 gpm from September 25 to October 31. The combined capacity of both areas will be more than sufficient to dispose of the liquid waste stream during the spring, summer, and fall months. In addition, adequate excess capacity will be present during these months to dispose of stored surplus liquid waste from the winter months.

Combined DDW and Land Application Option

As discussed above, if Class V DDWs are constructed but lack sufficient capacity to dispose of the entire liquid waste stream, Powertech will combine the use of DDWs and land application. In this option land application facilities will be constructed and used on an as-needed basis depending on the DDW capacity.

TR RAI 2.7-13

Below are comments and associated requests for information from NRC's review of water wells located at or near the project site.

TR RAI 2.7-13(f)

- f. Appendix 2.2- A of the TR indicated that stock wells 17, 49, 38, and 61 tap either the Fall River or Lakota water-bearing zones. These stock wells appear to be located at, or immediately adjacent to, possible production zones.***

For each of the wells above, please provide the applicant's plans for protecting public health, determining when well replacement is necessary, the means of notifying the affected parties and the NRC staff when such a replacement is necessary, and the manner in which the potential for contamination migration is precluded.

TR RAI 2.7-13(f) Response

The following provides details on wells 17, 38, 49, and 61 and describes procedures Powertech will utilize to protect public health. For additional information on the number and locations of existing wells, please refer to the response to TR RAI P&R-10. Please refer to the responses to TR RAI P&R-9, TR RAI P&R-10, and TR RAI 2.7-12 for procedures on plugging and abandonment and well replacement. The following information will be incorporated into the revised TR.

Stock wells 17, 38, 49, and 61 are expected to be removed from private use prior to ISR operations within ¼ mile. Powertech will notify the well owners in writing and work with the well owners to determine whether a replacement well or alternate water supply is more appropriate. Negotiations and decisions regarding well replacements will be noted in SERP records. Well replacement procedures are described in the response to TR RAI P&R-10.

TR RAI 2.7-15

Consistent with Section 2.7.4 of NUREG-1569, please provide a table listing the data on a parameter-by-parameter, well-by-well or surface-water location by surface-water-location basis using appropriate statistical methods. Include results of all field-measured parameters including elevations and/or depth to water. For sampling locations that were dry or ice, please note that information in the appropriate column rather than omitting the data altogether from the table. For concentrations below the minimum detection level, please report the data as "less than" and the PQL. Based on the data presented in the application, the staff cannot reconstruct this information with any degree of certainty to perform an independent, statistically valid basis. Furthermore, duplicate samples should be used only for QA/QC evaluations and should not be used for statistically evaluations.

TR RAI 2.7-15 Response

Revised summary tables presenting surface water and groundwater sample results are provided in revised TR Appendix 2.7-C and 2.7-G, respectively. Appendix 2.7-C replaces previous TR Appendix 2.7-C (Statistics for Surface Water Constituents At or Above PQL). Appendix 2.7-G replaces previous TR Appendix 2.7-G (Groundwater Quality Data). These revised appendices will be included with the revised TR. Consistent with Section 2.7.4 of NUREG-1569, groundwater and surface water analytical data are presented in tables on a date-by-date, parameter-by-parameter, and well-by-well or surface water location-by-surface water location basis. The following describes the presentation of data in Appendices 2.7-C and 2.7-G.

All field-measured parameters, including water level elevations for groundwater sampling locations, are presented with the corresponding laboratory data. Footnotes on each surface water quality table indicate the sampling frequency and reasons why samples were not collected during a scheduled sample event (frozen, dry, etc.). For concentrations reported as non-detect by the laboratory, the data are reported as "< RL" where RL is the laboratory reporting limit. In cases where the laboratory reported a numerical value less than the RL, the numerical results are provided along with the value of the RL, with a footnote explaining the reporting convention. The summary tables present the minimum, maximum and mean concentrations for each parameter at each sample location. Means were calculated using a value of ½ of the RL when non-detect data occurred.

Duplicate sample results have been removed from the water quality result tables. Duplicate sample results are included in the laboratory analyses in Appendix 2.7-F (surface water) and 2.7-H (groundwater), which have been provided with this RAI response package and will be provided with the revised TR.

Groundwater quality summary tables are provided at the beginning of Appendix 2.7-G describing the mean, standard deviation, minimum, and maximum values for each constituent in the four zones monitored. The monitored zones, in descending order, are the alluvium, Fall River Formation, Chilson Member of the Lakota Formation, and Unkpapa Sandstone.



Laboratory data packages are provided in revised Appendix 2.7-F (surface water) and 2.7-H (groundwater), which are included with this RAI response package and will be included with the revised TR. These appendices include indices by sample ID and date.

TR RAI 5.7.8-17

Section 5.7.8 of the TR states, "Quarterly samples will be collected from drinking water and livestock wells, included in the groundwater sampling sites as shown in Figure 5.7-10." This statement implies there are more proposed well sampling locations than what is shown in Figure 5.7-8. NRC staff notes that numerous Inyan Kara wells in Appendix 2.2-A are close to well fields within the license boundary and are not included in Figure 5.7-10. Please specify all water well sampling locations.

