POWERTECH (USA) INC.

APPENDIX 3.3-A

EXPLORATION DRILL HOLES WITHIN ONE MILE PERIMETER AROUND THE DEWEY-BURDOCK PROJECT

POWERTECH (USA), INC.

Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	26	AXJ13	1005051.893	443831.866	3875
6	1	26	AXJ14	1005010.678	443807.8553	3867
6	1	26	AXJ3	1005045.069	443721.3286	3874
6	1	35	DA1	1007235.038	438498.8522	3832
6	1	35	DK1	1005363.906	438676.1739	3742
6	1	35	DK36	1005934.038	438660.1913	3763
6	1	35	DK37	1005191.662	439246.9997	3754
6	1	35	DK38	1006130.535	439179.5671	3794
6	1	35	DK39	1005398.572	439369.2244	3757
6	1	35	DK40	1005052.025	439571.7032	3755
6	1	35	DK54	1004864.522	438750.1431	3742
6	1	35	DK55	1005189.816	438552.5900	3735
6	1	35	DP252	1006772.535	438554.2677	3812
6	1	35	DP253	1006422.78	438812.5176	3802
6	1	35	DP254	1005994.921	438806.2612	3771
6	1	35	DP255	1006236.284	438972.1618	3795
6	1	35	DP256	1006194.437	439068.6234	3795
6	1	35	DP257	1006164.833	439120.9117	3794
6	1	35	DP258	1006148.12	439149.6275	3794
6	1	35	DP261	1006119.259	438670.9787	3774
6	1	35	DP263	1006160.199	439421.1526	3778
6	1	35	DR262	1006126.551	438882.5993	3779
6	1	35	DR753	1006193.947	439244.2152	3780
6	1	35	DR755	1006179.886	439219.3092	3780
6	1	35	DR756	1006162.79	439191.195	3794
6	1	35	DR757	1006161.531	439252.7673	3794
6	1	35	DR759	1006146.941	439222.378	3794
6	1	35	DR762	1006174.528	439162.6805	3782
6	1	35	DR764	1006129.562	439249.7914	3794
6	1	35	DR766	1006218.434	439112.3001	3782
6	1	35	DR767	1006240.554	439132.8922	3782
6	1	35	DR768	1006190.476	439083.1397	3795
6	1	35	DR769	1006228.482	439175.5574	3782
6	1	35	DR77	1006413.892	438950.4167	3801
6	1	35	DR770	1006130.466	439101.8628	3794
6	1	35	DR771	1006114.743	439064.357	3785
6	1	35	DR772	1006098.686	439021.8603	3785
6	1	35	DR773	1006080.611	438973.5653	3785
6	1	35	DR774	1006091.347	438935.2548	3779
6	1	35	DR775	1006009.05	438948.3116	3772
6	1	35	DR776	1005930.683	438889.304	3772
6	1	35	DR778	1005948.169	438876.7427	3772
6	1	35	DR779	1005924.107	438870.2254	3772

POWERTECH (USA) INC.

Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	DR780	1005902.555	438891.1301	3763
6	1	35	DR781	1005914.971	438836.566	3763
6	1	35	DR782	1005900.027	438778.4641	3763
6	1	35	DR783	1005916.938	438715.9458	3763
6	1	35	DR784	1006018.703	438836.8104	3772
6	1	35	DR785	1006070.342	438881.4017	3779
6	1	35	DR786	1005944.515	438721.3826	3771
6	1	35	DR787	1005980.097	438880.2675	3772
6	1	35	DRJ101	1005588.607	439101.0006	3761
6	1	35	DRJ103	1006564.681	438478.5584	3806
6	1	35	DRJ104	1005812.339	439213.3025	3781
6	1	35	DRJ116	1004028.952	439370.1221	3731
6	1	35	DRJ118	1006605.346	438736.0722	3802
6	1	35	DRJ119	1005207.894	439558.8601	3758
6	1	35	DRJ120	1003799.844	439651.7024	3729
6	1	35	DRJ121	1004084.179	439555.9234	3735
6	1	35	DRJ122	1003931.056	439209.5672	3732
6	1	35	DRJ123	1003634.333	439505.7526	3732
6	1	35	DRJ124	1003386.22	439422.3517	3730
6	1	35	DRJ125	1003192.676	439453.6867	3727
6	1	35	DRJ126	1005041.618	439412.5191	3755
6	1	35	DRJ127	1003091.504	439647.4421	3726
6	1	35	DRJ128	1004874.374	439376.9368	3748
6	1	35	DRJ129	1003177.003	439696.7468	3731
6	1	35	DRJ130	1004672.409	439377.7737	3746
6	1	35	DRJ131	1003245.563	439724.9682	3728
6	1	35	DRJ132	1004509.074	439446.7948	3742
6	1	35	DRJ133	1004436.642	439434.3058	3742
6	1	35	DRJ134	1007244.37	439203.2647	3850
6	1	35	DRJ135	1004554.381	439451.9051	3744
6	1	35	DRJ136	1004512.277	439376.9962	3742
6	1	35	DRJ137	1004501.534	439512.562	3744
6	1	35	DRJ138	1004573.363	439374.4778	3744
6	1	35	DRJ139	1004436.298	439496.4666	3744
6	1	35	DRJ140	1004573.603	439304.7367	3743
6	1	35	DRJ141	1004368.309	439581.178	3741
6	1	35	DRJ142	1004509.566	439253.641	3740
6	1	35	DRJ143	1004563.204	439218.5521	3743
6	1	35	DRJ144	1004291.364	439577.5823	3741
6	1	35	DRJ145	1004447.146	439183.5106	3740
6	1	35	DRJ146	1004670.099	439254.543	3746
6	1	35	DRJ147	1004524.635	439121.4344	3740
6	1	35	DRJ148	1004564.789	439159.5626	3743

POWERTECH (USA) INC.

Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	DRJ149	1004629.36	439217.283	3743
6	1	35	DRJ150	1004222.837	439579.5103	3739
6	1	35	DRJ151	1004420.034	439613.7869	3744
6	1	35	DRJ152	1004562.39	439093.2905	3743
6	1	35	DRJ153	1004628.989	439063.7605	3742
6	1	35	DRJ154	1004147.324	439651.0772	3736
6	1	35	DRJ155	1004647.82	439141.1592	3743
6	1	35	DRJ156	1004682.788	439077.0346	3741
6	1	35	DRJ157	1004195.188	439469.534	3739
6	1	35	DRJ158	1004173.138	439390.5141	3738
6	1	35	DRJ159	1004733.626	439007.4669	3741
6	1	35	DRJ160	1004093.893	439403.025	3734
6	1	35	DRJ162	1004775.395	438976.8929	3741
6	1	35	DRJ163	1004834.429	438991.3157	3742
6	1	35	DRJ164	1004863.444	439029.66	3742
6	1	35	DRJ165	1003967.947	439308.5199	3732
6	1	35	DRJ166	1004902.315	438986.5361	3742
6	1	35	DRJ167	1004969.561	439000.7831	3745
6	1	35	DRJ168	1004011.666	439259.8047	3732
6	1	35	DRJ169	1004064.843	439218.745	3734
6	1	35	DRJ170	1005001.579	438962.0494	3745
6	1	35	DRJ171	1004122.507	439221.901	3734
6	1	35	DRJ172	1004074.948	439168.2308	3733
6	1	35	DRJ173	1005043.264	438916.4504	3742
6	1	35	DRJ174	1005115.2	438833.8781	3742
6	1	35	DRJ175	1004161.306	439102.2303	3733
6	1	35	DRJ176	1005218.184	438779.2465	3738
6	1	35	DRJ-177	1005313.719	438804.1089	3741
6	1	35	DRJ-178	1004201.265	438999.449	3734
6	1	35	DRJ179	1005404.267	438875.5722	3740
6	1	35	DRJ180	1005479.204	438816.6801	3745
6	1	35	DRJ181	1005398.511	438945.7242	3740
6	1	35	DRJ55	1007008.027	438994.0304	3851
6	1	35	DRJ56	1007057.059	438864.719	3864
6	1	35	DRJ57	1007349.44	438747.0961	3868
6	1	35	DRJ58	1007312.997	439175.5762	3870
6	1	35	DRJ60	1006965.01	439466.8141	3854
6	1	35	DRJ61	1006891.743	439567.7841	3839
6	1	35	DRJ62	1006651.34	438578.8598	3806
6	1	35	DRJ63	1006943.018	439104.9563	3843
6	1	35	DRJ65	1006883.616	439650.7304	3850
6	1	35	DRJ66	1006837.037	439550.4338	3839
6	1	35	DRJ67	1006936.327	439532.999	3854

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	DRJ68	1007022.769	439448.5887	3839
6	1	35	DRJ69	1005320.229	439230.4446	3752
6	1	35	DRJ70	1005467.158	439218.8233	3751
6	1	35	DRJ71	1005637.999	438883.8809	3753
6	1	35	DRJ89	1006133.126	438551.7068	3770
6	1	35	DRJ90	1006015.967	438706.716	3763
6	1	35	DRJ91	1005420.9	439051.128	3745
6	1	35	DRJ92	1005386.011	439415.4749	3757
6	1	35	DRJ93	1005385.542	439717.8461	3773
6	1	35	DRJ98	1006125.148	438648.3776	3774
6	1	35	DRM1	1005008.637	439236.358	3750
6	1	35	DRM10	1006040.047	438588.8293	3763
6	1	35	DRM11	1006022.573	438810.4752	3771
6	1	35	DRM12	1005965.742	439034.6986	3780
6	1	35	DRM13	1005335.737	439546.4003	3763
6	1	35	DRM14	1005449.027	439647.5478	3765
6	1	35	DRM6	1006846.784	438670.5688	3804
6	1	35	DRM8	1006248.982	438485.7483	3771
6	1	35	DRM9	1005622.702	439306.1102	3760
6	1	35	DRR1	1003954.14	439593.9314	3732
6	1	35	DRR10	1005536.093	439359.5789	3750
6	1	35	DRR11	1003909.427	439397.5866	3732
6	1	35	DRR12	1005351.911	439073.9989	3741
6	1	35	DRR13	1005281.965	439053.3869	3742
6	1	35	DRR14	1005214.841	439038.9317	3742
6	1	35	DRR15	1005302.397	439110.2814	3749
6	1	35	DRR16	1003821.41	439490.7399	3730
6	1	35	DRR17	1003668.24	439452.0236	3732
6	1	35	DRR18	1003577.769	439422.2022	3733
6	1	35	DRR19	1003520.076	439435.3894	3733
6	1	35	DRR2	1005354	438972.5308	3741
6	1	35	DRR20	1005180.432	439072.148	3742
6	1	35	DRR21	1005115.026	439146.5274	3748
6	1	35	DRR22	1003436.28	439492.0283	3733
6	1	35	DRR23	1002944.224	439720.9273	3723
6	1	35	DRR23	1003337.721	439472.9023	3732
6	1	35	DRR24	1003246.91	439511.5126	3730
6	1	35	DRR25	1003142.383	439545.6421	3725
6	1	35	DRR26	1005023.457	439184.7616	3747
6	1	35	DRR27	1005102.629	439228.9896	3753
6	1	35	DRR28	1003012.05	439587.2588	3723
6	1	35	DRR29	1002890.228	439552.8102	3720
6	1	35	DRR3	1005513.947	438910.7779	3743

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	DRR30	1002812.982	439621.2412	3720
6	1	35	DRR31	1005080.664	439342.6935	3755
6	1	35	DRR32	1004934.542	439511.1819	3751
6	1	35	DRR34	1005048.484	439550.8911	3755
6	1	35	DRR35	1004989.334	439556.8654	3751
6	1	35	DRR36	1005025.704	439665.535	3753
6	1	35	DRR37	1005152.452	439644.5652	3754
6	1	35	DRR38	1005010.558	439494.2664	3751
6	1	35	DRR39	1005097.469	438593.7333	3731
6	1	35	DRR4	1004016.725	439566.2997	3731
6	1	35	DRR41	1005176.021	438498.3826	3735
6	1	35	DRR43	1004980.614	438597.8043	3734
6	1	35	DRR44	1006759.885	438754.9976	3801
6	1	35	DRR47	1004872.836	438618.5226	3734
6	1	35	DRR49	1006692.552	438845.1715	3813
6	1	35	DRR5	1005574.857	438988.2882	3750
6	1	35	DRR54	1004994.981	438720.469	3743
6	1	35	DRR57	1006603.14	438915.127	3797
6	1	35	DRR58	1004815.297	438725.7683	3742
6	1	35	DRR61	1006520.573	438998.1294	3791
6	1	35	DRR62	1004896.646	438723.3215	3742
6	1	35	DRR64	1006618.434	438996.6722	3798
6	1	35	DRR67	1006546.304	439078.9083	3791
6	1	35	DRR68	1006569.919	438787.736	3802
6	1	35	DRR69	1006640.697	438686.945	3803
6	1	35	DRR7	1005643.297	439062.5695	3750
6	1	35	DRR70	1006529.795	438831.4422	3802
6	1	35	DRR71	1006523.472	438751.4419	3802
6	1	35	DRR72	1006495.199	438872.7354	3791
6	1	35	DRR73	1006589.426	438680.168	3803
6	1	35	DRR74	1006676.529	438655.1255	3800
6	1	35	DRR76	1006565.323	438565.1534	3806
6	1	35	DRR78	1006404.663	439078.7432	3788
6	1	35	DRR79	1006347.054	439162.9878	3787
6	1	35	DRR8	1005542.28	439163.4423	3751
6	1	35	DRR81	1006233.187	439161.3707	3782
6	1	35	DRR82	1006154.426	439262.5785	3794
6	1	35	DRR84	1006220.529	439221.6839	3780
6	1	35	DRR85	1006170.675	439196.5215	3782
6	1	35	DRR86	1006240.377	439102.2795	3782
6	1	35	DRR87	1006294.495	439189.7604	3782
6	1	35	DRR88	1006121.532	439379.2736	3778
6	1	35	DRR9	1005586.585	439249.0058	3760

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	DRR90	1005999.394	439398.4304	3790
6	1	35	DRR91	1006081.798	439304.1907	3794
6	1	35	DRR92	1005962.862	439507.047	3763
6	1	35	DRR94	1006054.542	439495.7375	3768
6	1	35	DRR95	1005988.105	439625.19	3763
6	1	35	DRR96	1006113.8	439590.0633	3782
6	1	35	DRT33	1007210.734	438611.0556	3833
6	1	35	DRT35	1007116.085	438673.2004	3830
6	1	35	DRT37	1006986.653	438812.411	3839
6	1	35	DRT38	1007153.388	438607.9492	3830
6	1	35	DRT39	1006938.034	438964.8505	3851
6	1	35	DRT40	1006994.184	439081.1488	3851
6	1	35	DRT41	1007056.02	439053.1096	3867
6	1	35	DRT42	1006913.587	439487.2697	3839
6	1	35	DRT43	1007002.23	439542.0145	3854
6	1	35	DRT44	1006863.897	439476.3472	3839
6	1	35	DRT45	1007084.747	438917.5512	3864
6	1	35	DRT46	1007130.992	439072.3923	3867
6	1	35	DRT47	1007194.501	439027.7243	3869
6	1	35	DRT48	1007285.063	438978.6464	3869
6	1	35	DRT49	1007093.303	438584.9209	3830
6	1	35	DRT50	1007267.23	438880.2832	3874
6	1	35	DRT51	1007268.236	438740.0758	3865
6	1	35	DRT58	1007043.501	439244.7639	3819
6	1	35	DRT59	1007349.578	438984.09	3873
6	1	35	DRT60	1006906.269	439245.0929	3801
6	1	35	DRT62	1007150.234	439262.2924	3851
6	1	35	DRT83	1007325.152	438507.4824	3821
6	1	35	DRT84	1007350.578	438854.9861	3877
6	1	35	DRT85	1007235.321	438690.2231	3833
6	1	35	DS560	1006198.74	439524.9959	3781
6	1	35	DS588	1006188.477	439365.6026	3781
6	1	35	DS589	1006194.092	439400.7182	3781
6	1	35	DS590	1006204.239	439447.3635	3781
6	1	35	DS591	1006173.046	439462.528	3781
6	1	35	DS592	1006059.571	439497.7234	3768
6	1	35	DS594	1006204.34	439559.9557	3781
6	1	35	DS595	1006108.971	439295.3659	3794
6	1	35	DS596	1006182.831	439280.6958	3780
6	1	35	DW31	1006645.059	438670.5828	3803
6	1	35	DW32	1006582.283	438751.9712	3802
6	1	35	DW33	1006521.07	438835.6735	3791
6	1	35	DW36	1006913.659	438416.2887	3817

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	EN100	1005537.78	441728.2544	3822
6	1	35	EN101	1005994.201	441573.5781	3790
6	1	35	EN99	1004394.839	441767.9437	3785
6	1	35	SP-4	1005093.453	440802.096	3782
6	1	35	SRA1	1005242.418	441846.5452	3794
6	1	35	SRA2	1005367.958	441147.0286	3798
6	1	35	SRA3	1005185.554	441094.8575	3793
6	1	35	SRA4	1004034.212	440450.0357	3737
6	1	35	SRA5	1004263.403	439755.5522	3740
6	1	35	SRA6	1003932.893	440268.7577	3736
6	1	35	SRA7	1003792.594	440095.7657	3734
6	1	35	SRA8	1003754.449	439848.1585	3729
6	1	35	SRJ1	1005451.522	441100.1887	3793
6	1	35	SRM1	1005244.436	441121.5001	3793
6	1	35	SRM10	1006438.741	440936.5321	3831
6	1	35	SRM101	1006166.672	441505.5949	3791
6	1	35	SRM102	1006188.615	441608.3582	3807
6	1	35	SRM103	1006110.521	441490.1484	3791
6	1	35	SRM104	1006186.489	441475.7214	3800
6	1	35	SRM105	1006248.068	441456.5907	3790
6	1	35	SRM106	1005976.772	441617.5233	3818
6	1	35	SRM107	1005762.238	441673.5091	3781
6	1	35	SRM108	1005892.707	441730.2836	3801
6	1	35	SRM109	1005827.883	441465.8029	3779
6	1	35	SRM110	1005696.344	441523.5446	3773
6	1	35	SRM111	1005663.276	441520.3786	3771
6	1	35	SRM112	1005498.462	441414.7633	3770
6	1	35	SRM113	1005633.991	441513.4159	3771
6	1	35	SRM114	1005670.125	441481.5373	3773
6	1	35	SRM115	1005376.16	441483.9069	3786
6	1	35	SRM115	1006399.299	440868.5684	3817
6	1	35	SRM116	1005259.187	441613.9967	3774
6	1	35	SRM117	1005083.683	441784.878	3763
6	1	35	SRM118	1005176.762	441937.3394	3794
6	1	35	SRM119	1005246.834	441778.7306	3771
6	1	35	SRM12	1006469.796	440808.0106	3826
6	1	35	SRM120	1005070.905	442087.5126	3776
6	1	35	SRM121	1004918.317	442031.5079	3759
6	1	35	SRM122	1005149.798	442263.5364	3783
6	1	35	SRM123	1004867.807	441825.0451	3756
6	1	35	SRM124	1004815.934	442155.4088	3783
6	1	35	SRM125	1004805.559	442356.719	3782
6	1	35	SRM126	1004645.179	442121.7201	3754

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Appendix 3.3-A
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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	SRM127	1004602.401	442295.9733	3759
6	1	35	SRM128	1004388.401	442357.3327	3752
6	1	35	SRM129	1004700.091	442018.7404	3764
6	1	35	SRM13	1006469.316	440839.385	3826
6	1	35	SRM130	1004657.528	441829.8933	3752
6	1	35	SRM131	1004329.203	441910.4844	3770
6	1	35	SRM132	1002420.334	441932.9959	3714
6	1	35	SRM135	1004166.918	442532.6702	3751
6	1	35	SRM136	1004073.586	442418.6112	3740
6	1	35	SRM137	1004044.444	442513.0262	3744
6	1	35	SRM138	1003948.188	442497.7479	3733
6	1	35	SRM139	1003891.287	442595.4285	3731
6	1	35	SRM14	1006482.213	440853.704	3831
6	1	35	SRM140	1003963.314	442673.5836	3759
6	1	35	SRM141	1003873.306	442738.0116	3750
6	1	35	SRM142	1004143.639	442419.8742	3740
6	1	35	SRM143	1004230.485	442513.8814	3751
6	1	35	SRM144	1004214.525	442622.7915	3751
6	1	35	SRM145	1004290.405	442659.0989	3755
6	1	35	SRM146	1004275.779	442619.3906	3751
6	1	35	SRM147	1004280.276	442736.9969	3749
6	1	35	SRM148	1004389.08	442573.7403	3762
6	1	35	SRM150	1004345.179	442480.2319	3762
6	1	35	SRM151	1004431.32	442596.0362	3780
6	1	35	SRM152	1004342.752	442417.2136	3752
6	1	35	SRM153	1004396.642	442764.0191	3750
6	1	35	SRM154	1004466.288	442500.2126	3780
6	1	35	SRM155	1004523.433	442379.4087	3757
6	1	35	SRM157	1002444.647	442194.8306	3712
6	1	35	SRM158	1002421.859	442350.7287	3711
6	1	35	SRM159	1004793.405	441626.7895	3766
6	1	35	SRM16	1006395.495	440830.3614	3802
6	1	35	SRM160	1004824.455	441573.4106	3773
6	1	35	SRM161	1004590.354	441785.4614	3752
6	1	35	SRM162	1004946.984	441908.7598	3757
6	1	35	SRM163	1005005.138	441837.864	3759
6	1	35	SRM164	1004938.702	441857.2224	3757
6	1	35	SRM165	1005044.91	441764.0056	3763
6	1	35	SRM166	1005213.302	441604.9219	3774
6	1	35	SRM167	1004968.54	441650.4958	3770
6	1	35	SRM168	1005250.939	441448.0164	3774
6	1	35	SRM169	1005284.743	441360.6533	3774
6	1	35	SRM2	1005127.935	441192.8486	3784

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	SRM3	1005100.762	441050.3565	3781
6	1	35	SRM36	1006196.407	440232.9611	3825
6	1	35	SRM37	1006212.251	440353.1421	3833
6	1	35	SRM40	1006211.791	440318.1151	3825
6	1	35	SRM41	1006245.353	440345.9228	3833
6	1	35	SRM42	1006177.024	440353.4414	3833
6	1	35	SRM43	1006209.426	440385.6435	3833
6	1	35	SRM44	1006142.429	440354.0435	3830
6	1	35	SRM45	1006177.432	440383.6382	3833
6	1	35	SRM46	1006138.046	440382.2604	3830
6	1	35	SRM47	1006115.586	440358.3354	3830
6	1	35	SRM48	1006140.491	440313.728	3820
6	1	35	SRM49	1006184.177	440322.9387	3825
6	1	35	SRM49	1004029.746	442384.5574	3737
6	1	35	SRM50	1006245.386	440317.7255	3825
6	1	35	SRM56	1006110.206	440313.4833	3820
6	1	35	SRM56	1002984.849	443074.5892	3744
6	1	35	SRM62	1006416.676	440916.7509	3817
6	1	35	SRM63	1006375.874	440845.3393	3817
6	1	35	SRM64	1006361.37	440877.7814	3817
6	1	35	SRM65	1006355.217	440829.9893	3802
6	1	35	SRM9	1006477.244	440876.9247	3831
6	1	35	SRM94	1006513.442	441060.2901	3839
6	1	35	SRM95	1006444.484	440975.1768	3839
6	1	35	SRM96	1006476.363	441071.7988	3839
6	1	35	SRP106	1006473.106	441106.5852	3816
6	1	35	SRP107	1006452.996	441020.5277	3839
6	1	35	SRP108	1006450.486	441041.9913	3839
6	1	35	SRP12	1006687.511	440860.0198	3842
6	1	35	SRP13	1006774.601	441186.3251	3808
6	1	35	SRP139	1006136.044	439786.4414	3770
6	1	35	SRP14	1006613.557	441314.0224	3800
6	1	35	SRP15	1006872.888	441123.7829	3822
6	1	35	SRP16	1006379.84	441461.1585	3790
6	1	35	SRP17	1006193.015	441553.9932	3800
6	1	35	SRP17	1006292.254	441160.3169	3838
6	1	35	SRP18	1006847.241	441338.4094	3851
6	1	35	SRP19	1006779.806	441553.1471	3874
6	1	35	SRP196	1006438.164	440825.1321	3826
6	1	35	SRP197	1006435.324	440851.0972	3831
6	1	35	SRP198	1006410.074	440852.6192	3817
6	1	35	SRP199	1006435.233	440896.1394	3831
6	1	35	SRP21	1006592.665	441699.0086	3856

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	SRP22	1006245.09	440909.8218	3797
6	1	35	SRP24	1006451.336	440874.1415	3831
6	1	35	SRP25	1006535.837	440815.5036	3826
6	1	35	SRP26	1006248.319	441739.9635	3798
6	1	35	SRP27	1006441.185	441928.8285	3800
6	1	35	SRP28	1006647.802	441965.8204	3810
6	1	35	SRP29	1006644.343	442194.4682	3800
6	1	35	SRP30	1006568.583	441224.8423	3800
6	1	35	SRP31	1006457.433	441321.7621	3793
6	1	35	SRP33	1006716.489	441215.3084	3808
6	1	35	SRP34	1006660.127	441589.5161	3865
6	1	35	SRP35	1006784.609	441411.3004	3857
6	1	35	SRP36	1006634.337	441635.1758	3856
6	1	35	SRP37	1006809.718	441452.2266	3867
6	1	35	SRP38	1006778.091	441432.3788	3857
6	1	35	SRP39	1006814.799	441403.245	3867
6	1	35	SRP40	1006840.254	441387.8278	3867
6	1	35	SRP41	1006836.534	441433.8144	3867
6	1	35	SRP42	1006875.319	441499.4589	3899
6	1	35	SRP43	1006762.803	441375.0259	3857
6	1	35	SRP44	1006782.834	441350.0072	3857
6	1	35	SRP45	1006609.325	441677.817	3856
6	1	35	SRP46	1006727.901	441260.9486	3839
6	1	35	SRP47	1006760.824	441236.0496	3839
6	1	35	SRP48	1006777.504	441213.4966	3808
6	1	35	SRP49	1006796.971	441190.1741	3808
6	1	35	SRP50	1006670.108	441146.2023	3798
6	1	35	SRP51	1006644.016	441169.1517	3798
6	1	35	SRP52	1006694.315	441125.1589	3808
6	1	35	SRP53	1006616.308	441190.1647	3798
6	1	35	SRP54	1006709.771	441111.8353	3808
6	1	35	SRP55	1006741.698	441094.7957	3808
6	1	35	SRP63	1006417.993	440814.2663	3802
6	1	35	SRP64	1006420.875	440879.0489	3817
6	1	35	SRP65	1006399.195	440890.4351	3817
6	1	35	SRP66	1006416.67	440949.9358	3817
6	1	35	SRP75	1006496.778	441006.0893	3839
6	1	35	SRP76	1006520.713	440989.1072	3839
6	1	35	SRP77	1006434.729	441046.1317	3839
6	1	35	SRR1	1006714.859	441282.1815	3839
6	1	35	SRR10	1005968.42	440307.5379	3823
6	1	35	SRR100	1006179.05	440596.7863	3836
6	1	35	SRR101	1006010.579	440594.626	3830

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	SRR102	1006032.011	440790.2706	3834
6	1	35	SRR103	1006022.747	440880.8945	3837
6	1	35	SRR104	1006093.208	440937.7197	3829
6	1	35	SRR105	1006165.011	440886.7892	3829
6	1	35	SRR106	1006018.911	440691.8723	3830
6	1	35	SRR107	1005899.437	440629.8364	3821
6	1	35	SRR108	1005902.109	440735.3185	3829
6	1	35	SRR111	1005895.593	440865.0522	3832
6	1	35	SRR112	1005810.332	440712.8843	3821
6	1	35	SRR113	1006050.66	440206.8617	3820
6	1	35	SRR113	1005942.804	440152.8161	3802
6	1	35	SRR114	1006500.506	440915.0169	3831
6	1	35	SRR115	1006491.689	440942.0683	3831
6	1	35	SRR116	1006464.12	440935.3489	3831
6	1	35	SRR117	1006475.36	440916.0343	3831
6	1	35	SRR118	1006490.456	440892.4039	3831
6	1	35	SRR12	1005997.261	440018.4217	3788
6	1	35	SRR13	1005969.858	439859.9878	3795
6	1	35	SRR14	1006207.116	440660.9097	3836
6	1	21	DWA 166	991985.7346	449500.7804	3783
6	1	21	DWA 169	992161.0403	449569.7992	3792
6	1	21	DWA 176	992730.9925	451847.2806	3847
6	1	21	DWA 177	992631.0621	452193.8693	3825
6	1	21	DWA 178	992680.7323	452418.3045	3808
6	1	21	DWA 179	992848.4519	452658.9498	3809
6	1	21	DWA 180	992719.0144	452969.638	3798
6	1	21	DWA 181	992832.2075	452082.0471	3829
6	1	21	DWA 182	992712.3592	452569.6406	3803
6	1	21	DWA 183	992872.2156	453421.2238	3800
6	1	21	DWA 184	992400.9133	450509.958	3822
6	1	21	DWA 185	992406.4514	450721.1504	3833
6	1	21	DWA 186	992577.458	452420.5599	3808
6	1	21	DWA 187	992613.6819	452976.3867	3798
6	1	21	DWA 188	992624.5168	451911.3594	3842
6	1	21	DWA 199	992736.8218	454111.0106	3789
6	1	21	DWA 201	993076.7192	453729.6277	3809
6	1	21	DWA 202	992634.1741	451734.8481	3851
6	1	21	DWA 203	992564.8583	452213.8913	3823
6	1	21	DWA168	992981.884	450322.7927	3824
6	1	21	DWA171	992785.304	450059.1539	3825
6	1	21	DWA172	993166.2495	450397.841	3822
6	1	21	DWA175	992292.844	449692.1696	3799
6	1	21	DWM 36	992700.0184	454392.9758	3782

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	21	DWM 37	992954.4054	453750.2624	3801
6	1	21	DWM 39	992988.975	453653.7973	3809
6	1	21	DWM 40	992756.1468	454379.1322	3787
6	1	21	DWM 41	992787.8078	454211.5515	3789
6	1	21	DWM 42	992971.4252	453409.8436	3800
6	1	21	DWM 43	992832.8094	454171.0723	3789
6	1	21	DWM 44	992925.7363	453572.6123	3799
6	1	21	DWM 59	992698.4132	453033.4946	3800
6	1	21	DWM 60	992667.2166	451947.8363	3842
6	1	21	DWT 98	992781.3318	454162.9277	3789
6	1	21	DWT11	997034.098	449992.1694	3786
6	1	21	DY 134	992689.8617	453517.8357	3797
6	1	21	DY 2	992896.179	453512.6149	3800
6	1	21	DY33	996573.7765	449774.7149	3808
6	1	21	DY344	997146.3242	450032.6365	3783
6	1	21	DY37	996690.976	449667.7758	3805
6	1	21	DY41	996657.1936	449741.5487	3805
6	1	21	DY42	996767.0827	449595.903	3804
6	1	21	DY50	996758.3968	449967.8088	3797
6	1	21	DY58	996865.1727	450017.5823	3792
6	1	21	DY75	996950.7703	450059.3926	3783
6	1	21	DY85	996851.1513	449733.9204	3804
6	1	21	DY87	996863.3844	449591.1311	3804
6	1	21	EN841A	996813.8755	449762.7646	3800
6	1	21	LK19	996980.7718	449235.8768	3788
6	1	36	DK157	1007642.664	438498.0298	3848
6	1	36	FK1	1009675.751	438375.8177	3900
6	1	36	FK2	1009506.253	438327.769	3900
6	1	36	FK22	1007430.2	438764.7059	3866
6	1	36	FK23	1007447.593	439158.5582	3892
6	1	36	FK3	1009230.128	438385.934	3910
6	1	36	FK4	1008684.713	438381.5719	3912
6	1	36	FK5	1008749.889	438708.1227	3919
6	1	36	FO128	1008480.562	438751.5784	3923
6	1	36	FO129	1008462.21	438794.0128	3923
6	1	36	FO131	1008511.585	438594.8466	3922
6	1	36	FO155	1008651.482	438988.4811	3937
6	1	36	FO156	1008643.301	438971.2502	3937
6	1	36	FO157	1008703.909	438987.2513	3939
6	1	36	FO159	1008756.427	438997.731	3939
6	1	36	FO160	1008850.033	439111.7321	3945
6	1	36	FO161	1008841.02	439083.3378	3940
6	1	36	FO162	1008882.341	439074.8633	3940

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	36	FO163	1008879.691	439047.3844	3940
6	1	36	FO164	1009049.536	439066.9572	3947
6	1	36	FO165	1009047.656	439097.5125	3951
6	1	36	FO166	1009042.555	439129.7149	3951
6	1	36	FO167	1009030.663	439153.2314	3951
6	1	36	FO168	1009022.328	439171.0367	3951
6	1	36	FO169	1009010.95	439188.3239	3951
6	1	36	FO173	1009078.572	439018.6953	3945
6	1	36	FO174	1009089.477	438994.2336	3945
6	1	36	FO175	1009075.325	438974.8516	3945
6	1	36	FO176	1009347.875	438959.4927	3925
6	1	36	FO177	1009336.526	438977.2949	3925
6	1	36	FO178	1009325.913	438987.8892	3925
6	1	36	FO180	1009289.787	438972.4144	3930
6	1	36	FO181	1009271.776	438964.7453	3930
6	1	36	FO182	1009292.994	438953.7532	3931
6	1	36	FO183	1009241.019	438960.2504	3930
6	1	36	FO184	1009251.792	438943.1441	3931
6	1	36	FO185	1009261.665	438927.7318	3931
6	1	36	FO186	1009276.086	439004.3237	3930
6	1	36	FO187	1009299.623	438936.6269	3931
6	1	36	FO188	1009234.581	438974.8513	3930
6	1	36	FO189	1009301.553	439176.3476	3930
6	1	36	FO190	1009328.077	439144.2635	3925
6	1	36	FO191	1009339.705	439122.9472	3925
6	1	36	FO192	1009342.583	439102.97	3925
6	1	36	FO193	1009353.411	439083.1872	3925
6	1	36	FO194	1009326.382	439088.3937	3925
6	1	36	FO195	1009318.56	439111.2294	3925
6	1	36	FO196	1009308.91	439128.9784	3930
6	1	36	FO197	1009366.109	439100.7358	3925
6	1	36	FO198	1009360.906	439122.3083	3925
6	1	36	FO199	1009353.212	439057.3138	3925
6	1	36	FO200	1009322.27	439009.2422	3925
6	1	36	FO201	1009307.522	438995.4359	3930
6	1	36	FO202	1009282.177	438986.5623	3930
6	1	36	FO213	1008284.343	438958.6249	3913
6	1	36	FO214	1008282.074	439010.1201	3913
6	1	36	FO215	1008282.485	438996.0445	3913
6	1	36	FO216	1008282.962	438985.8134	3913
6	1	36	FO217	1008282.805	438973.9346	3913
6	1	36	FO252	1008571.334	438760.8701	3922
6	1	36	FO299	1008619.153	438911.4408	3926

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	36	FO300	1008640.625	438913.3557	3926
6	1	36	FO303	1008606.906	438896.4856	3926
6	1	36	FO87	1009379.527	438993.1796	3925
6	1	36	FOA1	1009689.497	438379.609	3906
6	1	36	FOA11	1009647.945	438341.772	3900
6	1	36	FOA12	1009652.574	438324.101	3897
6	1	36	FOA13	1009653.564	438295.7555	3897
6	1	36	FOA14	1009690.449	438303.4898	3906
6	1	36	FOA15	1009706.807	438283.7022	3906
6	1	36	FOA19	1009315.036	438385.079	3904
6	1	36	FOA2	1009660.819	438362.4098	3900
6	1	36	FOA20	1009356.411	438467.7741	3918
6	1	36	FOA21	1009181.745	438487.9927	3912
6	1	36	FOA23	1009015.267	438419.664	3902
6	1	36	FOA25	1009087.31	438605.1447	3912
6	1	36	FOA26	1009135.678	438654.9508	3912
6	1	36	FOA27	1009083.383	438569.4761	3912
6	1	36	FOA28	1009075.706	438641.7858	3912
6	1	36	FOA29	1009029.329	438572.8985	3907
6	1	36	FOA3	1009621.061	438421.7396	3900
6	1	36	FOA30	1008948.736	438423.9196	3902
6	1	36	FOA31	1008945.861	438450.0113	3902
6	1	36	FOA32	1008886.963	438430.3128	3904
6	1	36	FOA33	1008913.017	438408.6317	3904
6	1	36	FOA34	1008991.326	438527.3958	3907
6	1	36	FOA35	1009062.025	438573.6399	3912
6	1	36	FOA36	1009163.889	438642.7062	3912
6	1	36	FOA37	1009126.581	438585.9627	3912
6	1	36	FOA38	1009235.848	438684.9584	3918
6	1	36	FOA39	1009266.648	438720.6345	3923
6	1	36	FOA4	1009706.578	438325.9976	3906
6	1	36	FOA40	1009273.972	438750.4734	3923
6	1	36	FOA41	1009302.929	438829.6987	3923
6	1	36	FOA42	1009291.953	438688.4278	3918
6	1	36	FOA43	1009324.919	438708.8626	3921
6	1	36	FOA44	1009361.786	438726.9503	3921
6	1	36	FOA45	1009355.768	438703.5642	3923
6	1	36	FOA46	1009399.981	438743.827	3921
6	1	36	FOA47	1009381.119	438759.947	3921
6	1	36	FOA48	1009338.664	438742.2575	3921
6	1	36	FOA49	1009397.49	438782.2418	3921
6	1	36	FOA5	1009716.441	438383.5701	3906
6	1	36	FOA50	1009429.318	438765.9099	3921

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Appendix 3.3-A
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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	36	FOA51	1009457.839	438783.5377	3924
6	1	36	FOA52	1009488.251	438821.2156	3924
6	1	36	FOA53	1009545.309	438852.4983	3925
6	1	36	FOA54	1009590.313	438871.4922	3930
6	1	36	FOA55	1009632.36	438889.2764	3930
6	1	36	FOA57	1009594.464	438884.6481	3930
6	1	36	FOA58	1009588.244	438849.4163	3930
6	1	36	FOA58	1009676.187	438936.1699	3930
6	1	36	FOA59	1009621.145	438903.3981	3930
6	1	36	FOA6	1009728.095	438413.4214	3906
6	1	36	FOA60	1009601.402	438910.4835	3930
6	1	36	FOA61	1009564.054	438870.3339	3930
6	1	36	FOA62	1009565.124	438842.6107	3930
6	1	36	FOA64	1009526.63	438832.8147	3925
6	1	36	FOA65	1009582.123	438825.0335	3923
6	1	36	FOA83	1009519.377	438860.1468	3925
6	1	36	FOM10	1008605.204	438658.1944	3922
6	1	36	FOM11	1008662.885	438655.4072	3922
6	1	36	FOM12	1008700.497	438615.1805	3915
6	1	36	FOM13	1008692.499	438659.964	3915
6	1	36	FOM14	1008658.101	438625.4813	3922
6	1	36	FOM15	1008685.827	438685.8808	3915
6	1	36	FOM16	1008709.062	438710.6972	3919
6	1	36	FOM17	1009149.239	438559.4147	3912
6	1	36	FOM18	1009498.594	438788.0659	3924
6	1	36	FOM2	1008565.706	438709.5225	3922
6	1	36	FOM20	1009580.984	438332.0486	3900
6	1	36	FOM3	1008571.72	438658.6578	3922
6	1	36	FOM30	1008489.731	438655.1253	3922
6	1	36	FOM4	1008522.119	438674.1605	3922
6	1	36	FOM5	1008584.328	438779.7829	3922
6	1	36	FOM6	1008559.496	438746.5864	3922
6	1	36	FOM7	1008544.055	438726.459	3923
6	1	36	FOM8	1008620.024	438729.3124	3922
6	1	36	FOM9	1008625.218	438688.1453	3922
6	1	36	FOT1	1007495.907	438806.2728	3866
6	1	36	FOT2	1007510.31	438985.7189	3886
6	1	36	FOT3	1007425.628	438974.4606	3873
6	1	36	FOT4	1007403.979	439074.5463	3873
6	1	36	FOT5	1007436.831	438782.7814	3866
6	1	36	FP2	1007575.213	441198.8782	3891
6	1	36	FP3	1007589.56	441511.6594	3928
6	1	36	FP4	1007436.489	438961.4167	3886

