ATTACHMENT 4

GWD 1-13 POWERTECH DEWEY-BURDOCK CONDITIONS FOR THE LAND APPLICATION DISPOSAL SYSTEM

December 12, 2012

1. The Ground Water Discharge Plan application, along with any amendments and technical revisions shall become part of these conditions, with the exception of those items specifically added, deleted, or amended in these conditions to the plan. The plan consists of a construction permit, ground water quality variance and a ground water discharge permit.

2. The plan is not effective until all other related state, federal and local permits and licenses that are required for operations are obtained.

3. Land application of liquid wastes may not occur if sufficient capacity is available to dispose of the liquid wastes via Class V UIC well(s) permitted through the United States Environmental Protection Agency. If insufficient Class V UIC capacity is available as determined by Powertech and demonstrated to the Department, the excess treated liquid wastes may be disposed via the land application system in accordance with the ground water discharge plan and conditions. (Refer to Section 1.0 of the ground water discharge plan, submitted on March 9, 2012.) Prior to commencing land application, Powertech shall provide written notification to the department.

4. The application rate at the land application sites shall be controlled so as to prevent any surface runoff of the effluent. Powertech must ensure the application rate does not cause water to accumulate in the catchment areas or excessive ponding in the land application areas during normal operations (i.e., dry conditions). To prevent ground saturation and runoff, no application is permitted during periods of heavy or prolonged precipitation. Land application may not take place when ground or soil conditions are frozen or covered with snow or ice, or will result in the land application water freezing at the surface. Any runoff leaving the catchment areas would be a violation of surface water rules and would require a separate surface water discharge permit. The land application equipment shall, to the extent feasible, be installed and operated in such a manner as to minimize wind drift of the effluent and formation of aerosols.

5. Leaks, spills or other releases from the well fields, Class V UIC well(s), processing facilities, ponds or associated appurtenances, and fertilizer applied at rates greater than recommended by the manufacturer or the South Dakota Department of Agriculture for agronomic purposes, do not constitute permitted discharges under the ground water discharge plan, and must be remediated to applicable state law, rules and standards.

6. The permitted allowable limit (PAL) for each of the parameters of concern must not be exceeded at the compliance points, and are set at the South Dakota Ground Water Quality Standard (ARSD 74:54:01:04)**. For natural ambient concentrations that exceed the Standard, the PAL shall be set at the ambient concentration as outlined in the chart below. Permitted allowable limits will be updated once prior to land application operation in accordance with ARSD 74:54:02:18 and condition 7 to reflect natural variations in ground water quality.

	TDS	Sulfate	Chloride	Uranium (dissolved)	Gross Alpha	Radon
BC-1	3727 mg/L	2346 mg/L	250 mg/L	0.086 mg/L	76.61 pCi/L	1883 pCi/L
BC-2	3904 mg/L	2488 mg/L	250 mg/L	0.03 mg/L	24.8 pCi/L	2766 pCi/L
BC-3	3175 mg/L	2009 mg/L	250 mg/L	0.03 mg/L	30.7 pCi/L	1765 pCi/L
DC-1	6413 mg/L	4130 mg/L	250 mg/L	0.041mg/L	24.5 pCi/L	1962 pCi/L
DC-2	4646 mg/L	2129 mg/L	847 mg/L	0.03 mg/L	17.5 pCi/L	2132 pCi/L
DC-3*	11234 mg/L*	7508 mg/L*	822 mg/L*	0.03 mg/L*	21.2 pCi/L*	4478 pCi/L*
DC-4	11462 mg/L	7600 mg/L	250 mg/L	0.03 mg/L	25.9 pCi/L	4747 pCi/L

* For compliance wells that are dry or contain insufficient water to collect at least three ambient samples, the ambient concentration for determining PALs shall be established as the arithmetic mean plus one standard deviation of the sample data from the two nearest alluvial wells. For DC-3, these wells are DC-2 and DC-4.

** If the gross beta concentration, excluding naturally occurring potassium-40, is less than 50 pCi/L, gross beta will be considered in compliance with the ground water quality standard. If the concentration exceeds 50 pCi/L, then Powertech will analyze specific concentrations of beta particles and convert the concentrations from pCi/L to mrem/yr using the conversion tables in EPA 816-F-00-002 (March 2002), Appendix I.

7. Following the four months of ambient ground water monitoring as required by ARSD 74:54:02:18, Powertech will continue to collect monthly ground water samples from applicable wells for a total period of one year (eight months beyond initial four month ambient sampling period) and quarterly groundwater samples thereafter until mining commences. Thereafter regular sampling will be conducted in accordance with the monitoring plan outlined in Section 6 of the plan application. All samples collected prior to initial mining or land application will be used to update ambient ground water quality to reflect natural fluctuations in concentrations at that time. The arithmetic mean plus one standard deviation of the sample data shall represent the ambient concentrations for each of the parameters of concern. Subsequently, applicable permitted allowable limits will be updated in accordance with ARSD 74:54:02:18.

8. The ground water compliance monitoring points are: BC-1, BC-2, BC-3, DC-1, DC-2, DC-3 and DC-4. The compliance points are to be sampled in accordance with the monitoring plan outlined in Section 6 of the plan application. Monitoring results shall be submitted to the Ground Water Quality Program of the Department of Environment and Natural Resources within 10 days after Powertech's receipt from the laboratory.