TR RAI 5.7.8-17 Response

The following describes the operational groundwater monitoring program proposed by Powertech. For a list of the water supply wells within 2 km of the project area, please refer to the response to TR RAI P&R-10. The following information will also be incorporated into the revised TR.

The operational groundwater monitoring program will include domestic wells, stock wells, irrigation wells and wells located hydrologically upgradient and downgradient of proposed activity. Powertech proposes an alternate operational groundwater monitoring program to what is recommended in Regulatory Guide 4.14. The proposed operational monitoring program is designed to provide a comprehensive baseline evaluation of water supply wells located within 2 km of the potential well field boundaries (as measured from the perimeter monitoring well ring). Wells proposed for operational monitoring include domestic and irrigation wells within 2 km of the potential well field boundaries, stock wells within the project area, and additional monitor wells in the alluvium, Fall River, Chilson and Unkpapa.

Prior to operations all domestic, stock and irrigation wells within 2 km of the boundary of each proposed well field (as measured from the perimeter monitoring well ring) will be sampled to establish baseline water quality. A complete list of the wells is provided the response to TR RAI P&R-10. As discussed in Section 2.7 of the TR, Powertech has already monitored many of the wells included in the list as part of the baseline monitoring program. To meet the recommendations of Regulatory Guide 4.14, Powertech will ensure that all domestic, stock and irrigation wells within 2 km of the potential well fields are monitored quarterly for one year prior to operation (including monitoring already completed). All samples will be analyzed for constituents listed in Table 6.1-1 in the response to TR RAI 6.1-3, which meets the criteria listed in NUREG-1569 and Regulatory Guide 4.14.

Operational Groundwater Monitoring - Domestic and Irrigation Wells

Prior to operations, all domestic wells within the project area will be removed from private use. Depending on the well construction, location and screen interval, Powertech may continue to use the well for monitoring or plug and abandon the well. Plugging and abandonment procedures are described in the response to TR RAI P&R-9 and well replacement procedures are described in the response to TR RAI P&R-10.

During operations, Powertech will monitor all domestic and irrigation wells within 2 km of the boundary of each well field (as measured from the perimeter monitoring well ring). Samples will be collected annually and analyzed for the constituents listed in Table 6.1-1 in the response to TR RAI 6.1-3.

Operational Groundwater Monitoring - Stock Wells

During the design of each well field, all nearby stock wells will be evaluated for the potential to be adversely affected by ISR operations or to adversely affect ISR operations. At a minimum, all stock wells within ¼ mile of well fields will be removed from private use prior to operation of nearby well fields. Depending on the well construction, location and screen interval, Powertech may continue to use the well for monitoring or plug and abandon the well. Plugging and abandonment procedures are described in the response to TR RAI P&R-9 and well replacement procedures are described in the response to TR RAI P&R-10.

During operation, Powertech will monitor all stock wells within the project area. Samples will be collected quarterly and analyzed for water level and the three excursion indicators of chloride, total alkalinity, and conductivity.