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	36	FP5	1007416.681	438514.5384	3821
6	1	36	FP6	1008116.491	438510.8555	3891
6	1	36	FP7	1008430.751	438637.1191	3922
6	1	36	FP8	1007720.923	438452.9371	3853
6	1	36	FP9	1008890.568	438628.0393	3911
6	1	27	DOT1	998349.4478	445342.2362	3720
6	1	27	DOT3	999080.9282	446215.976	3712
6	1	27	EM63	997313.4051	444706.5582	3733
6	1	27	HDJ18	997556.7337	446774.318	3769
6	1	27	HDJ22	997659.539	446758.9146	3769
6	1	27	HDJ27	997171.8184	447368.577	3757
6	1	27	HDJ28	997357.9411	448756.5456	3780
6	1	27	HDJ30	997238.6778	447517.2836	3759
6	1	27	HDR12	997144.4078	446769.2782	3772
6	1	27	HDR13	997239.1336	446703.8145	3782
6	1	27	HDR15	997271.0859	446847.1464	3770
6	1	27	HDR16	997339.7435	446741.9522	3780
6	1	27	HDR17	997426.6152	446808.1695	3768
6	1	27	HDR18	997513.0125	446864.8821	3769
6	1	27	HDR19	997623.7128	446883.2668	3767
6	1	27	HDR20	997718.5948	446826.0852	3769
6	1	27	HDR21	997844.8976	446822.9144	3767
6	1	27	HDR22	997950.028	446828.4663	3765
6	1	27	HDR23	998247.0868	446930.8276	3742
6	1	27	HDR24	998339.6768	447169.1182	3733
6	1	27	HDR25	998501.5677	447127.7415	3737
6	1	27	HDR26	999022.3472	447396.2961	3738
6	1	27	HDR27	999381.7818	447067.3582	3728
6	1	27	HDR29	997343.4141	447515.3137	3756
6	1	27	HK18	997263.622	449005.5415	3784
6	1	29	DWA 104	991546.1137	444116.1059	3692
6	1	29	DWA 114	990377.2888	445697.6038	3663
6	1	29	DWA 119	987753.5402	444285.4433	3633
6	1	29	DWA 125	987566.734	444308.2966	3631
6	1	29	DWA 126	989194.0278	444286.7213	3642
6	1	29	DWA 128	987679.9359	444356.8082	3631
6	1	29	DWA 13	987298.9547	444393.1173	3631
6	1	29	DWA 131	987391.0408	444373.1741	3632
6	1	29	DWA 139	987822.4669	444337.6074	3633
6	1	29	DWA 14	986698.4505	444468.9292	3622
6	1	29	DWA 140	987220.868	444511.9853	3631
6	1	29	DWA 142	987407.1715	444475.7659	3632
6	1	29	DWA 143	988018.6135	444472.2767	3632

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	29	DWA 157	991521.3505	449303.526	3756
6	1	29	DWA 158	991624.0999	447584.1563	3735
6	1	29	DWA 161	991781.6225	447498.8549	3743
6	1	29	DWA 165	990658.8089	447668.74	3700
6	1	29	DWA 173	991877.904	447642.8832	3744
6	1	29	DWA 192	989206.671	444657.3394	3648
6	1	29	DWA 193	988977.3033	444481.478	3643
6	1	29	DWA 196	990519.1554	445666.3258	3663
6	1	29	DWA 197	986608.6003	444559.9052	3626
6	1	29	DWA 34	988977.9899	444228.5153	3639
6	1	29	DWA 35	989041.2608	444417.9473	3643
6	1	29	DWA 37	989113.7166	444583.7378	3646
6	1	29	DWA 39	989200.8582	444451.805	3644
6	1	29	DWA159	990024.1196	449479.5069	3725
6	1	29	DWA165	990131.7168	447690.1623	3687
6	1	29	DWA38	989047.9964	444785.4266	3650
6	1	29	DWM 58	986662.3939	444332.6454	3622
6	1	29	DWR 1	990770.0908	446817.4457	3689
6	1	29	DWR 10	991097.8207	447061.499	3701
6	1	29	DWR 105	991292.955	449449.8703	3742
6	1	29	DWR 108	991293.2725	449298.8055	3741
6	1	29	DWR 110	991383.0196	449194.2276	3744
6	1	29	DWR 116	990493.956	445929.7729	3665
6	1	29	DWR 12	990957.2624	446475.2577	3684
6	1	29	DWR 13	990525.5319	448137.1099	3699
6	1	29	DWR 14	991074.3081	446479.2008	3687
6	1	29	DWR 15	990584.9561	448272.5897	3701
6	1	29	DWR 16	990733.1665	446323.2661	3678
6	1	29	DWR 17	990509.7844	448550.071	3701
6	1	29	DWR 18	991002.5862	446361.281	3682
6	1	29	DWR 2	990766.2242	446186.3438	3674
6	1	29	DWR 21	990583.17	448739.314	3702
6	1	29	DWR 22	991380.1958	447025.8176	3715
6	1	29	DWR 23	991399.3503	446871.4884	3712
6	1	29	DWR 24	990737.896	448772.3369	3724
6	1	29	DWR 25	991323.9735	447168.7763	3712
6	1	29	DWR 26	991283.8564	446769.039	3707
6	1	29	DWR 27	990735.0384	448538.2664	3711
6	1	29	DWR 28	991022.5006	447188.7476	3704
6	1	29	DWR 29	991159.3465	446394.1118	3693
6	1	29	DWR 3	990921.2892	446796.5805	3694
6	1	29	DWR 30	990788.1511	448656.6117	3715
6	1	29	DWR 31	991090.1529	447340.3461	3704

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	29	DWR 32	991263.4755	446524.0442	3698
6	1	29	DWR 33	990904.0235	448765.771	3723
6	1	29	DWR 34	991219.3263	447294.9283	3709
6	1	29	DWR 35	991304.0169	446666.824	3703
6	1	29	DWR 36	991098.4608	448823.3346	3728
6	1	29	DWR 37	991452.2504	446624.3415	3704
6	1	29	DWR 38	991764.5194	446901.4693	3722
6	1	29	DWR 39	990417.0566	448741.9071	3706
6	1	29	DWR 4	990471.6693	447691.6694	3693
6	1	29	DWR 40	990477.9013	445758.6663	3663
6	1	29	DWR 42	990440.9075	445603.9047	3660
6	1	29	DWR 44	990445.6444	449192.8585	3720
6	1	29	DWR 45	990512.6685	448982.2799	3716
6	1	29	DWR 46	990433.8473	448992.6317	3715
6	1	29	DWR 47	990576.9234	449097.4844	3719
6	1	29	DWR 48	990670.6987	449255.7513	3724
6	1	29	DWR 5	990830.4612	446107.3667	3672
6	1	29	DWR 50	991627.6047	446756.1615	3712
6	1	29	DWR 51	991173.6414	446488.0204	3693
6	1	29	DWR 52	991749.4431	446751.3565	3720
6	1	29	DWR 53	991202.6664	446591.2633	3695
6	1	29	DWR 54	990908.8431	446919.517	3695
6	1	29	DWR 55	991633.6156	446658.7728	3712
6	1	29	DWR 57	990764.7179	446902.9078	3691
6	1	29	DWR 58	990861.6281	447203.3892	3700
6	1	29	DWR 59	991122.8224	446932.4083	3705
6	1	29	DWR 6	990995.5388	446986.5541	3702
6	1	29	DWR 61	990617.3734	446765.951	3686
6	1	29	DWR 62	991564.0501	447143.5327	3721
6	1	29	DWR 63	991237.0453	447404.2436	3717
6	1	29	DWR 64	990546.7964	449368.9519	3722
6	1	29	DWR 65	990910.3429	447308.2756	3702
6	1	29	DWR 67	991679.2112	447081.417	3724
6	1	29	DWR 68	990743.2766	447291.5782	3697
6	1	29	DWR 70	990597.6134	446829.4917	3682
6	1	29	DWR 71	991800.3946	447193.9896	3736
6	1	29	DWR 72	990704.6165	447167.2529	3690
6	1	29	DWR 73	991120.3358	447497.5112	3713
6	1	29	DWR 75	990599.0275	447219.6763	3687
6	1	29	DWR 76	991828.7274	447086.1731	3732
6	1	29	DWR 77	990583.4282	447121.8164	3687
6	1	29	DWR 8	990948.3154	445747.3722	3678
6	1	29	DWR 80	990490.0337	447187.7116	3687

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	29	DWR 81	991289.8123	447545.6539	3721
6	1	29	DWR 82	990672.5167	449453.7077	3724
6	1	29	DWR 85	991488.5686	447467.4884	3724
6	1	29	DWR 9	990843.8465	446333.4875	3678
6	1	29	DWR 93	990918.567	449363.7294	3726
6	1	29	DWR 99	991110.7345	449378.207	3737
6	1	29	DWR108	991295.0191	449299.1883	3741
6	1	29	DWR110	991387.4448	449194.33	3744
6	1	29	DWR13	989685.5719	448171.552	3701
6	1	29	DWR14(?)	989554.8422	447728.3149	3687
6	1	29	DWR15	989853.8751	448302.6886	3707
6	1	29	DWR17	989609.5918	448585.84	3703
6	1	29	DWR21	989810.1914	448769.9353	3720
6	1	29	DWR24	990269.7739	448790.2158	3710
6	1	29	DWR27	990285.9083	448555.7365	3702
6	1	29	DWR39	989314.9228	448784.9718	3700
6	1	29	DWR45	989583.4283	449020.1939	3710
6	1	29	DWR46	989767.6195	449130.1856	3721
6	1	29	DWR47	989370.3586	449236.4632	3712
6	1	29	DWR48	990037.1672	449281.3243	3724
6	1	29	DWR64	989656.9346	449403.5992	3722
6	1	29	DWR82	990766.1384	449369.4282	3722
6	1	29	DWT 13	986767.8082	444511.7554	3627
6	1	29	DWT 15	987116.5192	444492.0308	3633
6	1	29	DWT 30	990617.6829	447542.497	3700
6	1	29	DWT 31	991724.3333	447696.1379	3736
6	1	29	DWT 32	990600.4293	446899.3125	3683
6	1	29	DWT 34	991232.4381	447049.8433	3709
6	1	29	DWT 36	991580.0708	446999.464	3718
6	1	29	DWT 37	990857.61	447729.583	3704
6	1	29	DWT 38	990495.0242	447267.9227	3692
6	1	29	DWT 39	990801.4974	447473.8188	3698
6	1	29	DWT 40	991016.3867	445874.7446	3680
6	1	29	DWT 41	990648.9036	447387.4919	3697
6	1	29	DWT 42	990495.7564	447837.8684	3696
6	1	29	DWT 43	990526.3725	447383.974	3695
6	1	29	DWT 44	990575.5625	447915.5213	3697
6	1	29	DWT 45	990653.6158	448039.5506	3701
6	1	29	DWT 46	990793.5654	448198.2323	3707
6	1	29	DWT 47	990907.7692	446050.5519	3679
6	1	29	DWT 65	987320.8453	444529.2236	3631
6	1	29	DWT 71	987487.449	444373.0731	3632
6	1	29	DWT 8	987895.7196	444391.3949	3632

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	29	DWT42	989629.3214	447872.9127	3696
6	1	29	DWT43(?)	989856.6244	447945.8482	3697
6	1	29	DWT45	990086.5069	448062.7642	3702
6	1	29	DY 5	990650.2726	448413.3046	3705
6	1	29	DY5	990030.4874	448438.4933	3709
6	1	29	ELA 108	989821.5266	444779.1318	3644
6	1	29	ELA 109	989904.3631	445036.8312	3641
6	1	29	ELA 110	989669.6547	444331.8271	3633
6	1	29	ELA 19	989741.9727	445327.37	3648
6	1	29	ELA 20	989614.2324	444675.7838	3635
6	1	29	ELA 21	989658.2832	445090.3415	3641
6	1	29	ELA 22	989609.6034	444491.0943	3632
6	1	29	ELA 23	989529.0966	445201.1706	3642
6	1	29	ELA 24	989410.6466	444401.7961	3643
6	1	29	ELA 25	989489.2918	445013.1078	3643
6	1	29	ELA 26	989579.0517	444866.9007	3643
6	1	29	ELA 27	989420.4449	444792.9687	3644
6	1	29	ELA 28	989317.1855	444275.1384	3643
6	1	29	ELA 30	989646.4174	445246.6117	3648
6	1	29	ELA 31	989915.3349	445567.4505	3652
6	1	29	ELA 32	990328.5614	446066.5924	3663
6	1	29	ELA 34	989331.5463	444892.9296	3649
6	1	29	ELA 37	989266.1015	444590.4107	3645
6	1	29	ELA 42	989478.6019	444172.8999	3641
6	1	29	ELA 44	989668.1316	444904.9568	3640
6	1	29	ELA 66	989996.5513	445054.7287	3643
6	1	29	ELA 67	989581.2307	444338.4547	3642
6	1	29	ELA 71	990214.8141	445208.6609	3648
6	1	29	ELA 72	990098.6132	444867.3328	3641
6	1	29	ELA 73	989970.5051	444719.1199	3634
6	1	29	ELA 75	990173.3399	445047.012	3647
6	1	29	ELA 76	989593.2775	444194.235	3641
6	1	29	ELA 77	989423.8834	444237.8708	3644
6	1	29	ELA 78	989371.4815	444816.8906	3644
6	1	29	ELA 79	990098.8454	445734.596	3651
6	1	29	ELA 80	990323.6023	445385.7265	3651
6	1	29	ELA 81	990257.898	444990.7015	3650
6	1	29	ELA 82	989586.9467	445170.3367	3642
6	1	29	ELA 83	990176.4274	444713.0236	3641
6	1	29	ELA 84	990454.8336	446048.112	3662
6	1	29	ELA 85	989996.6131	445364.0218	3646
6	1	29	ELA 86	990322.8159	445270.1126	3652
6	1	29	ELA 87	989909.3347	444485.6747	3632

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	29	ELA 88	990326.9815	444911.5439	3647
6	1	29	ELA 89	990326.6157	445499.7333	3658
6	1	29	ELM 106	989977.0199	444668.6258	3631
6	1	29	ELM 107	989322.7373	445007.2741	3650
6	1	29	ELM 108	989495.4231	444369.5598	3635
6	1	29	ELM 4	989275.7641	444735.7536	3648
6	1	29	ELR 1	990476.7519	446138.2091	3671
6	1	29	ELR 10	990255.2717	445753.3815	3660
6	1	29	ELR 12	989893.8242	445410.3999	3650
6	1	29	ELR 13	990097.4143	445828.2808	3652
6	1	29	ELR 14	989865.3041	445204.3021	3643
6	1	29	ELR 16	989920.3993	445703.8155	3652
6	1	29	ELR 17	989860.6556	445007.3856	3641
6	1	29	ELR 18	989796.6141	445532.3767	3653
6	1	29	ELR 19	989728.1861	444848.199	3644
6	1	29	ELR 3	990429.6126	445983.9362	3662
6	1	29	ELR 5	990274.0587	445931.8682	3662
6	1	29	ELR 68	989509.6134	444726.338	3632
6	1	29	ELR 69	989801.5541	444690.5667	3641
6	1	29	ELR 7	990303.8431	445583.6007	3658
6	1	29	ELR 70	990079.4667	445616.7944	3651
6	1	29	ELR 72	990137.2837	445342.097	3649
6	1	29	ELR 73	989393.4213	444499.8263	3642
6	1	29	ELR 76	990067.444	445211.9031	3642
6	1	29	ELR 77	989901.0754	444879.4859	3637
6	1	29	ELR 85	989984.2886	444567.1358	3632
6	1	29	ELR 9	990124.8945	445499.545	3654
6	1	29	ELT 95	989788.1308	445422.2273	3653
6	1	29	ELT 96	989634.7619	444580.1376	3632
6	1	34	DWT94	996856.4635	440446.5772	3692
6	1	34	SNJ1	997832.1814	441397.2596	3680
6	1	34	SNJ11	997042.5736	441090.4009	3690
6	1	34	SNJ12	998028.7756	440378.5826	3672
6	1	34	SNJ13	998196.9987	440232.079	3672
6	1	34	SNJ14	999225.6985	439322.0452	3669
6	1	34	SNJ15	997743.5749	441248.6519	3682
6	1	34	SNJ16	997878.5208	440835.375	3676
6	1	34	SNJ17	998185.412	440776.6377	3674
6	1	34	SNJ18	998350.6625	440386.4992	3673
6	1	34	SNJ19	1000067.886	440054.9237	3684
6	1	34	SNJ2	998291.1591	441348.2577	3678
6	1	34	SNJ20	998399.5431	440862.946	3675
6	1	34	SNJ21	999545.394	439664.8835	3675

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	34	SNJ22	998132.5161	441336.7703	3678
6	1	34	SNJ3	997992.8988	441275.4242	3679
6	1	34	SNJ4	997937.1284	440996.237	3678
6	1	34	SNJ5	997292.1382	441353.4435	3691
6	1	34	SNJ6	998026.1685	440796.2324	3673
6	1	34	SNJ7	997397.61	441163.7678	3685
6	1	34	SNJ8	998123.1859	440579.86	3672
6	1	34	SNJ9	997089.4237	441307.6614	3696
6	1	34	SNT-1	999018.1311	439081.2614	3667
6	1	34	SNT10	998109.4947	440410.0809	3672
6	1	34	SNT10	998370.4966	439775.0343	3665
6	1	34	SNT10	998807.8871	441965.7722	3682
6	1	34	SNT11	998263.8502	440410.3258	3673
6	1	34	SNT12	997541.3475	441316.1031	3683
6	1	34	SNT13	998069.3004	440058.4834	3670
6	1	34	SNT14	998296.8863	440685.882	3674
6	1	34	SNT15	998150.4441	441491.3026	3678
6	1	34	SNT16	998256.8063	439889.1183	3668
6	1	34	SNT17	998458.2318	440368.7294	3672
6	1	34	SNT18	998268.5923	441665.7381	3679
6	1	34	SNT19	998148.753	439770.7288	3667
6	1	34	SNT2	997234.9217	440367.4608	3680
6	1	34	SNT20	996977.5892	440687.2458	3692
6	1	34	SNT21	997904.5956	440145.7785	3672
6	1	34	SNT22	998560.2736	440556.3116	3671
6	1	34	SNT23	997070.6197	440491.2396	3685
6	1	34	SNT24	998458.3186	441735.1279	3681
6	1	34	SNT25	998000.7696	439631.0603	3664
6	1	34	SNT26	997828.4697	439940.9152	3670
6	1	34	SNT3	997515.8723	441594.6366	3682
6	1	34	SNT5	1000423.614	440382.9647	3688
6	1	34	SNT6	997252.0622	440579.277	3681
6	1	34	SNT-7	998135.1739	441177.386	3678
6	1	34	SNT8	997740.6533	440814.0236	3677
6	1	34	SNT-9	998505.3726	441544.8444	3679
6	1	28	CAT1	996745.9274	444661.2248	3736
6	1	28	DWA 164	991930.8286	447745.4256	3744
6	1	28	DWA 167	992142.8374	447561.258	3762
6	1	28	DWA 170	992294.5797	447653.2492	3763
6	1	28	DWA 174	992461.8039	447516.2297	3768
6	1	28	DWJ10	994595.8787	447325.7858	3813
6	1	28	DWJ11	995045.7686	447530.0541	3820
6	1	28	DWJ12	995180.892	447718.1751	3838

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	28	DWJ13	995384.4315	447376.1983	3837
6	1	28	DWJ2	995279.0338	447186.9527	3816
6	1	28	DWJ3	995467.5829	447575.0391	3846
6	1	28	DWJ4	995435.4022	447114.3651	3815
6	1	28	DWJ5	995575.684	447227.6506	3836
6	1	28	DWJ6	995727.0761	447381.9597	3855
6	1	28	DWJ7	995480.6966	446673.3573	3793
6	1	28	DWJ8	994952.7719	447424.864	3827
6	1	28	DWJ9	994918.1537	447592.4705	3830
6	1	28	DWR 101	993508.2537	447276.5594	3819
6	1	28	DWR 103	992711.8645	447300.1681	3779
6	1	28	DWR 104	993361.2009	447261.5699	3800
6	1	28	DWR 106	992827.444	447239.443	3781
6	1	28	DWR 107	993223.235	447146.7364	3780
6	1	28	DWR 109	992974.2921	447256.0046	3789
6	1	28	DWR 49	991875.5865	446744.8291	3727
6	1	28	DWR 56	991909.988	446856.1114	3727
6	1	28	DWR 60	992032.2153	446823.9705	3731
6	1	28	DWR 74	992601.2864	446883.0451	3758
6	1	28	DWR 78	992679.3399	447008.951	3769
6	1	28	DWR 79	991934.7656	447187.5358	3742
6	1	28	DWR 83	992852.9986	446951.8027	3769
6	1	28	DWR 84	992017.3574	447113.1013	3735
6	1	28	DWR 86	992949.9398	447041.4919	3771
6	1	28	DWR 89	993200.4715	447017.8739	3779
6	1	28	DWR 92	993367.6015	447048.2524	3805
6	1	28	DWR 95	993539.8837	447061.2358	3814
6	1	28	DWR 97	992515.7995	447278.5607	3773
6	1	28	DWR 98	993670.0648	447196.9958	3825
6	1	28	DWR112	994675.9099	447396.4861	3837
6	1	28	DWR113	994859.4688	447483.8432	3827
6	1	28	DWR114	995350.2588	446831.5951	3800
6	1	28	DWT9	994213.177	444247.0293	3710
6	1	28	DY96	995676.2003	447104.3242	3833
6	1	28	DY97	995001.296	447244.0745	3814
6	1	28	HDA1	996954.4928	448582.2198	3781
6	1	28	HDA2	996764.2544	447609.4002	3773
6	1	28	HDA3	996723.8474	448473.606	3787
6	1	28	HDA4	996850.1485	448455.9071	3783
6	1	28	HDA5	996773.3156	448347.5759	3782
6	1	28	HDA6	996992.5592	447359.3465	3766
6	1	28	HDJ1	996569.1421	448325.1068	3786
6	1	28	HDJ10	996872.6338	446988.6719	3774

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	28	HDJ11	996713.615	447762.5635	3780
6	1	28	HDJ12	996800.5305	447063.6355	3769
6	1	28	HDJ13	996661.4357	447659.3807	3781
6	1	28	HDJ14	996760.9737	447150.8879	3768
6	1	28	HDJ15	996558.3798	447577.1477	3789
6	1	28	HDJ16	996789.2087	447256.9003	3770
6	1	28	HDJ17	996623.1535	447510.5813	3789
6	1	28	HDJ19	996707.3801	447365.1607	3781
6	1	28	HDJ2	996806.2136	447939.7229	3777
6	1	28	HDJ20	996611.3511	447316.7352	3792
6	1	28	HDJ21	996543.6675	447392.4114	3790
6	1	28	HDJ23	996948.9341	449080.2172	3783
6	1	28	HDJ24	996468.432	447320.1561	3800
6	1	28	HDJ25	997172.9057	448815.498	3781
6	1	28	HDJ26	996376.3365	447309.6198	3804
6	1	28	HDJ29	996320.8873	447396.5611	3807
6	1	28	HDJ3	996973.2719	448075.7432	3772
6	1	28	HDJ31	996199.7033	447372.8926	3814
6	1	28	HDJ32	996517.9312	447199.9109	3791
6	1	28	HDJ33	996046.2713	447504.0671	3823
6	1	28	HDJ34	996888.2943	448663.8098	3781
6	1	28	HDJ35	996573.3027	447099.5237	3788
6	1	28	HDJ37	996527.0896	446995.0518	3788
6	1	28	HDJ38	996603.4199	446937.4635	3785
6	1	28	HDJ4	996622.6483	448241.9973	3782
6	1	28	HDJ5	996641.8724	448131.1091	3782
6	1	28	HDJ6	996758.3246	448030.6433	3778
6	1	28	HDJ7	996705.3861	447945.4755	3781
6	1	28	HDJ8	996943.8033	447060.0909	3760
6	1	28	HDJ9	996643.8726	447859.6225	3780
6	1	28	HDR1	997023.9089	448723.8639	3780
6	1	28	HDR10	996998.3894	446927.8173	3769
6	1	28	HDR11	997078.7162	446844.2795	3784
6	1	28	HDR14	997132.8352	446952.7478	3761
6	1	28	HDR2	996769.805	448219.5138	3780
6	1	28	HDR28	996820.0239	446854.3704	3788
6	1	28	HDR3	996959.267	447798.8365	3770
6	1	28	HDR30	996469.9342	447099.5303	3793
6	1	28	HDR31	996394.7599	447172.116	3796
6	1	28	HDR4	996855.9275	447506.7623	3773
6	1	28	HDR5	996850.3746	447273.5984	3770
6	1	28	HDR6	996977.7023	447493.1248	3766
6	1	28	HDR7	997041.3616	447318.4323	3762

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	28	HDR8	997064.1522	447691.1602	3764
6	1	28	HDR9	997054.6377	447023.6574	3760
6	1	28	HDS1	996682.5342	448859.7336	3796
6	1	28	HDS10	996774.6856	449177.9857	3789
6	1	28	HDS11	996610.3388	448891.4605	3805
6	1	28	HDS12	996506.047	448942.4077	3805
6	1	28	HDS13	996494.9647	449045.6791	3806
6	1	28	HDS14	996371.1671	448621.9278	3809
6	1	28	HDS15	996310.7038	448800.6665	3817
6	1	28	HDS16	996995.1712	447126.5404	3763
6	1	28	HDS2	996775.7529	448808.2022	3785
6	1	28	HDS3	996968.066	448760.997	3782
6	1	28	HDS4	996897.8226	448871.7757	3782
6	1	28	HDS5	996964.9204	448971.446	3782
6	1	28	HDS6	996799.6528	448863.393	3785
6	1	28	HDS7	996864.4925	448929.0942	3785
6	1	28	HDS8	996859.1318	449014.6033	3783
6	1	28	HDS9	996848.8794	449108.2234	3783
6	1	28	HDW1	996286.4837	448691.4577	3812
6	1	28	HDW2	996243.4905	448469.8329	3805
6	1	28	HDW3	996369.2947	448367.5813	3803
6	1	28	HDW4	996446.7804	448464.861	3799
6	1	28	HDW5	996548.5468	448527.1915	3799
6	1	28	HK22	996718.138	449022.6065	3792
6	1	28	HK23	996179.33	449020.3538	3820
6	1	28	HK24	996593.7882	448896.0867	3805
6	1	28	HP1	996422.8201	449182.4788	3804
6	1	28	HP-2	996349.7858	449210.5491	3807
6	1	28	HP3	996245.177	449159.9529	3818
6	1	28	HP4	996135.7174	449204.5723	3818
6	1	28	HP5	996557.4567	449175.7806	3799
6	1	28	HSJ36	996671.7296	448376.3947	3787
6	1	28	HWT10	995524.446	446073.2631	3774
6	1	20	DWA 134	990634.4299	454304.0819	3750
6	1	20	DWA 135	989926.5756	454595.9202	3742
6	1	20	DWA 136	990340.1041	454085.3867	3737
6	1	20	DWA 159	990835.5894	449498.0905	3729
6	1	20	DWA 162	990691.932	449572.8066	3727
6	1	20	DWA 163	991630.9354	449454.4912	3766
6	1	20	DWA162	990079.2989	449598.1282	3725
6	1	20	DWJ 14	990494.4039	449569.1801	3726
6	1	20	DWJ 14	989481.7517	449610.1565	3724
6	1	20	DWM 46	990455.3378	454030.7276	3741

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	20	DWM 47	990210.5458	454138.0137	3731
6	1	20	DWM 48	989909.7989	454728.4939	3743
6	1	20	DWM 49	989875.0571	454668.2998	3743
6	1	20	DWM 50	990645.9502	454323.6329	3750
6	1	20	DWM 51	990416.1053	454096.1514	3741
6	1	20	DWM 52	990643.5975	454378.7756	3750
6	1	20	DWM 53	989406.2323	453721.204	3721
6	1	20	DWM 54	990474.5238	454091.3479	3741
6	1	20	DWM 55	990573.4594	453136.4161	3743
6	1	20	DWM 56	989460.9689	453606.7205	3723
6	1	20	DWR 102	991193.7197	449492.9195	3738
6	1	20	DWR 88	990637.6007	449709.4334	3733
6	1	20	DWR 91	990751.1488	449687.7302	3736
6	1	20	DWR 96	990918.4299	449574.7135	3736
6	1	20	DWR88	989906.1454	449738.2025	3730
6	1	20	DWR91	990242.2012	449707.5113	3725
6	1	20	DWT 97	990379.1261	454027.2902	3741
6	1	20	DWT 99	990287.6819	453968.5304	3734
6	1	16	DWA 200	992593.0001	454687.0715	3762
6	1	16	DWM 45	992760.1931	454675.3331	3770
6	1	16	DY 102	992748.7541	455698.8022	3773
6	1	16	DY 111	992534.0908	456118.8427	3766
6	1	16	DY 138	992739.5181	455692.1699	3773
6	1	16	DY 147	992644.0539	455743.0733	3769
6	1	16	DY 158	992684.838	455948.6015	3766
6	1	16	DY 177	992687.8631	455575.1575	3770
6	1	16	DY 178	992791.4441	455573.9687	3774
6	1	16	DY 178-1	992737.5668	455578.1506	3774
6	1	16	DY 183	992577.4767	455380.4526	3763
6	1	16	DY 185	992880.2613	455367.1998	3772
6	1	16	SMSM 1	992798.5687	455465.5873	3774
6	1	16	SMSM 10	992775.3342	456001.9887	3772
6	1	16	SMSM 11	992754.4291	455783.6458	3773
6	1	16	SMSM 2	992563.6361	455041.4233	3759
6	1	16	SMSM 3	992822.9204	455660.7709	3773
6	1	16	SMSM 4	992771.5371	455828.9932	3773
6	1	16	SMSM 5	992727.8279	455020.8455	3762
6	1	16	SMSM 6	992745.0453	454789.9036	3767
6	1	16	SMSM 7	992409.846	456207.9426	3763
6	1	16	SMSM 8	992683.1474	456052.7595	3767
6	1	16	SMSM 9	992541.5039	456202.6152	3766
6	1	16	SMST 1	992695.3042	455416.7202	3769
6	1	33	DWA 155	991864.1992	443496.4817	3654

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	33	DWA 156	991859.8533	443613.4292	3656
6	1	33	DWA 43	991934.9424	443738.2501	3671
6	1	33	DWA41	993964.1008	443086.8579	3665
6	1	33	DWA46	994089.1197	443069.3196	3669
6	1	33	DWA51	993777.3684	443332.9303	3683
6	1	33	DWJ1	996844.6803	441178.4602	3705
6	1	33	DWM 1	991762.6024	443619.288	3661
6	1	33	DWM10	995954.9517	442507.6404	3775
6	1	33	DWM11	995564.9946	442544.7332	3768
6	1	33	DWM12	994767.092	442716.7017	3702
6	1	33	DWM13	994765.6025	442107.8509	3715
6	1	33	DWM14	994509.3836	442151.7004	3690
6	1	33	DWM15	996178.9168	442521.4111	3752
6	1	33	DWM16	994602.23	442737.9321	3695
6	1	33	DWM17	995495.6064	442020.1214	3762
6	1	33	DWM18	994533.9871	442399.0108	3689
6	1	33	DWM19	994627.5467	441938.1312	3689
6	1	33	DWM2	993828.3956	443004.4302	3661
6	1	33	DWM20	996065.0615	442669.6089	3770
6	1	33	DWM21	995922.5126	442733.1913	3776
6	1	33	DWM22	995280.1371	442004.8979	3752
6	1	33	DWM23	995444.9883	442327.8997	3777
6	1	33	DWM24	996382.6556	442835.0056	3776
6	1	33	DWM25	995635.4438	441808.5995	3748
6	1	33	DWM26	994498.1638	442263.9531	3686
6	1	33	DWM27	995146.0789	441933.585	3729
6	1	33	DWM28	995889.0684	443156.0138	3786
6	1	33	DWM29	995859.4824	441719.6545	3759
6	1	33	DWM3	995643.7773	442240.8664	3782
6	1	33	DWM30	994947.3771	441845.4494	3701
6	1	33	DWM31	995963.1732	443023.5926	3785
6	1	33	DWM32	996264.6626	443109.2284	3785
6	1	33	DWM4	995200.9306	442333.6468	3759
6	1	33	DWM5	995789.994	441964.1568	3776
6	1	33	DWM6	995406.1864	442145.7659	3774
6	1	33	DWM7	995331.6231	442400.0134	3761
6	1	33	DWM8	994889.1054	442513.9392	3704
6	1	33	DWM9	995623.3157	442077.9294	3759
6	1	33	DWT48	994273.0084	444049.1131	3692
6	1	33	DWT51	994100.3589	443859.1966	3702
6	1	33	DWT52	994027.9488	443724.7123	3681
6	1	33	DWT53	994259.1555	443896.058	3691
6	1	33	DWT54	994063.6075	443571.8275	3672

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Appendix 3.3-A
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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	33	DWT55	994227.7905	443599.4475	3678
6	1	33	DWT56	993933.1234	443218.3946	3670
6	1	33	DWT58	993995.4404	443401.4691	3673
6	1	33	DWT59	993796.0725	443081.1776	3661
6	1	33	DWT61	993886.087	443827.7233	3686
6	1	33	DWT62	993840.8186	442917.9947	3660
6	1	33	DWT66	994917.6027	442384.614	3721
6	1	33	DWT68	995092.5081	442323.8032	3741
6	1	33	DWT69	995943.3918	442352.0529	3772
6	1	33	DWT70	995547.1417	442281.4174	3780
6	1	33	DWT91	996738.3004	440995.3853	3704
6	1	33	DWT92	996782.6826	440793.184	3696
6	1	33	LK56	995627.7458	443901.9498	3777
6	1	33	LK57	996785.1924	443920.4734	3742
6	1	32	DWA 1	988459.9202	443746.5912	3628
6	1	32	DWA 10	988349.763	443705.5298	3627
6	1	32	DWA 101	991626.5241	443932.8545	3681
6	1	32	DWA 11	987658.7405	444045.2269	3628
6	1	32	DWA 115	988790.7012	443718.3457	3629
6	1	32	DWA 116	988510.8402	443942.1886	3629
6	1	32	DWA 117	987600.8974	444202.1215	3630
6	1	32	DWA 118	988590.1452	443776.4737	3628
6	1	32	DWA 12	988667.0568	443531.2089	3627
6	1	32	DWA 120	988021.6273	443845.8694	3627
6	1	32	DWA 121	988489.883	443840.4975	3628
6	1	32	DWA 122	987758.5134	444109.7639	3631
6	1	32	DWA 123	988969.5484	443806.95	3630
6	1	32	DWA 124	989126.9543	443809.8848	3631
6	1	32	DWA 127	988831.4027	443511.1822	3628
6	1	32	DWA 129	989138.0849	443999.1435	3638
6	1	32	DWA 130	989171.5872	444087.7866	3638
6	1	32	DWA 132	987500.617	444224.4293	3629
6	1	32	DWA 133	988655.6808	443850.4206	3629
6	1	32	DWA 138	987932.6616	443910.1931	3629
6	1	32	DWA 141	988049.0685	443939.0584	3629
6	1	32	DWA 145	988611.4817	443433.6537	3626
6	1	32	DWA 146	988691.9677	443346.7629	3625
6	1	32	DWA 147	988446.5275	443649.7535	3627
6	1	32	DWA 149	991088.2016	443981.8013	3640
6	1	32	DWA 15	991261.3496	443431.6432	3643
6	1	32	DWA 150	990562.6634	444006.1476	3628
6	1	32	DWA 151	991079.6505	443290.6031	3632
6	1	32	DWA 152	991420.4319	443390.7078	3647

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	32	DWA 16	989082.477	443525.3254	3629
6	1	32	DWA 17	988219.0159	443633.1916	3627
6	1	32	DWA 18	991379.6604	443478.1027	3650
6	1	32	DWA 189	988970.4899	443996.6359	3636
6	1	32	DWA 19	988288.5504	443598.1159	3625
6	1	32	DWA 190	989088.6024	444161.8769	3639
6	1	32	DWA 191	988824.332	443185.3372	3624
6	1	32	DWA 195	988922.1559	443322.1541	3626
6	1	32	DWA 2	988934.5018	443585.5839	3629
6	1	32	DWA 20	987852.1624	443859.373	3629
6	1	32	DWA 204	988211.2364	443702.628	3627
6	1	32	DWA 209	987810.7328	443945.0588	3627
6	1	32	DWA 21	991336.1207	443567.5019	3647
6	1	32	DWA 22	988728.652	443154.0975	3624
6	1	32	DWA 23	988942.0217	443514.6891	3629
6	1	32	DWA 24	988808.9128	443838.2004	3630
6	1	32	DWA 25	987649.4603	443986.4738	3628
6	1	32	DWA 26	987665.5608	444126.9742	3630
6	1	32	DWA 27	989044.8853	443929.5239	3632
6	1	32	DWA 28	988687.3813	444023.6206	3632
6	1	32	DWA 29	988769.8169	443072.871	3624
6	1	32	DWA 3	988664.4503	443701.642	3628
6	1	32	DWA 30	988806.2389	443346.4082	3625
6	1	32	DWA 31	988895.2735	443711.1638	3629
6	1	32	DWA 32	988899.1691	444040.338	3635
6	1	32	DWA 33	988603.0859	443044.8586	3624
6	1	32	DWA 36	988390.6246	444032.4854	3630
6	1	32	DWA 4	990851.199	443360.1488	3625
6	1	32	DWA 5	988546.8169	443611.7914	3628
6	1	32	DWA 6	990949.1383	443190.1062	3627
6	1	32	DWA 7	991065.1784	443352.2252	3632
6	1	32	DWA 8	988771.9079	443590.0928	3628
6	1	32	DWA 9	991199.462	443220.4804	3634
6	1	32	DWA 92	991587.9834	443091.8032	3648
6	1	32	DWA 93	991429.0643	443207.2801	3645
6	1	32	DWA 95	991520.0997	443177.2926	3649
6	1	32	DWM 57	989238.5896	443957.0284	3637
6	1	32	DWR 111	988891.5795	443124.6555	3625
6	1	32	DWR 115	988992.0985	443228.8247	3626
6	1	32	DWR 117	989011.7431	443086.2054	3624
6	1	32	DWT 14	987457.9544	443127.482	3621
6	1	32	DWT 16	987762.3316	443324.2662	3621
6	1	32	DWT 24	988724.4018	443450.1806	3626

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	32	DWT 25	990491.8659	443845.6071	3622
6	1	32	DWT 27	988566.9507	443293.4279	3625
6	1	32	DWT 32	988891.8325	443244.3761	3626
6	1	32	DWT 33	991713.3573	443770.0015	3662
6	1	32	DWT 6	990938.1479	442975.93	3626
6	1	32	DWT 64	988335.4525	443342.2353	3623
6	1	32	DWT 66 AB	990735.4883	443617.3436	3622
6	1	32	DWT 72	987336.8246	444193.7908	3632
6	1	32	DWT 73	987557.448	444117.118	3629
6	1	32	DWT 74	987739.9235	443973.5271	3627
6	1	32	DWT 75	988358.6042	443563.5041	3626
6	1	32	DWT 77	988239.1173	443737.8903	3628
6	1	32	DWT 78	987825.3266	443761.9372	3624
6	1	32	DWT 79	990813.4275	443562.2079	3625
6	1	32	DWT 80	988013.5154	443712.7711	3626
6	1	32	DWT 81	989082.2501	443672.5748	3630
6	1	32	DWT 82	988025.7106	443518.7372	3624
6	1	32	DWT 85	987428.357	442917.6868	3617
6	1	32	DWT 86	987631.3707	443035.83	3619
6	1	32	DWT 87 AB2	987560.0785	443243.0613	3621
6	1	32	DWT 90	986631.8276	444229.3867	3621
6	1	32	DWT 95	988757.6591	443768.5817	3630
6	1	32	DWT 96 Core	988695.1416	443569.6514	3627
6	1	32	ELA 1	990237.7489	443583.532	3619
6	1	32	ELA 10	989313.7974	443239.8748	3627
6	1	32	ELA 101	988109.0172	442008.9065	3613
6	1	32	ELA 102	988209.1389	442132.7927	3614
6	1	32	ELA 102 AB	988258.8948	442236.9795	3614
6	1	32	ELA 103	988269.2127	442255.2186	3614
6	1	32	ELA 104	988584.6928	441712.1088	3602
6	1	32	ELA 105	989002.4625	442666.722	3620
6	1	32	ELA 106	988450.5261	441647.9627	3602
6	1	32	ELA 107	988911.4311	442442.492	3619
6	1	32	ELA 11	988731.0779	442608.9103	3620
6	1	32	ELA 111	989893.0042	444139.7111	3621
6	1	32	ELA 12	989425.0436	443905.2896	3638
6	1	32	ELA 13	988544.5615	442716.6839	3619
6	1	32	ELA 14	988479.0622	441902.3859	3610
6	1	32	ELA 15	988370.1269	442606.3294	3619
6	1	32	ELA 16	989586.5485	444043.8159	3637
6	1	32	ELA 17	988499.939	442488.887	3618
6	1	32	ELA 18	989274.4751	444131.8677	3642
6	1	32	ELA 2	989860.9963	443534.7849	3632