9. Effluent shall not be applied with radionuclide concentrations above South Dakota Ground Water Quality Standards (ARSD 74:54:01:04, Table One) unless ambient alluvial radionuclide concentrations are above the standard. For radionuclides not listed in ARSD 74:54:01:04, Table One, effluent limits shall be set at the 10 CFR 20, Appendix B, Table 2, Column 2 limits as listed in the following table. Alluvial ambient for effluent limit determination is the arithmetic mean of all ambient based PALs for each radionuclide in the compliance point wells at each POP zone.

	SD ARSD 74:54:01:04	10 CFR 20, Appendix B
Beta particle and photon radioactivity (from man-made radionuclides)	4 mrem/yr[3]	N/A
Gross alpha particle activity, excluding radon and uranium	15 pCi/l	N/A
Radium (combined 226 and 228)	5 pCi/l [1]	N/A [1]
Radium 226	N/A [1]	60 pCi/l [1]
Radium 228	N/A [1]	60 pCi/l [1]
Radon	300 pCi/l	N/A
Uranium	0.03 mg/l [2]	300 pCi/l [2]
Lead-210	N/A	10 pCi/l
Polonium-210	N/A	40 pCi/l
Thorium-230	N/A	100 pCi/l

[1]Effluent is required to meet ARSD 74:54:01:04 for combined radium 226 and 228. If the alluvial ambient is above the standard of 5 pCi/l for either radium 226 or 228, the limits shall be separated and the alluvial ambient for each parameter shall be the effluent limits. No individual effluent limit will be set below the standard of 5 pCi/l. If the alluvial ambient is higher than the corresponding 10 CFR 20, Appendix B limit of 60 pCi/l, the effluent limit shall be 60 pCi/l.

[2]Uranium concentrations must meet both ARSD 74:54:01:04 ground water quality standard of 0.03 mg/l (or ambient) and 10 CFR 20, Appendix B limit of 300 pCi/l.

[3]If the gross beta concentration excluding naturally occurring potassium-40 is less than 50 pCi/L, the effluent will be deemed to be in compliance with the ground water quality standard. If the concentration exceeds 50 pCi/L, then Powertech will analyze specific concentrations of beta particles and convert the concentrations from pCi/L to mrem/yr using the conversion tables in EPA 816-F-00-002 (March 2002), Appendix I.

10. Soil samples are to be collected annually each fall from each of the land application pivot areas active during that year and analyzed for the parameters listed in Table 6.4-1 (updated August 2012) of the Plan application, with the addition of radium 228.

11. If monitoring shows extreme variability or unpredictability in analytical results, or if the reliability of the monitoring program or the parameters monitored are inappropriate or inadequate, the Department may require Powertech to submit a revised monitoring and treatment program to correct the identified deficiencies for Department review and approval.

12. In addition to the parameters listed in Table 6.2-2 of the Plan application, operational stream sampling shall include: total dissolved solids (TDS), total suspended solids (TSS), hardness, chloride, sulfate, arsenic, cadmium, chromium and selenium. Unless noted, the parameters are to be analyzed as dissolved. If monitoring on Beaver or Pass Creeks show sufficient variability between upgradient and downgradient monitoring sites that could indicate potential influence from the land application systems, Powertech shall immediately begin investigating and develop and implement a mitigation and remediation plan.

13. Prior to initiation of land application for the season, the effluent must be sampled by Powertech and analyzed for the parameters listed in Tables 6.1-3 (updated August 2012) and

6.3-1 of the Plan application, with the addition of radium 228. Powertech shall notify the Department at least 72 hours prior to the initiation of land application to provide the Department opportunity to take effluent samples for chemical characterization. Following initiation of land application for each season, the effluent will be sampled monthly in accordance with the Monitoring Plan (Section 6) of the Plan application until land application ceases for each season. The Department may conduct duplicate sampling during any regular sampling event and during the annual audit.

14. One to two monitoring well(s) shall be installed in each POP zone near the ponds in order to aid in differentiating potential impacts from the land application system verses potential leaks from the ponds. These wells are to be monitored on the same schedule as the interior monitoring wells outlined in Section 6 of the plan application. Should monitoring in these wells indicate leakage from the ponds could be influencing water quality in the POP zone, Powertech shall submit to the Department an investigative plan to determine the extent and magnitude of this influence and possible remediation options as required by condition 5.

15. Should the water quality in interior monitor wells indicate an increasing trend in constituent concentrations that could potentially trigger a permit limit violation at a compliance well, Powertech will implement a contingency plan as outlined in Section 8 of the Plan application.

16. In accordance with ARSD 74:54:02:23(4) the Department is authorized to approve technical revisions to a ground water discharge facility without the requirement of a permit modification or renewal. Such technical revisions include the following:

    a. Monitoring plans or parameters;
    b. Plans and specifications for permitted facilities;
    c. Reasonable changes to the quality of discharged waste;
    d. Reasonable changes in volume of discharged waste;
    e. Quality control and quality assurance plans;
    f. Any other changes that will not result in the degradation of the ground water above the South Dakota Water Quality Standards.

    Technical revisions must be submitted to the Department in writing. The Department shall either approve, disapprove, conditionally approve, or request additional information within 30 days after receipt.