Operational Groundwater Monitoring - Monitor Wells

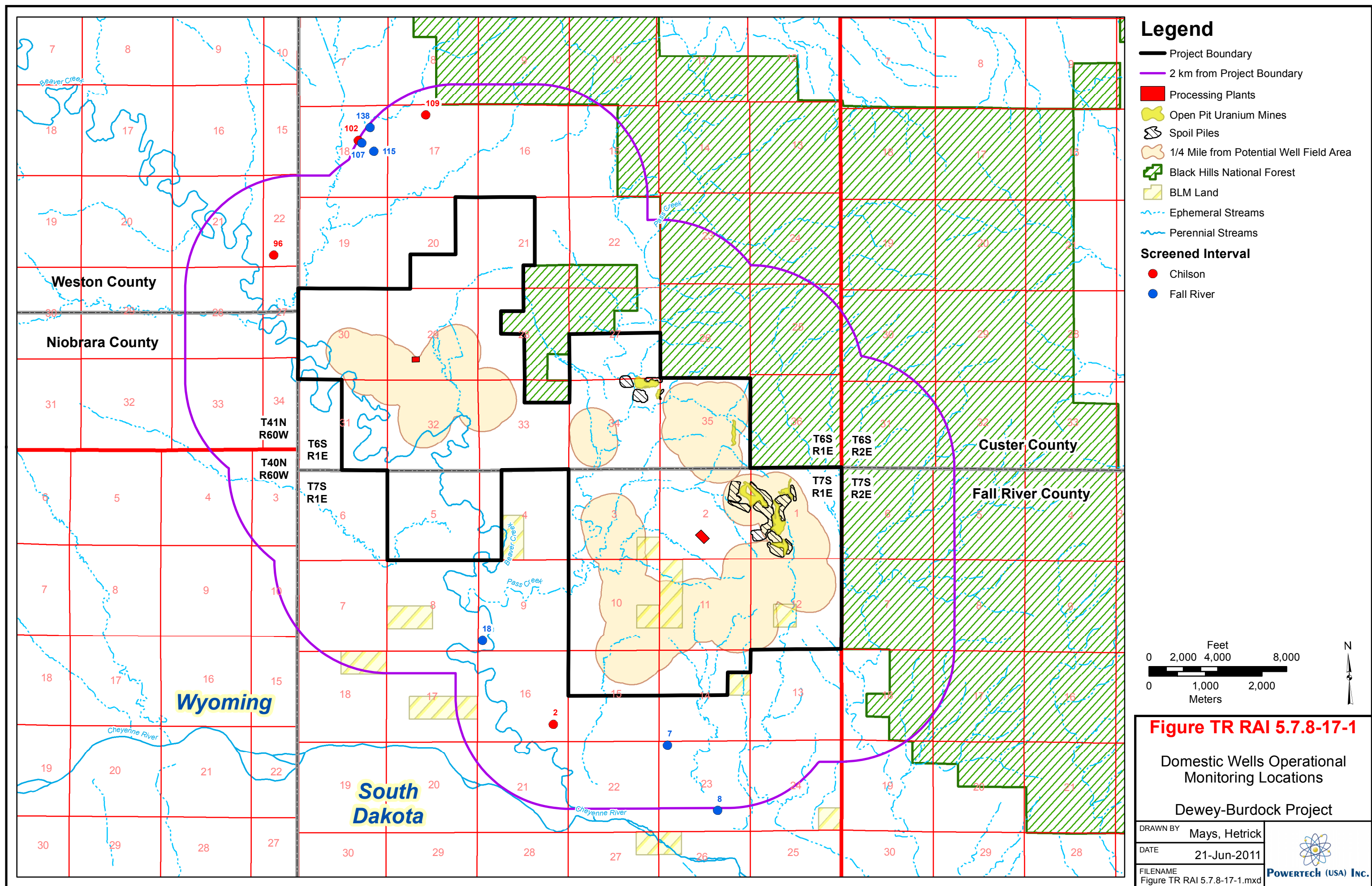
As recommended in Regulatory Guide 4.14, Powertech will monitor wells located hydrologically upgradient and downgradient of proposed activity as part of the operational groundwater monitoring program. A list of the monitor wells proposed for operational monitoring is provided in Table TR RAI 5.7.8-17-1. Monitor wells proposed for operational monitoring are depicted on Figures TR RAI 5.7.8-17-1, -2, -3, -4, -5, and -6.

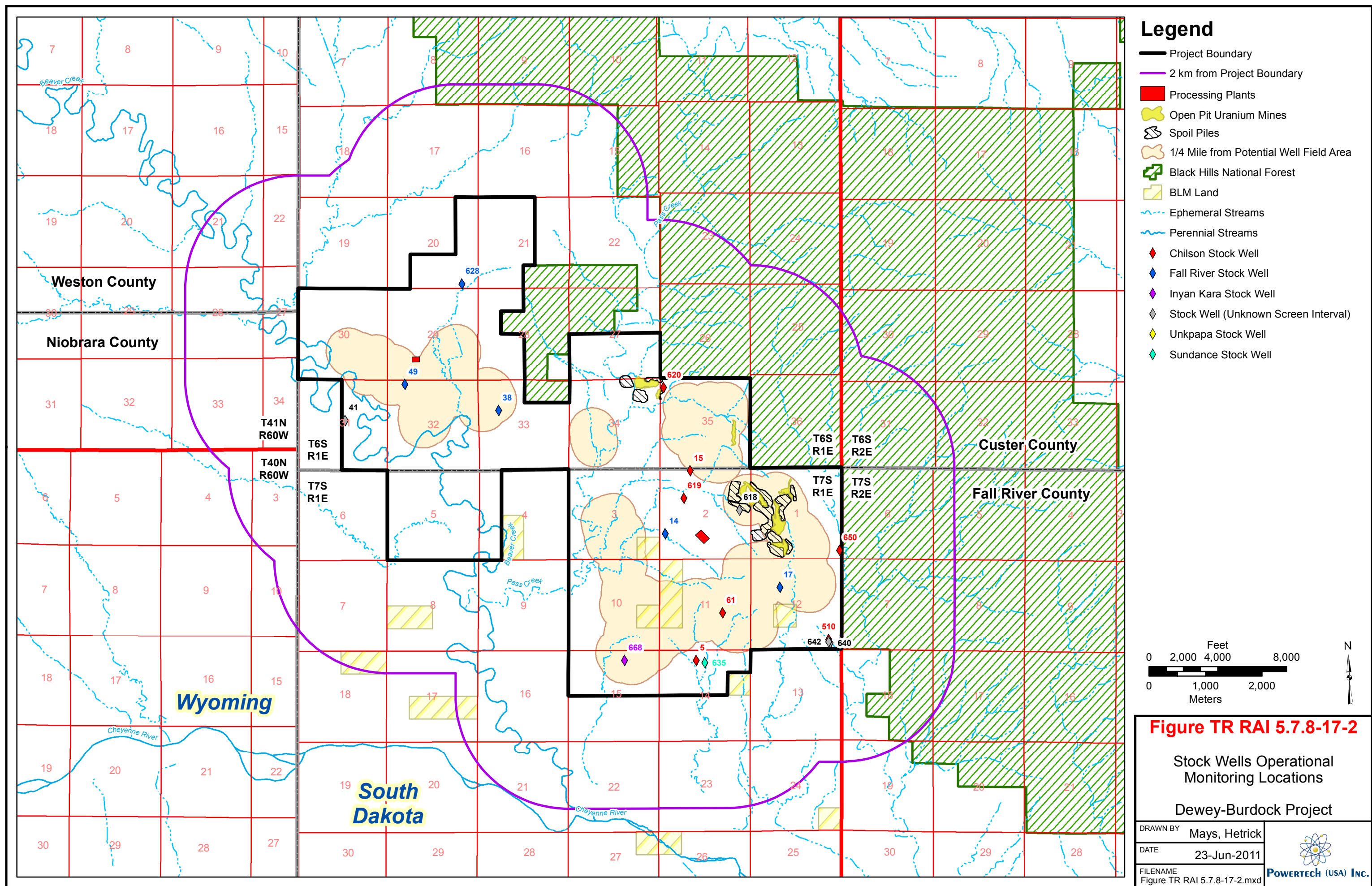
The monitor wells will be monitored quarterly and analyzed for constituents listed in the revised Table 6.1-1.