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	32	ELA 26 AB	989414.3418	444125.864	3642
6	1	32	ELA 29	989369.2126	443730.4756	3634
6	1	32	ELA 3	989788.1517	443460.5103	3632
6	1	32	ELA 33	989508.6123	443705.9124	3632
6	1	32	ELA 35	989514.0768	443814.7376	3633
6	1	32	ELA 36	989728.2969	443374.0751	3632
6	1	32	ELA 38	989626.0019	443429.5708	3630
6	1	32	ELA 39	990133.8945	443779.8987	3618
6	1	32	ELA 4	990426.7767	443581.3566	3613
6	1	32	ELA 40	990076.8343	443510.6004	3633
6	1	32	ELA 41	988643.2934	442874.5302	3622
6	1	32	ELA 43	990062.2613	443964.1711	3622
6	1	32	ELA 45	989579.5037	443508.4243	3631
6	1	32	ELA 46	990047.957	443375.5588	3633
6	1	32	ELA 47	990166.31	443440.4386	3633
6	1	32	ELA 48	989274.3896	444019.4782	3640
6	1	32	ELA 49	989972.6463	443296.8801	3632
6	1	32	ELA 5	989740.8814	443274.7939	3632
6	1	32	ELA 50	990255.1443	443473.2345	3627
6	1	32	ELA 51	990024.0365	443802.5784	3627
6	1	32	ELA 52	990312.6559	443735.7274	3611
6	1	32	ELA 53	990172.0093	443863.3509	3615
6	1	32	ELA 54	990130.7006	443304.6528	3631
6	1	32	ELA 55	989371.0828	443623.3396	3631
6	1	32	ELA 56	989988.6737	443696.3079	3633
6	1	32	ELA 57	989876.6298	443765.1623	3629
6	1	32	ELA 58	989715.5448	443445.73	3630
6	1	32	ELA 59	989854.1492	443456.8858	3632
6	1	32	ELA 6	989852.7832	443361.5783	3632
6	1	32	ELA 60	990234.5889	443399.1272	3627
6	1	32	ELA 61	989888.2304	443914.2895	3632
6	1	32	ELA 62	989924.6791	443386.5523	3632
6	1	32	ELA 63	990328.202	443433.9346	3627
6	1	32	ELA 64	989644.3361	443725.3793	3632
6	1	32	ELA 65	989256.8575	443376.8335	3629
6	1	32	ELA 7	989150.8858	443114.2445	3625
6	1	32	ELA 70	989351.8121	443947.0361	3638
6	1	32	ELA 74	989401.145	443378.6963	3630
6	1	32	ELA 8	988651.1754	442265.5816	3615
6	1	32	ELA 9	989261.2569	443788.0769	3633
6	1	32	ELA 90	988803.2839	442820.5	3621
6	1	32	ELA 91	988782.8397	442629.2099	3620
6	1	32	ELA 92	988278.2814	442185.0888	3614

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	32	ELA 93	988348.7584	442296.9757	3615
6	1	32	ELM 2	989679.0435	443522.9749	3631
6	1	32	ELM 3	988405.3369	442295.0616	3615
6	1	32	ELR 22	988350.8413	442140.0542	3613
6	1	32	ELR 23	988278.1317	441907.1854	3610
6	1	32	ELR 24	988217.2413	442208.5298	3614
6	1	32	ELR 25	988393.7654	441773.5993	3607
6	1	32	ELR 26	988160.1059	442032.9866	3613
6	1	32	ELR 27	988297.6769	441553.8588	3598
6	1	32	ELR 28	987993.6836	441953.9443	3612
6	1	32	ELR 30	988104.4761	441849.016	3610
6	1	32	ELR 31	987959.593	441775.1229	3611
6	1	32	ELR 33	988067.973	441984.7797	3612
6	1	32	ELR 34	988304.3623	441796.2801	3607
6	1	32	ELR 35	988595.1135	441924.15	3612
6	1	32	ELR 36	988027.3208	441662.5228	3607
6	1	32	ELR 40	988692.1367	442181.0408	3614
6	1	32	ELR 41	988471.6706	442580.3268	3618
6	1	32	ELR 42	988683.549	443018.0175	3624
6	1	32	ELR 43	988788.9562	442310.1586	3615
6	1	32	ELR 44	988317.3604	441677.966	3604
6	1	32	ELR 45	988412.6035	442445.1618	3616
6	1	32	ELR 46	988858.5376	442442.9277	3619
6	1	32	ELR 47	988313.6891	442260.7063	3614
6	1	32	ELR 48	988484.1434	441795.4797	3606
6	1	32	ELR 49	988152.2778	442120.5811	3614
6	1	32	ELR 50	989008.4347	442491.9405	3620
6	1	32	ELR 51	988796.2306	442210.1853	3614
6	1	32	ELR 52	988232.9455	442295.2347	3614
6	1	32	ELR 54	988013.1586	441861.015	3612
6	1	32	ELR 55	989009.8774	442734.0266	3621
6	1	32	ELR 56	988876.6566	442344.3453	3616
6	1	32	ELR 57	987948.2888	441679.3731	3609
6	1	32	ELR 58	989040.5528	442902.8683	3623
6	1	32	ELR 59	988760.0618	442393.8202	3618
6	1	32	ELR 60	988394.7159	441610.3745	3602
6	1	32	ELR 61	988638.5071	442600.3487	3620
6	1	32	ELR 62	988612.7259	442174.3394	3614
6	1	32	ELR 63	988300.2853	442325.7882	3614
6	1	32	ELR 64	988537.5795	442023.0294	3613
6	1	32	ELR 65	988260.8939	442126.4761	3614
6	1	32	ELR 66	988890.6078	443029.5634	3624
6	1	32	ELR 67	988820.5707	442772.385	3621

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	32	ELR 71	988799.1322	442528.4494	3619
6	1	32	ELR 74	989306.8389	443111.9373	3626
6	1	32	ELR 75	988924.6303	442758.6974	3621
6	1	32	ELR 78	988586.9344	442364.8418	3616
6	1	32	ELR 79	988088.5453	441920.9246	3612
6	1	32	ELR 80	988211.8262	441946.7906	3610
6	1	32	ELR 81	988409.4848	441947.4093	3609
6	1	32	ELR 82	988472.6772	441679.0469	3602
6	1	32	ELR 83	989005.5498	442813.4883	3621
6	1	32	ELR 84	988540.5424	442911.6536	3621
6	1	32	ELR 86	988108.1667	441668.1965	3605
6	1	32	ELR 87	988408.196	442057.2427	3612
6	1	32	ELR 88	988716.3342	442268.997	3615
6	1	32	ELR 89	987973.3215	441721.3344	3610
6	1	32	ELR 90	988016.273	441792.5963	3610
6	1	32	ELR 91	988405.3969	442208.1881	3613
6	1	32	ELR 92	988978.6271	442588.6502	3620
6	1	32	ELR 93	988042.9408	441892.2126	3612
6	1	32	ELT 1	989147.2113	442630.7766	3622
6	1	32	ELT 10	988959.6799	443464.0535	3627
6	1	32	ELT 13	990080.1733	443657.4347	3633
6	1	32	ELT 16	990246.7664	443796.3494	3611
6	1	32	ELT 25	989476.6092	443541.0654	3631
6	1	32	ELT 26	989132.93	443423.222	3629
6	1	32	ELT 28	988956.1222	442653.8502	3620
6	1	32	ELT 29	988964.0167	442150.7103	3614
6	1	32	ELT 31	989096.9299	442834.2021	3622
6	1	32	ELT 32	988981.3882	441830.5155	3611
6	1	32	ELT 34	988969.2339	442992.2656	3624
6	1	32	ELT 36	988680.6771	441852.3794	3612
6	1	32	ELT 38	989289.3325	441838.7599	3609
6	1	32	ELT 39	989603.8687	441803.9041	3601
6	1	32	ELT 4	987593.1836	442452.1562	3614
6	1	32	ELT 40	989460.6376	442648.9329	3624
6	1	32	ELT 40 ABN 1	988861.5594	442813.0751	3621
6	1	32	ELT 40 ABN 2	988820.5573	442814.3902	3621
6	1	32	ELT 43	989171.669	442151.5031	3616
6	1	32	ELT 44	988190.4015	441672.5787	3605
6	1	32	ELT 46	989100.3486	443221.8797	3625
6	1	32	ELT 49	988546.5877	442137.6069	3614
6	1	32	ELT 5	989627.6698	443642.06	3632
6	1	32	ELT 50	988757.5434	442986.9763	3624
6	1	32	ELT 51	988764.5872	442133.0862	3614

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	32	ELT 53	988729.8469	442817.7948	3621
6	1	32	ELT 55	988636.2612	442050.188	3613
6	1	32	ELT 61 ABN 1	988757.6565	442685.6982	3620
6	1	32	ELT 7	989254.3852	443539.314	3631
6	1	32	ELT 9	989946.5152	443456.8233	3632
6	1	32	ELT 92	988326.5461	442393.1591	3615
6	1	32	ELT 93	989318.4543	443753.6882	3633
6	1	32	ELT 94	989194.8363	443486.9428	3630
6	1	32	ELT 97	988578.6793	442802.0337	3620
6	1	32	PUA 1	987731.1876	440521.2854	3590
6	1	32	PUA 2	988122.3553	441189.6826	3592
6	1	32	PUA 3	988208.0446	441377.8009	3596
6	1	32	PUA 4	988240.5863	441194.7037	3590
6	1	32	PUA 5	988159.1431	441296.8963	3594
6	1	32	PUR 1	988183.6524	441435.6803	3596
6	1	32	PUR 10	988127.8472	441526.2483	3602
6	1	32	PUR 11	987745.3685	440979.1034	3596
6	1	32	PUR 12	988116.9098	441112.2272	3592
6	1	32	PUR 13	987830.7277	440930.7673	3594
6	1	32	PUR 14	987884.9637	441452.6926	3601
6	1	32	PUR 15	987740.9863	441144.547	3600
6	1	32	PUR 16	988215.544	441518.8683	3602
6	1	32	PUR 19	988188.078	441257.5522	3594
6	1	32	PUR 2	987966.8344	441442.2018	3599
6	1	32	PUR 20	988032.1126	441080.3939	3593
6	1	32	PUR 21	987921.3352	441547.5219	3604
6	1	32	PUR 22	987798.5245	441051.1566	3596
6	1	32	PUR 24	987887.0545	441380.3431	3601
6	1	32	PUR 25	988110.1371	441254.4663	3594
6	1	32	PUR 26	988190.132	441586.3596	3602
6	1	32	PUR 27	988227.7764	441463.0604	3594
6	1	32	PUR 28	987880.0809	441304.4821	3598
6	1	32	PUR 29	987926.7475	441399.5204	3601
6	1	32	PUR 3	987903.0565	441604.7474	3609
6	1	32	PUR 30	987792.2904	440998.4417	3596
6	1	32	PUR 31	987799.7518	441203.6436	3600
6	1	32	PUR 32	987927.87	441485.6893	3604
6	1	32	PUR 33	987747.283	440784.3283	3590
6	1	32	PUR 34	987819.3615	441154.1522	3600
6	1	32	PUR 35	987949.887	441579.1759	3604
6	1	32	PUR 36	987923.2892	441334.2294	3598
6	1	32	PUR 37	987851.2136	441230.242	3598
6	1	32	PUR 38	988172.3933	441174.7249	3592

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Appendix 3.3-A
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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	32	PUR 39	987970.1633	441520.7124	3604
6	1	32	PUR 4	988098.2929	441344.7411	3596
6	1	32	PUR 41	987806.9475	440763.3825	3590
6	1	32	PUR 42	988068.4803	441117.1894	3595
6	1	32	PUR 44	987823.937	440647.2057	3592
6	1	32	PUR 45	988371.3485	441559.6665	3597
6	1	32	PUR 46	987785.7811	440585.727	3590
6	1	32	PUR 5	987802.6072	441462.4994	3603
6	1	32	PUR 6	987969.8142	441296.3316	3597
6	1	32	PUR 7	987825.4698	441280.3725	3602
6	1	32	PUR 8	988072.1088	441185.2415	3595
6	1	32	PUR 9	987849.0295	441110.6655	3597
6	1	35	SRR15	1006214.072	440793.1165	3815
6	1	35	SRR18	1006360.308	441046.797	3844
6	1	35	SRR2	1006699.208	441244.876	3839
6	1	35	SRR20	1004135.938	442027.9911	3755
6	1	35	SRR21	1003999.512	442008.6926	3761
6	1	35	SRR22	1003738.774	442278.1818	3732
6	1	35	SRR23	1003833.695	442335.8159	3735
6	1	35	SRR24	1003879.809	441668.6158	3771
6	1	35	SRR25	1003814.416	442703.6753	3750
6	1	35	SRR26	1003745.772	442860.2246	3750
6	1	35	SRR27	1004132.292	442600.6593	3744
6	1	35	SRR28	1004258.166	442436.2429	3742
6	1	35	SRR29	1003911.584	441462.3582	3757
6	1	35	SRR3	1006689.121	441302.5987	3839
6	1	35	SRR30	1005677.77	442701.271	3801
6	1	35	SRR31	1005641.175	442543.6937	3785
6	1	35	SRR32	1006672.942	441260.1539	3839
6	1	35	SRR32	1005531.46	442417.3177	3778
6	1	35	SRR33	1005628.156	442821.2229	3797
6	1	35	SRR34	1005436.467	442357.5753	3778
6	1	35	SRR35	1003896.109	441159.037	3749
6	1	35	SRR36	1006167.887	440136.1719	3820
6	1	35	SRR37	1006136.283	440054.5828	3817
6	1	35	SRR38	1006082.801	439985.4513	3817
6	1	35	SRR39	1006075.453	439884.9593	3787
6	1	35	SRR4	1006637.364	441268.6932	3800
6	1	35	SRR42	1005927.56	442716.0299	3800
6	1	35	SRR43	1005771.517	442668.7505	3801
6	1	35	SRR44	1005628.109	442931.2094	3798
6	1	35	SRR45	1006796.896	441383.0452	3857
6	1	35	SRR46	1006874.55	441465.2107	3867

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	SRR47	1006848.143	441491.754	3899
6	1	35	SRR48	1006575.978	441627.9506	3856
6	1	35	SRR49	1006783.766	441506.5409	3874
6	1	35	SRR5	1006847.228	441463.5012	3867
6	1	35	SRR50	1006813.5	441484.8516	3899
6	1	35	SRR51	1006696.142	441236.6804	3839
6	1	35	SRR52	1003889.667	441134.5264	3749
6	1	35	SRR53	1005622.46	442896.7052	3798
6	1	35	SRR54	1005658.17	442924.8482	3798
6	1	35	SRR55	1005464.966	441904.1138	3817
6	1	35	SRR56	1005520.665	442076.5565	3823
6	1	35	SRR57	1005404.418	442030.7008	3808
6	1	35	SRR58	1005448.978	442034.9188	3823
6	1	35	SRR59	1005546.235	441660.8081	3785
6	1	35	SRR6	1006832.401	441410.5084	3867
6	1	35	SRR60	1005465.998	441627.398	3805
6	1	35	SRR61	1005371.989	441671.4234	3796
6	1	35	SRR62	1005297.844	441746.6099	3813
6	1	35	SRR63	1005972.822	441643.2206	3818
6	1	35	SRR64	1005900.58	441761.9924	3801
6	1	35	SRR65	1005783.552	441738.2028	3784
6	1	35	SRR7	1006608.561	441639.2368	3856
6	1	35	SRR70	1006298.905	439808.3766	3792
6	1	35	SRR71	1006307.001	439960.6483	3810
6	1	35	SRR72	1006355.222	439955.1474	3810
6	1	35	SRR73	1006284.598	439924.1477	3794
6	1	35	SRR74	1006289.432	440755.8352	3815
6	1	35	SRR75	1006281.7	440710.5778	3836
6	1	35	SRR77	1006385.626	440921.3381	3817
6	1	35	SRR78	1006084.981	440335.7407	3820
6	1	35	SRR79	1006448.698	440737.1936	3826
6	1	35	SRR8	1006186.42	440508.2877	3835
6	1	35	SRR80	1006389.809	440766.005	3802
6	1	35	SRR81	1006250.312	440752.1634	3815
6	1	35	SRR82	1006668.656	440912.4987	3859
6	1	35	SRR83	1006640.977	440930.8208	3859
6	1	35	SRR84	1006601.825	440929.762	3859
6	1	35	SRR85	1006570.237	440939.3908	3859
6	1	35	SRR86	1006537.587	440964.4039	3831
6	1	35	SRR87	1006547.739	441050.5672	3819
6	1	35	SRR88	1006726.716	441101.1098	3808
6	1	35	SRR89	1006701.731	441114.6783	3808
6	1	35	SRR9	1006109.278	440284.496	3820

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	SRR90	1006683.5	441134.6198	3808
6	1	35	SRR91	1006659.263	441157.9946	3798
6	1	35	SRR92	1006606.847	441038.9804	3819
6	1	35	SRR93	1006667.405	441028.6486	3819
6	1	35	SRR94	1006635.994	441037.4571	3819
6	1	35	SRR95	1006078.439	440441.8303	3830
6	1	35	SRR96	1006086.381	440542.0637	3831
6	1	35	SRR97	1006093.039	440644.6791	3832
6	1	35	SRR98	1006098.493	440740.8378	3836
6	1	35	SRR99	1006093.343	440829.5436	3836
6	1	35	TRA1	1005256.268	443486.0588	3863
6	1	35	TRA2	1005094.191	443650.2196	3874
6	1	35	TRA3	1005210.921	443394.0476	3830
6	1	35	TRA4	1005130.25	443630.1198	3874
6	1	35	TRA5	1005152.577	443533.5097	3843
6	1	35	TRA6	1005300.369	443233.826	3885
6	1	35	TRI-2	1004264.934	442587.0201	3751
6	1	35	TRJ1	1005742.762	442612.6461	3801
6	1	35	TRJ10	1005188.071	443306.9281	3867
6	1	35	TRJ100	1005490.766	442697.2802	3782
6	1	35	TRJ101	1005559.2	442675.4013	3784
6	1	35	TRJ102	1005507.355	442512.3264	3788
6	1	35	TRJ103	1003443.416	442495.0724	3731
6	1	35	TRJ104	1003517.292	440569.8153	3730
6	1	35	TRJ105	1003421.629	440600.0051	3735
6	1	35	TRJ106	1003530.715	440618.5488	3735
6	1	35	TRJ107	1003468.75	442533.7063	3731
6	1	35	TRJ108	1003555.053	440676.208	3735
6	1	35	TRJ109	1003590.808	440567.4665	3730
6	1	35	TRJ11	1005304.512	443324.2046	3885
6	1	35	TRJ110	1003473.001	442594.9149	3731
6	1	35	TRJ111	1003390.805	442672.5227	3727
6	1	35	TRJ112	1003581.367	440617.3908	3735
6	1	35	TRJ113	1003609.7	440668.0544	3735
6	1	35	TRJ114	1003427.443	442710.9026	3732
6	1	35	TRJ115	1003313.895	442810.7811	3735
6	1	35	TRJ116	1003584.415	440722.0759	3736
6	1	35	TRJ117	1003639.334	440800.5792	3736
6	1	35	TRJ118	1003743.135	440825.3574	3738
6	1	35	TRJ119	1003254.357	442765.5711	3727
6	1	35	TRJ12	1005357.301	443213.0537	3881
6	1	35	TRJ120	1003120.005	442817.0149	3727
6	1	35	TRJ121	1003686.438	440926.0323	3739

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	TRJ122	1003767.018	440945.3383	3739
6	1	35	TRJ123	1003034.964	442862.6322	3737
6	1	35	TRJ124	1003070.801	442963.0975	3737
6	1	35	TRJ125	1002984.728	442982.5623	3744
6	1	35	TRJ126	1003751.663	441046.4517	3741
6	1	35	TRJ127	1003834.136	441026.7728	3742
6	1	35	TRJ128	1003851.154	441133.5355	3749
6	1	35	TRJ129	1002921.633	442985.0837	3744
6	1	35	TRJ13	1005312.975	443555.6384	3860
6	1	35	TRJ130	1003799.14	441204.1986	3749
6	1	35	TRJ131	1005360.223	439960.7647	3773
6	1	35	TRJ132	1003864.394	441306.3355	3753
6	1	35	TRJ133	1005227.556	440099.7934	3774
6	1	35	TRJ134	1003799.056	441380.806	3755
6	1	35	TRJ135	1005246.399	439975.5661	3772
6	1	35	TRJ136	1005357.931	440118.9145	3780
6	1	35	TRJ137	1005291.796	439960.9685	3773
6	1	35	TRJ138	1003732.327	441336.2154	3751
6	1	35	TRJ139	1005342.555	440048.3663	3778
6	1	35	TRJ14	1005197.978	443620.3111	3891
6	1	35	TRJ140	1004718.355	439790.1283	3749
6	1	35	TRJ141	1004518.067	439818.8743	3745
6	1	35	TRJ142	1003674.107	441264.8829	3751
6	1	35	TRJ143	1003615.917	441192.5796	3750
6	1	35	TRJ144	1004553.416	440015.1756	3750
6	1	35	TRJ145	1004589.791	440149.5857	3749
6	1	35	TRJ146	1003654.777	441098.5064	3750
6	1	35	TRJ147	1003553.469	440982.7997	3740
6	1	35	TRJ148	1004339.13	440017.1209	3744
6	1	35	TRJ149	1003608.897	440941.3518	3738
6	1	35	TRJ15	1006357.276	440013.8958	3809
6	1	35	TRJ150	1003390.393	440784.8946	3734
6	1	35	TRJ151	1004356.581	440124.1945	3745
6	1	35	TRJ152	1003479.529	440876.479	3738
6	1	35	TRJ153	1003410.634	440960.0855	3738
6	1	35	TRJ154	1003319.369	440902.0846	3736
6	1	35	TRJ155	1003937.156	439853.5117	3734
6	1	35	TRJ157	1003507.294	440180.934	3723
6	1	35	TRJ158	1003309.132	440662.1058	3734
6	1	35	TRJ159	1003376.391	440264.8755	3721
6	1	35	TRJ16	1005619.071	441021.9426	3809
6	1	35	TRJ160	1004979.929	439776.3551	3760
6	1	35	TRJ161	1005082.046	439767.9387	3761

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	TRJ162	1005058.871	439872.418	3765
6	1	35	TRJ163	1004812.689	440178.6001	3755
6	1	35	TRJ164	1003330.968	439831.1221	3726
6	1	35	TRJ167 (Abn)	1005298.143	442841.1898	3819
6	1	35	TRJ168	1005406.981	442461.3404	3802
6	1	35	TRJ169	1005340.255	443403.9372	3843
6	1	35	TRJ17	1005303.377	441583.9346	3786
6	1	35	TRJ170	1005257.986	443138.364	3852
6	1	35	TRJ18	1005154.052	441813.2764	3763
6	1	35	TRJ19	1004759.357	442274.7197	3771
6	1	35	TRJ2	1005655.241	442536.8067	3785
6	1	35	TRJ20	1006774.614	439718.7261	3841
6	1	35	TRJ21	1006818.569	439701.9349	3850
6	1	35	TRJ21	1005665.751	441604.8352	3785
6	1	35	TRJ22	1005969.132	441618.1921	3818
6	1	35	TRJ23	1005883.35	441932.0061	3805
6	1	35	TRJ24	1005933.285	441422.6146	3782
6	1	35	TRJ25	1005471.029	442474.6846	3788
6	1	35	TRJ26	1005422.228	442670.0118	3782
6	1	35	TRJ27	1005781.131	442297.8103	3833
6	1	35	TRJ28	1005778.415	442370.8107	3802
6	1	35	TRJ29	1003770.778	440499.9305	3731
6	1	35	TRJ3	1005607.681	442680.9932	3784
6	1	35	TRJ30	1003902.373	440660.0916	3740
6	1	35	TRJ31	1003980.498	440767.5566	3743
6	1	35	TRJ32	1003978.681	440898.0228	3742
6	1	35	TRJ33	1004000.489	441037.1039	3746
6	1	35	TRJ34	1003960.032	440975.0144	3746
6	1	35	TRJ36	1004057.297	441262.5158	3754
6	1	35	TRJ37	1004090.954	441588.6841	3773
6	1	35	TRJ38	1003503.937	440477.8391	3730
6	1	35	TRJ39	1003660.551	440506.6265	3731
6	1	35	TRJ40	1003551.916	440530.4915	3730
6	1	35	TRJ41	1004091.945	441218.4525	3754
6	1	35	TRJ42	1004039.169	441549.8536	3773
6	1	35	TRJ43	1004127.402	441721.8088	3772
6	1	35	TRJ44	1003455.542	440569.3893	3730
6	1	35	TRJ45	1004008.367	441231.3421	3752
6	1	35	TRJ46	1003991.819	441646.5534	3767
6	1	35	TRJ47	1003388.518	440466.886	3729
6	1	35	TRJ48	1003931.924	441735.7697	3752
6	1	35	TRJ49	1004011.93	441582.076	3762
6	1	35	TRJ5	1005266.386	442614.9207	3809

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	TRJ50	1003324.492	440578.8512	3729
6	1	35	TRJ51	1003955.548	442047.9409	3761
6	1	35	TRJ52	1004035.483	441673.5458	3767
6	1	35	TRJ53	1003206.298	440601.07	3729
6	1	35	TRJ54	1004022.951	441788.0878	3752
6	1	35	TRJ55	1003920.719	441902.6934	3761
6	1	35	TRJ56	1003258.86	440451.4266	3725
6	1	35	TRJ56	1003909.498	440079.1195	3734
6	1	35	TRJ57	1003339.282	440366.5562	3724
6	1	35	TRJ58	1004069.335	441921.2954	3763
6	1	35	TRJ59	1004127.893	441836.2149	3772
6	1	35	TRJ6	1005301.911	442779.4221	3819
6	1	35	TRJ60	1003942.135	441987.9162	3761
6	1	35	TRJ61	1003134.159	440512.0194	3725
6	1	35	TRJ62	1003370.251	440421.4919	3724
6	1	35	TRJ63	1003477.596	440522.1918	3730
6	1	35	TRJ64	1003708.314	440464.0812	3730
6	1	35	TRJ65	1003873.108	440536.4032	3737
6	1	35	TRJ66	1003812.93	440488.6232	3737
6	1	35	TRJ67	1003939.825	440927.3217	3742
6	1	35	TRJ68	1003947.675	441019.6927	3746
6	1	35	TRJ69	1004044.488	441305.6955	3754
6	1	35	TRJ7	1005422.453	442920.8265	3799
6	1	35	TRJ70	1004051.501	441628.954	3773
6	1	35	TRJ71	1004081.828	441430.1518	3759
6	1	35	TRJ72	1003419.443	440527.1562	3730
6	1	35	TRJ73	1003424.113	440419.6881	3725
6	1	35	TRJ74	1004066.503	441149.7973	3751
6	1	35	TRJ75	1004080.505	441816.3323	3772
6	1	35	TRJ76	1003645.593	442211.4853	3749
6	1	35	TRJ77	1003535.933	440375.38	3729
6	1	35	TRJ78	1003818.083	442148.9591	3737
6	1	35	TRJ79	1003720.494	442052.9157	3754
6	1	35	TRJ8	1005244.059	442984.0294	3842
6	1	35	TRJ80	1003448.187	440285.5847	3722
6	1	35	TRJ81	1003768.906	441955.6412	3761
6	1	35	TRJ82	1003545.288	442089.3419	3756
6	1	35	TRJ83	1003666.94	442106.7047	3731
6	1	35	TRJ84	1003572.079	440252.3918	3728
6	1	35	TRJ85	1003418.171	442276.5936	3729
6	1	35	TRJ86	1003688.954	440132.1739	3731
6	1	35	TRJ87	1003722.654	440246.4718	3730
6	1	35	TRJ88	1003527.102	442247.6029	3729

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	TRJ89	1003547.417	442379.5195	3732
6	1	35	TRJ9	1005178.808	443188.029	3852
6	1	35	TRJ90	1003811.186	440287.6	3733
6	1	35	TRJ91	1003574.425	442250.3329	3730
6	1	35	TRJ92	1003383.95	442477.5081	3725
6	1	35	TRJ93	1003388.049	442566.1838	3725
6	1	35	TRJ94	1003477.908	442417.7682	3730
6	1	35	TRJ95	1005197.812	443671.0487	3891
6	1	35	TRJ96	1003523.789	442506.333	3731
6	1	35	TRJ97	1003841.557	440351.1766	3731
6	1	35	TRJ98	1005208.116	443661.671	3891
6	1	35	TRJ99	1005216.105	443511.5948	3863
6	1	35	TRJA4	1005454.182	442592.044	3788
6	1	35	TRK1	1003263.317	443080.134	3739
6	1	35	TRM1	1002449.568	441844.6761	3716
6	1	35	TRM10	1004112.438	440859.7081	3745
6	1	35	TRM11	1004273.174	440800.4254	3748
6	1	35	TRM12	1004438.969	440764.8961	3751
6	1	35	TRM13	1005051.408	440080.0377	3769
6	1	35	TRM14	1004661.561	440672.5065	3754
6	1	35	TRM141	1005055.971	439957.4985	3765
6	1	35	TRM15	1005296.494	439821.769	3773
6	1	35	TRM16	1003946.488	440804.2128	3743
6	1	35	TRM17	1004745.69	440221.3919	3751
6	1	35	TRM18	1005299.059	440026.5591	3778
6	1	35	TRM19	1004048.881	441388.6513	3759
6	1	35	TRM2	1003676.578	441578.8639	3760
6	1	35	TRM20	1004072.833	440667.4572	3744
6	1	35	TRM21	1004896.474	440119.913	3755
6	1	35	TRM22	1004550.199	440361.3203	3751
6	1	35	TRM-23	1004730.57	440091.6579	3753
6	1	35	TRM24	1004024.859	441195.8013	3749
6	1	35	TRM25	1003967.081	440632.202	3743
6	1	35	TRM26	1004049.335	440895.868	3745
6	1	35	TRM27	1003995.738	440744.9681	3743
6	1	35	TRM28	1003848.942	440697.2833	3740
6	1	35	TRM29	1004887.679	439971.72	3757
6	1	35	TRM3	1004349.105	441259.905	3760
6	1	35	TRM30	1005341.128	439912.5735	3773
6	1	35	TRM31	1005172.071	440054.5914	3772
6	1	35	TRM32	1003815.325	440543.0416	3737
6	1	35	TRM33	1004016.325	440986.264	3746
6	1	35	TRM34	1005183.707	439900.7865	3768

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	TRM35	1005466.006	440026.3884	3782
6	1	35	TRM35	1004038.765	441089.2887	3749
6	1	35	TRM36	1003773.521	440443.4589	3730
6	1	35	TRM37	1003993.769	440839.6286	3743
6	1	35	TRM38	1004018.862	441141.1376	3749
6	1	35	TRM39	1003709.37	440518.0534	3731
6	1	35	TRM4	1004078.249	441482.1065	3773
6	1	35	TRM40	1003641.506	440396.0675	3729
6	1	35	TRM42	1005438.037	439836.7162	3773
6	1	35	TRM43	1004090.833	441118.8811	3751
6	1	35	TRM44	1003931.903	440716.3679	3743
6	1	35	TRM45	1003872.764	440589.4782	3737
6	1	35	TRM46	1003604.801	440480.3264	3730
6	1	35	TRM5	1004075.296	441343.9359	3759
6	1	35	TRM6	1003968.256	441308.1073	3752
6	1	35	TRM7	1003994.349	441088.3178	3746
6	1	35	TRM8	1005866.753	442063.6959	3804
6	1	35	TRM9	1004116.111	441040.0106	3749
6	1	35	TRR1	1002927.821	439825.461	3723
6	1	35	TRR10	1005245.132	439912.7042	3768
6	1	35	TRR11	1005234.845	439855.6963	3768
6	1	35	TRR12	1005967.326	439769.1062	3786
6	1	35	TRR13	1005875.771	439736.5919	3786
6	1	35	TRR14	1005870.485	439845.1327	3775
6	1	35	TRR15	1005850.986	439967.9948	3787
6	1	35	TRR16	1005928.245	440050.8487	3788
6	1	35	TRR17	1005933.131	440166.6877	3802
6	1	35	TRR18	1006059.232	439970.0158	3817
6	1	35	TRR19	1005798.478	440129.3647	3808
6	1	35	TRR2	1002846.208	439910.6768	3717
6	1	35	TRR20	1005995.145	440009.8437	3788
6	1	35	TRR21	1005758.669	440242.8209	3810
6	1	35	TRR22	1005831.474	440332.9706	3815
6	1	35	TRR23	1005714.5	440357.5013	3808
6	1	35	TRR24	1005642.908	440271.4624	3800
6	1	35	TRR25	1005596.745	440388.3347	3797
6	1	35	TRR26	1005677.965	440467.9946	3800
6	1	35	TRR27	1005576.6	440497.7582	3792
6	1	35	TRR28	1005489.626	440430.4822	3785
6	1	35	TRR29	1005506.657	440331.8813	3788
6	1	35	TRR3	1002737.706	439920.7903	3713
6	1	35	TRR30	1005435.709	440222.046	3788
6	1	35	TRR31	1005198.05	440317.5786	3778

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	TRR32	1005108.477	440516.4163	3780
6	1	35	TRR33	1004998.47	440527.0286	3773
6	1	35	TRR5	1005283.63	440231.0607	3778
6	1	35	TRR6	1005140.561	440216.7382	3777
6	1	35	TRR7	1005238.769	440038.2719	3772
6	1	35	TRR8	1002747.359	439793.3536	3718
6	1	35	TRR9	1005176.993	439834.6419	3762
6	1	35	TRS1	1004112.145	442374.8745	3740
6	1	35	TRS10	1004687.959	441843.0338	3756
6	1	35	TRS11	1004646.13	441924.7946	3752
6	1	35	TRS12	1004742.122	441892.9338	3751
6	1	35	TRS13	1004824.748	442020.7968	3771
6	1	35	TRS14	1004370.158	442523.0243	3762
6	1	35	TRS15	1004851.171	441926.0383	3754
6	1	35	TRS16	1004877.689	441963.9988	3754
6	1	35	TRS17	1004801.506	441455.4875	3774
6	1	35	TRS18	1004203.853	442795.3861	3749
6	1	35	TRS19	1004183.55	442748.2603	3749
6	1	35	TRS2	1004248.638	442371.3382	3742
6	1	35	TRS20	1004204.528	442728.8332	3749
6	1	35	TRS21	1005064.572	441092.3397	3781
6	1	35	TRS22	1004908.999	441276.3328	3770
6	1	35	TRS23	1004734.649	441646.9632	3758
6	1	35	TRS25	1004715.16	441691.5704	3758
6	1	35	TRS26	1004759.857	441571.6454	3760
6	1	35	TRS27	1004735.369	441722.9208	3756
6	1	35	TRS28	1004670.523	441664.3515	3758
6	1	35	TRS29	1004700.541	441737.1378	3756
6	1	35	TRS3	1004269.143	442240.5382	3741
6	1	35	TRS4	1004136.675	442281.772	3738
6	1	35	TRS5	1004217.356	442216.8301	3741
6	1	35	TRS6	1004183.325	442014.4703	3755
6	1	35	TRS7	1004313.335	441935.3659	3770
6	1	35	TRS8	1004429.493	441956.5322	3749
6	1	35	TRS9	1004585.575	441876.5293	3752
6	1	35	TRT10	1005648.373	440536.7652	3792
6	1	35	TRT100	1005476.289	443263.5682	3886
6	1	35	TRT101	1004950.169	443289.0766	3821
6	1	35	TRT102	1004929.526	443185.0252	3808
6	1	35	TRT103	1005153.792	441686.1313	3762
6	1	35	TRT104	1004830.863	443175.0519	3787
6	1	35	TRT105	1004924.707	443385.3601	3803
6	1	35	TRT106	1004767.196	443300.1231	3795

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	TRT107	1004653.536	443191.4217	3777
6	1	35	TRT108	1005136.791	443152.7442	3817
6	1	35	TRT109	1005061.099	441690.0223	3762
6	1	35	TRT11	1005741.969	440506.3619	3800
6	1	35	TRT110	1005076.818	443203.9623	3817
6	1	35	TRT111	1005039.078	443277.801	3821
6	1	35	TRT112	1004964.89	442083.5447	3759
6	1	35	TRT113	1005057.969	443352.2417	3838
6	1	35	TRT114	1005163.341	443408.8273	3814
6	1	35	TRT115	1004831.769	442185.5914	3783
6	1	35	TRT116	1005630.372	442909.5838	3798
6	1	35	TRT117	1006889.635	441127.0305	3822
6	1	35	TRT118	1006739.642	441233.9665	3839
6	1	35	TRT119	1006644.196	441300.0532	3800
6	1	35	TRT12	1005483.029	440972.947	3811
6	1	35	TRT120	1006774.713	441163.3322	3808
6	1	35	TRT121	1004542.966	443260.466	3812
6	1	35	TRT122	1005378.614	443106.2415	3881
6	1	35	TRT123	1005630.814	442902.8884	3798
6	1	35	TRT124	1006381.397	440116.4616	3798
6	1	35	TRT125	1006347.85	439941.637	3810
6	1	35	TRT13	1005395.601	441061.1659	3799
6	1	35	TRT14	1005298.209	441094.0529	3798
6	1	35	TRT15	1005857.009	440199.152	3808
6	1	35	TRT16	1006070.852	440044.6568	3817
6	1	35	TRT17	1006303.762	439958.9652	3810
6	1	35	TRT18 (ABN)	1006539.527	439906.1082	3819
6	1	35	TRT19	1006562.445	439906.3539	3836
6	1	35	TRT2	1005550.84	441004.858	3809
6	1	35	TRT20	1006522.351	439676.1998	3797
6	1	35	TRT22	1005373.177	441282.5429	3772
6	1	35	TRT23	1005216.23	441280.3698	3786
6	1	35	TRT24	1005194.371	441421.6555	3774
6	1	35	TRT25	1005041.087	441742.8139	3763
6	1	35	TRT26	1005759.202	440936.0795	3817
6	1	35	TRT27	1004860.293	441716.6937	3766
6	1	35	TRT28	1004552.139	441622.4293	3761
6	1	35	TRT29	1004781.359	441834.3445	3756
6	1	35	TRT30	1005132.626	441875.8366	3778
6	1	35	TRT31	1005184.651	441784.4836	3771
6	1	35	TRT32	1005264.289	441712.1087	3774
6	1	35	TRT33	1005391.062	441597.0888	3796
6	1	35	TRT34	1005453.957	441771.4611	3822

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	TRT35	1005515.458	441714.4731	3805
6	1	35	TRT36	1005523.572	441797.685	3822
6	1	35	TRT37	1005723.949	441611.7854	3781
6	1	35	TRT38	1005820.042	441567.4099	3793
6	1	35	TRT39	1005700.138	441533.2276	3773
6	1	35	TRT4	1005470.631	440857.6934	3812
6	1	35	TRT40	1005651.117	441420.0969	3778
6	1	35	TRT41	1005818.925	441480.709	3793
6	1	35	TRT42	1005911.789	441643.0313	3796
6	1	35	TRT43	1006047.632	441434.4711	3787
6	1	35	TRT44	1006016.64	441313.7145	3785
6	1	35	TRT45	1006121.405	441199.9134	3812
6	1	35	TRT46	1006139.104	441497.5931	3791
6	1	35	TRT47	1006206.618	441226.6791	3816
6	1	35	TRT48	1006079.931	441524.4612	3791
6	1	35	TRT49	1005992.04	441585.1754	3790
6	1	35	TRT5	1005554.055	440792.1556	3820
6	1	35	TRT50	1005905.838	441577.5597	3793
6	1	35	TRT51	1005866.907	441715.8767	3796
6	1	35	TRT52	1005792.948	441729.5813	3784
6	1	35	TRT53	1005834.021	441844.0969	3801
6	1	35	TRT54	1005515.687	441608.8892	3805
6	1	35	TRT55	1005634.877	441536.3997	3771
6	1	35	TRT56	1005754.618	441468.1416	3779
6	1	35	TRT57	1005703.457	442241.5897	3833
6	1	35	TRT58	1005872.572	441972.6485	3804
6	1	35	TRT59	1005845.901	442205.238	3799
6	1	35	TRT6	1005518.234	440686.2318	3800
6	1	35	TRT60	1005908.829	442261.0075	3828
6	1	35	TRT61	1005403.184	442551.5397	3818
6	1	35	TRT62	1005360.013	443309.683	3885
6	1	35	TRT63	1005727.903	442524.0461	3780
6	1	35	TRT64	1005308.198	442988.6906	3858
6	1	35	TRT65	1005346.123	442538.6165	3818
6	1	35	TRT66	1005411.62	443351.0541	3885
6	1	35	TRT67	1005344.029	442682.5274	3827
6	1	35	TRT68	1005847.997	441796.4913	3801
6	1	35	TRT69	1005902.381	441666.6193	3796
6	1	35	TRT7	1005583.07	440603.6028	3814
6	1	35	TRT70	1005826.657	442123.9307	3799
6	1	35	TRT71	1005691.389	442274.1053	3833
6	1	35	TRT72	1005663.135	442375.1932	3793
6	1	35	TRT73	1005133.31	441742.0071	3763