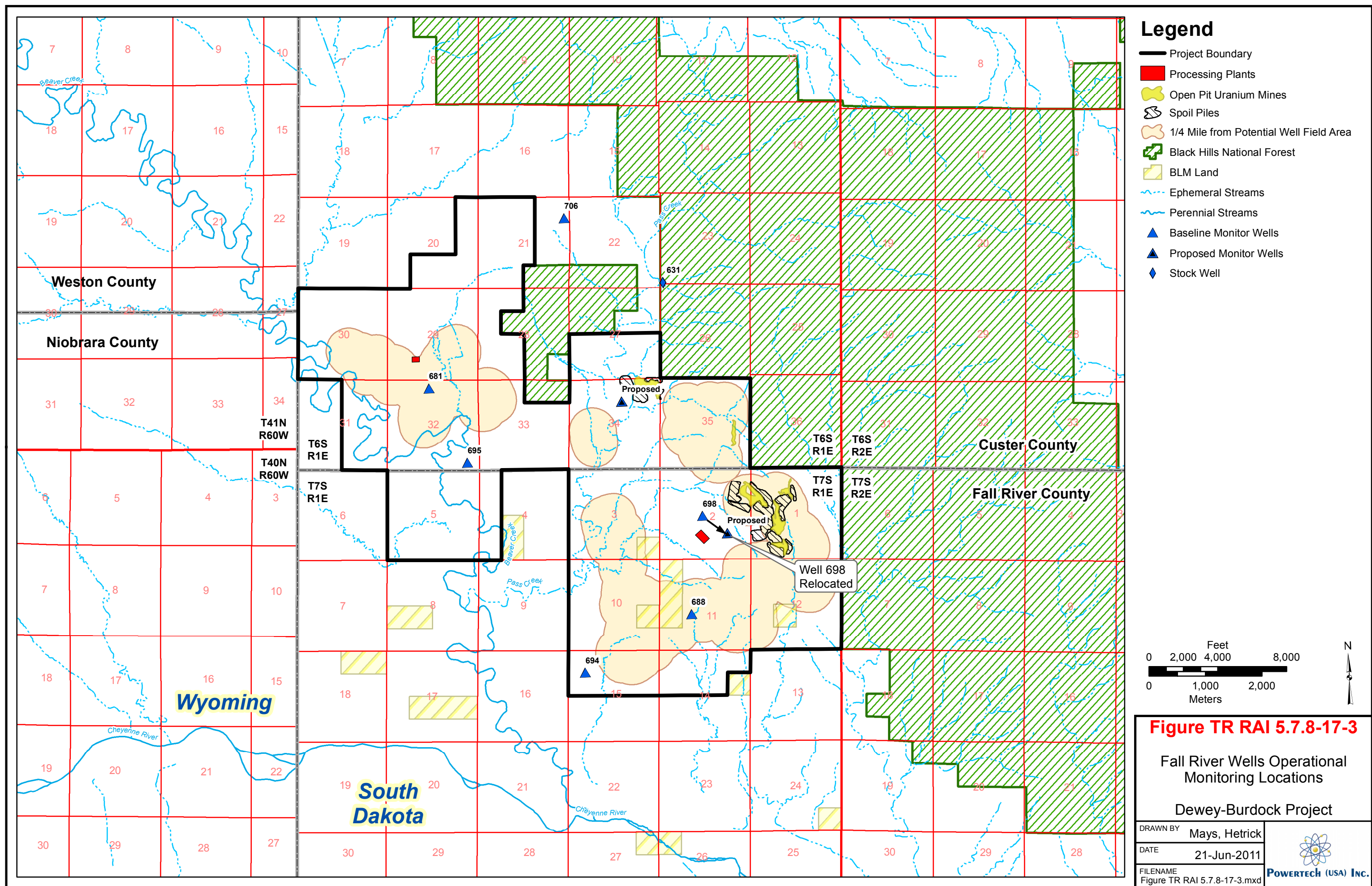
Monitoring conducted as part of the pre-operational and operational monitoring program will be conditional upon land owner access and suitable conditions allowing proper collection of a sample. If access is not available during the time of monitoring, a second attempt will be made to collect a sample during the monitoring period. If a well cannot be accessed continually, Powertech will propose an alternate monitoring location or remove the well from the operational groundwater monitoring program.