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	35	TRT74	1005217.437	441668.3402	3774
6	1	35	TRT75	1005950.991	441520.5451	3790
6	1	35	TRT76	1005938.958	441685.5632	3818
6	1	35	TRT77	1005272.98	441651.2678	3774
6	1	35	TRT78	1005422.869	441672.9773	3805
6	1	35	TRT79	1005064.972	441829.5162	3763
6	1	35	TRT8	1005806.004	440690.6184	3821
6	1	35	TRT80	1005477.325	441590.1896	3793
6	1	35	TRT81	1005384.626	441716.2477	3796
6	1	35	TRT82	1005065.809	441932.6643	3778
6	1	35	TRT83	1005007.98	442037.7637	3759
6	1	35	TRT84	1004964.036	441776.0664	3759
6	1	35	TRT85	1005575.34	442482.4433	3785
6	1	35	TRT86	1004846.074	442072.9481	3771
6	1	35	TRT87	1004985.859	441983.0487	3759
6	1	35	TRT88	1004949.551	442206.7389	3775
6	1	35	TRT89	1005112.553	441542.8008	3771
6	1	35	TRT9	1005694.119	440616.3277	3816
6	1	35	TRT90	1005294.469	441290.0591	3772
6	1	35	TRT91	1004836.021	442246.6748	3793
6	1	35	TRT92	1004762.393	443444.988	3816
6	1	35	TRT93	1004901.872	442341.5627	3793
6	1	35	TRT94	1005429.622	442975.7243	3799
6	1	35	TRT95	1005441.048	443050.8891	3809
6	1	35	TRT96	1005458.07	443114.6305	3852
6	1	35	TRT97	1005510.982	443178.4993	3852
6	1	35	TRT98	1005560.805	443228.5593	3849
6	1	35	TRT99	1005545.773	443315.7415	3849
6	1	29	DWA104	991550.9564	444121.6094	3692
6	1	29	DWA38	989048.1429	444784.8858	3650
6	1	29	ELM 4	989276.1295	444735.2047	3648
6	1	29	DWA 192	989205.5888	444656.8506	3648
6	1	29	ELA 37	989265.8974	444589.8875	3645
6	1	29	DWA 37	989113.9729	444583.1962	3646
6	1	29	ELA 109	989903.1702	445036.3393	3641
6	1	29	ELR 77	989900.733	444878.9625	3637
6	1	29	ELM 107	989321.0278	445006.8042	3650
6	1	29	ELA 34	989331.9405	444892.3766	3649
6	1	29	ELA 78	989371.2754	444816.3633	3644
6	1	29	ELR 16	989919.5769	445703.2964	3652
6	1	29	ELA 31	989914.2195	445566.9458	3652
6	1	29	ELR 18	989795.8539	445531.8583	3653
6	1	29	ELA 83	990176.5663	444712.4836	3641

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	29	ELA 73	989970.288	444718.5943	3634
6	1	29	ELM 106	989975.5982	444668.1499	3631
6	1	29	ELR 85	989984.6041	444566.5915	3632
6	1	29	ELA 87	989909.1188	444485.1534	3632
6	1	29	ELA 66	989996.5736	445054.1873	3643
6	1	29	ELA 75	990173.0592	445046.4829	3647
6	1	29	ELA 72	990098.1539	444866.8142	3641
6	1	29	ELA 85	989996.6953	445363.4723	3646
6	1	29	ELR 72	990137.0569	445341.5603	3649
6	1	29	ELA 71	990213.3336	445208.1773	3648
6	1	29	ELR 70	990079.6606	445616.2357	3651
6	1	29	ELR 9	990125.4051	445498.9756	3654
6	1	29	ELR 13	990096.6486	445827.757	3652
6	1	29	ELA 79	990098.5061	445734.0567	3651
6	1	28	DWA113	992025.3906	444202.4641	3661
6	1	33	TP55A	995354.7034	439994.7903	3773
6	1	33	DWA96	991753.4121	442496.5647	3641
6	1	33	DWA99	991854.8702	442466.7503	3642
6	1	33	DWA79	991906.9269	442365.8112	3641
6	1	33	DWA80	991701.5049	442306.1291	3633
6	1	33	DWA88	991830.7536	442252.3898	3642
6	1	33	DWA100	991677.953	442193.878	3628
6	1	33	DWA82	991663.3213	442098.9058	3628
6	1	33	DWA83	991694.995	442639.1552	3641
6	1	33	DWA43	991934.0571	443730.1953	3671
6	1	33	DWA156	991857.2115	443605.4456	3661
6	1	33	DWM1	991760.1284	443611.2975	3661
6	1	33	DWA155	991861.5574	443488.498	3654
6	1	33	DWA111	992411.422	443886.2171	3655
6	1	33	DWA106	992446.6006	443712.8998	3660
6	1	33	DWA154	991967.4402	443556.0164	3654
6	1	33	DWA103	992376.7715	443531.9155	3660
6	1	33	DWM35	992498.2961	443526.4038	3668
6	1	33	DWA49	992048.123	443489.4486	3650
6	1	33	DWA42	992019.5527	443364.8276	3641
6	1	33	DWA52	992210.959	443360.648	3643
6	1	33	DWA55	992379.2611	443236.6929	3656
6	1	33	DWA57	992290.7943	443053.8511	3641
6	1	33	DWA58	992472.1302	443031.3288	3644
6	1	33	DWA60	992481.8174	442837.3061	3636
6	1	33	DWA74	992348.3267	442737.9014	3631
6	1	33	DWA62	992236.9956	442870.967	3638
6	1	33	DWA64	992280.614	442548.9341	3642

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Appendix 3.3-A
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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	33	DWA66	992305.6653	442471.4189	3645
6	1	33	DWA59	992327.4475	442403.3563	3645
6	1	33	DWA56	992472.8018	442283.4887	3622
6	1	33	DWA68	992384.5477	442146.6768	3630
6	1	33	DWA76	993023.5461	442456.4133	3633
6	1	33	DWA53	992823.4776	442417.9231	3633
6	1	33	DWA73	992857.1851	442253.6573	3629
6	1	33	DWA50	992696.4779	442216.3267	3635
6	1	33	DWA75	992580.3315	443153.6659	3657
6	1	33	DWA205	992580.7	443045.9046	3651
6	1	33	DWA70	992753.1258	443052.0322	3656
6	1	33	DWA65	993102.7151	443049.0831	3662
6	1	33	DWA67	992925.174	442940.0763	3655
6	1	33	DWA48	992836.5197	442846.7076	3648
6	1	33	DWA71	992889.8383	442814.0558	3653
6	1	33	DWA69	992836.5197	442846.7076	3648
6	1	33	DWA102	993102.1165	442716.8451	3649
6	1	33	DWA78	993111.533	442577.3477	3652
6	1	33	EN10-1	992850.8395	443733.6986	3693
6	1	33	DWA63	993131.584	443631.5125	3718
6	1	33	DWA77	992601.9043	443338.589	3659
6	1	33	DWA72	992755.7447	443245.4475	3674
6	1	33	DWA112	992983.1846	443951.1391	3695
6	1	33	DWA108	992606.4053	443828.9891	3669
6	1	33	DWA110	992808.4258	443825.2869	3693
6	1	33	DWA109	993006.6091	443745.1134	3696
6	1	33	DWA61	993332.5928	443605.7077	3707
6	1	33	DWA47	993210.6264	443443.2843	3683
6	1	33	DWA44	993394.0781	443441.5533	3696
6	1	33	DWA45	993587.3654	443408.8831	3682
6	1	33	DWA40	993502.1793	443324.8976	3680
6	1	33	DWA107	993371.947	443272.8226	3692
6	1	33	DWA54	993229.2668	443153.0379	3675
6	1	33	DWA105	993526.3817	443177.7492	3688
6	1	33	DWT63	993625.842	443135.8648	3670
6	1	33	DWT60	993438.7679	443127.1085	3700
6	1	33	DWT50	993229.0722	442967.2185	3663
6	1	33	DWM34	993236.8417	442735.1478	3662
6	1	33	SWT49	993645.1914	442633.5842	3654
6	1	33	DWT57	993625.5496	442956.8519	3673
6	1	33	DWT2	993568.2065	442497.7394	3660
6	1	32	DWA 150	990563.6611	444009.8704	3628
6	1	32	DWA 149	991088.2329	443985.4537	3640

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
6	1	32	DWT 79	990814.3122	443564.5358	3625
6	1	32	DWA 21	991332.1089	443559.5737	3647
6	1	32	DWA 15	991257.6376	443423.7028	3643
6	1	32	DWA 4	990854.6424	443364.05	3629
6	1	32	DWA 7	991062.5633	443344.2404	3632
6	1	32	DWA 151	991074.4818	443282.7216	3632
6	1	32	DWA6	990952.2783	443192.9907	3627
6	1	32	DWA9	991198.4146	443212.4322	3634
6	1	32	DWT6	990939.8573	442980.3775	3626
6	1	32	DWA94	991151.6193	441862.2556	3612
6	1	32	DWA91	991231.1858	441879.0528	3617
6	1	32	DWA86	991376.195	442014.6158	3620
6	1	32	DWA98	991408.0414	441946.1929	3619
6	1	32	DWA89	991394.0582	441809.3156	3622
6	1	32	DWA81	991623.7236	442499.4355	3633
6	1	32	DWA97	991559.1209	442145.7829	3623
6	1	32	DWA93	991427.8193	443199.2399	3645
6	1	32	DWA95	991518.7947	443169.2549	3649
6	1	32	DWA92	991586.4985	443083.7727	3648
6	1	32	DWA90	991682.7838	442889.0611	3646
6	1	32	DWA87	991675.2339	443922.6727	3681
6	1	32	DWA85	991515.1669	442703.3857	3645
6	1	32	DWM33	991710.6857	443762.019	3662
6	1	32	DWA18	991377.3362	443470.1062	3647
6	1	32	DWA152	991417.6102	443382.7313	3647
6	1	32	DWA101	991622.8632	443924.9121	3681
6	1	32	TT57WM	991671.6938	443922.8159	3681
6	1	35	DP248	1005543.802	438435.4147	3744
6	1	35	DW35	1006925.585	438397.7751	3801
7	1	15	B-1 FR	999282.2426	427549.4324	3624
7	1	15	B10FR	999662.3066	427941.5755	3628
7	1	15	B10FU	999710.7151	428008.238	3628
7	1	15	B10LAK	999648.2271	427983.5399	3628
7	1	15	B2	999269.7123	427505.4169	3625
7	1	15	B-2	999246.3095	427540.4085	3624
7	1	15	B2 FU	999191.3248	427526.166	3624
7	1	15	B-2 LAK	999198.1685	427582.4218	3624
7	1	15	B9	999772.2516	426318.8221	3612
7	1	15	BPZ 31	999249.9137	427609.8222	3624
7	1	15	PA156	999807.7234	427931.637	3629
7	1	15	PA37	1000355.669	427992.9498	3631
7	1	15	PA39	999956.9063	427683.5239	3628
7	1	15	PA49	1000012.114	428007.7568	3630

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	15	PA54	1000208.651	427959.6145	3631
7	1	15	PA55	1000172.53	427862.3868	3629
7	1	15	PA58	999585.6539	427768.104	3626
7	1	15	PA59	999570.4631	428024.3121	3627
7	1	15	PA60	999541.3086	427943.9532	3627
7	1	15	PA72	1000722.815	427937.8265	3636
7	1	15	PA75	1000426.549	427651.7303	3631
7	1	15	PA76	1000427.417	427770.1715	3631
7	1	15	PA77	999801.8258	427385.335	3624
7	1	15	PA78	999833.197	427246.0415	3623
7	1	15	PA79	999977.3329	427347.9269	3623
7	1	15	PA80	999300.0802	427305.4716	3624
7	1	15	PA81	999257.6365	427404.3187	3624
7	1	15	PA82	999536.4658	427233.3384	3623
7	1	15	PA83	999546.216	427345.3525	3624
7	1	15	PJ50	999618.3199	427854.842	3626
7	1	15	PM10	999659.279	427400.7356	3624
7	1	15	PM11	999602.5981	427445.1273	3625
7	1	15	PM12	999498.8395	427425.383	3625
7	1	15	PM13	999420.3852	427467.1527	3625
7	1	15	PM130	999054.4209	427898.628	3622
7	1	15	PM14	999324.9153	427508.1252	3625
7	1	15	PM15	999314.8271	427643.6645	3624
7	1	15	PM16	999342.9749	427817.1593	3622
7	1	15	PM17	999283.1578	427896.8799	3622
7	1	15	PM176	1000479.579	428002.8555	3632
7	1	15	PM18	999108.8275	428004.3002	3622
7	1	15	PM19	998969.1095	427841.7937	3622
7	1	15	PM20	998780.8609	427863.125	3622
7	1	15	PM203	999684.0819	427718.5045	3626
7	1	15	PM204	999788.6912	427584.2547	3625
7	1	15	PM205	999441.1798	427751.0547	3625
7	1	15	PM206	1000332.241	427873.8106	3630
7	1	15	PM209	1000284.509	427905.2827	3630
7	1	15	PM21	998835.154	428034.5767	3622
7	1	15	PM210	1000383.514	427847.9346	3630
7	1	15	PM211	999819.6839	427665.1648	3627
7	1	15	PM212	999855.2708	427582.9997	3625
7	1	15	PM213	1000411.844	427898.3794	3631
7	1	15	PM215	1000485.78	427779.7578	3631
7	1	15	PM217	1000207.904	427656.057	3624
7	1	15	PM224	999293.2145	427999.4203	3623
7	1	15	PM225	999192.2984	427775.3396	3623

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	15	PM226	999894.2991	427604.1745	3624
7	1	15	PM25	999848.7801	427727.667	3627
7	1	15	PM26	999934.2964	427770.531	3628
7	1	15	PM27	999760.0705	427543.2204	3625
7	1	15	PM28	999844.5766	427531.3566	3624
7	1	15	PM29	999417.0599	427574.8948	3625
7	1	15	PM30	999539.9337	427744.4633	3626
7	1	15	PM4	999651.9758	427606.2221	3625
7	1	15	PM5	999725.9065	427683.2524	3626
7	1	15	PM50	1000196.512	427599.954	3624
7	1	15	PM51	1000051.058	427458.4004	3623
7	1	15	PM52	1000062.236	427539.0018	3624
7	1	15	PM53	1000262.588	427543.2344	3624
7	1	15	PM54	999196.3657	427909.0238	3623
7	1	15	PM62	1000431.796	427869.1416	3631
7	1	15	PM7	999739.1496	427597.8941	3625
7	1	15	PM77	999461.38	427695.6752	3625
7	1	15	PM78	999898.483	427441.069	3624
7	1	15	PM79	999825.2848	427440.5432	3624
7	1	15	PM8	999780.717	427466.5233	3624
7	1	15	PM80	999447.1938	427640.2013	3625
7	1	15	PM81	999391.4333	427743.0902	3625
7	1	15	PM82	999465.7786	427511.3242	3625
7	1	15	PM83	999531.2596	427481.5892	3625
7	1	15	PM84	999607.482	427651.6064	3626
7	1	15	PM85	999389.8812	427686.1042	3624
7	1	15	PM86	999619.9343	427728.1528	3626
7	1	15	PM87	999445.904	427777.3863	3625
7	1	15	PM88	999636.7696	427592.841	3626
7	1	15	PM89	999750.097	427749.0026	3626
7	1	15	PM9	999709.2424	427447.7247	3624
7	1	15	PM90	999289.7208	427757.3078	3624
7	1	15	PM91	999516.1117	427554.7798	3625
7	1	15	PM92	999756.6004	427655.8006	3625
7	1	15	PM93	1000068.394	427925.0203	3630
7	1	15	PM94	999785.6267	427867.9023	3628
7	1	15	PM95	999912.4103	427889.6738	3629
7	1	15	PM96	999413.9573	427420.873	3625
7	1	15	PS1	999753.4355	427410.4533	3624
7	1	15	PS2	999826.9675	427845.3525	3628
7	1	15	PS27	1000276.345	427673.2269	3629
7	1	15	PS28	1000389.008	427798.9362	3630
7	1	15	PS3	999984.4277	427925.6183	3630

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	15	PS4	1000170.107	427933.8068	3631
7	1	15	PS49	999506.6687	427621.7343	3625
7	1	15	PS5	1000288.257	427757.5549	3629
7	1	15	PS50	999269.7351	427836.6992	3622
7	1	15	PS51	999105.0718	427903.5221	3622
7	1	15	PS52	999006.761	427931.0667	3622
7	1	15	PS53	999111.7541	428059.6354	3622
7	1	15	PS6	1000145.394	427520.6714	3622
7	1	15	PS69	999979.7553	427437.8121	3624
7	1	15	PS71	999895.5808	427339.1774	3623
7	1	15	PS71	1000386.774	427596.5567	3626
7	1	15	PS8	1000386.982	427702.0134	3629
7	1	15	PS9	1000433.882	427940.0397	3632
7	1	15	PT108	999077.8719	427965.5966	3622
7	1	15	PT109	999251.9192	428058.8592	3622
7	1	15	PT119	999522.111	427877.2191	3626
7	1	15	PT120	999516.481	427837.5221	3626
7	1	15	PT122	999505.9057	427704.3358	3625
7	1	15	PT125	999131.5071	427921.9223	3622
7	1	15	PT126	999162.2185	428001.6709	3622
7	1	15	PT132	999098.7713	427384.161	3623
7	1	15	PT133	1000110.269	428010.1816	3630
7	1	15	PT134	999506.6107	426960.4371	3622
7	1	15	PT137	999517.6225	427797.4417	3626
7	1	15	PT138	999376.6519	427912.4731	3623
7	1	15	PT139	999674.2662	427640.3345	3625
7	1	15	PT143	999225.3591	427366.1102	3624
7	1	15	PT149	999578.6865	427486.6451	3625
7	1	15	PT150	999501.8199	427476.306	3625
7	1	15	PT151	999450.1184	427483.9495	3625
7	1	15	PT153	1000117.898	427951.9641	3630
7	1	15	PT154	1000166.25	428009.4336	3631
7	1	15	PT161	1000341.353	427924.47	3631
7	1	15	PT174	999855.2845	427875.2177	3628
7	1	15	PT175	1000009.083	427853.5638	3629
7	1	15	PT176	999947.219	427628.8688	3624
7	1	15	PT177	1000025.198	427956.8563	3630
7	1	15	PT178	1000114.013	427848.0686	3629
7	1	15	PT179	999872.8603	427669.3625	3627
7	1	15	PT180	999994.3425	427668.7636	3628
7	1	15	PT181	1000018.345	427763.5256	3628
7	1	15	PT182	1000358.002	427967.8653	3631
7	1	15	PT183	1000124.092	427900.8667	3629

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	15	PT184	999898.5541	427830.7304	3629
7	1	15	PT185	999880.0125	427928.1523	3629
7	1	15	PT187	999559.1506	427435.9071	3625
7	1	15	PT188	999840.4674	427345.051	3624
7	1	15	PT189	999855.6324	427406.5217	3624
7	1	15	PT190	999858.8817	427480.391	3624
7	1	15	PT191	999959.3616	427489.4932	3624
7	1	15	PT23	999631.7252	427520.483	3625
7	1	15	PT25	999335.7808	427780.9347	3624
7	1	15	PT27	999200.1293	427840.0783	3623
7	1	15	PT30	999123.2693	427843.2037	3622
7	1	15	PT31	999065.1796	427840.7999	3622
7	1	15	PT37	999670.3023	427435.3195	3624
7	1	15	PT38	999231.1123	427854.8072	3623
7	1	15	PT47	999178.6875	428055.5199	3622
7	1	15	PT55	999225.6354	428012.8512	3622
7	1	15	PW11	1000008.898	427401.3372	3623
7	1	15	PW12	1000265.83	427597.6029	3624
7	1	15	PW13	1000336.846	427634.7014	3626
7	1	15	PW14	1000355.408	427731.0646	3629
7	1	15	PW15	1000440.926	427806.7191	3631
7	1	15	PW16	1000078.612	427404.4905	3622
7	1	15	PW17	999740.1139	427500.8972	3624
7	1	15	PW18	999937.7584	427399.2425	3623
7	1	15	PW19	1000518.662	427949.9022	3632
7	1	11	B3FR	1002043.59	429564.5908	3703
7	1	11	B3LAKOTA	1002085.992	429576.9654	3703
7	1	11	B-7	1001765.493	428959.0026	3682
7	1	11	BPZ-10(B-7FR	1001770.642	428982.6897	3682
7	1	11	BPZ6	1006488.679	430301.0765	3742
7	1	11	DK138	1006580.302	433020.4165	3799
7	1	11	DK142	1006894.903	431366.9414	3767
7	1	11	DK143	1007007.392	431480.9291	3774
7	1	11	DK144	1006988.565	431275.3113	3767
7	1	11	DK147	1007049.415	431619.7397	3781
7	1	11	DK148	1006942.732	431045.7021	3763
7	1	11	DK149	1006875.202	430753.7448	3754
7	1	11	DK150	1007056.05	431425.399	3775
7	1	11	DK151	1003210.413	429689.4354	3696
7	1	11	DK209	1007055.906	431323.0673	3772
7	1	11	DK210	1006863.031	431293.4014	3764
7	1	11	DK80	1007006.923	431385.1787	3768
7	1	11	EN86	1002093.029	428073.4739	3703

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBA1	1003113.791	430567.7328	3707
7	1	11	FBA10	1003638.926	430878.7235	3726
7	1	11	FBA11	1003579.588	431074.9336	3726
7	1	11	FBA 12	1003477.596	431278.2707	3720
7	1	11	FBA13	1003245.653	431200.5401	3710
7	1	11	FBA14	1003339.629	431232.065	3715
7	1	11	FBA15	1003216.74	431427.6687	3707
7	1	11	FBA16	1006121.301	430295.5265	3750
7	1	11	FBA17	1003727.641	430558.4728	3722
7	1	11	FBA18	1003935.907	430572.0653	3719
7	1	11	FBA19	1003624.17	430770.7902	3722
7	1	11	FBA2	1003296.113	430502.1971	3702
7	1	11	FBA3	1003456.533	430439.5806	3712
7	1	11	FBA4	1003636.511	430412.3599	3713
7	1	11	FBA5	1003274.194	429516.8658	3690
7	1	11	FBA6	1003715.767	429877.6207	3697
7	1	11	FBA8	1003572.624	430684.9724	3722
7	1	11	FBA9	1006443.366	430255.072	3739
7	1	11	FBH1	1003983.18	429702.4109	3705
7	1	11	FBH2	1003626.161	429671.7232	3692
7	1	11	FBH3	1003926.454	429707.3645	3705
7	1	11	FBH4	1003781.289	429847.1491	3697
7	1	11	FBJ1	1006467.02	430952.3214	3760
7	1	11	FBJ10	1006508.748	430466.3753	3746
7	1	11	FBJ100	1005205.309	430405.655	3739
7	1	11	FBJ101	1005307.674	430548.8893	3741
7	1	11	FBJ102	1004641.587	430666.6506	3747
7	1	11	FBJ103	1004702.284	430740.9011	3764
7	1	11	FBJ105	1005435.625	430526.3383	3744
7	1	11	FBJ106	1005536.189	430362.1327	3741
7	1	11	FBJ107	1005246.801	430927.6583	3760
7	1	11	FBJ108	1005067.729	430940.2987	3756
7	1	11	FBJ109	1004854.395	430718.1389	3764
7	1	11	FBJ11	1006513.675	430375.1294	3742
7	1	11	FBJ110	1004650.461	430818.0933	3762
7	1	11	FBJ111	1005410.877	430529.3257	3738
7	1	11	FBJ112	1005470.064	430417.8221	3741
7	1	11	FBJ113	1004791.248	430769.2509	3764
7	1	11	FBJ114	1005338.435	430884.9332	3760
7	1	11	FBJ115	1004511.545	430802.8521	3749
7	1	11	FBJ116	1005295.569	430909.953	3760
7	1	11	FBJ117	1004882.238	430816.535	3758
7	1	11	FBJ118	1004599.836	430909.765	3762

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBJ119	1004633.206	430437.5749	3750
7	1	11	FBJ12	1006457.918	430600.5917	3749
7	1	11	FBJ120	1005155.972	431003.6294	3756
7	1	11	FBJ121	1004863.596	430914.0907	3758
7	1	11	FBJ122	1004502.927	430929.0428	3757
7	1	11	FBJ123	1004474.23	430594.2916	3741
7	1	11	FBJ124	1006341.015	431197.5154	3760
7	1	11	FBJ125	1006364.855	431266.9861	3760
7	1	11	FBJ126	1006290.216	431637.3199	3766
7	1	11	FBJ127	1004418.136	430824.8188	3749
7	1	11	FBJ128	1004761.014	430932.0498	3755
7	1	11	FBJ129	1004529.533	430436.4836	3734
7	1	11	FBJ13	1006388.787	430620.9975	3749
7	1	11	FBJ131	1004250.535	430293.0456	3732
7	1	11	FBJ132	1004424.813	430531.8922	3734
7	1	11	FBJ133	1006215.575	431156.2541	3751
7	1	11	FBJ134	1006294.892	431242.559	3760
7	1	11	FBJ136	1004313.528	430405.8456	3736
7	1	11	FBJ137	1004399.197	430943.5922	3751
7	1	11	FBJ138	1006229.418	431710.5277	3761
7	1	11	FBJ139	1004769.363	431041.2588	3755
7	1	11	FBJ14	1006992.275	430117.8278	3753
7	1	11	FBJ140	1004329.251	430564.283	3733
7	1	11	FBJ141	1004219.884	430480.1634	3722
7	1	11	FBJ142	1005391.846	430961.4019	3764
7	1	11	FBJ144	1004406.035	431044.2143	3751
7	1	11	FBJ145	1004312.747	430652.5099	3733
7	1	11	FBJ146	1004100.511	430466.0394	3720
7	1	11	FBJ147	1004857.986	431092.5951	3742
7	1	11	FBJ148	1003614.248	430541.464	3715
7	1	11	FBJ149	1004031.984	430606.6172	3719
7	1	11	FBJ15	1006987.319	429937.6866	3751
7	1	11	FBJ150	1005491.644	430913.5924	3763
7	1	11	FBJ151	1003714.296	430658.0818	3722
7	1	11	FBJ16	1006933.313	432002.4321	3781
7	1	11	FBJ17	1006960.097	429836.6538	3741
7	1	11	FBJ18	1006975.858	430166.6582	3753
7	1	11	FBJ19	1006957.59	429674.9294	3741
7	1	11	FBJ2	1006682.111	432072.2559	3771
7	1	11	FBJ21	1004314.626	430115.5687	3726
7	1	11	FBJ22	1006848.504	430265.4065	3747
7	1	11	FBJ23	1003710.702	430101.4856	3704
7	1	11	FBJ24	1003636.962	429943.4564	3700

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBJ25	1004231.705	430059.4978	3727
7	1	11	FBJ27	1004575.468	430621.7382	3747
7	1	11	FBJ28	1004997.858	430676.3663	3758
7	1	11	FBJ29	1005170.894	430514.1076	3740
7	1	11	FBJ3	1006621.029	432047.5008	3763
7	1	11	FBJ30	1005201.276	430758.4946	3754
7	1	11	FBJ31	1004894.183	430519.3605	3764
7	1	11	FBJ33	1004527.659	430539.7101	3734
7	1	11	FBJ34	1004201.904	430100.8159	3727
7	1	11	FBJ35	1003863.79	429943.9124	3707
7	1	11	FBJ36	1003912.56	429919.6076	3713
7	1	11	FBJ37	1003641.328	430036.4532	3700
7	1	11	FBJ38	1005112.255	430559.2667	3746
7	1	11	FBJ39	1005116.772	430805.9043	3755
7	1	11	FBJ4	1006788.313	431999.5256	3769
7	1	11	FBJ40	1003112.296	430204.8267	3697
7	1	11	FBJ41	1003088.529	430273.6276	3697
7	1	11	FBJ42	1003208.265	430575.7956	3711
7	1	11	FBJ43	1003128.331	430629.496	3707
7	1	11	FBJ44	1003696.355	430037.1512	3701
7	1	11	FBJ46	1003322.179	430662.6556	3713
7	1	11	FBJ47	1007084.262	432029.6346	3787
7	1	11	FBJ49	1007044.281	432220.6641	3777
7	1	11	FBJ48	1007002.445	432157.6608	3775
7	1	11	FBJ5	1006909.07	432436.8617	3784
7	1	11	FBJ51	1005835.079	429801.0236	3720
7	1	11	FBJ52	1006000.285	429460.6948	3719
7	1	11	FBJ53	1006042.378	429707.4699	3708
7	1	11	FBJ54	1006135.013	429359.2242	3721
7	1	11	FBJ55	1006057.978	430131.1107	3735
7	1	11	FBJ57	1006261.009	429444.4225	3746
7	1	11	FBJ58	1006172.347	429769.4564	3727
7	1	11	FBJ59	1005956.684	430197.07	3730
7	1	11	FBJ6	1006946.901	432059.3221	3775
7	1	11	FBJ60	1006223.485	429910.025	3719
7	1	11	FBJ63	1006301.591	429568.7633	3728
7	1	11	FBJ64	1006103.276	429631.9748	3731
7	1	11	FBJ65	1005953.463	430296.8993	3739
7	1	11	FBJ66	1006512.45	430136.725	3732
7	1	11	FBJ7	1006381.514	430715.1846	3751
7	1	11	FBJ71	1006415.484	430136.332	3743
7	1	11	FBJ72	1006221.835	429648.3523	3743
7	1	11	FBJ73	1005856.896	430264.3533	3746

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBJ74	1006153.456	429473.1699	3732
7	1	11	FBJ76	1006336.345	430243.0912	3751
7	1	11	FBJ77	1006278.007	429824.8575	3719
7	1	11	FBJ78	1006063.008	430245.5454	3751
7	1	11	FBJ79	1005856.758	430158.7812	3744
7	1	11	FBJ8	1006432.646	430663.6673	3749
7	1	11	FBJ80	1006399.854	429493.7269	3742
7	1	11	FBJ84	1006062.73	429423.7014	3732
7	1	11	FBJ86	1005088.095	430455.9988	3751
7	1	11	FBJ88	1005082.474	430847.639	3755
7	1	11	FBJ89	1004899.98	430619.3054	3762
7	1	11	FBJ9	1006744.588	431879.894	3776
7	1	11	FBJ90	1005000.318	430430.5097	3763
7	1	11	FBJ91	1005333.908	430385.6268	3733
7	1	11	FBJ92	1005959.482	429598.4933	3719
7	1	11	FBJ93	1005971.398	429499.8648	3719
7	1	11	FBJ94	1005158.181	430898.4971	3755
7	1	11	FBJ95	1004576.276	430725.4661	3752
7	1	11	FBJ96	1004711.333	430499.4695	3753
7	1	11	FBJ97	1005336.614	430492.9216	3738
7	1	11	FBJ99	1004941.736	430662.3104	3760
7	1	11	FBK1	1005828.656	431189.5798	3762
7	1	11	FBK11	1006576.66	429993.1541	3734
7	1	11	FBK12	1006590.081	429697.1798	3733
7	1	11	FBK13	1006714.65	429888.2962	3743
7	1	11	FBK14	1006845.48	429740.9709	3732
7	1	11	FBK15	1006955.34	429571.4318	3742
7	1	11	FBK17	1006874.976	429910.142	3742
7	1	11	FBK18	1006782.245	430197.6051	3736
7	1	11	FBK19	1006618.2	430549.647	3748
7	1	11	FBK2	1004946.773	430539.752	3763
7	1	11	FBK29	1006187.254	429978.5169	3728
7	1	11	FBK3	1003453.61	429945.3417	3703
7	1	11	FBK34	1004365.853	430516.0746	3732
7	1	11	FBK38	1006435	429631.5334	3729
7	1	11	FBK39	1006343.615	429812.6793	3722
7	1	11	FBK5	1003219.39	431049.5478	3715
7	1	11	FBK6	1003349.494	430367.0487	3703
7	1	11	FBK8	1005851.421	430595.511	3755
7	1	11	FBK9	1005998.478	430072.197	3730
7	1	11	FBM1	1006699.747	429698.2787	3732
7	1	11	FBM10	1006735.482	429566.0493	3742
7	1	11	FBM100	1003532.897	429718.3638	3697

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBM101	1003482.529	429711.4259	3697
7	1	11	FBM11	1006569.022	429461.5171	3744
7	1	11	FBM12	1006515.751	429378.3651	3753
7	1	11	FBM120	1006296.18	429094.1544	3735
7	1	11	FBM121	1006297.999	429213.6517	3750
7	1	11	FBM122	1006649.008	429209.0522	3755
7	1	11	FBM123	1006608.875	429258.7326	3755
7	1	11	FBM124	1006565.601	429285.4736	3755
7	1	11	FBM125	1006524.895	429312.8613	3753
7	1	11	FBM126	1006420.453	429364.0333	3749
7	1	11	FBM127	1006357.419	429341.2651	3749
7	1	11	FBM128	1006293.187	429291.2877	3734
7	1	11	FBM129	1006242.175	429283.1241	3732
7	1	11	FBM13	1006078.297	429991.4169	3724
7	1	11	FBM130	1006201.235	429243.9487	3732
7	1	11	FBM131	1006575.252	429333.9687	3752
7	1	11	FBM132	1006408.857	429318.3693	3749
7	1	11	FBM133	1006730.341	429285.0324	3764
7	1	11	FBM134	1006780.035	429249.8685	3764
7	1	11	FBM135	1006805.641	429304.6302	3761
7	1	11	FBM136	1006869.961	429277.5694	3768
7	1	11	FBM137	1006926.308	429234.0669	3773
7	1	11	FBM138	1006921.643	429157.2523	3769
7	1	11	FBM139	1006926.336	429083.0148	3772
7	1	11	FBM14	1006301.616	429961.4731	3733
7	1	11	FBM140	1006870.307	429204.7901	3768
7	1	11	FBM141	1006829.11	429235.3097	3768
7	1	11	FBM142	1006687.937	429251.9057	3764
7	1	11	FBM143	1006457.351	429336.5338	3753
7	1	11	FBM144	1006355.153	429277.7086	3750
7	1	11	FBM145	1006408.043	429264.5124	3750
7	1	11	FBM146	1006343.488	429230.3115	3750
7	1	11	FBM147	1006871.915	429157.5441	3769
7	1	11	FBM148	1006792.062	429202.889	3764
7	1	11	FBM149	1006740.336	429212.8166	3764
7	1	11	FBM15	1005937.262	429963.4536	3723
7	1	11	FBM150	1006462.198	429277.6938	3753
7	1	11	FBM151	1006600.929	429285.8426	3755
7	1	11	FBM152	1004804.184	430468.0486	3764
7	1	11	FBM159	1004265.648	429897.9406	3711
7	1	11	FBM160	1004225.059	429845.521	3711
7	1	11	FBM164	1004279.519	429801.5788	3711
7	1	11	FBM165	1004310.765	429849.2471	3716

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBM167	1004131.491	429820.4852	3708
7	1	11	FBM168	1004142.724	429899.067	3708
7	1	11	FBM172	1004212.572	429999.7045	3721
7	1	11	FBM178	1003942.777	429666.0912	3704
7	1	11	FBM179	1003869.271	429772.9353	3701
7	1	11	FBM179	1003807.375	429636.8992	3702
7	1	11	FBM18	1005971.657	429787.3032	3708
7	1	11	FBM182	1003976.59	429914.1395	3702
7	1	11	FBM184	1003880.024	429620.7298	3702
7	1	11	FBM189	1005928.979	429633.4438	3719
7	1	11	FBM19	1005906.93	429713.6224	3709
7	1	11	FBM192	1003933.115	429737.7775	3705
7	1	11	FBM193	1003534.003	429937.8667	3700
7	1	11	FBM194	1006202.285	432393.1613	3773
7	1	11	FBM195	1003177.531	429735.085	3696
7	1	11	FBM196	1003609.338	429597.887	3692
7	1	11	FBM197	1003685.937	429700.2843	3694
7	1	11	FBM198	1004160.792	430069.6387	3722
7	1	11	FBM199	1003894.115	429662.352	3702
7	1	11	FBM2	1006472.031	429732.2475	3732
7	1	11	FBM20	1005845.248	429611.9821	3708
7	1	11	FBM204	1005995.543	430194.8124	3730
7	1	11	FBM205	1006656.575	429628.9022	3732
7	1	11	FBM206	1006975.499	432592.2311	3792
7	1	11	FBM207	1006690.968	432582.1463	3792
7	1	11	FBM208	1006721.534	432659.2892	3792
7	1	11	FBM21	1006132.761	429895.821	3711
7	1	11	FBM22	1006661.327	430170.8141	3733
7	1	11	FBM23	1006829.758	430288.3871	3747
7	1	11	FBM24	1006873.442	430376.8061	3746
7	1	11	FBM25	1006741.989	430451.7779	3746
7	1	11	FBM26	1006756.611	430545.8767	3746
7	1	11	FBM27	1006575.318	430651.2016	3748
7	1	11	FBM28	1006883.328	429666.5805	3744
7	1	11	FBM29	1006953.343	429700.967	3741
7	1	11	FBM3	1006537.95	429776.1515	3732
7	1	11	FBM30	1006840.669	429568.0488	3744
7	1	11	FBM31	1006779.037	429485.8294	3750
7	1	11	FBM32	1006727.742	429386.396	3758
7	1	11	FBM33	1006669.33	429286.9535	3755
7	1	11	FBM34	1006599.239	429509.3208	3744
7	1	11	FBM35	1006640.11	429661.1422	3732
7	1	11	FBM36	1006486.513	429453.8615	3733

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBM37	1006677.271	429471.2119	3750
7	1	11	FBM38	1006536.877	429692.6704	3732
7	1	11	FBM39	1006444.52	429685.1318	3732
7	1	11	FBM4	1006565.724	429883.01	3737
7	1	11	FBM41	1006538.969	429933.7456	3728
7	1	11	FBM42	1006578.595	429825.0347	3737
7	1	11	FBM43	1006530.83	429641.4492	3729
7	1	11	FBM44	1006558.728	429597.7215	3732
7	1	11	FBM45	1006798.288	430418.0044	3746
7	1	11	FBM46	1006755.529	430240.9096	3736
7	1	11	FBM47	1006133.272	430009.976	3724
7	1	11	FBM48	1006200.344	430041.2602	3728
7	1	11	FBM49	1006238.625	430000.3808	3728
7	1	11	FBM5	1006483.47	429925.3117	3728
7	1	11	FBM6	1006614.044	429584.0675	3732
7	1	11	FBM63	1004303.06	429945.6722	3718
7	1	11	FBM64	1004250.661	429942.4595	3721
7	1	11	FBM65	1004212.112	429898.5116	3711
7	1	11	FBM66	1004207.832	429855.5385	3711
7	1	11	FBM67	1004201.203	429807.3903	3711
7	1	11	FBM7	1006451.523	429989.2323	3728
7	1	11	FBM73	1004014.109	429689.5558	3705
7	1	11	FBM75	1004052.03	429791.0003	3712
7	1	11	FBM76	1004031.42	429838.9682	3702
7	1	11	FBM77	1003930.706	429868.0018	3702
7	1	11	FBM78	1003911.162	429813.4171	3702
7	1	11	FBM8	1006659.948	429594.3769	3732
7	1	11	FBM80	1003861.075	429693.3235	3701
7	1	11	FBM81	1003807.917	429725.844	3701
7	1	11	FBM82	1003787.728	429789.1361	3701
7	1	11	FBM83	1003747.305	429821.9858	3697
7	1	11	FBM84	1003693.133	429848.3857	3697
7	1	11	FBM85	1003680.556	429796.3351	3697
7	1	11	FBM86	1003695.056	429737.7603	3694
7	1	11	FBM 87	1003649.462	429731.7901	3692
7	1	11	FBM88	1003602.483	429699.3477	3692
7	1	11	FBM89	1003567.931	429656.2827	3692
7	1	11	FBM9	1006681.415	429530.0478	3750
7	1	11	FBM90	1003521.923	429671.6714	3697
7	1	11	FBM91	1003472.259	429666.878	3695
7	1	11	FBM92	1003493.707	429748.7731	3697
7	1	11	FBM93	1003498.942	429856.2769	3700
7	1	11	FBM94	1003467.913	429804.3649	3700

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBM95	1006566.645	431534.5106	3773
7	1	11	FBM97	1003417.297	430463.0148	3712
7	1	11	FBM98	1003530.608	430212.4857	3712
7	1	11	FBM99	1003485.953	429899.7766	3700
7	1	11	FBR10	1006648.971	429804.0468	3737
7	1	11	FBR11	1006531.927	429835.7013	3730
7	1	11	FBR12	1006815.201	430364.7126	3746
7	1	11	FBR13	1006983.654	430989.6718	3763
7	1	11	FBR14	1006974.131	431076.9752	3765
7	1	11	FBR15	1006589.011	431665.8594	3773
7	1	11	FBR16	1006801.966	431670.6768	3778
7	1	11	FBR17	1006985.907	431601.2755	3781
7	1	11	FBR18	1006495.123	431552.8707	3769
7	1	11	FBR19	1006470.239	431176.1014	3764
7	1	11	FBR20	1006552.44	431360.9052	3766
7	1	11	FBR21	1004080.477	430707.587	3724
7	1	11	FBR22	1004080.363	430688.4503	3724
7	1	11	FBR23	1007036.84	430613.2937	3751
7	1	11	FBR24	1007004.781	431341.5248	3768
7	1	11	FBR25	1006874.49	431588.0182	3778
7	1	11	FBR28	1006776.211	430323.0501	3741
7	1	11	FBR29	1006143.36	429099.4929	3731
7	1	11	FBR30	1006410.98	429153.627	3735
7	1	11	FBR31	1006543.817	433080.8024	3802
7	1	11	FBR32	1006304.495	429148.9588	3735
7	1	11	FBR34	1006661.304	430433.5709	3746
7	1	11	FBR35	1006570.267	430431.421	3746
7	1	11	FBR36	1006400.017	430792.6904	3751
7	1	11	FBR37	1006269.617	430938.7116	3751
7	1	11	FBR38	1006264.801	431020.4918	3751
7	1	11	FBR39	1006394.58	431147.2914	3762
7	1	11	FBR40	1006970.048	431147.9822	3765
7	1	11	FBR41	1006624.93	429881.0411	3737
7	1	11	FBR42	1006702.504	429759.3758	3732
7	1	11	FBR43	1006446.628	429811.7282	3730
7	1	11	FBR46	1004263.242	430112.7372	3727
7	1	11	FBR47	1004216.298	430167.2127	3727
7	1	11	FBR48	1005040.518	430699.1925	3746
7	1	11	FBR49	1003805.501	430381.4709	3711
7	1	11	FBR50	1003675.353	430468.275	3715
7	1	11	FBR51	1006796.198	429677.3775	3732
7	1	11	FBR52	1004252.506	430208.6907	3732
7	1	11	FBR53	1004186.194	430208.4962	3732

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBR54	1004994.993	430759.8816	3758
7	1	11	FBR55	1005139.998	430739.0802	3746
7	1	11	FBR57	1003141.525	430272.4061	3697
7	1	11	FBR58	1005829.677	431654.8426	3761
7	1	11	FBR59	1005172.249	430571.1485	3744
7	1	11	FBR6	1006144.929	429272.6087	3714
7	1	11	FBR60	1005002.704	430618.9807	3760
7	1	11	FBR61	1005219.633	430802.1336	3757
7	1	11	FBR62	1005239.57	430487.2303	3740
7	1	11	FBR63	1005243.683	430629.2011	3744
7	1	11	FBR64	1005060.718	430805.4668	3755
7	1	11	FBR65	1005891.32	431732.7454	3753
7	1	11	FBR68	1005777.146	431775.4286	3752
7	1	11	FBR7	1006254.308	429193.4006	3732
7	1	11	FBR9	1006648.646	429728.0574	3733
7	1	11	FBS10	1006979.318	431811.9251	3785
7	1	11	FBS100	1003367.135	430461.1034	3702
7	1	11	FBS101	1003486.833	430130.4508	3709
7	1	11	FBS102	1003470.437	430186.8024	3712
7	1	11	FBS103	1003452.928	430238.6952	3712
7	1	11	FBS104	1003396.077	430269.2226	3707
7	1	11	FBS105	1003453.614	430080.6261	3709
7	1	11	FBS106	1003338.698	430300.6158	3703
7	1	11	FBS107	1003349.452	430250.3569	3707
7	1	11	FBS108	1003092.785	430323.7484	3700
7	1	11	FBS109	1007029.413	431159.0762	3765
7	1	11	FBS11	1006927.163	431852.2086	3785
7	1	11	FBS110	1007025.902	431083.4191	3765
7	1	11	FBS111	1007017.417	431024.1802	3763
7	1	11	FBS112	1006984.12	430841.6201	3759
7	1	11	FBS113	1006269.669	431740.2072	3761
7	1	11	FBS114	1003415.575	430067.8091	3709
7	1	11	FBS115	1003400.949	430133.3313	3706
7	1	11	FBS116	1003362.985	430096.1936	3706
7	1	11	FBS117	1003308.593	430086.3997	3706
7	1	11	FBS118	1003268.938	430059.855	3703
7	1	11	FBS119	1003344.223	430047.2696	3706
7	1	11	FBS12	1006867.478	431871.8255	3777
7	1	11	FBS120	1003251.959	430009.1699	3701
7	1	11	FBS121	1003203.3	430011.8111	3701
7	1	11	FBS122	1003172.887	430039.6424	3701
7	1	11	FBS123	1003131.113	430092.2511	3697
7	1	11	FBS124	1003120.346	430031.7127	3699

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Appendix 3.3-A
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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBS125	1003064.325	430006.7998	3699
7	1	11	FBS126	1003155.185	429990.0031	3699
7	1	11	FBS127	1003299.97	430014.5931	3702
7	1	11	FBS128	1003070.609	429946.3847	3699
7	1	11	FBS129	1003138.61	429934.4538	3699
7	1	11	FBS13	1006804.994	431931.637	3772
7	1	11	FBS130	1003222.988	429955.3732	3701
7	1	11	FBS131	1003284.192	429977.2302	3702
7	1	11	FBS132	1003414.347	430014.0502	3703
7	1	11	FBS134	1003620.148	430072.8092	3707
7	1	11	FBS135	1003637.949	430146.0741	3707
7	1	11	FBS136	1003704.665	430142.0769	3704
7	1	11	FBS137	1003778.057	430199.8	3708
7	1	11	FBS138	1003764.143	430272.5965	3708
7	1	11	FBS139	1003771.483	430349.3811	3712
7	1	11	FBS14	1006753.353	431827.3541	3776
7	1	11	FBS140	1003754.952	430420.9856	3715
7	1	11	FBS141	1003700.414	430312.926	3712
7	1	11	FBS142	1003658.24	430420.16	3713
7	1	11	FBS143	1003591.764	430452.2497	3715
7	1	11	FBS144	1003511.485	430413.9466	3715
7	1	11	FBS145	1003444.369	430389.2324	3715
7	1	11	FBS146	1003310.843	430450.9485	3702
7	1	11	FBS147	1003244.837	430491.3232	3708
7	1	11	FBS148	1003189.155	430443.1892	3708
7	1	11	FBS149	1003134.525	430473.7205	3703
7	1	11	FBS15	1006674.419	431846.233	3776
7	1	11	FBS150	1003078.495	430496.9741	3703
7	1	11	FBS151	1003181.252	430488.1408	3708
7	1	11	FBS152	1003128.495	430515.0778	3703
7	1	11	FBS153	1003229.572	430530.2704	3708
7	1	11	FBS154	1003115.388	430662.7651	3707
7	1	11	FBS155	1003312.307	430599.1097	3713
7	1	11	FBS156	1003291.039	430540.3724	3702
7	1	11	FBS157	1003166.698	430556.5376	3711
7	1	11	FBS158	1003201.101	430744.1354	3712
7	1	11	FBS159	1003676.508	430097.5051	3704
7	1	11	FBS16	1006690.477	431774.8822	3774
7	1	11	FBS160	1003780.586	430080.5646	3704
7	1	11	FBS161	1003820.453	430129.3071	3708
7	1	11	FBS162	1003982.525	430246.0427	3721
7	1	11	FBS163	1003688.875	430377.3694	3712
7	1	11	FBS164	1004140.98	430247.6386	3725

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBS165	1004638.493	430534.3501	3750
7	1	11	FBS166	1005265.218	430730.9019	3754
7	1	11	FBS167	1006547.576	431420.7624	3766
7	1	11	FBS168	1006656.105	431546.1386	3773
7	1	11	FBS169	1006696.381	431580.4617	3776
7	1	11	FBS17	1006593.418	431723.027	3771
7	1	11	FBS170	1006850.67	431654.3034	3778
7	1	11	FBS171	1006558.182	431280.6357	3762
7	1	11	FBS172	1006622.061	431443.7241	3773
7	1	11	FBS173	1006425.353	431401.1395	3766
7	1	11	FBS174	1006468.165	431059.695	3762
7	1	11	FBS175	1006473.564	430941.6415	3760
7	1	11	FBS176	1006571.21	430741.6326	3750
7	1	11	FBS177	1006794.869	430501.5422	3746
7	1	11	FBS178	1006919.94	430279.0304	3747
7	1	11	FBS179	1006872.997	430313.2541	3746
7	1	11	FBS18	1006508.771	431632.8718	3769
7	1	11	FBS180	1006823.7	430446.9238	3748
7	1	11	FBS181	1006693.442	431491.5513	3774
7	1	11	FBS182	1007053.653	431510.1152	3775
7	1	11	FBS183	1006451.031	430849.0826	3753
7	1	11	FBS184	1006923.715	431692.4613	3782
7	1	11	FBS185	1006456.303	430781.3741	3752
7	1	11	FBS186	1006915.441	431617.5599	3778
7	1	11	FBS187	1007049.486	431880.5066	3788
7	1	11	FBS188	1006994.856	431546.6796	3774
7	1	11	FBS189	1006479.367	430661.1671	3749
7	1	11	FBS19	1006418.415	431517.7072	3770
7	1	11	FBS190	1006691.104	430477.9667	3746
7	1	11	FBS191	1006542.156	430598.4659	3749
7	1	11	FBS192	1007000.838	430220.4288	3754
7	1	11	FBS193	1006619.862	430477.3461	3746
7	1	11	FBS194	1006999.735	431126.3886	3765
7	1	11	FBS195	1007029.075	430979.7021	3763
7	1	11	FBS196	1006547.436	431577.574	3773
7	1	11	FBS197	1006699.873	431627.0009	3776
7	1	11	FBS198	1006557.192	430499.195	3746
7	1	11	FBS199	1006407.99	430989.0672	3760
7	1	11	FBS2	1007050.292	431712.1895	3786
7	1	11	FBS20	1006656.97	431672.79	3773
7	1	11	FBS200	1006491.219	431010.2208	3760
7	1	11	FBS201	1006407.737	431093.5418	3762
7	1	11	FBS202	1006415.723	430910.3279	3752

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBS203	1006940.093	429464.2847	3751
7	1	11	FBS204	1006936.649	429626.0779	3742
7	1	11	FBS21	1006857.189	431801.619	3782
7	1	11	FBS22	1006819.108	431729.628	3782
7	1	11	FBS23	1006740.19	431663.3241	3776
7	1	11	FBS24	1006604.484	431950.3053	3763
7	1	11	FBS25	1006591.025	431589.6035	3773
7	1	11	FBS26	1006530.818	431496.6766	3769
7	1	11	FBS27	1006495.627	431391.7594	3766
7	1	11	FBS28	1006438.211	431307.1331	3766
7	1	11	FBS29a	1006514.393	431265.9401	3764
7	1	11	FBS29b	1006511.735	431254.0374	3764
7	1	11	FBS29c	1006521.642	431187.8147	3764
7	1	11	FBS3	1007031.895	431772.6412	3784
7	1	11	FBS30	1006449.718	431124.2147	3762
7	1	11	FBS31	1006439.299	431017.4039	3760
7	1	11	FBS32	1006455.899	430917.2097	3753
7	1	11	FBS33	1003588.756	430012.7612	3700
7	1	11	FBS33	1006501.098	430818.7046	3753
7	1	11	FBS34	1006502.823	430717.5171	3752
7	1	11	FBS35	1006416.589	431209.8928	3760
7	1	11	FBS36	1006931.634	431927.8268	3781
7	1	11	FBS37	1007001.81	431981.2544	3781
7	1	11	FBS38	1007043.731	432059.5799	3775
7	1	11	FBS39	1006344.246	431328.6218	3765
7	1	11	FBS4	1006863.633	431922.321	3777
7	1	11	FBS40	1006319.983	431428.2816	3770
7	1	11	FBS41	1006075.893	431269.6225	3760
7	1	11	FBS42	1006232.131	431289.1046	3760
7	1	11	FBS43	1006143.026	431350.9627	3764
7	1	11	FBS44	1006203.983	431444.0156	3771
7	1	11	FBS45	1006147.797	431189.5068	3760
7	1	11	FBS46	1006171.552	431085.5513	3751
7	1	11	FBS47	1006500.454	431345.259	3766
7	1	11	FBS48	1006473.532	431235.7067	3764
7	1	11	FBS49	1006528.612	431689.9623	3765
7	1	11	FBS5	1006895.482	431542.0052	3771
7	1	11	FBS50	1006488.231	431807.3982	3762
7	1	11	FBS51	1006385.713	431777.7515	3759
7	1	11	FBS52	1006328.374	431756.3792	3759
7	1	11	FBS53	1006376.872	431728.0194	3759
7	1	11	FBS54	1006365.801	431681.0206	3759
7	1	11	FBS55	1006345.252	431809.2577	3755

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBS56	1006319.778	431706.4653	3759
7	1	11	FBS57	1006298.162	431799.0589	3759
7	1	11	FBS58	1006222.089	431788.0466	3761
7	1	11	FBS59	1006091.765	431850.5558	3752
7	1	11	FBS6	1006959.485	431354.0697	3768
7	1	11	FBS60	1006039.91	431760.1059	3755
7	1	11	FBS61	1006006.496	431715.9189	3755
7	1	11	FBS62	1005966.093	431654.7654	3759
7	1	11	FBS63	1005944.788	431598.3285	3759
7	1	11	FBS64	1005891.265	431592.6591	3761
7	1	11	FBS65	1005951.964	431762.9916	3755
7	1	11	FBS8	1007035.671	431250.6985	3767
7	1	11	FBS9	1007003.656	431729.011	3784
7	1	11	FBS95	1006987.571	431215.5972	3767
7	1	11	FBS96	1003477.325	429955.6065	3703
7	1	11	FBS97	1003458.393	429996.2966	3703
7	1	11	FBS98	1003491.539	430033.4932	3703
7	1	11	FBS99	1003522.101	430088.5831	3709
7	1	11	FBT1	1003828.829	429762.6707	3701
7	1	11	FBT10	1003730.071	429648.7531	3697
7	1	11	FBT100	1006393.843	431585.4146	3765
7	1	11	FBT101	1006453.764	431689.3625	3765
7	1	11	FBT102	1006564.504	431768.6255	3771
7	1	11	FBT103	1006634.295	431750.3355	3771
7	1	11	FBT104	1006739.098	432011.2125	3769
7	1	11	FBT105	1006418.893	431455.1656	3770
7	1	11	FBT106	1006627.204	429154.5119	3751
7	1	11	FBT107	1003981.906	430477.8128	3713
7	1	11	FBT108	1006108.565	431651.6128	3763
7	1	11	FBT109	1006499.987	431283.475	3764
7	1	11	FBT11	1003516.498	429619.7056	3695
7	1	11	FBT110	1003215.212	430644.6205	3711
7	1	11	FBT111	1003414.17	429362.9977	3690
7	1	11	FBT112	1003364.958	430629.2258	3713
7	1	11	FBT113	1005102.918	430633.3325	3746
7	1	11	FBT115	1006007.589	431570.7505	3759
7	1	11	FBT116	1006878.385	431984.1682	3772
7	1	11	FBT117	1006435.013	431772.6917	3765
7	1	11	FBT118	1003946.648	429705.8281	3705
7	1	11	FBT119	1003894.819	429788.1812	3701
7	1	11	FBT12	1003442.889	429780.7438	3697
7	1	11	FBT120	1004297.754	429827.8328	3716
7	1	11	FBT121	1004298.01	429880.6645	3716

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBT122	1004265.65	429929.7334	3721
7	1	11	FBT124	1003062.574	430220.0841	3697
7	1	11	FBT125	1006511.989	431434.9318	3769
7	1	11	FBT126	1006883.114	431831.1274	3777
7	1	11	FBT127	1006828.529	431891.3542	3777
7	1	11	FBT129	1005994.062	431618.5727	3759
7	1	11	FBT13	1003381.34	429639.186	3694
7	1	11	FBT130	1006634.482	431805.2029	3768
7	1	11	FBT131	1006523.895	431783.4985	3765
7	1	11	FBT132	1006832.353	431960.1804	3772
7	1	11	FBT133	1005929.802	431555.163	3759
7	1	11	FBT135	1005860.457	431665.4512	3761
7	1	11	FBT136	1006008.523	431828.7772	3751
7	1	11	FBT137	1005956.763	431808.8838	3751
7	1	11	FBT138	1005949.269	431870.6458	3751
7	1	11	FBT139	1006029.495	431985.97	3744
7	1	11	FBT14	1003908.254	429706.8185	3701
7	1	11	FBT14	1004968.524	431619.5616	3763
7	1	11	FBT140	1006276.237	431870.5688	3753
7	1	11	FBT141	1006138.784	431822.0213	3752
7	1	11	FBT142	1006128.312	432001.7858	3750
7	1	11	FBT143	1003194.971	430372.8627	3701
7	1	11	FBT144	1006209.374	432073.9456	3761
7	1	11	FBT146	1003177.357	430186.3371	3703
7	1	11	FBT147	1003084.589	430096.182	3697
7	1	11	FBT148	1006334.581	432176.769	3764
7	1	11	FBT149	1006339.663	432299.1839	3770
7	1	11	FBT 15	1003572.581	429763.7233	3692
7	1	11	FBT150	1003157.749	430319.6031	3701
7	1	11	FBT151	1006453.994	432299.0932	3769
7	1	11	FBT152	1003263.333	430573.0047	3711
7	1	11	FBT153	1006301.372	432122.7527	3764
7	1	11	FBT154	1006554.763	432253.9655	3770
7	1	11	FBT155	1003633.375	429879.4686	3694
7	1	11	FBT156	1003771.012	429890.9614	3697
7	1	11	FBT157	1006839.882	432384.6296	3778
7	1	11	FBT158	1006636.45	432309.2887	3772
7	1	11	FBT159	1006722.131	432350.1257	3775
7	1	11	FBT16	1003829.242	429858.4547	3700
7	1	11	FBT160	1006559.583	432309.8184	3772
7	1	11	FBT161	1006634.789	432199.4339	3770
7	1	11	FBT162	1006640.449	432377.6856	3772
7	1	11	FBT163	1006720.083	432453.4687	3784

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBT164	1006805.773	432535.919	3784
7	1	11	FBT165	1006897.424	432586.5073	3792
7	1	11	FBT166	1006718.796	432112.7294	3771
7	1	11	FBT167	1006654.793	432128.4239	3766
7	1	11	FBT168	1006904.406	432317.4482	3778
7	1	11	FBT169	1006887.982	432188.2203	3776
7	1	11	FBT17	1003721.558	429636.6024	3697
7	1	11	FBT170	1006615.399	430599.678	3748
7	1	11	FBT171	1006817.318	432279.4987	3776
7	1	11	FBT172	1006810.269	432126.4809	3772
7	1	11	FBT173	1006765.257	430391.2387	3741
7	1	11	FBT175	1006620.672	430387.4396	3739
7	1	11	FBT176	1006510.939	430548.826	3749
7	1	11	FBT177	1006977.304	430290.3305	3754
7	1	11	FBT178	1006671.246	432006.0917	3763
7	1	11	FBT179	1006988.745	432390.3824	3779
7	1	11	FBT180	1003341.502	430147.653	3706
7	1	11	FBT181	1003578.927	429912.3101	3694
7	1	11	FBT182	1006113.558	433126.5314	3782
7	1	11	FBT184	1007026.915	432289.8472	3777
7	1	11	FBT185	1003874.037	429878.5673	3700
7	1	11	FBT189	1003062.747	430153.1762	3697
7	1	11	FBT19	1003995.709	429779.9863	3705
7	1	11	FBT190	1007101.066	432363.0529	3784
7	1	11	FBT191	1006991.709	432498.3236	3786
7	1	11	FBT192	1006875.45	430214.3048	3747
7	1	11	FBT193	1006886.781	429621.8245	3744
7	1	11	FBT194	1007069.99	432471.1359	3792
7	1	11	FBT195	1006940.232	430371.4141	3750
7	1	11	FBT196	1007015.629	430313.5511	3750
7	1	11	FBT197	1006944.01	430220.4604	3754
7	1	11	FBT199	1007073.416	432592.8984	3796
7	1	11	FBT200	1007112.079	432686.8064	3801
7	1	11	FBT201	1006671.785	431955.2764	3763
7	1	11	FBT202	1006108.651	430053.4616	3735
7	1	11	FBT203	1006159.723	429949.9492	3724
7	1	11	FBT204	1003904.437	429972.1997	3707
7	1	11	FBT205	1004495.97	430683.317	3741
7	1	11	FBT208	1004306.09	430263.9468	3734
7	1	11	FBT209	1003061.256	429876.7502	3699
7	1	11	FBT210	1004721.661	430408.4273	3749
7	1	11	FBT25	1005936.565	429677.9252	3708
7	1	11	FBT28	1006995.707	432025.5234	3781

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBT30	1003744.826	429703.0311	3694
7	1	11	FBT31	1003441.599	429860.6924	3700
7	1	11	FBT32	1003491.42	429821.6628	3700
7	1	11	FBT33	1003600.649	430372.6194	3713
7	1	11	FBT34	1003722.572	430232.4302	3708
7	1	11	FBT34	1006089.887	431789.3293	3760
7	1	11	FBT35	1003514.218	430358.2416	3715
7	1	11	FBT36	1004055.345	429976.0244	3721
7	1	11	FBT37	1003929.08	430008.3907	3713
7	1	11	FBT38	1006894.193	429138.2051	3769
7	1	11	FBT39	1006856.676	429174.0649	3768
7	1	11	FBT4	1004918.652	430404.2104	3763
7	1	11	FBT42	1003165.501	430014.4195	3701
7	1	11	FBT43	1003243.831	432871.8832	3711
7	1	11	FBT45	1004926.812	431731.8907	3760
7	1	11	FBT45	1006332.172	432072.4021	3764
7	1	11	FBT47	1003539.282	431640.3901	3709
7	1	11	FBT48	1004053.661	432322.0074	3743
7	1	11	FBT49	1006586.64	431554.4225	3773
7	1	11	FBT5	1003378.696	430062.5454	3706
7	1	11	FBT51	1003124.028	429338.3148	3698
7	1	11	FBT52	1003165.043	429920.5139	3701
7	1	11	FBT53	1003521.352	429897.1871	3700
7	1	11	FBT54	1003215.012	429850.9657	3699
7	1	11	FBT55	1003264.499	429921.0095	3701
7	1	11	FBT6	1007031.211	431451.7069	3774
7	1	11	FBT62	1004287.727	430055.5735	3726
7	1	11	FBT69	1003596.901	430267.2276	3711
7	1	11	FBT7	1006985.133	431795.0194	3784
7	1	11	FBT70	1003563.53	429823.1898	3694
7	1	11	FBT71	1006353.821	429401.4464	3749
7	1	11	FBT72	1006405.442	429222.003	3750
7	1	11	FBT73	1006704.681	429177.8531	3764
7	1	11	FBT74	1006609.061	429410.2922	3752
7	1	11	FBT75	1006924.735	430325.1103	3750
7	1	11	FBT76	1006449.318	430723.8886	3752
7	1	11	FBT77	1006526.53	430616.5192	3749
7	1	11	FBT78	1006571.092	430546.3923	3748
7	1	11	FBT79	1006658.869	430515.3799	3746
7	1	11	FBT80	1006740.55	430501.5974	3746
7	1	11	FBT81	1006495.838	431459.903	3769
7	1	11	FBT82	1006368.535	431036.6716	3760
7	1	11	FBT183	1003813.371	429924.5121	3707

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBT83	1006368.94	430951.7545	3760
7	1	11	FBT84	1006327.232	431088.6826	3762
7	1	11	FBT85	1006700.114	429123.6163	3760
7	1	11	FBT86	1006700.886	429351.3892	3758
7	1	11	FBT92	1006289.431	431129.1828	3751
7	1	11	FBT93	1006317.898	430990.5072	3760
7	1	11	FBT94	1006314.513	430910.263	3752
7	1	11	FBT95	1006035.049	431650.3335	3759
7	1	11	FBT96	1006760.022	431961.4648	3769
7	1	11	FBT97	1006801.659	431863.9952	3777
7	1	11	FBT98	1006400.334	431837.9932	3755
7	1	11	FBT99	1006071.865	431706.6904	3760
7	1	11	FBW1	1006910.609	429582.2649	3744
7	1	11	FBW2	1006959.475	429529.9166	3751
7	1	11	FBW3	1006925.174	429116.1995	3772
7	1	11	FBW4	1006786.627	429118.0987	3760
7	1	11	FBW5	1006472.523	429223.1673	3753
7	1	11	FBW6	1006189.561	429126.8986	3727
7	1	11	FBW8	1005939.316	429550.9867	3719
7	1	11	PA100	1001988.006	429061.1105	3686
7	1	11	PA35	1001941.387	429263.4024	3691
7	1	11	PA50	1001765.251	429244.1937	3691
7	1	11	PA51	1001689.159	429228.0059	3691
7	1	11	PA52	1001735.129	429290.748	3695
7	1	11	PA53	1001816.953	429273.3943	3692
7	1	11	PA67	1001634.975	428490.9881	3671
7	1	11	PA68	1001661.054	428400.4189	3680
7	1	11	PA84	1001652.151	428627.426	3673
7	1	11	PA85	1001645.658	428551.9208	3671
7	1	11	PA91	1002097.605	429083.9964	3693
7	1	11	PA92	1002010.251	429112.1612	3686
7	1	11	PA93	1002445.662	429082.9255	3713
7	1	11	PA94	1002043.741	429058.9181	3693
7	1	11	PA97	1001844.223	428885.5541	3678
7	1	11	PA98	1001720.38	428798.5329	3675
7	1	11	PM100	1001785.57	429154.8585	3687
7	1	11	PM101	1002286.535	429233.3774	3714
7	1	11	PM102	1002517.021	429189.0378	3712
7	1	11	PM103	1002441.409	429160.961	3713
7	1	11	PM104	1005865.734	429064.7955	3706
7	1	11	PM105	1005877.086	428942.7479	3722
7	1	11	PM106	1005946.226	428964.6435	3735
7	1	11	PM107	1006000.89	428913.171	3737

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	PM108	1006026.522	428977.1583	3735
7	1	11	PM109	1006085.915	428983.4346	3739
7	1	11	PM110	1006131.507	429025.2054	3739
7	1	11	PM111	1006193.089	429038.6337	3741
7	1	11	PM112	1006245.351	429017.4404	3741
7	1	11	PM113	1002070.58	429286.8717	3699
7	1	11	PM114	1001800.186	429022.8735	3682
7	1	11	PM116	1001913.092	429100.9855	3686
7	1	11	PM148	1001672.05	428849.9837	3675
7	1	11	PM49	1002559.512	429228.7759	3703
7	1	11	PM56	1002036.797	429199.8036	3699
7	1	11	PM57	1002315.833	429174.2206	3714
7	1	11	PM66	1002183.999	429156.7068	3705
7	1	11	PM68	1002207.018	429240.3165	3712
7	1	11	PM97	1001899.226	429169.0573	3692
7	1	11	PM98	1001991.157	429204.6527	3691
7	1	11	PM99	1001889.39	429249.774	3692
7	1	11	PR1	1002478.366	429041.7714	3713
7	1	11	PR2	1002393.967	429251.378	3714
7	1	11	PR4	1005865.797	429012.8266	3722
7	1	11	PR5	1005799.092	429075.7488	3706
7	1	11	PR6	1006215.316	429076.1579	3727
7	1	11	PS18	1001750.82	428896.6362	3675
7	1	11	PS19	1001867.937	429051.3934	3687
7	1	11	PS20	1001727.531	429196.8968	3691
7	1	11	PS21	1001935.982	429237.1922	3691
7	1	11	PS22	1002433.359	429210.4068	3712
7	1	11	PS23	1002631.857	429130.924	3706
7	1	11	PS24	1001692.431	429047.0783	3686
7	1	11	PS26	1001850.652	429144.1872	3687
7	1	11	PS32	1001721.316	428977.7889	3682
7	1	11	PS33	1001769.635	429084.8959	3686
7	1	11	PS34	1001829.562	429208.5166	3692
7	1	11	PS35	1001710.56	429121.4559	3686
7	1	11	PS36	1001656.103	428771.577	3674
7	1	11	PS37	1001778.458	429228.1461	3692
7	1	11	PS46	1001670.88	428921.5766	3682
7	1	11	PT1	1005997.371	428955.9905	3735
7	1	11	PT121	1001705.664	428885.9056	3675
7	1	11	PT140	1006225.919	428963.0231	3741
7	1	11	PT141	1006195.113	428930.9285	3741
7	1	11	PT142	1002942.324	429197.3522	3702
7	1	11	PT144	1002110.807	429217.3111	3699

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	PT16	1002067.549	429145.561	3693
7	1	11	PT163	1002308.63	429132.2727	3709
7	1	11	PT169	1001747.702	429046.9063	3686
7	1	11	PT173	1002501.909	429075.2858	3713
7	1	11	PT18	1002114.017	429245.1895	3699
7	1	11	PT22	1002221.677	429197.0932	3712
7	1	11	PT24	1002516.917	429125.7535	3713
7	1	11	PT26	1002056.432	429289.0393	3699
7	1	11	PT3	1002382.014	429130.7737	3709
7	1	11	PT35	1002010.771	429163.6529	3686
7	1	11	PT4	1002550.306	429152.755	3706
7	1	11	PT5	1001967.386	429149.5822	3686
7	1	11	PT-52	1006161.24	429027.3177	3739
7	1	11	PT6	1002028.361	429238.1149	3699
7	1	11	PT7	1002142.346	429190.2318	3699
7	1	11	PT8	1002279.178	429188.7929	3714
7	1	11	PT9	1001643.978	428829.304	3672
7	1	11	PW1	1006172.957	429002.5416	3741
7	1	11	PW10	1006027.194	429058.5445	3729
7	1	11	PW2	1006050.147	429015.7362	3739
7	1	11	PW3	1005972.211	429013.8852	3735
7	1	11	PW4	1006092.17	429057.6358	3731
7	1	11	PW5	1006133.56	428960.8173	3739
7	1	11	PW6	1006056.275	428942.0661	3739
7	1	11	PW7	1005925.816	429067.3063	3729
7	1	11	PW8	1005829.469	429019.4258	3722
7	1	11	PW9	1006100.405	428902.2794	3743
7	1	11	RCP58	1006539.164	433096.5196	3802
7	1	11	RON2	1002520.44	429424.7104	3710
7	1	11	RON3	1002039.513	431152.7695	3680
7	1	11	RON5	1001814.332	430318.9252	3674
7	1	11	RONA1	1002091.371	430645.8805	3673
7	1	11	RONA10	1001745.319	430580.3291	3666
7	1	11	RONA100	1002185.611	430015.188	3695
7	1	11	RONA101	1002096.421	429615.0295	3703
7	1	11	RONA102	1001907.211	429333.5626	3703
7	1	11	RONA103	1001697.585	429760.339	3694
7	1	11	RONA104	1001717.747	429461.0494	3696
7	1	11	RONA105	1002163.549	429459.5893	3707
7	1	11	RONA106	1002169.514	429534.7249	3707
7	1	11	RONA107	1001761.903	429660.732	3696
7	1	11	RONA108	1001691.868	429338.2718	3695
7	1	11	RONA109	1001821.069	429427.7817	3700

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	RONA11	1002687.692	430539.5899	3690
7	1	11	RONA110	1001749.929	429357.1284	3695
7	1	11	RONA112	1002105.053	430017.0711	3692
7	1	11	RONA113	1002218.376	429402.3239	3710
7	1	11	RONA114	1002225.541	429469.9515	3707
7	1	11	RONA115	1002086.969	429461.9526	3706
7	1	11	RONA116	1002065.56	429526.4982	3706
7	1	11	RONA117	1001930.45	429505.8643	3703
7	1	11	RONA118	1001720.299	429531.1312	3696
7	1	11	RONA119	1001922.353	429378.7548	3703
7	1	11	RONA12	1002867.722	430520.4052	3692
7	1	11	RONA120	1002143.404	429650.8327	3703
7	1	11	RONA121	1002740.386	430209.6621	3687
7	1	11	RONA122	1002841.766	430252.7725	3689
7	1	11	RONA123	1002832.188	430141.7993	3696
7	1	11	RONA124	1002625.116	430132.9593	3708
7	1	11	RONA125	1002473.736	429959.3367	3712
7	1	11	RONA127	1001810.522	431342.892	3671
7	1	11	RONA128	1002006.058	431440.0811	3685
7	1	11	RONA129	1003048.848	431363.5228	3704
7	1	11	RONA13	1003041.812	430536.4908	3703
7	1	11	RONA130	1002072.256	431619.8718	3691
7	1	11	RONA131	1002120.444	431782.4111	3692
7	1	11	RONA132	1002310.454	431762.7132	3700
7	1	11	RONA133	1002525.388	431904.4896	3690
7	1	11	RONA134	1001890.273	431482.1778	3672
7	1	11	RONA135	1002588.078	432109.2866	3690
7	1	11	RONA136	1001990.417	431562.2851	3686
7	1	11	RONA137	1002183.037	431716.9655	3697
7	1	11	RONA138	1001890.07	431401.6796	3671
7	1	11	RONA139	1002617.31	432348.669	3694
7	1	11	RONA14	1002099.011	429394.1579	3701
7	1	11	RONA140	1002306.715	431896.0408	3694
7	1	11	RONA141	1002485.575	432030.9571	3682
7	1	11	RONA142	1002107.897	431694.734	3692
7	1	11	RONA143	1002370.895	432060.6809	3681
7	1	11	RONA144	1002480.117	432529.3068	3682
7	1	11	RONA145	1002425.808	431980.3142	3682
7	1	11	RONA146	1002478.767	432260.491	3684
7	1	11	RONA147	1002499.669	432404.0188	3682
7	1	11	RONA148	1006866.038	432448.4862	3784
7	1	11	RONA149	1002354.413	432476.2649	3678
7	1	11	RONA15	1001835.782	430603.8329	3669

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	RONA150	1002219.935	432376.8505	3679
7	1	11	RONA151	1002038.562	432397.8879	3674
7	1	11	RONA16	1002483.62	429858.5854	3710
7	1	11	RONA17	1002563.875	429915.4835	3711
7	1	11	RONA18	1002652.242	429916.3183	3711
7	1	11	RONA19	1002747.136	429892.1021	3715
7	1	11	RONA2	1002212.291	430631.1985	3673
7	1	11	RONA21	1002081.951	429333.5457	3701
7	1	11	RONA21	1002574.286	430612.5804	3685
7	1	11	RONA22	1002296.917	429863.9186	3703
7	1	11	RONA23	1002364.179	429845.5432	3703
7	1	11	RONA26	1002120.688	429794.749	3690
7	1	11	RONA27	1002207.935	429802.6038	3701
7	1	11	RONA28	1002199.895	429874.2557	3701
7	1	11	RONA29	1002182.805	429722.3793	3699
7	1	11	RONA3	1002306.708	430540.523	3680
7	1	11	RONA30	1002292.464	429805.752	3703
7	1	11	RONA31	1002612.907	429897.2045	3711
7	1	11	RONA32	1002250.66	429736.7423	3699
7	1	11	RONA33	1002343.929	429802.2466	3703
7	1	11	RONA34	1002097.691	429702.5687	3696
7	1	11	RONA38	1002023.555	430665.2791	3670
7	1	11	RONA39	1001745.392	429714.2108	3694
7	1	11	RONA4	1002436.669	430591.6256	3683
7	1	11	RONA40	1001670.442	429666.3716	3696
7	1	11	RONA42	1002022.498	430623.8333	3670
7	1	11	RONA43	1002270.59	430633.1716	3673
7	1	11	RONA44	1002736.997	430661.3258	3693
7	1	11	RONA45	1002966.272	430565.8196	3700
7	1	11	RONA46	1002748.26	430499.2007	3690
7	1	11	RONA47	1002653.582	430473.5529	3682
7	1	11	RONA48	1002518.353	430637.7223	3683
7	1	11	RONA49	1001967.333	430537.3175	3672
7	1	11	RONA5	1001934.195	430673.7425	3668
7	1	11	RONA50	1001863.636	430540.2306	3670
7	1	11	RONA51	1002145.579	429969.7205	3692
7	1	11	RONA52	1002251.741	429910.128	3701
7	1	11	RONA53	1002429.728	430555.469	3683
7	1	11	RONA54	1002618.254	430593.8026	3685
7	1	11	RONA55	1002571.381	430424.3338	3682
7	1	11	RONA56	1002700.107	430698.8804	3690
7	1	11	RONA57	1002758.484	430631.7131	3693
7	1	11	RONA58	1003018.147	430483.6054	3702

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	RONA6	1002600.412	430524.7304	3682
7	1	11	RONA60	1001761.434	429508.8711	3696
7	1	11	RONA61	1001820.384	429637.3479	3698
7	1	11	RONA62	1001989.528	429697.7182	3697
7	1	11	RONA63	1001926.994	429554.5769	3701
7	1	11	RONA64	1001911.432	429766.4496	3697
7	1	11	RONA67	1001852.548	429529.6587	3700
7	1	11	RONA68	1001929.579	429640.671	3701
7	1	11	RONA69	1001862.286	429710.1538	3694
7	1	11	RONA7	1002721.336	430606.0054	3693
7	1	11	RONA7	1003012.84	430109.7034	3693
7	1	11	RONA70	1001743.485	429406.087	3695
7	1	11	RONA71	1001744.035	429613.4451	3696
7	1	11	RONA72	1002340.951	430114.0085	3705
7	1	11	RONA74	1001834.925	429847.0487	3691
7	1	11	RONA76	1002464.172	430239.7755	3702
7	1	11	RONA77	1002477.774	430082.904	3708
7	1	11	RONA78	1001941.453	429430.2767	3703
7	1	11	RONA79	1002563.763	430170.6123	3699
7	1	11	RONA8	1001813.399	430692.2977	3667
7	1	11	RONA80	1002026.218	429360.2903	3703
7	1	11	RONA81	1001863.086	429369.4865	3697
7	1	11	RONA82	1002042.419	429658.484	3703
7	1	11	RONA83	1001780.063	429304.8343	3697
7	1	11	RONA84	1002019.124	429483.2603	3703
7	1	11	RONA85	1002135.508	429497.7554	3706
7	1	11	RONA86	1001891.423	429466.7992	3700
7	1	11	RONA87	1001829.87	429578.805	3698
7	1	11	RONA88	1001767.254	429564.1362	3696
7	1	11	RONA89	1001979.992	429767.7573	3697
7	1	11	RONA9	1002687.073	430432.0542	3690
7	1	11	RONA90	1002077.926	429758.5874	3696
7	1	11	RONA91	1001850.846	429762.7237	3694
7	1	11	RONA92	1001936.057	429809.8975	3691
7	1	11	RONA95	1001793.208	429500.345	3700
7	1	11	RONA96	1001996.049	429434.9331	3703
7	1	11	RONA97	1001984.034	429381.5919	3703
7	1	11	RONA98	1001779.117	429870.3246	3691
7	1	11	RONA99	1002052.79	429712.3922	3696
7	1	11	RONJ2	1001681.052	429299.551	3695
7	1	11	RONJ3	1001769.354	430948.9538	3661
7	1	11	RONJ4	1002651.872	430077.9401	3708
7	1	11	RONJ5	1002834.488	430026.0448	3704

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	RONJ6	1002739.381	430257.8533	3687
7	1	11	RONJ7	1002300.607	429537.0212	3706
7	1	11	RONJ8	1001868.355	429937.8218	3680
7	1	11	RONM1	1001859.393	430215.1555	3676
7	1	11	RONM10	1002013.945	429829.719	3691
7	1	11	RONM13	1001740.444	430984.4497	3661
7	1	11	RONM14	1002778.219	429461.9779	3714
7	1	11	RONM15	1002897.524	429810.8908	3708
7	1	11	RONM16	1003010.575	429926.4821	3700
7	1	11	RONM17	1002902.462	429722.0371	3711
7	1	11	RONM18	1002650.674	429463.6196	3713
7	1	11	RONM19	1002910.546	429981.2757	3700
7	1	11	RONM2	1001942.936	430038.8933	3688
7	1	11	RONM3	1002049.355	429877.0937	3690
7	1	11	RONM4	1002077.755	429831.8444	3690
7	1	11	RONM5	1002140.706	429754.2646	3696
7	1	11	RONM6	1002221.915	429693.3516	3699
7	1	11	RONM7	1002305.774	429624.6372	3701
7	1	11	RONM8	1002414.874	429541.3276	3710
7	1	11	RONM9	1002468.876	429489.9444	3710
7	1	11	RONR1	1002157.281	429397.6647	3710
7	1	11	RONR10	1002483.999	429343.9113	3710
7	1	11	RONR11	1002460.656	429280.973	3712
7	1	11	RONR12	1002305.16	429348.035	3712
7	1	11	RONR13	1002117.716	429333.2403	3701
7	1	11	RONR15	1002431.304	429327.2929	3710
7	1	11	RONR16	1002444.873	429386.3105	3710
7	1	11	RONR17	1002248.391	429540.5882	3707
7	1	11	RONR18	1002378.754	429193.7875	3714
7	1	11	RONR19	1002152.46	429268.9058	3699
7	1	11	RONR2	1002530.439	429313.9928	3708
7	1	11	RONR20	1002249.362	429263.781	3712
7	1	11	RONR22	1002949.653	429824.9049	3704
7	1	11	RONR23	1002379.449	429354.381	3712
7	1	11	RONR24	1002675.702	429232.1913	3702
7	1	11	RONR25	1002365.532	429423.0805	3706
7	1	11	RONR26	1002596.662	429545.8421	3715
7	1	11	RONR27	1002875.396	430051.7412	3696
7	1	11	RONR28	1002716.791	429702.1664	3719
7	1	11	RONR29	1002982.245	430138.0582	3693
7	1	11	RONR3	1002598.336	429354.9862	3708
7	1	11	RONR30	1002819.097	430287.4373	3689
7	1	11	RONR31	1002619.311	430300.947	3681