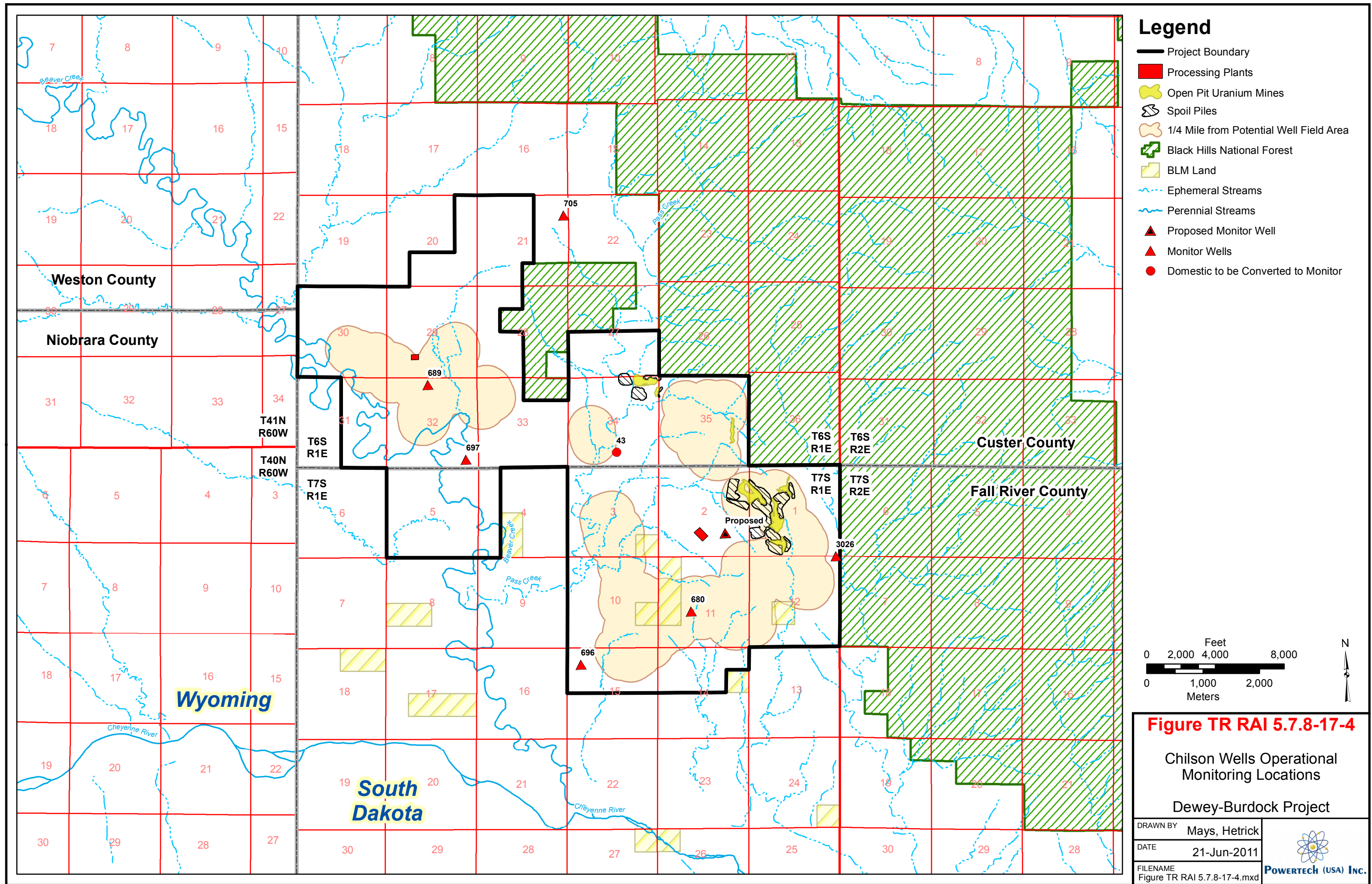
Table TR RAI 5.7.8-17-1: Monitor Wells Proposed for Operational Monitoring