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	RONR32	1002428.856	429690.9371	3714
7	1	11	RONR33	1003033.609	430793.1355	3711
7	1	11	RONR4	1002840.502	429378.8266	3709
7	1	11	RONR5	1002905.874	429536.3342	3713
7	1	11	RONR6	1002897.879	429611.2214	3713
7	1	11	RONR8	1002282.637	429404.2592	3712
7	1	11	RONR9	1002353.266	429299.4237	3712
7	1	11	RONS1	1003024.205	430327.7272	3695
7	1	11	RONS10	1002601.624	429993.3209	3713
7	1	11	RONS11	1002589.383	429695.1859	3714
7	1	11	RONS12	1002702.961	429819.6697	3715
7	1	11	RONS13	1002914.125	430199.0828	3692
7	1	11	RONS14	1002234.956	429311.6387	3710
7	1	11	RONS15	1002807.977	429294.5537	3709
7	1	11	RONS16	1002809.7	429500.41	3713
7	1	11	RONS17	1002631.569	429321.9427	3708
7	1	11	RONS18	1002606.843	429414.4588	3708
7	1	11	RONS19	1003012.598	429975.0199	3700
7	1	11	RONS2	1002957.82	430287.6265	3692
7	1	11	RONS20	1002964.965	429978.8394	3700
7	1	11	RONS21	1002988.699	430037.0078	3700
7	1	11	RONS22	1002886.284	430147.0857	3696
7	1	11	RONS23	1002963.453	429918.0829	3704
7	1	11	RONS24	1002893.842	429924.4805	3704
7	1	11	RONS25	1002832.201	429920.8755	3704
7	1	11	RONS26	1002868.383	429851.1814	3708
7	1	11	RONS27	1002815.738	429813.2615	3708
7	1	11	RONS28	1002843.259	429718.5367	3711
7	1	11	RONS29	1002834.552	429634.4888	3713
7	1	11	RONS30	1002781.485	429558.6316	3713
7	1	11	RONS31	1002737.453	429485.8494	3714
7	1	11	RONS32	1002682.496	429396.9794	3709
7	1	11	RONS33	1002913.953	430245.6452	3692
7	1	11	RONS33	1002914.297	429770.6628	3706
7	1	11	RONS34	1003015.851	429892.5054	3704
7	1	11	RONS35	1002921.186	429869.8753	3704
7	1	11	RONS36	1002858.52	429775.7031	3711
7	1	11	RONS37	1002806.894	429599.2955	3713
7	1	11	RONS38	1002731.315	429432.7709	3714
7	1	11	RONS39	1002878.278	429673.1292	3711
7	1	11	RONS4	1002866.052	430198.5882	3689
7	1	11	RONS40	1002671.551	429335.6194	3709
7	1	11	RONS41	1003019.152	430586.1368	3700

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Appendix 3.3-A
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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	RONS42	1002976.433	430520.4794	3702
7	1	11	RONS43	1002913.994	430526.1646	3702
7	1	11	RONS44	1002839.029	430577.051	3694
7	1	11	RONS45	1002789.478	430535.4091	3692
7	1	11	RONS46	1002753.661	430153.0614	3703
7	1	11	RONS47	1002637.401	430193.8429	3699
7	1	11	RONS48	1002992.668	430220.9733	3692
7	1	11	RONS49	1002629.382	429261.714	3703
7	1	11	RONS5	1002809.936	430193.1489	3689
7	1	11	RONS50	1002748.98	429364.2169	3709
7	1	11	RONS51	1002621.467	429196.6659	3703
7	1	11	RONS52	1002711.008	429259.6626	3702
7	1	11	RONS53	1002748.901	429568.6292	3718
7	1	11	RONS6	1002706.112	430209.3754	3687
7	1	11	RONS7	1002600.457	430242.6593	3699
7	1	11	RONS8	1002685.531	430283.8805	3687
7	1	11	RONS9	1002786.409	430244.0654	3689
7	1	11	RONT1	1002806.477	429574.0876	3713
7	1	11	RONT10	1002513.51	430448.2561	3681
7	1	11	RONT11	1002488.69	429924.6713	3712
7	1	11	RONT12	1002469.078	430557.3956	3683
7	1	11	RONT13	1002315.272	429924.8224	3702
7	1	11	RONT14	1002237.492	429852.8113	3701
7	1	11	RONT15	1002579.891	430578.4496	3685
7	1	11	RONT16	1002038.193	429750.812	3696
7	1	11	RONT17	1002666.246	430578.365	3693
7	1	11	RONT18	1001943.953	429696.5752	3697
7	1	11	RONT19	1002208.708	429954.0145	3695
7	1	11	RONT2	1002761.911	429834.7527	3715
7	1	11	RONT20	1002754.69	430583.8881	3693
7	1	11	RONT21	1002092.363	429946.6489	3692
7	1	11	RONT22	1002804.138	430670.2912	3694
7	1	11	RONT23	1001968.451	429912.8635	3691
7	1	11	RONT24	1002765.892	430767.5141	3690
7	1	11	RONT25	1002672.235	430842.2547	3703
7	1	11	RONT26	1002672.652	430660.0821	3693
7	1	11	RONT27	1002529.904	430675.6472	3690
7	1	11	RONT28	1002397.395	430653.1252	3680
7	1	11	RONT29	1002207.175	430577.4375	3673
7	1	11	RONT3	1002689.951	429881.8425	3715
7	1	11	RONT30	1002123.636	430694.9619	3670
7	1	11	RONT31	1001994.999	430690.1735	3668
7	1	11	RONT32	1001912.244	430750.6643	3668

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	RONT33	1001869.534	430919.0817	3663
7	1	11	RONT34	1001913.143	431007.5507	3670
7	1	11	RONT35	1001834.555	431071.3133	3664
7	1	11	RONT36	1002609.442	430630.6747	3685
7	1	11	RONT37	1002373.529	430562.3874	3680
7	1	11	RONT38	1002495.37	430593.5668	3683
7	1	11	RONT39	1002326.437	430612.6309	3680
7	1	11	RONT4	1002755.642	430456.3343	3690
7	1	11	RONT40	1002146.67	430630.851	3673
7	1	11	RONT41	1002042.949	430733.0374	3670
7	1	11	RONT42	1002148.199	429902.698	3690
7	1	11	RONT43	1002396.853	429883.0356	3703
7	1	11	RONT44	1002540.076	429864.5895	3711
7	1	11	RONT45	1002804.313	429631.3491	3713
7	1	11	RONT46	1002597.814	429247.3528	3703
7	1	11	RONT47	1002853.9	429569.401	3713
7	1	11	RONT48	1002769.531	429627.5644	3718
7	1	11	RONT49	1002017.461	429674.5379	3697
7	1	11	RONT5	1002608.143	429842.0061	3711
7	1	11	RONT50	1002895.874	429241.8148	3703
7	1	11	RONT51	1001777.487	429537.1995	3700
7	1	11	RONT52	1002107.535	429431.8142	3706
7	1	11	RONT53	1002400.922	429278.0102	3714
7	1	11	RONT54	1002769.863	430048.0042	3703
7	1	11	RONT55	1002693.213	430158.1031	3703
7	1	11	RONT56	1002389.209	429468.803	3706
7	1	11	RONT57	1002579.366	429101.6147	3706
7	1	11	RONT58	1003020.267	430178.5558	3692
7	1	11	RONT59	1001776.917	429460.6884	3700
7	1	11	RONT6	1002561.588	429782.8845	3714
7	1	11	RONT60	1001782.221	429390.93	3697
7	1	11	RONT62	1002338.816	429470.623	3706
7	1	11	RONT63	1002846.357	429967.9059	3704
7	1	11	RONT64	1002679.119	430104.4394	3703
7	1	11	RONT66	1002791.542	429980.664	3704
7	1	11	RONT67	1002681.125	430050.875	3703
7	1	11	RONT68	1002735.79	429975.3507	3710
7	1	11	RONT69	1002720.925	430024.1496	3710
7	1	11	RONT7	1002697.943	430510.8228	3690
7	1	11	RONT8	1002601.138	430469.6071	3682
7	1	11	RONT9	1002499.821	429822.8687	3710
7	1	12	BPZ LA8	1009566.482	432108.3439	3794
7	1	12	COM2	1007140.076	428985.6662	3774

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	COS1	1007038.967	429035.4679	3772
7	1	12	DK211	1007091.855	431592.36	3781
7	1	12	DR301	1008916.853	433038.0092	3800
7	1	12	DRA4	1010013.926	432986.7262	3836
7	1	12	DRA5	1010065.427	432999.108	3839
7	1	12	DRJ1	1008274.833	433051.5991	3842
7	1	12	DRJ5	1007935.119	433055.5383	3839
7	1	12	DRS1	1009962.381	433000.212	3836
7	1	12	DS690	1008322.948	433063.4611	3832
7	1	12	DS693	1008360.345	433057.7882	3832
7	1	12	DTW-1	1007137.064	429034.1106	3774
7	1	12	EN91	1010214.021	432089.5265	3825
7	1	12	EN94(400)	1008251.759	432603.0389	3861
7	1	12	FBS1	1007113.282	431972.7253	3787
7	1	12	FBS7	1007079.468	431363.7747	3772
7	1	12	IHA1	1009938.454	432829.3926	3836
7	1	12	IHA10	1009599.356	432797.5419	3814
7	1	12	IHA11	1009569.392	432737.5613	3814
7	1	12	IHA12	1008761.44	432008.5207	3806
7	1	12	IHA13	1008558.647	432451.3003	3842
7	1	12	IHA14	1009355.107	431554.587	3772
7	1	12	IHA15	1010099.128	431726.7044	3808
7	1	12	IHA16	1009884.362	432918.2958	3831
7	1	12	IHA17	1008844.663	432033.8656	3809
7	1	12	IHA18	1008095.425	432384.1245	3838
7	1	12	IHA19	1008781.485	432348.4229	3830
7	1	12	IHA2	1009986.781	432606.4202	3821
7	1	12	IHA20	1008691.143	432413.8653	3830
7	1	12	IHA21	1008810.565	431852.6359	3793
7	1	12	IHA22	1008849.639	431905.5391	3793
7	1	12	IHA23	1008773.323	432294.4567	3819
7	1	12	IHA24	1008817.543	432244.2043	3825
7	1	12	IHA25	1008830.075	432139.1547	3822
7	1	12	IHA26	1008301.65	432496.728	3852
7	1	12	IHA27	1008123.118	432330.5686	3838
7	1	12	IHA28	1008814.535	431940.9416	3809
7	1	12	IHA29	1009147.303	431748.3874	3792
7	1	12	IHA3	1009604.844	432541.6168	3808
7	1	12	IHA30	1009283.011	431545.478	3796
7	1	12	IHA31	1008727.415	432366.1863	3830
7	1	12	IHA32	1008057.549	432378.1818	3838
7	1	12	IHA33	1008045.334	432066.7843	3811
7	1	12	IHA34	1007764.42	431829.4059	3804

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHA35	1008154.151	432271.2165	3830
7	1	12	IHA36	1008916.847	431819.5612	3793
7	1	12	IHA37	1007254.207	431242.9045	3773
7	1	12	IHA38	1007251.995	431207.7607	3773
7	1	12	IHA39	1007114.913	430941.512	3764
7	1	12	IHA4	1009696.366	432564.1395	3823
7	1	12	IHA40	1007198.687	431027.6367	3767
7	1	12	IHA41	1007242.983	431062.9387	3770
7	1	12	IHA42	1008426.777	432419.7447	3841
7	1	12	IHA43	1009406.737	431595.0814	3772
7	1	12	IHA44	1009442.841	431519.3384	3761
7	1	12	IHA45	1010182.33	431367.2993	3793
7	1	12	IHA46	1010300.837	431404.7751	3794
7	1	12	IHA47	1010194.942	431230.7977	3792
7	1	12	IHA48	1010397.943	431128.3789	3781
7	1	12	IHA49	1010081.132	431713.0295	3808
7	1	12	IHA5	1009567.361	432569.7655	3811
7	1	12	IHA50	1010354.519	431770.9025	3819
7	1	12	IHA51	1010110.273	431206.6529	3795
7	1	12	IHA52	1010145.201	431162.891	3778
7	1	12	IHA53	1010202.834	431141.7306	3779
7	1	12	IHA54	1010307.019	431141.9098	3779
7	1	12	IHA55	1010331.905	431080.7108	3781
7	1	12	IHA56	1010427.427	431116.3329	3781
7	1	12	IHA57	1010052.229	431167.8098	3779
7	1	12	IHA58	1010060.481	431221.397	3801
7	1	12	IHA59	1010284.799	431085.9163	3779
7	1	12	IHA6	1009624.698	432610.6858	3811
7	1	12	IHA60	1010230.022	431410.0172	3794
7	1	12	IHA61	1010259.886	431493.4908	3796
7	1	12	IHA7	1009528.272	432594.1947	3812
7	1	12	IHA8	1009642.979	432413.9035	3799
7	1	12	IHA9	1009393.724	432669.2291	3808
7	1	12	IHH1	1008222.478	432420.3789	3847
7	1	12	IHH2	1008240.85	432482.8302	3852
7	1	12	IHJ1	1008845.146	432486.4988	3835
7	1	12	IHJ10	1009973.193	432397.8067	3813
7	1	12	IHJ100	1010112.146	431462.3739	3787
7	1	12	IHJ101	1008709.669	432891.1964	3836
7	1	12	IHJ102	1008027.048	432527.8865	3842
7	1	12	IHJ103	1007790.094	432703.8345	3831
7	1	12	IHJ104	1007967.704	432183.319	3827
7	1	12	IHJ105	1010240.08	431682.6094	3817

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Appendix 3.3-A
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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHJ106	1007767.943	432806.5209	3827
7	1	12	IHJ107	1007838.646	432919.7283	3831
7	1	12	IHJ108	1008106.393	432571.0128	3856
7	1	12	IHJ11	1010098.494	431318.8813	3793
7	1	12	IHJ12	1010005.729	431367.9388	3797
7	1	12	IHJ13	1009828.082	431517.5606	3788
7	1	12	IHJ130	1007763.913	432464.9386	3834
7	1	12	IHJ14	1009955.216	431417.4606	3797
7	1	12	IHJ15	1009608.152	431470.6766	3768
7	1	12	IHJ16	1009817.038	432448.7408	3805
7	1	12	IHJ17	1009847.593	432504.0686	3805
7	1	12	IHJ18	1009987.709	432443.118	3809
7	1	12	IHJ19	1009745.705	431392.8151	3808
7	1	12	IHJ2	1008807.974	432532.2124	3835
7	1	12	IHJ20	1009866.356	431354.8742	3802
7	1	12	IHJ21	1009587.44	431415.3572	3802
7	1	12	IHJ22	1009563.568	431352.2839	3802
7	1	12	IHJ23	1009506.587	431445.6829	3761
7	1	12	IHJ24	1009639.615	432516.9245	3808
7	1	12	IHJ25	1009887.14	432794.5465	3835
7	1	12	IHJ26	1009934.575	432929.7133	3831
7	1	12	IHJ27	1007501.216	431809.1847	3798
7	1	12	IHJ28	1007758.81	432339.5845	3831
7	1	12	IHJ29	1007573.639	431894.1891	3801
7	1	12	IHJ3	1008692.242	432586.2652	3841
7	1	12	IHJ31	1008010.381	432261.1291	3827
7	1	12	IHJ32	1007678.676	432412.1828	3831
7	1	12	IHJ33	1007698.341	432342.7348	3831
7	1	12	IHJ34	1007596.629	432414.7674	3821
7	1	12	IHJ35	1007666.558	432281.4046	3808
7	1	12	IHJ36	1007709.349	432473.7925	3834
7	1	12	IHJ37	1008537.094	432527.3616	3841
7	1	12	IHJ38	1008496.783	432444.5922	3841
7	1	12	IHJ39	1007606.904	432340.1789	3821
7	1	12	IHJ4	1008638.316	432645.6052	3841
7	1	12	IHJ40	1008574.836	432565.5091	3841
7	1	12	IHJ41	1007712.866	432260.3741	3823
7	1	12	IHJ42	1007753.361	432510.7011	3834
7	1	12	IHJ43	1007641.414	432519.1556	3832
7	1	12	IHJ44	1007678.466	432627.0469	3831
7	1	12	IHJ45	1007169.337	431140.2788	3768
7	1	12	IHJ46	1007633.574	432449.929	3832
7	1	12	IHJ47	1007735.92	432621.8293	3831

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHJ48	1007347.854	429969.53	3754
7	1	12	IHJ49	1007748.22	432571.3671	3831
7	1	12	IHJ5	1008398.346	432836.0781	3838
7	1	12	IHJ50	1007608.343	432477.6601	3832
7	1	12	IHJ51	1007788.88	432618.2635	3831
7	1	12	IHJ52	1007295.234	432545.7819	3799
7	1	12	IHJ53	1007393.371	432321.1539	3800
7	1	12	IHJ54	1007372.508	432609.3687	3808
7	1	12	IHJ55	1007801.018	433012.4536	3826
7	1	12	IHJ56	1007409.833	432549.4806	3803
7	1	12	IHJ57	1007340.684	432321.8781	3800
7	1	12	IHJ58	1007487.918	432612.284	3822
7	1	12	IHJ59	1007697.807	433007.9189	3826
7	1	12	IHJ6	1008316.916	432934.2194	3836
7	1	12	IHJ60	1007327.834	432269.9	3796
7	1	12	IHJ61	1007450.496	432718.9661	3824
7	1	12	IHJ62	1007419.31	432256.2061	3796
7	1	12	IHJ63	1007350.348	432186.0901	3796
7	1	12	IHJ64	1007149.229	432259.4236	3781
7	1	12	IHJ65	1007218.938	432215.1303	3793
7	1	12	IHJ66	1007147.341	432147.9515	3782
7	1	12	IHJ67	1007237.642	432105.2959	3790
7	1	12	IHJ68	1009240.399	432571.3122	3794
7	1	12	IHJ69	1009409.927	432463.8047	3791
7	1	12	IHJ7	1008182.375	433018.3082	3842
7	1	12	IHJ70	1009415.683	432378.2332	3776
7	1	12	IHJ71	1009201.945	432677.6764	3794
7	1	12	IHJ72	1009213.09	432344.5191	3777
7	1	12	IHJ73	1009286.392	432511.5268	3786
7	1	12	IHJ74	1009529.35	432344.719	3778
7	1	12	IHJ75	1009862.457	432585.4592	3823
7	1	12	IHJ76	1009816.53	431354.8258	3802
7	1	12	IHJ77	1009852.121	431684.7317	3777
7	1	12	IHJ78	1010029.854	431711.3041	3786
7	1	12	IHJ79	1009761.488	431461.6735	3799
7	1	12	IHJ8	1008429.058	432867.0819	3838
7	1	12	IHJ80	1009211.177	431929.6791	3790
7	1	12	IHJ81	1009104.319	431808.4264	3814
7	1	12	IHJ82	1009810.771	432653.4505	3823
7	1	12	IHJ83	1009593.225	432301.3029	3780
7	1	12	IHJ84	1009141.731	432108.2486	3826
7	1	12	IHJ85	1009545.81	432213.6603	3774
7	1	12	IHJ86	1009771.928	431721.3642	3770

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHJ87	1009466.928	432292.7604	3774
7	1	12	IHJ88	1010024.929	431444.8691	3782
7	1	12	IHJ89	1010291.267	431606.7409	3788
7	1	12	IHJ9	1008040.052	432964.3904	3839
7	1	12	IHJ90	1009980.445	431469.6416	3782
7	1	12	IHJ91	1010346.988	431655.5614	3802
7	1	12	IHJ92	1010255.823	431631.8671	3788
7	1	12	IHJ93	1009772.708	431598.806	3776
7	1	12	IHJ94	1010322.052	431722.7832	3819
7	1	12	IHJ95	1010436.259	431676.1422	3802
7	1	12	IHJ96	1010019.501	431535.7756	3782
7	1	12	IHJ97	1010285.307	431687.1913	3817
7	1	12	IHJ98	1010066.197	431495.9007	3787
7	1	12	IHJ99	1009949.516	431105.4242	3779
7	1	12	IHK1	1008934.514	432371.2876	3835
7	1	12	IHK10	1007154.007	431408.7374	3772
7	1	12	IHK11	1007563.257	431764.06	3795
7	1	12	IHK13	1009403.328	431319.9683	3768
7	1	12	IHK14	1008862.51	432189.5742	3825
7	1	12	IHK15	1009415.866	431439.3448	3770
7	1	12	IHK16	1008250.144	432453.5075	3852
7	1	12	IHK17	1008241.519	432758.148	3854
7	1	12	IHK18	1007834.195	432121.288	3821
7	1	12	IHK19	1008893.207	432518.4114	3835
7	1	12	IHK2	1009449.525	431585.5153	3762
7	1	12	IHK20	1009258.411	432578.4495	3794
7	1	12	IHK21	1009279.067	432265.2999	3783
7	1	12	IHK22	1010691.777	432191.2223	3823
7	1	12	IHK23	1008995.81	432221.5098	3831
7	1	12	IHK24	1009193.434	431664.0286	3784
7	1	12	IHK25	1009139.579	431461.1259	3800
7	1	12	IHK26	1008732.315	432084.2785	3810
7	1	12	IHK27	1008768.176	432123.8783	3810
7	1	12	IHK28	1008737.503	432112.7181	3810
7	1	12	IHK29	1008730.858	432049.6828	3806
7	1	12	IHK3	1009295.095	431061.7633	3779
7	1	12	IHK30	1008701.897	432077.9558	3810
7	1	12	IHK31	1008763.754	432091.4043	3810
7	1	12	IHK32	1008740.786	432142.0792	3810
7	1	12	IHK33	1008701.437	432112.9574	3810
7	1	12	IHK44	1008639.5	432511.9743	3842
7	1	12	IHK5	1007373.621	430274.1551	3760
7	1	12	IHK7	1008421.906	432091.0042	3842

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHK8	1007139.029	431384.0093	3772
7	1	12	IHK9	1007127.149	431549.3027	3775
7	1	12	IHM1	1008797.627	432122.9213	3810
7	1	12	IHM10	1008673.18	432078.8674	3813
7	1	12	IHM100	1007048.747	429395.5523	3759
7	1	12	IHM101	1007364.676	429923.2636	3754
7	1	12	IHM102	1007407.544	430050.9836	3754
7	1	12	IHM103	1007280.458	430256.7032	3755
7	1	12	IHM104	1007205.797	429057.3676	3772
7	1	12	IHM105	1007106.638	429111.8758	3772
7	1	12	IHM106	1007097.581	429184.2882	3760
7	1	12	IHM107	1010116.185	432571.7375	3831
7	1	12	IHM108	1009995.828	432265.7787	3802
7	1	12	IHM109	1010048.992	432284.677	3802
7	1	12	IHM110	1010114.622	432297.0033	3802
7	1	12	IHM111	1008909.02	432075.706	3822
7	1	12	IHM113	1008899.366	432131.2844	3822
7	1	12	IHM114	1008642.509	432082.2196	3813
7	1	12	IHM115	1008112.989	432227.1553	3830
7	1	12	IHM116	1008617.552	432133.7881	3813
7	1	12	IHM118	1008153.605	432087.4565	3823
7	1	12	IHM119	1007442.466	431407.6225	3783
7	1	12	IHM12	1008671.734	432017.2795	3814
7	1	12	IHM12	1008490.553	431978.9459	3835
7	1	12	IHM120	1007410.899	431501.995	3782
7	1	12	IHM121	1007563.22	431728.4999	3795
7	1	12	IHM122	1008072.553	432128.174	3823
7	1	12	IHM123	1008112.03	432227.1941	3830
7	1	12	IHM124	1008149.949	432484.819	3844
7	1	12	IHM125	1008134.272	432366.1169	3838
7	1	12	IHM126	1008002.402	432038.9804	3812
7	1	12	IHM127	1007974.239	431855.3681	3807
7	1	12	IHM128	1007909.56	431842.6594	3805
7	1	12	IHM129	1007811.098	431909.3842	3805
7	1	12	IHM13	1008639.52	432052.0177	3814
7	1	12	IHM130	1007928.555	431952.2508	3812
7	1	12	IHM131	1008406.642	432373.7693	3841
7	1	12	IHM132	1008727.847	432320.755	3830
7	1	12	IHM133	1008888.01	431771.3889	3803
7	1	12	IHM134	1008809.792	431762.5745	3803
7	1	12	IHM135	1007245.326	431728.0533	3788
7	1	12	IHM136	1007344.273	431586.8702	3787
7	1	12	IHM137	1009449.771	432630.0862	3812

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHM138	1009189.827	431690.5408	3780
7	1	12	IHM139	1009169.111	432255.9868	3812
7	1	12	IHM14	1008758.318	432049.4788	3806
7	1	12	IHM140	1007132.083	431489.2863	3775
7	1	12	IHM141	1009233.167	432458.2266	3786
7	1	12	IHM142	1009317.114	432424.523	3776
7	1	12	IHM143	1009333.284	432525.9248	3791
7	1	12	IHM144	1009561.633	432662.6077	3811
7	1	12	IHM146	1007532.994	432763.2784	3824
7	1	12	IHM15	1008644.002	432012.3338	3814
7	1	12	IHM16	1009159.013	431667.9859	3783
7	1	12	IHM17	1009181.362	431693.839	3792
7	1	12	IHM17	1008937.882	432103.5475	3820
7	1	12	IHM18	1009229.965	431644.1755	3784
7	1	12	IHM19	1009157.949	431592.8553	3783
7	1	12	IHM2	1008800.66	432089.958	3810
7	1	12	IHM20	1009011.199	431578.4941	3801
7	1	12	IHM21	1008965.742	431792.4365	3789
7	1	12	IHM22	1008874.635	431856.3772	3793
7	1	12	IHM23	1008816.697	431927.6709	3809
7	1	12	IHM24	1008891.597	431546.1607	3802
7	1	12	IHM25	1008835.207	432095.1128	3822
7	1	12	IHM26	1008822.451	432130.9872	3822
7	1	12	IHM27	1008819.862	432160.2731	3822
7	1	12	IHM28	1008849.001	432152.6668	3822
7	1	12	IHM29	1008857.867	432116.4493	3822
7	1	12	IHM3	1008768.803	432148.0142	3810
7	1	12	IHM30	1008874.241	432141.2149	3822
7	1	12	IHM31	1009019.647	432266.3658	3831
7	1	12	IHM32	1009155.798	432054.9781	3826
7	1	12	IHM33	1008648.255	432698.9834	3839
7	1	12	IHM34	1009358.905	431940.3727	3786
7	1	12	IHM35	1008395.167	432757.6864	3841
7	1	12	IHM36	1008599.984	432701.1084	3839
7	1	12	IHM37	1008551.633	432702.6424	3838
7	1	12	IHM38	1008907.305	432111.947	3822
7	1	12	IHM39	1008904.736	432138.0575	3822
7	1	12	IHM4	1008793.126	432149.4541	3810
7	1	12	IHM40	1008912.292	432164.556	3822
7	1	12	IHM41	1008958.863	432159.8569	3820
7	1	12	IHM42	1009074.838	432153.2098	3826
7	1	12	IHM43	1009064.077	432185.0002	3812
7	1	12	IHM44	1008881.668	432170.5647	3822

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHM45	1008911.073	432195.929	3825
7	1	12	IHM45	1009711.842	432660.2054	3823
7	1	12	IHM47	1009214.169	432127.0708	3784
7	1	12	IHM48	1009206.855	432168.5581	3784
7	1	12	IHM49	1009188.601	432208.0017	3783
7	1	12	IHM5	1008770.553	432175.1072	3810
7	1	12	IHM50	1009175.482	432233.5538	3812
7	1	12	IHM51	1009166.952	432254.5729	3812
7	1	12	IHM52	1009183.908	432221.5311	3783
7	1	12	IHM53	1009308.325	432219.8908	3783
7	1	12	IHM54	1009315.94	432162.6277	3773
7	1	12	IHM55	1009319.626	431786.8007	3782
7	1	12	IHM56	1008906.815	432436.51	3835
7	1	12	IHM57	1009644.122	431675.0067	3769
7	1	12	IHM58	1009309.482	432246.1634	3772
7	1	12	IHM59	1009276.37	432192.4403	3783
7	1	12	IHM6	1008736.548	432171.2598	3810
7	1	12	IHM60	1009312.674	432187.7344	3772
7	1	12	IHM61	1009312.238	432279.7056	3772
7	1	12	IHM62	1009359.024	432246.4578	3772
7	1	12	IHM63	1009366.216	432275.348	3772
7	1	12	IHM64	1009364.408	432302.5068	3772
7	1	12	IHM65	1009497.384	432292.2632	3774
7	1	12	IHM66	1009280.541	432156.9601	3784
7	1	12	IHM68	1009273.781	432222.6802	3783
7	1	12	IHM69	1009079.631	432214.5216	3812
7	1	12	IHM7	1008705.717	432171.9443	3810
7	1	12	IHM70	1008918.166	432404.1172	3834
7	1	12	IHM71	1009030.216	432333.3396	3835
7	1	12	IHM72	1008605.385	431982.3849	3814
7	1	12	IHM73	1008592.467	432016.5144	3814
7	1	12	IHM74	1008597.78	432046.1218	3814
7	1	12	IHM75	1008665.882	431918.2282	3818
7	1	12	IHM76	1008456.803	431984.4712	3835
7	1	12	IHM77	1008449.56	432012.9445	3835
7	1	12	IHM78	1008487.573	431935.9358	3835
7	1	12	IHM79	1008467.361	431958.5065	3835
7	1	12	IHM8	1008703.163	432053.3992	3810
7	1	12	IHM80	1008341.264	431977.4013	3822
7	1	12	IHM81	1008581.505	432730.6776	3839
7	1	12	IHM82	1007034.616	429785.3662	3741
7	1	12	IHM83	1007078.21	429889.0676	3743
7	1	12	IHM84	1007137.918	429948.6706	3752

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHM84b	1007158.148	429930.0713	3752
7	1	12	IHM85	1007173.789	429838.3612	3743
7	1	12	IHM86	1007272.18	429917.0599	3753
7	1	12	IHM87	1007296.555	430023.5405	3752
7	1	12	IHM88	1007354.432	430132.8882	3754
7	1	12	IHM89	1007373.602	430184.3603	3760
7	1	12	IHM9	1008674.897	432048.3032	3814
7	1	12	IHM90	1007107.994	429811.6647	3743
7	1	12	IHM91	1007020.098	429733.1428	3741
7	1	12	IHM92	1006989.664	429088.131	3772
7	1	12	IHM93	1007074.865	429083.9019	3772
7	1	12	IHM94	1007150.837	429081.3442	3772
7	1	12	IHM95	1007163.765	429159.0131	3772
7	1	12	IHM96	1007133.882	429229.6095	3760
7	1	12	IHM97	1007084.757	429158.6754	3772
7	1	12	IHM98	1007073.348	429238.6737	3760
7	1	12	IHM99	1007102.991	429313.0234	3757
7	1	12	IHR1	1009036.565	432154.3048	3820
7	1	12	IHR10	1008738.36	432437.9772	3833
7	1	12	IHR100	1008803.044	432085.8425	3810
7	1	12	IHR101	1009080.497	432151.9644	3826
7	1	12	IHR102	1008764.59	432237.0106	3819
7	1	12	IHR103	1008494.46	432338.4078	3832
7	1	12	IHR104	1008343.708	432438.869	3840
7	1	12	IHR105	1008830.644	431968.1574	3809
7	1	12	IHR106	1009144.685	432063.6066	3826
7	1	12	IHR107	1009042.649	432218.2229	3831
7	1	12	IHR108	1008152.712	432271.2747	3830
7	1	12	IHR109	1009492.859	432689.7548	3804
7	1	12	IHR11	1008649.818	432409.188	3832
7	1	12	IHR110	1009432.679	432717.3987	3793
7	1	12	IHR111	1008246.268	432050.5384	3821
7	1	12	IHR112	1009436.901	432778.3113	3804
7	1	12	IHR113	1009523.05	432786.6797	3804
7	1	12	IHR114	1009341.689	432929.3675	3791
7	1	12	IHR115	1008206.832	432098.0951	3830
7	1	12	IHR116	1009288.768	432915.7296	3794
7	1	12	IHR117	1009442.761	432982.1863	3799
7	1	12	IHR12	1008551.283	432407.4198	3832
7	1	12	IHR13	1008457.094	432402.3636	3832
7	1	12	IHR14	1008535.008	432303.6452	3829
7	1	12	IHR15	1008968.9	432026.3995	3802
7	1	12	IHR16	1009021.932	431943.3722	3802

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHR17	1009085.171	431858.5871	3814
7	1	12	IHR18	1009137.309	431771.2485	3792
7	1	12	IHR19	1009267.202	431933.527	3790
7	1	12	IHR2	1008985.143	432193.9487	3831
7	1	12	IHR 20	1009367.104	431857.2173	3783
7	1	12	IHR21	1009410.411	431671.3574	3772
7	1	12	IHR22	1009013.966	432192.9076	3831
7	1	12	IHR24	1009502.542	431921.2309	3774
7	1	12	IHR 25	1009499.538	431811.8555	3774
7	1	12	IHR26	1010093.068	431725.6516	3808
7	1	12	IHR27	1010081.559	431842.6857	3810
7	1	12	IHR28	1010047.102	431992.3315	3823
7	1	12	IHR29	1009804.334	431895.7033	3795
7	1	12	IHR3	1008961.851	432213.2505	3831
7	1	12	IHR30	1009770.385	431753.3602	3770
7	1	12	IHR31	1010401.107	431840.5162	3825
7	1	12	IHR32	1010348.452	431697.6007	3819
7	1	12	IHR33	1010309.196	431621.5132	3788
7	1	12	IHR34	1010561.144	431688.667	3821
7	1	12	IHR35	1010506.662	431474.1547	3796
7	1	12	IHR36	1010307.586	431467.0242	3796
7	1	12	IHR37	1010073.045	431544.3059	3787
7	1	12	IHR37	1008886.18	432483.4937	3835
7	1	12	IHR38	1009876.123	431531.4898	3788
7	1	12	IHR39	1008571.802	432534.4489	3842
7	1	12	IHR4	1009026.607	432115.3616	3820
7	1	12	IHR40	1008581.5	432504.1403	3842
7	1	12	IHR41	1008608.556	432521.108	3842
7	1	12	IHR42	1008552.15	432535.1815	3841
7	1	12	IHR43	1008608.049	432493.7614	3842
7	1	12	IHR45	1008615.417	432562.6631	3841
7	1	12	IHR46	1009005.559	432172.4175	3820
7	1	12	IHR46	1008552.825	432565.0078	3843
7	1	12	IHR47	1008590.996	432547.0901	3842
7	1	12	IHR48	1008520.039	432542.1417	3841
7	1	12	IHR49	1008377.077	432589.5239	3854
7	1	12	IHR5	1008938.752	432229.886	3831
7	1	12	IHR50	1008704.652	432496.8902	3833
7	1	12	IHR51	1008757.272	432492.9002	3833
7	1	12	IHR52	1008691.748	432564.9075	3841
7	1	12	IHR53	1008746.027	431787.6111	3811
7	1	12	IHR54	1008824.205	431659.4975	3807
7	1	12	IHR55	1009024.459	432238.6632	3831

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHR56	1009072.111	432237.3452	3812
7	1	12	IHR57	1009049.779	432292.5295	3831
7	1	12	IHR58	1009040.527	432311.4197	3835
7	1	12	IHR59	1008973.543	432248.4486	3831
7	1	12	IHR6	1008837.512	432451.6057	3835
7	1	12	IHR60	1008948.654	432273.4918	3831
7	1	12	IHR61	1009104.727	432184.9663	3812
7	1	12	IHR62	1009096.112	432289.4664	3812
7	1	12	IHR63	1009128.676	432257.6697	3812
7	1	12	IHR64	1009140.823	432230.6555	3812
7	1	12	IHR65	1009157.635	432194.445	3812
7	1	12	IHR66	1009169.618	432165.7641	3826
7	1	12	IHR67	1009179.67	432139.5072	3826
7	1	12	IHR68	1009052.563	432216.4769	3831
7	1	12	IHR69	1009059.398	432265.7115	3812
7	1	12	IHR7	1008721.737	432571.4351	3841
7	1	12	IHR71	1009248.047	431663.6174	3784
7	1	12	IHR72	1009272.405	432083.4605	3784
7	1	12	IHR73	1008920.612	432474.125	3835
7	1	12	IHR74	1008962.33	432434.3264	3830
7	1	12	IHR75	1008949.301	431715.9419	3789
7	1	12	IHR76	1008955.349	432374.7609	3835
7	1	12	IHR77	1008850.148	432407.307	3834
7	1	12	IHR78	1008806.345	432469.3495	3833
7	1	12	IHR79	1008747.805	432533.8805	3833
7	1	12	IHR8	1008448.589	432780.3275	3838
7	1	12	IHR80	1008754.728	432867.7768	3836
7	1	12	IHR81	1008939.291	431814.728	3813
7	1	12	IHR82	1008892.095	432367.718	3834
7	1	12	IHR83	1008946.569	432132.0332	3820
7	1	12	IHR84	1008991.984	432138.9689	3820
7	1	12	IHR85	1008943.377	432186.3493	3831
7	1	12	IHR86	1008814.33	432426.7559	3834
7	1	12	IHR88	1008973.421	432406.8546	3835
7	1	12	IHR89	1008677.041	432551.8658	3842
7	1	12	IHR9	1008486.823	432796.6396	3838
7	1	12	IHR90	1008637.369	432550.1243	3842
7	1	12	IHR91	1008850.034	432364.916	3834
7	1	12	IHR92	1008496.981	431902.1985	3830
7	1	12	IHR93	1008465.028	431879.8304	3830
7	1	12	IHR94	1008386.342	431923.2202	3830
7	1	12	IHR95	1008373.868	431983.573	3822
7	1	12	IHR96	1008587.729	432045.3712	3814

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHR97	1008557.427	432137.5969	3813
7	1	12	IHR98	1008580.739	432018.8342	3814
7	1	12	IHR99	1008648.822	431978.5945	3814
7	1	12	IHS10	1008284.604	433029.7635	3842
7	1	12	IHS13	1006975.109	429079.2743	3772
7	1	12	IHS16	1008157.58	432427.8681	3838
7	1	12	IHS17	1008037.665	432433.3922	3842
7	1	12	IHS18	1007168.98	431663.0684	3781
7	1	12	IHS19	1007192.843	431756.3084	3788
7	1	12	IHS2	1008506.613	432819.2809	3834
7	1	12	IHS20	1007175.274	431866.957	3794
7	1	12	IHS21	1007128.334	431322.3264	3772
7	1	12	IHS22	1007184.73	431403.8976	3774
7	1	12	IHS23	1007237.749	431354.681	3774
7	1	12	IHS24	1007299.338	431318.6136	3774
7	1	12	IHS25	1007116.961	431430.3785	3775
7	1	12	IHS26	1007092.226	430905.4764	3764
7	1	12	IHS27	1007166.716	430975.6502	3764
7	1	12	IHS28	1007234.114	431012.3008	3767
7	1	12	IHS29	1007252.961	431167.4684	3770
7	1	12	IHS3	1008320.205	432947.7855	3836
7	1	12	IHS30	1007396.101	431345.4906	3779
7	1	12	IHS31	1007396.091	431443.3559	3782
7	1	12	IHS32	1007458.626	431528.7917	3786
7	1	12	IHS33	1007523.328	431373.731	3783
7	1	12	IHS34	1010911.568	431200.8497	3829
7	1	12	IHS35	1007104.817	430205.1968	3755
7	1	12	IHS36	1007184.686	431948.4587	3793
7	1	12	IHS37	1007278.782	431981.2142	3793
7	1	12	IHS38	1007361.359	432032.9829	3796
7	1	12	IHS39	1007151.358	430143.6378	3754
7	1	12	IHS4	1008358.363	432964.3509	3836
7	1	12	IHS40	1007018.81	429246.2755	3773
7	1	12	IHS41	1007222.372	429902.7798	3753
7	1	12	IHS42	1007097.431	430141.1906	3754
7	1	12	IHS43	1010541.773	431342.3883	3800
7	1	12	IHS44	1010325.859	431207.3916	3795
7	1	12	IHS45	1010486.169	431674.5764	3806
7	1	12	IHS46	1010504.629	431783.1417	3821
7	1	12	IHS47	1010479.858	431906.3422	3830
7	1	12	IHS48	1010406.587	431809.6277	3825
7	1	12	IHS49	1010857.197	431955.7714	3848
7	1	12	IHS5	1008260.561	432938.204	3842