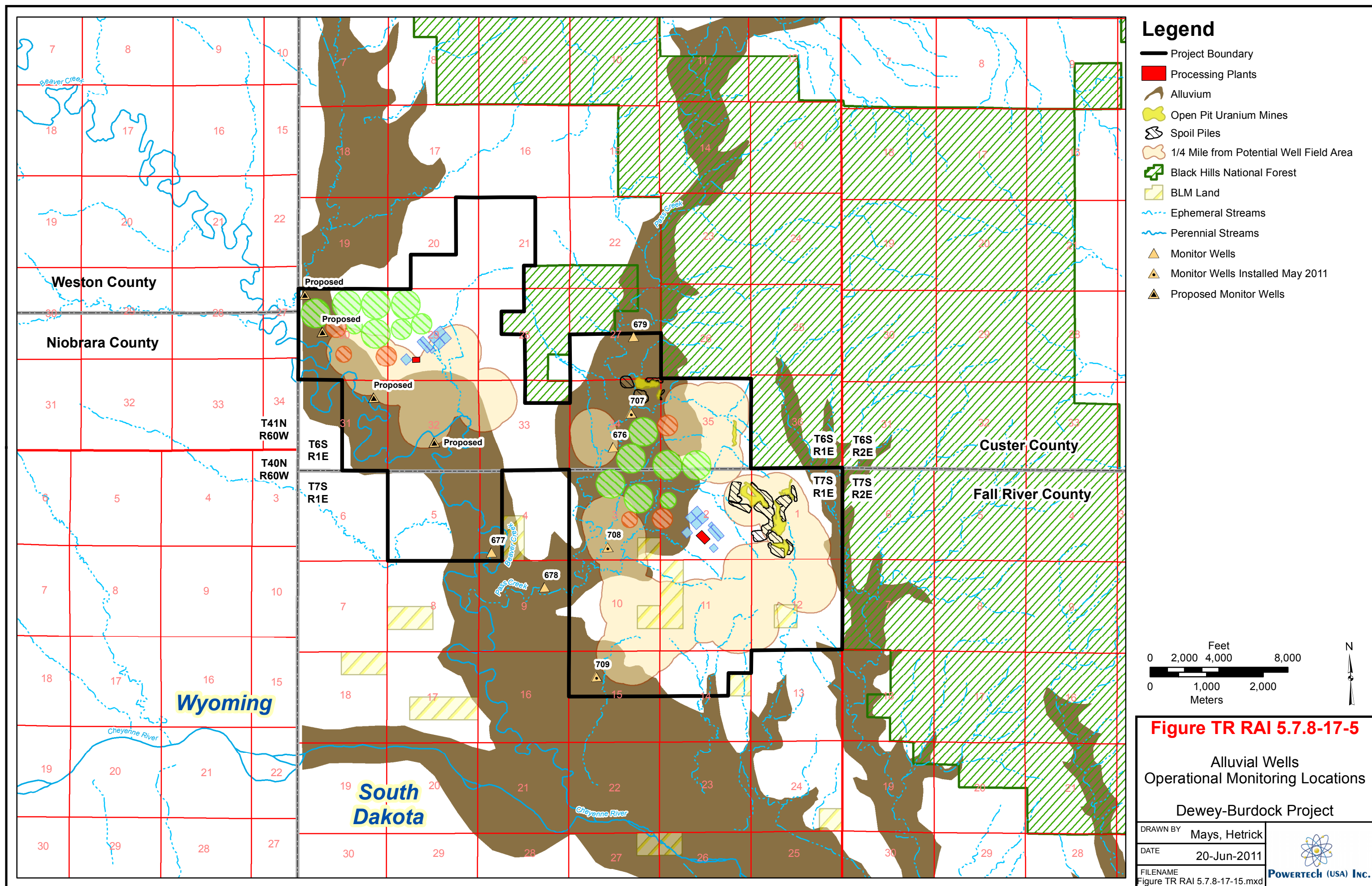
Well ID	Qtr-Qtr	Section	Township	Range	Relative Position
Alluvium					
676	SESW	34	6S	1E	Downgradient of Land App.
677	SWSW	27	6S	1E	Downgradient
678	SWNE	4	7S	1E	Downgradient
679	NESW	9	7S	1E	Upgradient
707	SWNE	34	6S	1E	Downgradient of Triangle Pit
708	SESW	3	7S	1E	Downgradient of Land App.
709	SESW	15	7S	1E	Downgradient of Well Field
Proposed	NWNW	20	6S	1E	Upgradient
Proposed	NENE	31	6S	1E	Downgradient of Well Field
Proposed	NWSE	32	6S	1E	Downgradient of Well Field
Proposed	NWNW	20	6S	1E	Downgradient of Land App.
Fall River					
631	SWSW	23	6S	1E	Upgradient
681	NWNE	32	6S	1E	Production Zone
688	NESW	11	7S	1E	Overlying Production Zone
694	NWNW	15	7S	1E	Upgradient
695	SESE	32	6S	1E	Downgradient
698	SESW	2	7S	1E	Downgradient
706	NENE	21	6S	1E	Upgradient
Proposed	SWNE	34	6S	1E	Downgradient of Triangle Pit
Proposed	NWSE	2	7S	1E	Downgradient of Darrow Pit
Chilson					
43	SWSE	34	6S	1E	Downgradient of Triangle Pit
680	NESW	11	7S	1E	Production Zone
689	NENW	32	6S	1E	Production Zone
696	NWNW	15	7S	1E	Downgradient
697	SESE	32	6S	1E	Downgradient
705	NENE	21	6S	1E	Upgradient
3026	SESE	12	7S	1E	Upgradient
Proposed	SWSE	2	7S	1E	Downgradient of Darrow Pit
Unkpapa					
690	NESW	11	7S	1E	
693	NENW	32	6S	1E	
703	SWSE	1	7S	1E	

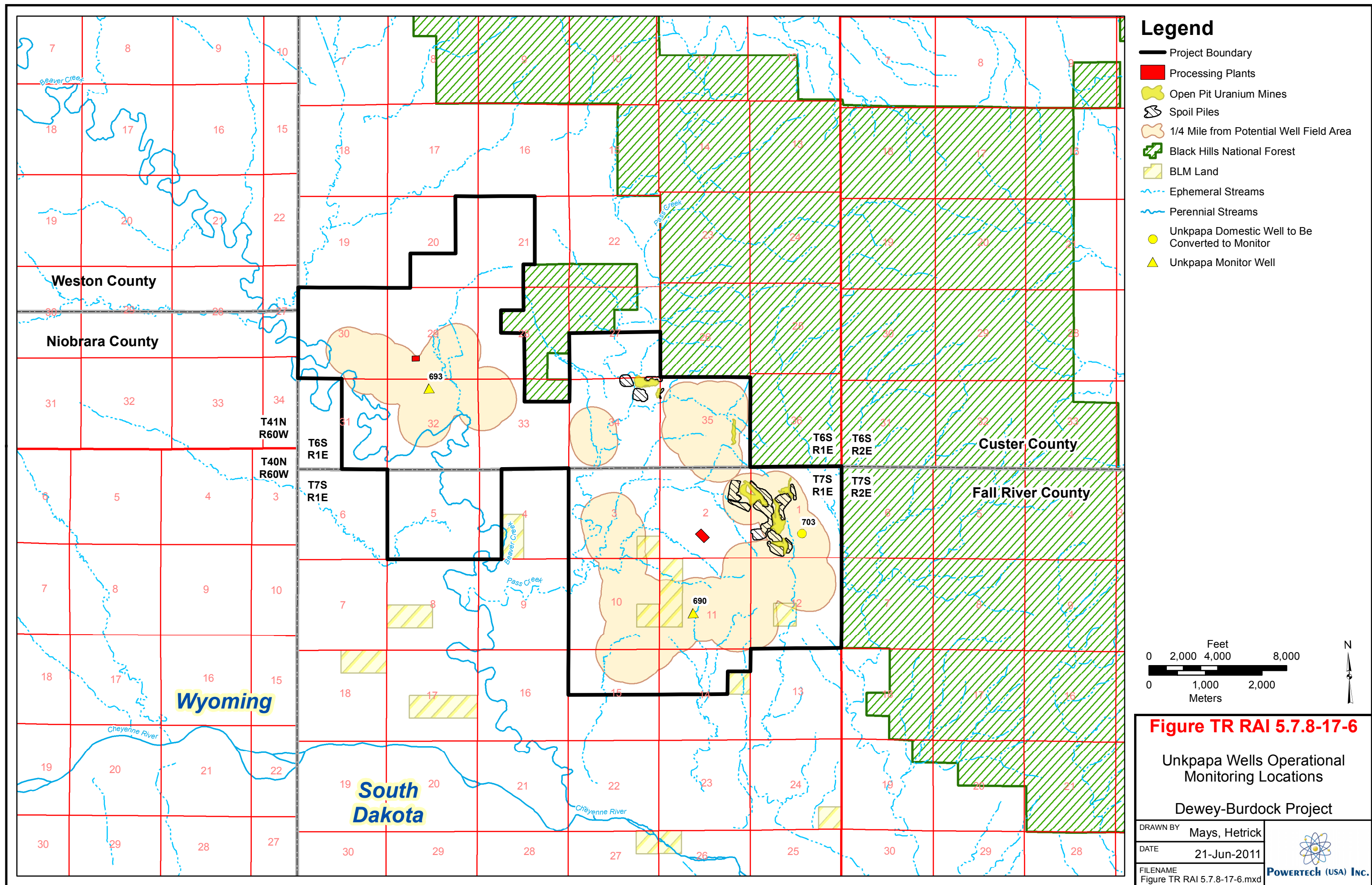












TR RAI 6.1-4

The applicant provided a brief discussion of the restoration methods to be used but the discussion is too general and contains several confusing references. The discussion lacks details on the proposed specific restoration methods to be used and how those methods affect the aquifer. The applicant needs to provide a more in-depth discussion on the proposed methods to be used in clear terms. For example, the applicant needs to define "injection sweep method" in more commonly accepted terms (e.g. groundwater transfer, groundwater sweep, groundwater treatment or groundwater recirculation). The methods should be described in sufficient detail for staff to review (i.e., for groundwater treatment, staff needs to consider the volume of waste, clean makeup water, pore volumes and timing). If groundwater treatment is the only restoration method, then the applicant needs to discuss how flaring will be captured by using this method only. Please address this comment.