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHS50	1010815.621	432029.9374	3841
7	1	12	IHS51	1010726.044	432096.5373	3834
7	1	12	IHS52	1010598.024	431679.9343	3831
7	1	12	IHS53	1010685.6	431822.1251	3835
7	1	12	IHS54	1010766.343	431995.2435	3841
7	1	12	IHS55	1010797.315	431863.9886	3840
7	1	12	IHS56	1010612.784	432014.358	3839
7	1	12	IHS57	1010379.503	431721.6473	3819
7	1	12	IHS58	1010317.976	431817.3726	3825
7	1	12	IHS59	1010148.751	431908.0566	3810
7	1	12	IHS6	1008387.033	432961.0955	3836
7	1	12	IHS60	1010565.036	432303.5355	3821
7	1	12	IHS61	1010291.635	431915.9749	3822
7	1	12	IHS62	1010949.854	432076.6448	3848
7	1	12	IHS63	1010145	431780.7087	3808
7	1	12	IHS64	1009809.341	431967.9846	3802
7	1	12	IHS65	1010007.305	432012.8798	3823
7	1	12	IHS66	1009664.759	432166.4364	3794
7	1	12	IHS67	1009786.995	432187.9666	3789
7	1	12	IHS68	1009748.533	432230.511	3789
7	1	12	IHS69	1009850.182	432202.9877	3794
7	1	12	IHS7	1008085.241	432947.643	3843
7	1	12	IHS70	1009923.878	432225.9658	3794
7	1	12	IHS71	1009814.322	432267.8209	3794
7	1	12	IHS72	1009846.6	432075.6642	3811
7	1	12	IHS73	1009917.993	432326.524	3793
7	1	12	IHS74	1009858.504	432432.7384	3805
7	1	12	IHS75	1009938.016	431953.5832	3823
7	1	12	IHS76	1010230.281	431776.9612	3817
7	1	12	IHS77	1009938.338	432112.1902	3815
7	1	12	IHS78	1009960.282	432518.854	3809
7	1	12	IHS79	1010052.489	432461.6714	3809
7	1	12	IHS8	1007895.475	432991.4611	3832
7	1	12	IHS80-A	1010061.117	432340.9381	3813
7	1	12	IHS81	1010444.108	431736.5484	3821
7	1	12	IHS82	1010338.499	431457.7511	3792
7	1	12	IHS83	1010302.005	431341.7052	3794
7	1	12	IHS84	1010573.62	431411.019	3803
7	1	12	IHS85	1009716.361	431429.2513	3799
7	1	12	IHS86	1010120.712	431425.5118	3787
7	1	12	IHS87	1010217.146	432403.575	3814
7	1	12	IHS88	1010162.46	432644.7888	3831
7	1	12	IHS89	1010019.038	431862.261	3815

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHS9	1008343.345	433005.1804	3836
7	1	12	IHS90	1010051.998	432592.303	3821
7	1	12	IHS91	1010125.643	432524.3146	3819
7	1	12	IHS92	1009906.872	432726.8002	3835
7	1	12	IHS93	1009783.441	432753.0936	3823
7	1	12	IHS94	1009845.448	432866.4808	3831
7	1	12	IHS95	1010000.531	432814.9333	3836
7	1	12	IHT1	1007572.607	431683.3161	3795
7	1	12	IHT10	1008235.704	432377.6671	3847
7	1	12	IHT100	1008717.009	431779.7149	3811
7	1	12	IHT101	1008618.397	431958.4791	3814
7	1	12	IHT102	1010107.635	432427.8351	3803
7	1	12	IHT103	1008668.128	432029.0916	3814
7	1	12	IHT104	1008745.7	432066.8631	3810
7	1	12	IHT105	1008863.489	432074.53	3822
7	1	12	IHT106	1008805.445	432195.0576	3819
7	1	12	IHT107	1008966.943	432290.0635	3831
7	1	12	IHT108	1008837.287	432345.7743	3834
7	1	12	IHT109	1008742.524	432405.7344	3830
7	1	12	IHT11	1009121.152	431604.5403	3783
7	1	12	IHT110	1008606.892	432408.7198	3832
7	1	12	IHT111	1010567.738	431405.8773	3803
7	1	12	IHT112	1008692.43	432311.4757	3830
7	1	12	IHT113	1008885.313	431691.1168	3803
7	1	12	IHT114	1009947.367	431770.3923	3786
7	1	12	IHT115	1008628.343	432486.3253	3842
7	1	12	IHT116	1010495.659	431612.9056	3806
7	1	12	IHT118	1010359.084	431426.0637	3792
7	1	12	IHT119	1010073.332	431282.805	3795
7	1	12	IHT12	1008295.967	432438.2046	3852
7	1	12	IHT121	1008322.107	432556.0924	3854
7	1	12	IHT122	1008237.667	432509.0281	3852
7	1	12	IHT123	1008065.478	432456.1467	3844
7	1	12	IHT124	1007969.368	432497.3484	3842
7	1	12	IHT126	1007944.951	432388.9302	3831
7	1	12	IHT129	1009885.879	432199.2759	3794
7	1	12	IHT13	1009058.364	431819.2934	3814
7	1	12	IHT131	1009892.366	431943.1227	3812
7	1	12	IHT132	1010037.871	432898.9175	3836
7	1	12	IHT133	1009972.219	432701.512	3837
7	1	12	IHT134	1010112.928	432368.7738	3803
7	1	12	IHT135	1010001.844	432320.6606	3813
7	1	12	IHT136	1010165.588	432477.0501	3819

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHT137	1009919.49	432440.9207	3805
7	1	12	IHT138	1009951.538	431858.4396	3815
7	1	12	IHT139	1009895.274	432136.7176	3811
7	1	12	IHT14	1008480.342	432393.6195	3832
7	1	12	IHT14	1007855.896	431829.8334	3805
7	1	12	IHT141	1009841.36	432349.9231	3793
7	1	12	IHT142	1009712.921	432436.189	3801
7	1	12	IHT143	1009734.339	432397.7121	3801
7	1	12	IHT144	1009653.262	432471.6622	3808
7	1	12	IHT145	1010522.643	431445.6249	3796
7	1	12	IHT146	1007019.358	429139.5997	3772
7	1	12	IHT147	1007294.415	429957.3361	3752
7	1	12	IHT148	1007055.688	429850.5742	3743
7	1	12	IHT149	1007026.251	429341.9002	3759
7	1	12	IHT15	1008916.097	431896.3447	3793
7	1	12	IHT150	1007048.079	429195.721	3773
7	1	12	IHT151	1007042.678	429438.4125	3751
7	1	12	IHT152	1010401.135	431405.9716	3797
7	1	12	IHT-153	1010248.509	431224.9867	3792
7	1	12	IHT154	1009904.607	432168.1328	3811
7	1	12	IHT155	1007228.239	431970.5764	3793
7	1	12	IHT156	1007342.856	431925.8423	3796
7	1	12	IHT157	1007331.397	431870.7897	3796
7	1	12	IHT158	1007276.727	431858.6769	3794
7	1	12	IHT159	1007811.537	431963.7411	3810
7	1	12	IHT16	1008448.614	432342.0142	3832
7	1	12	IHT160	1007316.002	431816.4124	3796
7	1	12	IHT161	1007389.799	431862.8909	3796
7	1	12	IHT162	1007376.39	431808.9336	3796
7	1	12	IHT163	1007323.037	431759.3293	3792
7	1	12	IHT164	1007381.585	431747.64	3792
7	1	12	IHT165	1007356.355	431694.0985	3792
7	1	12	IHT166	1008446.119	432615.9117	3843
7	1	12	IHT167	1007410.181	431688.9495	3792
7	1	12	IHT168	1007814.104	432435.4312	3839
7	1	12	IHT169	1007824.921	432329.5284	3831
7	1	12	IHT17	1009224.236	431486.0219	3796
7	1	12	IHT17	1008768.099	431935.3921	3806
7	1	12	IHT170	1007441.486	431752.2224	3793
7	1	12	IHT171	1008369.127	432625.2665	3854
7	1	12	IHT172	1007455.141	431864.7979	3798
7	1	12	IHT173	1008516.9	432577.158	3843
7	1	12	IHT174	1007785.76	432271.6245	3823

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Appendix 3.3-A
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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHT175	1007437.693	431810.2066	3798
7	1	12	IHT176	1007774.196	432387.5036	3831
7	1	12	IHT177	1007727.147	432413.5058	3831
7	1	12	IHT179	1007691.944	432053.0269	3820
7	1	12	IHT18	1008334.75	432351.1874	3841
7	1	12	IHT180	1007636.131	432096.2419	3804
7	1	12	IHT181	1007514.029	432092.5653	3799
7	1	12	IHT182	1007592.794	432176.4061	3804
7	1	12	IHT183	1007453.651	432097.1037	3799
7	1	12	IHT184	1007503.774	432151.0142	3799
7	1	12	IHT185	1007652.533	432171.3931	3804
7	1	12	IHT186	1007707.923	432136.2021	3820
7	1	12	IHT187	1007616.491	432236.1555	3808
7	1	12	IHT188	1007414.207	432065.5149	3795
7	1	12	IHT189	1007522.669	431937.5523	3798
7	1	12	IHT19	1008857.439	431789.9531	3803
7	1	12	IHT190	1007559.525	432064.3739	3804
7	1	12	IHT191	1007658.475	432227.5447	3808
7	1	12	IHT192	1007452.488	432173.9821	3799
7	1	12	IHT193	1007735.577	432304.4468	3831
7	1	12	IHT194	1007476.912	432223.6622	3801
7	1	12	IHT195	1007403.452	429980.3542	3754
7	1	12	IHT197	1007540.154	432484.1722	3817
7	1	12	IHT198	1007825.714	432589.3905	3840
7	1	12	IHT199	1007116.345	431280.2594	3771
7	1	12	IHT2	1007636.91	431760.4702	3795
7	1	12	IHT20	1008381.951	432253.7742	3844
7	1	12	IHT20	1008412.704	432464.7739	3840
7	1	12	IHT200	1007048.968	430128.2637	3753
7	1	12	IHT201	1007196.998	432427.2298	3796
7	1	12	IHT202	1007868.041	432689.5776	3834
7	1	12	IHT203	1007159.013	432524.8957	3792
7	1	12	IHT204	1007815.826	432789.9773	3834
7	1	12	IHT205	1007483.869	432457.3152	3817
7	1	12	IHT206	1007455.557	432392.4354	3811
7	1	12	IHT207	1007216.421	432719.0691	3803
7	1	12	IHT208	1007540.145	432395.2528	3811
7	1	12	IHT209	1007797.01	432889.9953	3827
7	1	12	IHT21	1008938.678	431692.1792	3789
7	1	12	IHT210	1007212.606	432604.7194	3803
7	1	12	IHT211	1007483.703	432341.2226	3811
7	1	12	IHT212	1007442.31	432306.3974	3811
7	1	12	IHT213	1007294.653	432655.3522	3803

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Appendix 3.3-A
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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHT214	1007898.077	432938.7953	3832
7	1	12	IHT215	1007262.499	432324.1657	3796
7	1	12	IHT216	1007327.829	432718.0021	3811
7	1	12	IHT217	1007727.537	432820.119	3827
7	1	12	IHT218	1007253.687	432766.4313	3803
7	1	12	IHT22	1008827.615	431689.0255	3803
7	1	12	IHT23	1008432.299	432162.5515	3829
7	1	12	IHT24	1008721.232	431838.5945	3808
7	1	12	IHT25	1008477.143	432033.7536	3835
7	1	12	IHT25	1007961.623	432613.0573	3850
7	1	12	IHT26	1009333.693	431625.7635	3772
7	1	12	IHT27	1008291.844	432104.3983	3830
7	1	12	IHT27	1007927.259	432293.2042	3828
7	1	12	IHT28	1010250.127	431264.9555	3792
7	1	12	IHT28	1007995.816	431986.139	3812
7	1	12	IHT29	1008050.503	432106.0621	3811
7	1	12	IHT30	1007544.187	431575.4509	3790
7	1	12	IHT30	1009961.343	432861.4791	3836
7	1	12	IHT31	1007407.553	431381.7461	3779
7	1	12	IHT32	1008139.424	432201.2207	3830
7	1	12	IHT32	1007939.469	432022.7919	3812
7	1	12	IHT33	1007631.6	431682.3525	3795
7	1	12	IHT34	1007493.434	431496.779	3786
7	1	12	IHT35	1007238.583	431119.3054	3770
7	1	12	IHT36	1007693.23	431640.6536	3793
7	1	12	IHT37	1009791.911	431403.3626	3808
7	1	12	IHT37	1009700.858	431344.6494	3808
7	1	12	IHT38	1007551.553	431502.0279	3789
7	1	12	IHT40	1009910.289	431290.8872	3799
7	1	12	IHT40	1009809.161	432410.6204	3801
7	1	12	IHT41	1010000.629	431317.211	3797
7	1	12	IHT42	1010009.827	431431.7965	3782
7	1	12	IHT43	1010185.781	431304.5436	3793
7	1	12	IHT44	1010281.331	431213.6658	3792
7	1	12	IHT45	1010416.837	431222.6645	3795
7	1	12	IHT46	1010524.11	431091.2938	3791
7	1	12	IHT47	1010517.851	431283.3986	3798
7	1	12	IHT48	1010438.503	431331.1783	3797
7	1	12	IHT49	1010507.584	431454.1472	3796
7	1	12	IHT5	1007986.657	432091.7245	3811
7	1	12	IHT50	1010370.958	431297.9898	3795
7	1	12	IHT51	1010556.219	431609.2513	3806
7	1	12	IHT52	1010660.347	431666.7474	3825

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHT53	1010761.261	431630.9342	3828
7	1	12	IHT54	1010568.55	431720.1602	3831
7	1	12	IHT55	1010450.525	431489.1243	3796
7	1	12	IHT56	1010680.717	431773.2494	3831
7	1	12	IHT57	1010337.032	431249.304	3795
7	1	12	IHT58	1010747.293	431847.2777	3840
7	1	12	IHT59	1010205.443	431260.0701	3792
7	1	12	IHT6	1008068.865	432167.4035	3823
7	1	12	IHT60	1010856.618	431893.6635	3842
7	1	12	IHT61	1010627.653	431849.6317	3835
7	1	12	IHT62	1010580.669	431927.2693	3835
7	1	12	IHT63	1010698.425	431935.5005	3841
7	1	12	IHT64	1010462.468	431578.6243	3806
7	1	12	IHT65	1010427.696	431422.0054	3797
7	1	12	IHT66	1010236.274	431192.4378	3792
7	1	12	IHT67	1010375.795	431365.1955	3797
7	1	12	IHT68	1010120.696	431278.1207	3795
7	1	12	IHT69	1009901.444	431454.6192	3788
7	1	12	IHT7	1009472.421	431480.672	3761
7	1	12	IHT70	1008910.389	431555.7842	3807
7	1	12	IHT70	1009668.731	431561.3209	3769
7	1	12	IHT71	1009568.084	431376.9506	3802
7	1	12	IHT72	1010290.533	431290.3594	3792
7	1	12	IHT73	1010513.422	431391.8266	3800
7	1	12	IHT74	1010419.555	431625.2583	3802
7	1	12	IHT75	1007369.955	431327.2507	3779
7	1	12	IHT76	1007430.16	431456.0833	3786
7	1	12	IHT77	1007589.863	431626.3355	3792
7	1	12	IHT78	1007306.105	431260.1963	3772
7	1	12	IHT78	1007605.186	432003.867	3804
7	1	12	IHT79	1007679.749	431755.6562	3801
7	1	12	IHT8	1008117.982	432258.4646	3830
7	1	12	IHT80	1007212.003	431162.2916	3770
7	1	12	IHT81	1007300.513	431135.6753	3773
7	1	12	IHT82	1008102.58	432047.2191	3822
7	1	12	IHT83	1007736.652	431853.205	3804
7	1	12	IHT84	1007928.427	431885.2613	3807
7	1	12	IHT85	1007505.721	431581.6049	3790
7	1	12	IHT86	1007601.712	431578.3936	3792
7	1	12	IHT87	1009871.265	431869.1625	3807
7	1	12	IHT88	1009370.568	431478.5845	3770
7	1	12	IHT89	1007683.357	431638.8636	3793
7	1	12	IHT9	1009239.559	431536.6801	3796

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	12	IHT90	1009388.425	431510.8746	3770
7	1	12	IHT91	1007440.999	431587.2886	3790
7	1	12	IHT92	1009124.342	431669.6233	3783
7	1	12	IHT93	1009244.324	431650.9289	3784
7	1	12	IHT94	1009307.872	431685.5146	3780
7	1	12	IHT95	1010008.61	432554.7279	3809
7	1	12	IHT96	1008743.449	431882.4683	3808
7	1	12	IHT196	1007796.75	432545.9304	3834
7	1	12	IHT97	1009946.187	432774.3141	3837
7	1	12	IHT98	1008787.303	431805.9739	3808
7	1	12	IHT99	1009986.649	432924.7289	3836
7	1	12	IHW1	1007004.964	429459.1423	3751
7	1	12	IHW10	1007348.274	431376.9508	3779
7	1	12	IHW11	1007518.212	431632.4403	3790
7	1	12	IHW12	1007625.883	431809.364	3801
7	1	12	IHW13	1007704.707	431810.8351	3804
7	1	12	IHW14	1007756.381	431898.4149	3804
7	1	12	IHW15	1007847.078	431906.521	3805
7	1	12	IHW16	1007955.014	431917.7142	3807
7	1	12	IHW17	1008115.404	432258.5689	3830
7	1	12	IHW18	1008152.449	432116.7001	3823
7	1	12	IHW19	1007803.505	431860.6651	3805
7	1	12	IHW2	1006992.668	429396.7422	3759
7	1	12	IHW3	1007000.928	429301.8897	3759
7	1	12	IHW4	1007138.353	429880.2695	3743
7	1	12	IHW5	1007117.482	431007.2769	3764
7	1	12	IHW6	1007181.702	431078.3979	3770
7	1	12	IHW7	1007288.085	431216.5593	3773
7	1	12	IHW8	1007355.081	431277.2936	3772
7	1	12	IHW9	1007467.655	431425.0723	3783
7	1	12	Q+186.4	1008646.205	432836.4964	3834
7	1	14	PM191	1003351.63	426245.5326	3630
7	1	1	C	1008854.196	437700.1224	3924
7	1	1	D	1008841.231	437403.5648	3922
7	1	1	DK158	1009743.216	435097.0054	3882
7	1	1	DK163	1010498.156	435040.7675	3908
7	1	1	DK164	1010523.889	434947.0064	3908
7	1	1	DK165	1010552.425	434851.5525	3901
7	1	1	DK166	1010262.877	435030.6135	3904
7	1	1	DK167	1010651.866	434982.2069	3913
7	1	1	DK168	1010683.031	435042.4674	3913
7	1	1	DK169	1010216.182	434898.5288	3904
7	1	1	DK173	1009757.177	435199.1221	3879

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	1	DK175	1010328.062	434868.3084	3901
7	1	1	DK177	1010939.916	435107.7169	3922
7	1	1	DK178	1010937.252	435122.8532	3922
7	1	1	DK179	1010931.844	435133.2839	3922
7	1	1	DK180	1010919.559	435127.1815	3922
7	1	1	DK181	1010882.633	435138.2305	3922
7	1	1	DK182	1010878.656	435117.5455	3922
7	1	1	DK183	1010416.8	434938.1716	3901
7	1	1	DK185	1010845.422	435138.9385	3922
7	1	1	DK186	1010844.26	435052.0518	3911
7	1	1	DK188	1009931.304	434703.1433	3882
7	1	1	DK190	1010020.153	434927.7281	3892
7	1	1	DK193	1009725.554	435235.2751	3879
7	1	1	DK195	1009787.509	435292.6165	3879
7	1	1	DK196	1009789.883	435265.7006	3879
7	1	1	DK33	1007463.968	434546.8125	3810
7	1	1	DK34	1007301.871	434383.3348	3801
7	1	1	DM39	1007998.594	433243.3204	3835
7	1	1	DM40	1008191.233	433210.9586	3837
7	1	1	DP1	1007832.63	438286.9826	3861
7	1	1	DP2	1007386.208	438041.2719	3836
7	1	1	DP28	1009081.632	438208.3631	3888
7	1	1	DP29	1008631.132	438294.7418	3926
7	1	1	DP3	1007787.281	437978.3019	3844
7	1	1	DP30	1008283.584	438130.51	3899
7	1	1	DR285	1009116.519	433169.2531	3837
7	1	1	DR291	1009068.989	433115.1595	3837
7	1	1	DR292	1009014.469	433140.0723	3814
7	1	1	DR293	1009033.802	433123.3233	3814
7	1	1	DR294	1008992.148	433158.5842	3814
7	1	1	DR295	1008975.063	433175.9146	3814
7	1	1	DR302	1008896.35	433093.3384	3820
7	1	1	DR303	1008885.513	433182.9625	3813
7	1	1	DR307	1008924.301	433192.9187	3813
7	1	1	DR308	1008947.021	433152.669	3814
7	1	1	DR309	1008973.915	433103.227	3814
7	1	1	DR310	1009011.289	433048.779	3800
7	1	1	DR311	1008882.496	433197.425	3813
7	1	1	DR312	1008765.26	433102.411	3828
7	1	1	DR313	1008730.001	433081.8031	3828
7	1	1	DR314	1008806.247	433196.96	3835
7	1	1	DR315	1008861.256	433180.0969	3820
7	1	1	DR316	1008890.701	433140.4196	3820

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	1	DR317	1008833.572	433084.8377	3820
7	1	1	DR318	1008802.899	433086.063	3828
7	1	1	DR44	1009834.899	434956.1474	3896
7	1	1	DR45	1009788.822	434999.3752	3886
7	1	1	DR46	1009776.437	435038.6125	3886
7	1	1	DR47	1009857.077	435006.2938	3896
7	1	1	DR476	1009770.838	436751.6631	3922
7	1	1	DR477	1009757.777	436823.5807	3922
7	1	1	DR478	1009760.487	436896.3772	3923
7	1	1	DR48	1009894.224	435046.8268	3896
7	1	1	DR49	1009945.494	435038.8256	3902
7	1	1	DR50	1009885.651	434923.9746	3890
7	1	1	DR506	1009799.292	436617.5075	3926
7	1	1	DR507	1009700.135	436338.3553	3912
7	1	1	DR509	1009760.387	437512.3142	3911
7	1	1	DR51	1009942.676	434945.3595	3902
7	1	1	DR510	1009818.571	437452.5204	3911
7	1	1	DR514	1009773.795	437269.9868	3924
7	1	1	DR516	1009922.334	437453.608	3911
7	1	1	DR517	1010020.535	437597.4801	3892
7	1	1	DR52	1010098.85	434912.0647	3899
7	1	1	DR53	1009699.472	434934.8851	3881
7	1	1	DR54	1009663.215	434969.0518	3878
7	1	1	DR58	1009783.833	434925.6075	3881
7	1	1	DR59	1010208.485	434841.6663	3904
7	1	1	DR60	1010125.049	434676.0695	3901
7	1	1	DR61	1010329.285	434758.8842	3897
7	1	1	DR62	1010309.799	434727.6608	3904
7	1	1	DR63	1009662.665	435267.2666	3875
7	1	1	DR631	1008912.355	433115.8826	3820
7	1	1	DR633	1008916.748	433061.0175	3820
7	1	1	DR65	1009958.025	435245.4488	3886
7	1	1	DR66	1010015.79	435243.2368	3886
7	1	1	DR67	1009697.764	435291.1807	3879
7	1	1	DR68	1010010.058	435297.0771	3886
7	1	1	DR688	1008173.374	433225.9433	3843
7	1	1	DR69	1009721.235	435316.0031	3879
7	1	1	DR70	1009756.241	435225.1666	3879
7	1	1	DR714	1008151.418	433126.1362	3842
7	1	1	DR715	1008208.718	433182.5087	3838
7	1	1	DR717	1008320.868	433094.8689	3832
7	1	1	DR72	1009832.47	435234.859	3881
7	1	1	DR73	1009853.242	435306.4086	3881

POWERTECH (USA), INC.

Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	1	DR735	1008467.117	433211.2282	3833
7	1	1	DR74	1009849.852	435375.8237	3886
7	1	1	DR75	1009906.357	435436.6854	3886
7	1	1	DR76	1009989.354	435457.864	3902
7	1	1	DR77	1010002.991	435437.7017	3889
7	1	1	DR78	1009982.389	435402.395	3889
7	1	1	DR79	1010085.72	435348.9848	3900
7	1	1	DR80	1010003.618	435323.3755	3889
7	1	1	DR81	1010177.441	435354.4692	3900
7	1	1	DR82	1010031.74	435334.1542	3889
7	1	1	DR824	1009381.031	437688.0183	3914
7	1	1	DR825	1009374.941	437711.5503	3904
7	1	1	DR826	1009369.407	437741.7373	3904
7	1	1	DR827	1009355.356	437778.3835	3904
7	1	1	DR828	1009310.804	437778.6378	3904
7	1	1	DR829	1009260.094	437721.3106	3905
7	1	1	DR83	1009984.262	435292.3502	3886
7	1	1	DR830	1009176.379	437750.0474	3912
7	1	1	DR84	1010037.732	435286.3711	3886
7	1	1	DR848	1009780.602	437333.9695	3921
7	1	1	DR851	1009743.921	437404.1373	3921
7	1	1	DR852	1009734.142	437342.0889	3921
7	1	1	DR856	1009762.207	437489.9871	3911
7	1	1	DR857	1009792.132	437496.6894	3911
7	1	1	DR858	1009774.531	437541.1421	3911
7	1	1	DR859	1009786.878	437573.5457	3911
7	1	1	DR860	1009802.877	437643.2711	3901
7	1	1	DR861	1009754.961	437702.7276	3888
7	1	1	DR862	1009743.759	437732.8624	3888
7	1	1	DR863	1009727.258	437753.0311	3888
7	1	1	DR864	1009710.801	437778.3586	3888
7	1	1	DR872	1009729.283	437221.8075	3924
7	1	1	DR873	1009741.462	437169.8801	3926
7	1	1	DR874	1009759.045	437142.521	3926
7	1	1	DR875	1009762.178	437200.3656	3926
7	1	1	DR877	1009781.662	437169.9113	3926
7	1	1	DR878	1009798.396	437113.9214	3926
7	1	1	DR879	1009837.249	437077.6948	3920
7	1	1	DR881	1009784.634	437233.2829	3924
7	1	1	DR882	1009829.518	437141.0771	3920
7	1	1	DR883	1009921.136	437080.9315	3920
7	1	1	DR884	1009955.442	437079.4184	3919
7	1	1	DR885	1010007.959	437064.5328	3921

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	1	DR886	1010061.948	437050.3694	3921
7	1	1	DR887	1010122.578	437034.0608	3920
7	1	1	DR889	1009725.274	437132.4869	3926
7	1	1	DR923	1007349.044	437797.7691	3835
7	1	1	DRA1	1009159.897	434878.258	3861
7	1	1	DRA10	1007525.844	438210.5688	3831
7	1	1	DRA11	1008357.912	437034.7716	3885
7	1	1	DRA12	1008438.084	436973.666	3899
7	1	1	DRA13	1010134.404	433679.7611	3874
7	1	1	DRA14	1010013.837	434007.5715	3851
7	1	1	DRA15	1009904.919	434095.6905	3855
7	1	1	DRA16	1009865.103	434374.1162	3872
7	1	1	DRA17	1010264.108	433561.8546	3875
7	1	1	DRA18	1010315.003	433636.0638	3879
7	1	1	DRA19	1010289.434	433705.5631	3876
7	1	1	DRA2	1009267.074	434859.8158	3846
7	1	1	DRA20	1010299.591	433547.7988	3873
7	1	1	DRA21	1008670.656	435352.7065	3895
7	1	1	DRA22	1010124.917	433395.7455	3865
7	1	1	DRA23	1010079.719	433311.7664	3865
7	1	1	DRA24	1010159.09	433346.4469	3865
7	1	1	DRA25	1010109.684	433260.4643	3849
7	1	1	DRA26	1009918.507	433330.8621	3843
7	1	1	DRA27	1010039.3	433761.1752	3856
7	1	1	DRA28	1010342.388	433580.3153	3879
7	1	1	DRA29	1009431.044	434679.1424	3841
7	1	1	DRA3	1010200.896	433483.5148	3873
7	1	1	DRA30	1009602.796	434531.8078	3860
7	1	1	DRA31	1009641.47	434575.0314	3858
7	1	1	DRA32	1009395.639	434750.9162	3845
7	1	1	DRA45	1007464.775	437827.6633	3844
7	1	1	DRA46	1009146.693	434833.9257	3861
7	1	1	DRA47	1009121.007	434898.3785	3861
7	1	1	DRA6	1010020.133	433195.1066	3849
7	1	1	DRA7	1008174.059	437316.2882	3877
7	1	1	DRA8	1008073.634	437494.0153	3881
7	1	1	DRA9	1007652.303	438123.2572	3819
7	1	1	DRJ106	1007474.378	437640.2711	3842
7	1	1	DRJ107	1007488.853	437571.4396	3847
7	1	1	DRJ108	1007534.751	437177.6225	3810
7	1	1	DRJ109	1008934.525	436068.3392	3884
7	1	1	DRJ11	1007439.127	434952.7419	3792
7	1	1	DRJ110	1007495.176	437753.0424	3844

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	1	DRJ111	1007457.048	437601.6417	3842
7	1	1	DRJ112	1007478.443	437482.7533	3847
7	1	1	DRJ113	1007692.846	437235.3748	3862
7	1	1	DRJ114	1007491.433	437029.3718	3841
7	1	1	DRJ115	1007447.167	437941.7069	3842
7	1	1	DRJ117	1007492.568	437047.2162	3841
7	1	1	DRJ12	1007484.178	434952.5769	3792
7	1	1	DRJ15	1007850.307	433226.8789	3831
7	1	1	DRJ182	1009573.068	433073.6219	3822
7	1	1	DRJ183	1009884.799	433013.3595	3833
7	1	1	DRJ184	1009880.377	433065.5672	3841
7	1	1	DRJ185	1009450.966	433036.964	3799
7	1	1	DRJ186	1009463.023	433119.0781	3800
7	1	1	DRJ187	1010018.877	433585.9448	3861
7	1	1	DRJ188	1009896.542	433478.2355	3850
7	1	1	DRJ189	1010149.291	433582.5606	3874
7	1	1	DRJ190	1010096.142	433618.7713	3874
7	1	1	DRJ191	1009969.923	433870.0729	3851
7	1	1	DRJ192	1009910.629	433666.2956	3856
7	1	1	DRJ193	1009779.359	433551.2224	3838
7	1	1	DRJ194	1009685.762	433650.4659	3828
7	1	1	DRJ195	1009675.815	433524.9482	3821
7	1	1	DRJ196	1009983.753	433721.934	3856
7	1	1	DRJ197	1009907.898	433166.2752	3841
7	1	1	DRJ198	1009729.148	433474.0299	3838
7	1	1	DRJ2	1008047.226	433242.0878	3835
7	1	1	DRJ20	1007769.336	433250.9383	3820
7	1	1	DRJ21	1007709.13	433295.7542	3820
7	1	1	DRJ22	1007652.527	433333.5277	3812
7	1	1	DRJ23	1007619.208	433255.7769	3812
7	1	1	DRJ24	1007675.59	433377.0076	3812
7	1	1	DRJ25	1007726.494	433445.1644	3824
7	1	1	DRJ26	1007770.239	433522.3839	3824
7	1	1	DRJ27	1007837.824	433580.7486	3832
7	1	1	DRJ28	1007909.549	433607.8254	3832
7	1	1	DRJ29	1007965.476	433644.3615	3843
7	1	1	DRJ3	1008051.195	433456.8454	3838
7	1	1	DRJ30	1007660.346	433199.5189	3812
7	1	1	DRJ31	1007954.449	433691.8166	3841
7	1	1	DRJ32	1007747.911	433176.913	3821
7	1	1	DRJ33	1007931.006	433751.5834	3841
7	1	1	DRJ34	1007869.645	433768.2949	3825
7	1	1	DRJ35	1007885.961	433847.1639	3828

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	1	DRJ36	1007851.956	433885.5698	3828
7	1	1	DRJ37	1007775.196	433140.6071	3821
7	1	1	DRJ4	1007999.433	433243.2865	3835
7	1	1	DRJ49	1009435.554	434791.4311	3883
7	1	1	DRJ50	1009303.527	434686.5065	3839
7	1	1	DRJ51	1009352.049	434829.1358	3856
7	1	1	DRJ52	1009908.105	433271.0596	3841
7	1	1	DRJ53	1009905.768	434142.5087	3855
7	1	1	DRJ54	1009891.832	434227.035	3867
7	1	1	DRJ59	1007920.871	437857.2982	3864
7	1	1	DRJ6	1008393.679	433117.4761	3832
7	1	1	DRM15	1008911.687	435270.5177	3879
7	1	1	DRM16	1008989.001	435460.6174	3865
7	1	1	DRM17	1008841.992	435651.4421	3882
7	1	1	DRM18	1008951.707	435347.2155	3872
7	1	1	DRM19	1008926.65	435470.5057	3880
7	1	1	DRM20	1008989.74	435199.067	3874
7	1	1	DRM21	1008969.609	435543.6129	3865
7	1	1	DRM22	1008953.302	435407.2023	3872
7	1	1	DRM23	1008923.509	435700.4387	3879
7	1	1	DRM24	1008963.136	435274.0972	3874
7	1	1	DRM25	1008952.542	435622.8237	3867
7	1	1	DRM26	1008900.313	435774.9714	3879
7	1	1	DRM27	1008675.301	436724.8795	3905
7	1	1	DRM28	1008939.621	435666.7429	3867
7	1	1	DRM29	1008936.716	435738.2496	3876
7	1	1	DRM30	1008941.112	435804.9727	3876
7	1	1	DRM31	1008936.041	435220.2715	3874
7	1	1	DRM32	1008636.609	436771.5929	3905
7	1	1	DRM33	1008763.035	436550.5902	3904
7	1	1	DRM34	1008495.439	436787.0785	3891
7	1	1	DRM35	1008823.555	436435.8737	3902
7	1	1	DRM36	1009227.787	434820.902	3846
7	1	1	DRM37	1008460.869	436845.6354	3892
7	1	1	DRM38	1008687.058	436655.9703	3907
7	1	1	DRM39	1008952.573	435304.9569	3874
7	1	1	DRM40	1008970.609	435965.5114	3884
7	1	1	DRM41	1008882.24	435665.452	3882
7	1	1	DRM42	1008930.968	435578.5798	3882
7	1	1	DRM43	1008949.54	435508.9883	3865
7	1	1	DRM44	1008885.075	435729.7205	3879
7	1	1	DRM45	1009120.415	434855.9755	3861
7	1	1	DRM46	1009548.589	434476.1546	3846

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	1	DRM47	1009270.889	434807.0384	3849
7	1	1	DRM48	1008538.407	436815.053	3891
7	1	1	DRM49	1008392.814	436883.9974	3881
7	1	1	DRM5	1007507.035	437971.2027	3843
7	1	1	DRM50	1008504.356	436841.8899	3892
7	1	1	DRM51	1009605.949	434485.1873	3860
7	1	1	DRM52	1009682.218	434456.5172	3860
7	1	1	DRM53	1009553.826	434521.7631	3846
7	1	1	DRM54	1009476.454	434603.9924	3871
7	1	1	DRM55	1008695.25	436851.5252	3910
7	1	1	DRM56	1008725.361	436634.2941	3907
7	1	1	DRM57	1008914.233	435434.0234	3879
7	1	1	DRM58	1008914.412	435844.4452	3880
7	1	1	DRM59	1008917.615	435378.8082	3879
7	1	1	DRM60	1008860.742	435445.336	3880
7	1	1	DRM61	1009034.395	435967.4971	3884
7	1	1	DRM62	1008857.436	435847.1413	3880
7	1	1	DRM63	1009000.365	435910.9024	3882
7	1	1	DRM64	1009076.989	435954.6236	3871
7	1	1	DRM65	1008240.983	436890.1559	3875
7	1	1	DRR111	1007358.86	436003.3537	3791
7	1	1	DRR134	1007259.885	435437.7461	3791
7	1	1	DRS10	1010137.493	433450.2212	3872
7	1	1	DRS11	1010212.44	433561.2552	3875
7	1	1	DRS12	1010273.627	433649.5291	3875
7	1	1	DRS13	1010226.522	433746.4381	3876
7	1	1	DRS14	1010180.695	433886.8795	3866
7	1	1	DRS15	1010101.781	433958.6309	3874
7	1	1	DRS16	1010043.153	434071.4724	3854
7	1	1	DRS17	1009951.128	434173.9988	3854
7	1	1	DRS19	1009757.862	434306.8939	3873
7	1	1	DRS2	1010011.598	433043.8692	3836
7	1	1	DRS20	1009855.336	434323.6398	3872
7	1	1	DRS21	1009944.166	434342.221	3884
7	1	1	DRS22	1009877.812	434439.7211	3877
7	1	1	DRS23	1009788.583	434435.2931	3879
7	1	1	DRS24	1009724.663	434514.3352	3865
7	1	1	DRS25	1009649.158	434530.2135	3860
7	1	1	DRS26	1009557.106	434589.4384	3871
7	1	1	DRS27	1009638.038	434640.2571	3858
7	1	1	DRS28	1010030.032	433282.8596	3849
7	1	1	DRS29	1009599.946	434804.9222	3872
7	1	1	DRS3	1009957.152	433105.8262	3843

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	1	DRS30	1009446.896	434871.4941	3867
7	1	1	DRS31	1009277.187	434816.9016	3846
7	1	1	DRS32	1009271.895	434751.9193	3849
7	1	1	DRS33	1009525.497	434630.1886	3871
7	1	1	DRS34	1009175.166	434821.2482	3861
7	1	1	DRS35	1009149.324	435035.6637	3857
7	1	1	DRS36	1008866.273	435029.5694	3878
7	1	1	DRS37	1008972.817	435027.7452	3874
7	1	1	DRS38	1008285.839	437179.2618	3880
7	1	1	DRS39	1008195.688	437364.2204	3882
7	1	1	DRS4	1010018.712	433129.1545	3843
7	1	1	DRS40	1008824.122	436499.2019	3904
7	1	1	DRS41	1008924.917	435941.9946	3880
7	1	1	DRS42	1008964.663	435832.1846	3882
7	1	1	DRS43	1008904.281	435613.329	3882
7	1	1	DRS44	1008956.733	435885.5508	3882
7	1	1	DRS45	1008828.901	436381.7989	3902
7	1	1	DRS46	1008849.906	436238.4991	3898
7	1	1	DRS47	1008742.331	436408.5088	3902
7	1	1	DRS48	1008636.316	436647.4987	3903
7	1	1	DRS49	1008700.828	436590.3107	3907
7	1	1	DRS5	1009962.973	433309.0772	3851
7	1	1	DRS50	1008772.039	436470.3451	3904
7	1	1	DRS51	1008836.735	436314.1587	3898
7	1	1	DRS6	1009912.538	433420.9304	3843
7	1	1	DRS7	1009917.175	433526.7397	3850
7	1	1	DRS8	1010028.363	433524.6026	3859
7	1	1	DRS9	1010096.316	433559.6199	3874
7	1	1	DRT1	1007476.06	437601.2322	3842
7	1	1	DRT10	1008367.202	436988.1218	3885
7	1	1	DRT103	1010015.059	433212.78	3849
7	1	1	DRT104	1010054.139	433273.2206	3849
7	1	1	DRT105	1009099.933	433243.9875	3844
7	1	1	DRT11	1008349.667	436916.4569	3881
7	1	1	DRT12	1008284.796	436765.9818	3875
7	1	1	DRT13	1008242.282	436637.1996	3879
7	1	1	DRT14	1007797.749	438008.9988	3844
7	1	1	DRT16	1008306.381	436602.0315	3881
7	1	1	DRT17	1008415.94	436563.6011	3888
7	1	1	DRT18	1008524.799	436524.1981	3892
7	1	1	DRT19	1008466.366	436646.2583	3895
7	1	1	DRT2	1008346.237	437130.1063	3892
7	1	1	DRT20	1008642.24	436577.4962	3903

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Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	1	DRT21	1008438.408	436892.1926	3892
7	1	1	DRT22	1008543.372	436884.7244	3892
7	1	1	DRT23	1008865.843	436128.3544	3889
7	1	1	DRT24	1009247.841	435991.4673	3893
7	1	1	DRT25	1009333.004	435742.2178	3895
7	1	1	DRT26	1009099.066	435817.5045	3864
7	1	1	DRT27	1009292.935	435591.5212	3884
7	1	1	DRT28	1009160.529	435291.1636	3866
7	1	1	DRT29	1009152.18	434955.3076	3857
7	1	1	DRT3	1008164.923	437248.6465	3877
7	1	1	DRT30	1008633.457	436817.5722	3905
7	1	1	DRT31	1008723.724	436698.9311	3910
7	1	1	DRT32	1009255.575	435103.6298	3851
7	1	1	DRT34	1009239.535	435030.6064	3847
7	1	1	DRT36	1009209.004	434941.1235	3847
7	1	1	DRT4	1008086.154	437449.5963	3879
7	1	1	DRT5	1007882.364	437653.6025	3862
7	1	1	DRT52	1009868.147	434224.8186	3867
7	1	1	DRT53	1010178.49	433679.0565	3874
7	1	1	DRT54	1010274.38	433474.8181	3873
7	1	1	DRT55	1009030.77	434959.3909	3874
7	1	1	DRT56	1010038.932	433429.0467	3851
7	1	1	DRT57	1009978.775	433223.2557	3849
7	1	1	DRT6	1007866.025	437904.6964	3864
7	1	1	DRT61	1008124.292	437503.8979	3881
7	1	1	DRT63	1010234.377	433680.7519	3875
7	1	1	DRT64	1010247.822	433661.6608	3875
7	1	1	DRT65	1008411.346	437021.5847	3885
7	1	1	DRT66	1008609.166	436890.4446	3907
7	1	1	DRT67	1008512.09	436969.7647	3899
7	1	1	DRT68	1009841.056	434432.0441	3872
7	1	1	DRT69	1009898.81	434291.9177	3867
7	1	1	DRT7	1007958.365	437611.7444	3874
7	1	1	DRT70	1010133.498	433515.3603	3872
7	1	1	DRT71	1010052.696	433352.6281	3851
7	1	1	DRT72	1010176.01	433830.9429	3866
7	1	1	DRT73	1010234.023	433841.7633	3880
7	1	1	DRT74	1009958.51	434099.7932	3854
7	1	1	DRT75	1010121.228	433798.2701	3870
7	1	1	DRT76	1010067.795	434016.8983	3874
7	1	1	DRT77	1010062.66	433206.835	3849
7	1	1	DRT78	1008604.43	436687.0715	3903
7	1	1	DRT79	1008568.536	436824.6714	3907