TR RAI 6.1-4 Response

Powertech proposes two options for aquifer restoration, depending on the method of liquid waste disposal (refer to response to TR RAI P&R-14(b) for a description of the liquid waste disposal options). The following discussion describes the two aquifer restoration options and replaces outdated information in the TR and SR. For example, the term "injection sweep method" is no longer used. Section 6.1 of the TR will be revised to incorporate the following information.

Aquifer Restoration Methods

During aquifer restoration, Powertech will restore groundwater quality consistent with the groundwater protection standards contained in 10 CFR 40, Appendix A, Criterion 5(B)(5) on a parameter-by-parameter basis using best practicable technology. The technology selected will depend on the liquid waste disposal option as described below. In the deep disposal well liquid waste disposal option, RO treatment with permeate injection will be the primary restoration method. If land application is used to dispose liquid waste, then groundwater sweep with injection of clean makeup water from the Madison Formation will be used to restore the aquifer. In either case, Powertech proposes to remove at least six (6) pore volumes during aquifer restoration. Additional information about the typical aquifer restoration flow rates is found in the water balance provided in response to TR RAI P&R-14(c).

Deep Disposal Well Option

In the deep disposal well liquid waste disposal option, the primary method of aquifer restoration will be RO treatment with permeate injection. In this method, water will be pumped from one or more well fields to the CPP or Satellite Facility for treatment. Treatment will begin with removal of uranium and other dissolved species in IX columns. The water will then pass through the restoration RO unit, which will remove over 90% of dissolved constituents using high pressure RO membranes. The treated effluent, or permeate, will be returned to the well field(s) for injection. The RO reject, or brine, will

undergo radium removal in radium settling ponds and will then be disposed in one or more deep disposal wells.

The RO units will operate at a recovery rate of approximately 70%. Therefore, about 70% of the water that is withdrawn from the well fields and passed through the restoration RO unit will be recovered as nearly pure water, or permeate. In order to avoid excessive restoration bleed and consumptive use of Fall River and Chilson groundwater, permeate will be supplemented with clean makeup water from Madison Formation water supply wells. Permeate and Madison Formation water will be reinjected into the well field(s) at an amount slightly less than the amount withdrawn from the well field(s). This will be done to maintain a slight restoration bleed, which will maintain hydraulic control of the well field(s) throughout active aquifer restoration. The restoration bleed will typically be 1% of the restoration flow rate unless groundwater sweep is used in conjunction with RO treatment with permeate injection, in which case the restoration bleed will average approximately 17%. Refer to the “Optional Groundwater Sweep” discussion below.

Land Application Option

In the land application liquid waste disposal option, the primary method of aquifer restoration will be groundwater sweep with Madison Formation water injection. This method begins the same as the method described above for RO treatment with permeate injection; water is pumped to the CPP or Satellite Facility for removal of uranium and other dissolved species in IX columns. The partially treated water will undergo radium removal in radium settling ponds and will then be disposed in the land application system. Powertech refers to this portion of the aquifer restoration method as “groundwater sweep,” since none of the water recovered from the Fall River or Chilson will be reinjected into the well field(s).

RO will not be used if there are no deep disposal wells available to accept the RO brine. Instead, clean makeup water from the Madison Formation will be injected into the well field(s) at a flow rate sufficient to maintain the restoration bleed. As before, the restoration bleed will typically be 1% of the restoration flow rate unless the optional groundwater sweep method is used as described below.

The water quality of the Madison Formation is expected to be equal to or better than the baseline ore zone water quality, and injection of Madison Formation water will therefore be similar to injection of permeate under the deep disposal well option.

Optional Groundwater Sweep

Although a 1% restoration bleed will be adequate to maintain hydraulic control of well fields undergoing active aquifer restoration, additional bleed may be required at times. For example, additional restoration bleed may be used to recover flare of lixiviant outside of the well field pattern area. In addition to the restoration methods described above, Powertech may withdraw up to one (1) pore volume of water through groundwater sweep over the course of aquifer restoration. This will result in an average restoration bleed of approximately 17% as described in the response to TR RAI P&R-14(c).

Flare Control and Capture

Flaring will be controlled by maintaining balanced well fields and adequate production bleed during uranium recovery. Flaring will be captured by maintaining adequate restoration bleed. If necessary, the restoration bleed may be increased to provide up to one (1) pore volume of groundwater sweep as discussed above. The results of a numerical modeling potential impact analysis for the Inyan Kara under aquifer restoration with and without one (1) pore volume of groundwater sweep are provided in the February 2012 numerical groundwater model report for the Dewey-Burdock Project (ML12062A096).

ATTACHMENT 3

Electronic Copy of Revised TR on DVD