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	1	DRT8	1008324.987	437049.7404	3885
7	1	1	DRT80	1008669.241	436625.2112	3903
7	1	1	DRT81	1008317.91	437119.6487	3892
7	1	1	DRT82	1010086.382	433887.6458	3866
7	1	1	DRT86	1010135.833	433981.2581	3874
7	1	1	DRT87	1010038.986	433923.8114	3851
7	1	1	DRT88	1010019.139	433871.4283	3851
7	1	1	DRT89	1010266.834	433604.4527	3875
7	1	1	DRT9	1008142.625	437414.815	3879
7	1	1	DRT90	1008678.269	436732.4223	3905
7	1	1	DRW1	1007518.921	437588.5825	3842
7	1	1	DRW10	1007609.607	437985.5998	3848
7	1	1	DRW11	1007541.966	437939.0287	3842
7	1	1	DRW12	1007519.517	438097.3997	3823
7	1	1	DRW13	1007377.389	438235.9198	3816
7	1	1	DRW14	1007703.452	437956.1248	3844
7	1	1	DRW15	1007870.831	437967.3057	3854
7	1	1	DRW16	1007618.635	437838.8907	3853
7	1	1	DRW17	1007425.416	437676.1404	3837
7	1	1	DRW18	1007488.399	437880.5817	3842
7	1	1	DRW19	1007418.116	437597.3368	3837
7	1	1	DRW2	1007590.464	437489.9029	3854
7	1	1	DRW20	1007482.76	437519.063	3847
7	1	1	DRW21	1007451.444	437774.2502	3844
7	1	1	DRW22	1007424.523	437892.0486	3838
7	1	1	DRW23	1007425.117	437929.2908	3838
7	1	1	DRW24	1007413.811	437975.6156	3836
7	1	1	DRW25	1007964.652	437875.9036	3848
7	1	1	DRW26	1008020.26	437828.1149	3875
7	1	1	DRW27	1008032.071	437761.0801	3875
7	1	1	DRW28	1007992.223	437781.5366	3875
7	1	1	DRW29	1007978.143	437740.5707	3875
7	1	1	DRW3	1007754.984	437396.0315	3861
7	1	1	DRW30	1007882.104	437817.9879	3864
7	1	1	DRW31	1007917.104	437760.9618	3864
7	1	1	DRW32	1007923.309	437705.9139	3864
7	1	1	DRW33	1007888.262	437579.2536	3862
7	1	1	DRW34	1007928.816	437553.5923	3872
7	1	1	DRW35	1007892.847	437463.6413	3863
7	1	1	DRW36	1007972.648	437510.3616	3872
7	1	1	DRW37	1008019.654	437482.766	3872
7	1	1	DRW38	1008056.356	437395.5984	3879
7	1	1	DRW39	1008129.728	437332.6567	3879

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	1	DRW4	1007622.648	437222.5452	3855
7	1	1	DRW40	1008041.561	437536.3481	3872
7	1	1	DRW41	1008186.725	437447.5916	3882
7	1	1	DRW42	1008205.466	437293.2801	3881
7	1	1	DRW43	1008222.985	437168.4965	3880
7	1	1	DRW5	1007746.861	437286.9385	3862
7	1	1	DRW6	1007680.761	437550.8048	3858
7	1	1	DRW7	1007768.878	437541.7038	3858
7	1	1	DRW8	1007545.66	437807.7202	3844
7	1	1	DRW9	1007576.84	437892.2039	3853
7	1	1	DS423	1009755.695	437020.0673	3925
7	1	1	DS424	1009765.815	436972.7271	3925
7	1	1	DS472	1009737.681	436640.5803	3926
7	1	1	DS473	1009801.101	436650.7284	3926
7	1	1	DS474	1009774.65	436651.8612	3926
7	1	1	DS604	1008304.312	433216.7048	3837
7	1	1	DS683	1007973.165	433104.3702	3843
7	1	1	DS684	1007920.165	433099.0706	3840
7	1	1	DS685	1007982.137	433154.7537	3843
7	1	1	DS686	1007917.964	433164.1997	3840
7	1	1	DS688	1008098.582	433139.6586	3842
7	1	1	DS692	1008315.4	433136.0939	3832
7	1	1	DS694	1008429.73	433163.3705	3832
7	1	1	DS695	1008232.666	433131.3093	3838
7	1	1	DS696	1010664.373	434211.3233	3912
7	1	1	DS697	1010565.61	435252.2059	3920
7	1	1	DS715	1008347.34	434034.6961	3851
7	1	1	DS716	1008148.328	433832.8185	3831
7	1	1	DS717	1007969.532	433601.9425	3843
7	1	1	DS718	1007970.044	433481.866	3838
7	1	1	DS719	1007897.299	433522.2944	3831
7	1	1	DS720	1007810.959	433313.1214	3831
7	1	1	DS721	1007902.303	433685.8257	3825
7	1	1	DS722	1007838.423	433693.9149	3825
7	1	1	DS723	1007688.038	433698.7482	3821
7	1	1	DS724	1008224.343	433267.0431	3837
7	1	1	DS727	1008169.566	433193.3819	3843
7	1	1	DS733	1008860.068	438264.1329	3913
7	1	1	DS734	1008958.076	438109.5389	3907
7	1	1	DS735	1009094.906	437980.8194	3906
7	1	1	DS736	1008854.229	437912.3494	3923
7	1	1	DW38	1010576.733	435122.5673	3917
7	1	1	DW39	1010618.63	435166.9741	3917

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	1	DW40	1010584.604	435076.9757	3917
7	1	1	DW41	1010639.31	435064.2221	3913
7	1	1	DW42	1009983.752	435272.5413	3886
7	1	1	DW43	1009992.727	435221.6194	3886
7	1	1	DW44	1010038.429	435255.3476	3886
7	1	1	DW45	1010033.388	435309.2381	3886
7	1	1	DW46	1009929.342	435294.8537	3881
7	1	1	DW47	1009873.442	435271.7655	3881
7	1	1	DW48	1009877.864	435230.3482	3881
7	1	1	DW49	1009928.057	435260.4543	3881
7	1	1	DW5	1009979.649	435324.0794	3889
7	1	1	DW50	1009874.724	435299.3466	3881
7	1	1	DW51	1009737.633	435223.214	3879
7	1	1	DW52	1009745.798	435015.253	3886
7	1	1	DW53	1009748.345	435122.5855	3882
7	1	1	DW54	1009760.62	434935.0696	3881
7	1	1	DW55	1009756.125	434908.9164	3881
7	1	1	DW56	1009764.044	434957.7631	3886
7	1	1	DW57	1009985.711	435038.2931	3902
7	1	1	DW58	1009810.531	434919.1164	3881
7	1	1	DW59	1009812.483	434946.217	3896
7	1	1	DW6	1009969.214	435430.045	3889
7	1	1	DW60	1009812.489	434892.9837	3890
7	1	1	DW61	1009861.625	434905.2892	3890
7	1	1	DW62	1009909.426	434916.4602	3890
7	1	1	DW63	1009840.929	434932.8212	3890
7	1	1	DW64	1009838.457	435038.8243	3896
7	1	1	DW65	1009751.849	435063.6122	3886
7	1	1	DW7	1009963.505	435524.4502	3902
7	1	1	E	1008829.941	437103.0924	3915
7	1	1	EN93	1008963.325	435835.4133	3882
7	1	1	FR736	1008502.177	433185.6797	3833
7	1	1	L1	1009036.159	434791.5139	3882
7	1	1	O-1	1009002.986	434062.6535	3865
7	1	10	B11FR	999262.397	428402.1353	3623
7	1	10	B11LAK	999300.392	428418.7542	3624
7	1	10	B6FR	1000499.226	431127.2787	3647
7	1	10	BPZ-6ABN	1000435.138	431109.401	3647
7	1	10	PA1	999516.8406	433274.9517	3640
7	1	10	PA10	1000028.499	431317.2512	3649
7	1	10	PA101	1000389.265	430788.6219	3656
7	1	10	PA 102	1000328.618	430918.7278	3653
7	1	10	PA103	999763.1558	431391.1189	3670

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	10	PA104	999646.2503	431712.9792	3649
7	1	10	PA105	999666.9513	431253.8593	3675
7	1	10	PA106	1000440.229	430876.3966	3650
7	1	10	PA107	1000224.892	431045.7363	3654
7	1	10	PA108	1000183.24	431181.0357	3650
7	1	10	PA109	999707.6009	431777.1477	3649
7	1	10	PA11	999624.7695	431531.8334	3664
7	1	10	PA110	1000270.442	432801.9742	3646
7	1	10	PA 111	1000449.794	430966.1158	3649
7	1	10	PA112	1000387.833	432753.75	3646
7	1	10	PA113	1000570.147	431016.2209	3648
7	1	10	PA114	1000230.509	431122.8721	3652
7	1	10	PA115	999727.6301	431657.3919	3655
7	1	10	PA116	1000636.696	430934.072	3648
7	1	10	PA117	999821.944	433002.2131	3642
7	1	10	PA118	999743.2013	432849.4845	3639
7	1	10	PA119	999925.3497	433040.5345	3644
7	1	10	PA12	999651.6567	431755.8285	3649
7	1	10	PA120	999773.2405	433097.9825	3643
7	1	10	PA121	999645.5733	432694.9396	3638
7	1	10	PA122	1000589.832	430828.7046	3650
7	1	10	PA123	999829.2681	429330.9042	3646
7	1	10	PA124	1000261.321	430446.5015	3667
7	1	10	PA125	1000129.848	430307.6351	3687
7	1	10	PA126	1000079.498	429827.1409	3675
7	1	10	PA127	999486.1509	430636.8908	3722
7	1	10	PA128	999540.199	430737.8234	3710
7	1	10	PA129	999726.4106	430823.1032	3693
7	1	10	PA13	999551.7993	431330.1107	3676
7	1	10	PA130	999764.5252	430859.359	3693
7	1	10	PA131	1000681.345	430789.456	3651
7	1	10	PA132	999936.2258	429298.803	3648
7	1	10	PA133	1000283.907	430750.7392	3656
7	1	10	PA134	1000254.531	430617.1875	3662
7	1	10	PA135	1000759.856	430850.1167	3650
7	1	10	PA136	999478.5751	430560.2253	3722
7	1	10	PA137	1000863.947	430885.869	3651
7	1	10	PA138	999803.5918	430744.2283	3691
7	1	10	PA139	1000154.123	429775.5477	3662
7	1	10	PA14	999597.0376	431249.7758	3682
7	1	10	PA141	999387.5983	430559.9809	3720
7	1	10	PA142	999534.3446	430598.05	3713
7	1	10	PA15	999583.768	431119.6385	3687

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	10	PA16	999549.9263	430966.2035	3692
7	1	10	PA17	999534.507	430674.9217	3710
7	1	10	PA18	999540.2413	430811.4315	3706
7	1	10	PA19	999759.5305	429151.4606	3635
7	1	10	PA2	999523.818	432994.3517	3640
7	1	10	PA20	999659.625	429314.4823	3645
7	1	10	PA21	999793.0392	429240.6823	3639
7	1	10	PA22	999959.7418	429745.6562	3663
7	1	10	PA23	999865.9471	430169.6696	3706
7	1	10	PA24	999866.9979	430279.5856	3706
7	1	10	PA25	1000062.161	430393.4759	3687
7	1	10	PA 26	1000257.606	430101.7916	3681
7	1	10	PA27	999927.6158	429976.3865	3687
7	1	10	PA28	999443.5679	428483.8189	3627
7	1	10	PA29	1001491.167	429222.1921	3679
7	1	10	PA3	999575.9347	432746.0327	3636
7	1	10	PA30	1001401.245	429165.1691	3679
7	1	10	PA31	1001274.438	429072.8726	3673
7	1	10	PA32	1001167.552	429009.0763	3663
7	1	10	PA33	1001414.148	429057.5711	3679
7	1	10	PA34	1000418.937	428393.5471	3645
7	1	10	PA36	1000205.114	428154.6585	3634
7	1	10	PA38	1000066.969	428037.0174	3631
7	1	10	PA4	999681.9775	432381.1216	3636
7	1	10	PA40	1000906.466	430792.8783	3659
7	1	10	PA41	1001251.679	428770.3934	3664
7	1	10	PA45	1000798.627	428589.0685	3651
7	1	10	PA46	1000641.288	428549.0353	3657
7	1	10	PA47	1000534.834	428464.6102	3651
7	1	10	PA48	1000130.36	428068.0283	3631
7	1	10	PA5	999592.6692	433093.7628	3641
7	1	10	PA57	999835.8565	428052.2481	3630
7	1	10	PA6	999598.8701	433308.0703	3640
7	1	10	PA61	1000450.405	428259.3947	3642
7	1	10	PA62	1000456.1	428345.1753	3645
7	1	10	PA63	1000746.592	428597.9139	3651
7	1	10	PA64	1000742.365	428513.8724	3655
7	1	10	PA65	1001049.958	428776.8503	3661
7	1	10	PA66	1001335.886	428839.7205	3670
7	1	10	PA69	1001333.793	428334.1542	3661
7	1	10	PA7	999569.3288	433128.0794	3641
7	1	10	PA70	1001345.59	428439.9865	3660
7	1	10	PA71	1000762.4	428037.327	3650

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	10	PA73	1001034.189	428074.5281	3662
7	1	10	PA74	1001038.019	428139.3818	3662
7	1	10	PA8	999586.889	432789.502	3636
7	1	10	PA86	1001392.559	428466.5168	3660
7	1	10	PA87	1001383.276	428392.2035	3661
7	1	10	PA88	1001089.412	428089.3396	3662
7	1	10	PA89	1001080.544	428039.2021	3662
7	1	10	PA9	1000167.974	431019.8276	3654
7	1	10	PA90	1000994.838	428103.0964	3672
7	1	10	PA95	1001524.948	428435.5291	3662
7	1	10	PA95	999640.0131	430819.4364	3706
7	1	10	PA96	1001124.167	428168.471	3657
7	1	10	PA99	1001296.329	428744.3474	3664
7	1	10	PJ1	999893.1251	430046.2311	3698
7	1	10	PJ10	1000235.974	430945.7778	3654
7	1	10	PJ11	1000174.33	431135.826	3652
7	1	10	PJ12	1000119.356	431223.3575	3654
7	1	10	PJ13	1000002.433	431250.0913	3657
7	1	10	PJ14	999958.5384	431359.6625	3654
7	1	10	PJ15	999851.8381	431412.9276	3660
7	1	10	PJ16	999799.7421	431339.5802	3660
7	1	10	PJ17	999896.8117	431196.7529	3657
7	1	10	PJ19	999844.3333	430951.7743	3673
7	1	10	PJ2	999912.7627	430106.3324	3698
7	1	10	PJ20	999725.4671	430973.1758	3681
7	1	10	PJ21	999604.8069	430918.757	3706
7	1	10	PJ22	999489.5126	430770.8381	3724
7	1	10	PJ23	999371.5138	430732.7319	3727
7	1	10	PJ24	999347.5368	430911.3382	3729
7	1	10	PJ25	999359.605	431080.229	3708
7	1	10	PJ26	999473.3436	431092.6105	3699
7	1	10	PJ27	999646.1397	431066.6344	3679
7	1	10	PJ28	999675.6935	431173.2495	3679
7	1	10	PJ29	999623.0971	431273.1642	3682
7	1	10	PJ3	999920.3159	430262.4808	3704
7	1	10	PJ30	999539.1598	431352.8442	3676
7	1	10	PJ31	999618.7227	431410.2395	3676
7	1	10	PJ32	999632.4909	431632.9201	3661
7	1	10	PJ33	999597.1434	431771.6864	3655
7	1	10	PJ34	999637.3109	431876.7618	3651
7	1	10	PJ35	999548.7246	431952.1729	3646
7	1	10	PJ36	999570.9162	432049.9688	3646
7	1	10	PJ37	999667.0048	432482.1257	3636

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	10	PJ38	999644.1351	431705.5584	3649
7	1	10	PJ38	999830.7664	431033.9398	3673
7	1	10	PJ39	999452.3888	433304.6138	3639
7	1	10	PJ3C	999913.2159	430319.2356	3701
7	1	10	PJ4	1000018.333	430360.0316	3701
7	1	10	PJ40	999623.7942	433220.9258	3640
7	1	10	PJ41	999991.0897	430149.4842	3698
7	1	10	PJ42	1000192.7	430701.0869	3663
7	1	10	PJ43	999945.4022	429927.1254	3687
7	1	10	PJ44	999963.8743	429826.0142	3677
7	1	10	PJ45	999922.4788	429709.663	3663
7	1	10	PJ46	999757.7343	428680.6308	3630
7	1	10	PJ47	999771.9099	428591.2626	3634
7	1	10	PJ48	999821.1683	428500.9754	3634
7	1	10	PJ49	999915.8311	428460.2232	3636
7	1	10	PJ5	1000070.659	430523.431	3683
7	1	10	PJ51	1000023.75	428117.3332	3631
7	1	10	PJ52	999816.1592	428615.8073	3634
7	1	10	PJ53	1000324.795	430998.1101	3650
7	1	10	PJ54	999743.5692	431507.1817	3660
7	1	10	PJ55	1000229.875	430563.1224	3662
7	1	10	PJ56	1000206.614	430646.6341	3662
7	1	10	PJ57	1000309.211	430848.5663	3653
7	1	10	PJ58	999675.886	431616.7927	3655
7	1	10	PJ59	999707.6437	431422.2333	3670
7	1	10	PJ6	1000178.28	430467.5326	3667
7	1	10	PJ7	1000171.964	430590.1897	3662
7	1	10	PJ8	1000143.424	430683.3605	3669
7	1	10	PJ9	1000210.037	430783.6128	3663
7	1	10	PK4	1000309.83	428424.1974	3647
7	1	10	PM115	1001470.022	428519.4618	3662
7	1	10	PM117	999705.2219	429360.5065	3645
7	1	10	PM118	999692.8746	429249.5827	3638
7	1	10	PM119	999748.7757	429549.8452	3654
7	1	10	PM120	999816.1691	429632.0818	3655
7	1	10	PM121	999921.8591	429658.8322	3657
7	1	10	PM122	999903.6631	429762.1091	3663
7	1	10	PM123	999999.568	429882.6731	3677
7	1	10	PM124	1000020.191	429985.355	3684
7	1	10	PM125	1000033.483	430091.3301	3691
7	1	10	PM126	999971.2712	430035.4378	3687
7	1	10	PM127	999650.81	429219.9141	3638
7	1	10	PM128	999283.5136	428578.2447	3624

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	10	PM129	999323.0418	428666.9257	3626
7	1	10	PM131	999751.5199	429389.6442	3645
7	1	10	PM132	999590.4476	428956.7856	3632
7	1	10	PM133	999220.9184	428529.0456	3622
7	1	10	PM134	999259.1926	428633.3218	3622
7	1	10	PM135	999360.5231	428726.6178	3626
7	1	10	PM136	999232.0285	428422.2239	3622
7	1	10	PM138	999196.6836	428166.2621	3623
7	1	10	PM139	999705.9544	428988.3933	3632
7	1	10	PM149	1001597.478	428780.1417	3671
7	1	10	PM150	1001584.724	428677.6947	3671
7	1	10	PM151	1001593.182	428591.3884	3671
7	1	10	PM152	999606.6133	432536.77	3633
7	1	10	PM153	999578.5683	432901.0275	3638
7	1	10	PM154	999527.036	433051.9897	3640
7	1	10	PM155	999551.281	433245.2842	3640
7	1	10	PM156	999608.4481	432985.4073	3640
7	1	10	PM157	999592.6315	433184.9829	3640
7	1	10	PM158	999753.4731	432042.9893	3639
7	1	10	PM159	1000959.51	433086.5185	3653
7	1	10	PM160	999623.7966	433086.6547	3641
7	1	10	PM161	999232.8429	432325.9649	3637
7	1	10	PM 161	999985.0895	432296.4551	3642
7	1	10	PM162	999842.7097	432487.2617	3638
7	1	10	PM163	999643.3096	432846.9422	3639
7	1	10	PM164	1000861.086	433097.3345	3652
7	1	10	PM165	999647.015	432928.7217	3639
7	1	10	PM166	999819.308	432557.3099	3640
7	1	10	PM167	1000904.361	432968.9598	3653
7	1	10	PM168	999732.2537	432754.0173	3638
7	1	10	PM169	1001021.501	432975.1048	3653
7	1	10	PM170	1000464.734	432723.8502	3650
7	1	10	PM171	1000832.875	433005.6779	3652
7	1	10	PM172	999599.2551	433034.5241	3640
7	1	10	PM173	1000812.545	433168.6234	3652
7	1	10	PM174	999550.125	430876.1029	3706
7	1	10	PM175	1000112.359	431111.0757	3654
7	1	10	PM176	1000877.984	432857.7592	3652
7	1	10	PM177	1000758.844	433245.5318	3650
7	1	10	PM178	999559.1915	432951.6196	3640
7	1	10	PM179	999638.3754	432767.9492	3636
7	1	10	PM180	1000699.442	432717.0752	3653
7	1	10	PM181	999738.7374	432569.7852	3639

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	10	PM182	999677.1265	433013.0922	3641
7	1	10	PM183	999624.5013	433144.5819	3641
7	1	10	PM184	1000870.392	432651.2959	3655
7	1	10	PM185	1000110.204	432851.527	3644
7	1	10	PM186	999523.475	432896.4694	3638
7	1	10	PM187	1000869.067	432419.9486	3653
7	1	10	PM188	999887.7376	432941.9551	3642
7	1	10	PM189	999302.7994	428069.9994	3624
7	1	10	PM190	999269.6553	428169.1115	3624
7	1	10	PM2	1000313.494	428503.007	3647
7	1	10	PM20	1000842.53	428130.3548	3668
7	1	10	PM207	1001289.996	428396.3998	3661
7	1	10	PM208	1001489.508	428395.7559	3671
7	1	10	PM214	1000456.491	428073.1927	3633
7	1	10	PM216	1000634.494	428299.5655	3649
7	1	10	PM218	1000547.008	428204.3175	3643
7	1	10	PM219	1000736.064	428188.3019	3659
7	1	10	PM22	999005.684	428147.9519	3622
7	1	10	PM221	1000978.402	428007.2413	3649
7	1	10	PM222	1000968.059	428163.1521	3660
7	1	10	PM223	999721.5959	428909.5998	3631
7	1	10	PM229	1000974.403	430762.1503	3659
7	1	10	PM23	999124.9416	428150.0077	3622
7	1	10	PM24	999216.6801	428117.584	3622
7	1	10	PM3	1000293.827	428308.8135	3645
7	1	10	PM31	999352.6019	428191.5589	3624
7	1	10	PM32	999292.1722	428262.7031	3624
7	1	10	PM33	999180.8908	428440.072	3622
7	1	10	PM36	1000237.932	428671.1647	3642
7	1	10	PM37	999390.853	428785.5984	3627
7	1	10	PM38	999811.718	428855.3009	3632
7	1	10	PM39	999902.2967	429031.493	3635
7	1	10	PM40	999758.1099	429095.9706	3635
7	1	10	PM41	999536.1693	429039.0813	3632
7	1	10	PM42	999465.1794	429269.5387	3635
7	1	10	PM43	999606.7664	429438.303	3650
7	1	10	PM44	999840.5784	429467.2979	3650
7	1	10	PM45	1000737.702	428419.2143	3655
7	1	10	PM46	1001212.806	428496.5745	3657
7	1	10	PM47	1001466.166	428701.0073	3668
7	1	10	PM48	1000615.479	428177.7769	3643
7	1	10	PM55	1001107.465	428490.8593	3654
7	1	10	PM58	1001335.847	428531.9434	3660

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	10	PM59	1001017.304	428376.2028	3654
7	1	10	PM60	1000534.666	428024.3032	3632
7	1	10	PM61	1001066.63	428316.2514	3654
7	1	10	PM63	1001136.947	428330.9683	3654
7	1	10	PM64	1001522.588	428595.0108	3666
7	1	10	PM65	1001112.945	428278.9097	3657
7	1	10	PM67	1001536.537	428543.0588	3671
7	1	10	PM69	1000978.026	428317.2559	3654
7	1	10	PM70	1000921.6	428351.3942	3654
7	1	10	PM71	1001221.472	428342.6082	3657
7	1	10	PM72	1001263.779	428502.4409	3657
7	1	10	PM73	1001065.685	428577.4973	3660
7	1	10	PM74	1001006.577	428448.4795	3651
7	1	10	PM75	1000861.21	428496.131	3654
7	1	10	PR 10	1001099.854	430834.3557	3662
7	1	10	PR11	1001196.185	430854.7071	3665
7	1	10	PR 12	1001288.369	430823.3562	3663
7	1	10	PR3	1001149.332	428226.9725	3658
7	1	10	PR7	1001003.887	430758.4639	3659
7	1	10	PR8	1001106.317	430720.9539	3662
7	1	10	PR 9	1001171.845	430751.7936	3665
7	1	10	PS1	999659.1761	429078.2986	3635
7	1	10	PS10	1000512.871	428136.0923	3633
7	1	10	PS11	1000704.159	428239.964	3659
7	1	10	PS12	1000850.016	428371.0391	3659
7	1	10	PS13	1001021.381	428516.2984	3651
7	1	10	PS14	1001150.226	428385.4312	3657
7	1	10	PS15	1001301.073	428452.9691	3660
7	1	10	PS16	1001451.65	428591.0157	3666
7	1	10	PS17	1001594.539	428712.4996	3671
7	1	10	PS25	1001600.72	428851.6499	3672
7	1	10	PS29	1000687.44	428144.1048	3650
7	1	10	PS30	1000621.835	428243.0289	3643
7	1	10	PS31	1000920.089	428440.422	3651
7	1	10	PS38	1001486.698	428647.4127	3666
7	1	10	PS39	1001143.735	428555.2137	3660
7	1	10	PS40	1000756.21	428358.5236	3661
7	1	10	PS41	1001232.334	428633.9494	3662
7	1	10	PS42	1001354.012	428664.8696	3664
7	1	10	PS43	1001542.711	428796.5728	3672
7	1	10	PS44	1001601.173	428635.306	3671
7	1	10	PS45	1001318.293	428595.4886	3661
7	1	10	PS47	1001291.547	428683.8015	3664

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	10	PS48	1001249.127	428568.4333	3662
7	1	10	PS54	999637.728	428976.5005	3632
7	1	10	PS55	999709.4105	428871.9822	3631
7	1	10	PS56	999683.0225	429054.4392	3635
7	1	10	PS57	999663.8786	429131.9825	3635
7	1	10	PS58	999618.0229	429028.9043	3632
7	1	10	PS59	999607.4773	428908.509	3630
7	1	10	PS60	999603.1059	429111.9221	3634
7	1	10	PS62	999571.9306	428863.2667	3630
7	1	10	PS63	999493.7072	428823.2071	3628
7	1	10	PS64	999552.2102	428817.9314	3630
7	1	10	PS65	999527.1095	428781.3054	3628
7	1	10	PS66	999487.7721	428733.2138	3627
7	1	10	PS67	999425.8598	428739.1279	3627
7	1	10	PS68	1000789.556	428207.312	3663
7	1	10	PS70	999855.9496	429556.3464	3655
7	1	10	PS72	999935.8377	428781.5016	3634
7	1	10	PS73	999815.5001	431502.5982	3654
7	1	10	PS74	999688.4654	431541.8608	3660
7	1	10	PS75	999579.2066	431535.569	3664
7	1	10	PT10	1001395.837	428749.6419	3664
7	1	10	PT100	999434.5033	430676.6689	3724
7	1	10	PT101	999942.4108	430169.6567	3704
7	1	10	PT102	1000017.88	430419.1942	3701
7	1	10	PT103	999641.5012	432031.068	3646
7	1	10	PT104	999744.2258	429205.7976	3638
7	1	10	PT105	999702.2584	429149.4459	3635
7	1	10	PT106	999932.6671	429800.2818	3677
7	1	10	PT107	999937.6985	429880.0997	3677
7	1	10	PT11	1001391.176	428609.8671	3661
7	1	10	PT110	999292.9925	428322.1114	3624
7	1	10	PT111	1000181.366	430375.4855	3672
7	1	10	PT112	999940.8774	430298.5802	3701
7	1	10	PT113	999346.2908	428422.0735	3624
7	1	10	PT114	999356.5668	428312.2986	3624
7	1	10	PT115	1000224.945	430739.1284	3663
7	1	10	PT116	1000174.119	430965.9706	3654
7	1	10	PT117	1000073.04	431241.4328	3654
7	1	10	PT118	999923.2825	431202.3126	3657
7	1	10	PT12	1001219.501	428423.1787	3657
7	1	10	PT123	999716.6411	429244.7741	3638
7	1	10	PT124	1000054.824	431276.2771	3654
7	1	10	PT127	999330.3317	428134.942	3624

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	10	PT128	999246.4461	428230.3834	3623
7	1	10	PT129	999845.2888	428883.7025	3632
7	1	10	PT13	1000895.152	428315.8705	3659
7	1	10	PT130	999739.9351	428759.5271	3630
7	1	10	PT131	1000020.265	428067.9631	3631
7	1	10	PT135	999694.9271	428700.6243	3630
7	1	10	PT136	999827.9895	428924.8588	3634
7	1	10	PT137	999760.7239	429487.559	3650
7	1	10	PT14	1001183.588	428652.0761	3662
7	1	10	PT145	1001580.402	428563.5687	3671
7	1	10	PT146	1000960.226	428439.0014	3651
7	1	10	PT147	1000950.472	428330.8189	3654
7	1	10	PT148	1000899.79	428241.213	3660
7	1	10	PT15	1000832.593	428432.4991	3654
7	1	10	PT155	1000371.698	428192.3316	3643
7	1	10	PT156	1001348.137	428883.5909	3670
7	1	10	PT157	1000558.161	428155.9034	3640
7	1	10	PT158	1000401.582	428304.704	3645
7	1	10	PT159	1001382.528	428808.1362	3670
7	1	10	PT160	1000761.009	428091.883	3650
7	1	10	PT162	1000861.564	428243.6353	3663
7	1	10	PT164	1000812.125	428395.4511	3659
7	1	10	PT165	1000788.342	428318.3466	3659
7	1	10	PT166	1001137.161	428454.1118	3654
7	1	10	PT167	1001549.949	428654.5494	3671
7	1	10	PT168	1000683.71	428319.7338	3661
7	1	10	PT17	1001019.417	428276.11	3660
7	1	10	PT170	1001628.75	429036.7062	3681
7	1	10	PT171	1001607.742	428883.0648	3672
7	1	10	PT172	1001532.309	428708.0739	3671
7	1	10	PT186	1000065.564	428090.5575	3631
7	1	10	PT19	1000729.64	428292.5101	3661
7	1	10	PT2	1001554.292	428558.1352	3671
7	1	10	PT20	1000819.371	428277.6982	3663
7	1	10	PT21	1001426.194	428764.0051	3668
7	1	10	PT28	1000932.361	428239.5042	3660
7	1	10	PT29	1001069.391	428241.1381	3657
7	1	10	PT32	999200.1045	428213.5861	3623
7	1	10	PT33	999246.2478	428348.2734	3623
7	1	10	PT34	999272.0949	428474.7116	3624
7	1	10	PT36	1001420.63	428577.6801	3666
7	1	10	PT39	1000140.514	430812.5886	3660
7	1	10	PT40	1001249.629	428896.2714	3664

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	10	PT40	1000189.519	431030.3719	3654
7	1	10	PT41	1000066.126	431182.4275	3654
7	1	10	PT42	1001063.799	428682.8041	3661
7	1	10	PT42	1000084.668	430416.4138	3687
7	1	10	PT43	1001088.671	428868.2384	3658
7	1	10	PT43	999982.6011	430322.5252	3701
7	1	10	PT44	1000922.945	428775.0926	3653
7	1	10	PT44	999721.9656	429310.9592	3645
7	1	10	PT45	999637.2221	429189.9377	3637
7	1	10	PT46	999234.131	428282.7853	3623
7	1	10	PT48	999333.0513	428505.1328	3624
7	1	10	PT49	999739.2158	429263.049	3638
7	1	10	PT50	999803.6949	429523.7747	3650
7	1	10	PT51	999838.1724	429616.1474	3655
7	1	10	PT52	999882.4025	429664.1036	3655
7	1	10	PT53	1000002.599	430196.5796	3704
7	1	10	PT54	1000063.279	430373.2572	3687
7	1	10	PT56	999690.3095	429197.47	3638
7	1	10	PT57	999757.958	429338.1837	3645
7	1	10	PT58	999716.011	429431.4122	3650
7	1	10	PT59	999937.9268	430087.1737	3698
7	1	10	PT60	999680.5932	429105.9564	3635
7	1	10	PT61	999520.7868	433218.6034	3640
7	1	10	PT62	999998.3911	429944.3262	3687
7	1	10	PT63	999970.8206	430263.4673	3704
7	1	10	PT64	1000138.984	430438.2211	3683
7	1	10	PT65	1000141.894	430544.2566	3683
7	1	10	PT66	1000164.467	430640.6765	3662
7	1	10	PT67	1000203.331	430838.1038	3657
7	1	10	PT68	1000147.061	431075.1734	3652
7	1	10	PT69	999888.6259	431096.8735	3667
7	1	10	PT70	999588.5235	431953.8311	3646
7	1	10	PT71	999638.8363	431566.0439	3661
7	1	10	PT72	999987.1052	431180.6985	3657
7	1	10	PT73	999567.7533	431954.9217	3646
7	1	10	PT74	999395.5063	430776.7527	3724
7	1	10	PT75	999794.6389	430966.4833	3673
7	1	10	PT76	999473.3825	431007.5206	3708
7	1	10	PT77	999585.5001	430824.5976	3706
7	1	10	PT78	999427.4194	430895.142	3721
7	1	10	PT79	999571.5512	431065.5236	3687
7	1	10	PT80	999569.1359	431198.9697	3682
7	1	10	PT81	999621.5881	431367.2432	3676

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	10	PT82	999646.235	431479.0611	3660
7	1	10	PT83	999589.6128	431684.5257	3655
7	1	10	PT84	999636.6416	431817.9104	3651
7	1	10	PT85	999740.6374	430917.7496	3693
7	1	10	PT86	1000129.101	430554.814	3675
7	1	10	PT87	999903.4753	431057.2706	3661
7	1	10	PT88	999946.5678	431140.7875	3661
7	1	10	PT89	999599.9032	431006.5928	3692
7	1	10	PT90	999532.4663	430914.6465	3706
7	1	10	PT91	999471.5745	430841.0608	3721
7	1	10	PT92	1000129.958	431164.0658	3654
7	1	10	PT93	999469.1797	430727.8265	3724
7	1	10	PT94	999766.2466	430907.4868	3693
7	1	10	PT96	1000157.273	430737.2687	3663
7	1	10	PT97	1000201.072	430875.0491	3657
7	1	10	PT98	1000114.313	430469.5421	3683
7	1	10	PT99	999549.3561	431998.2493	3646
7	1	10	PW20	999769.9385	429439.755	3650
7	1	10	RON1	1000991.866	429482.1765	3659
7	1	10	RONA11	1001614.206	429661.7972	3693
7	1	10	RONA14	1001630.431	430611.3593	3665
7	1	10	RONA20	1001551.245	430529.8969	3671
7	1	10	RONA24	1001448.464	430490.6589	3671
7	1	10	RONA25	1001358.237	430474.1203	3672
7	1	10	RONA35	1001666.672	430493.5748	3668
7	1	10	RONA36	1001672.249	430591.5894	3666
7	1	10	RONA37	1001201.546	430321.2925	3673
7	1	10	RONA41	1001058.972	430343.9504	3671
7	1	10	RONA59	1001363.603	429541.231	3680
7	1	10	RONA65	1001624.823	429366.475	3688
7	1	10	RONA66	1001521.325	429571.8031	3689
7	1	10	RONA73	1001660.881	429559.8389	3696
7	1	10	RONA75	1001508.792	429433.7855	3686
7	1	10	RONA93	1001653.714	429614.5034	3696
7	1	10	RONA94	1001624.651	429498.5323	3690
7	1	10	RONJ1	1000442.048	430646.3509	3654
7	1	10	RONM11	1000855.102	429507.1328	3661
7	1	10	RONM12	1001654.659	430931.7318	3661
7	1	10	RONM20	1000746.974	430629.6351	3652
7	1	10	RONT61	1001648.324	429751.6198	3694
7	1	10	RONT65	1001672.556	429799.478	3691
7	1	3	EM2-1	999408.6694	435150.0208	3654
7	1	3	EM2-3	999418.0966	435416.8677	3653

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	3	KLA1	999191.2556	437468.6036	3666
7	1	3	KLA10	998891.4704	435702.2126	3652
7	1	3	KLA11	999085.5924	435260.2846	3648
7	1	3	KLA12	999327.6152	436082.5005	3652
7	1	3	KLA13	999222.6027	436430.4492	3652
7	1	3	KLA14	999209.2649	436108.6977	3652
7	1	3	KLA15	998972.7397	435200.1545	3644
7	1	3	KLA16	999359.3136	436376.4078	3652
7	1	3	KLA2	998960.9424	437592.4102	3667
7	1	3	KLA3	999190.3511	436986.9785	3663
7	1	3	KLA4	999147.1431	437293.6122	3662
7	1	3	KLA5	999355.3618	437115.7932	3661
7	1	3	KLA6	998940.846	437782.1504	3667
7	1	3	KLA7	999161.6876	436829.5183	3662
7	1	3	KLA8	999030.4518	437185.7059	3664
7	1	3	KLA8ABN	999049.8427	436330.879	3653
7	1	3	KLA9	999161.5908	436376.0565	3652
7	1	3	KLJ1	998802.1865	434954.3859	3640
7	1	3	KLJ10	998935.2116	437504.5784	3666
7	1	3	KLJ11	999053.014	434841.2903	3650
7	1	3	KLJ12	999126.4101	435398.6277	3644
7	1	3	KLJ2	998737.3817	435712.9663	3647
7	1	3	KLJ3	998898.2013	435097.3142	3644
7	1	3	KLJ4	999211.3069	435994.502	3652
7	1	3	KLJ5	999261.5441	436920.9661	3662
7	1	3	KLJ6	998624.8753	435112.2979	3637
7	1	3	KLJ7	998887.8328	434578.2585	3641
7	1	3	KLJ8	999126.1139	434500.763	3650
7	1	3	KLJ9	999109.3916	437415.1641	3665
7	1	3	KLT1	998144.5688	434637.4801	3633
7	1	3	KLT10	999010.2595	436436.7415	3654
7	1	3	KLT11	999041.526	437336.1368	3665
7	1	3	KLT12	999057.9015	437624.221	3667
7	1	3	KLT13	998928.8399	436172.041	3653
7	1	3	KLT14	999114.0062	435906.6727	3652
7	1	3	KLT15	998848.1433	437810.1092	3667
7	1	3	KLT15ABN	998800.1519	437782.166	3667
7	1	3	KLT16	999244.1306	435582.6669	3649
7	1	3	KLT17	999192.6735	435268.6036	3652
7	1	3	KLT18	998529.5345	437886.7573	3663
7	1	3	KLT19	999096.7449	435070.6091	3650
7	1	3	KLT2	998434.774	436069.5663	3645
7	1	3	KLT20	998662.282	438037.9422	3664

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	3	KLT21	998976.1845	434550.3662	3647
7	1	3	KLT21ABN	998965.9652	434882.1097	3645
7	1	3	KLT22	998634.434	434740.5	3636
7	1	3	KLT23	998873.6761	434351.4181	3644
7	1	3	KLT24	998735.4434	434182.737	3634
7	1	3	KLT25	999100.8371	435482.8272	3646
7	1	3	KLT26	998978.572	434997.6989	3643
7	1	3	KLT27	999023.0282	435663.4238	3649
7	1	3	KLT28	998870.4618	435179.6152	3641
7	1	3	KLT29	999157.8803	436555.4067	3653
7	1	3	KLT29	999081.1455	435831.0302	3652
7	1	3	KLT29ABN	998767.0094	435844.7563	3652
7	1	3	KLT3	998978.4311	436941.1154	3661
7	1	3	KLT30	998718.4375	435052.1362	3639
7	1	3	KLT31	999196.8801	436283.4258	3652
7	1	3	KLT32	999379.7736	436577.7059	3652
7	1	3	KLT33	998594.7863	434919.4119	3636
7	1	3	KLT34	998560.1476	434331.1532	3632
7	1	3	KLT35	998983.3593	435820.3021	3653
7	1	3	KLT36	998727.8447	435215.8802	3641
7	1	3	KLT37	998504.0036	434574.0366	3635
7	1	3	KLT38	998572.6044	435760.2146	3643
7	1	3	KLT39	999098.8082	436011.4391	3652
7	1	3	KLT-4	999151.7819	437127.5328	3663
7	1	3	KLT40	998752.1621	435418.0231	3643
7	1	3	KLT41	998752.4271	436121.7075	3650
7	1	3	KLT42	998692.32	435617.8316	3645
7	1	3	KLT43	998832.3662	436217.3077	3652
7	1	3	KLT44	999113.6868	436731.4999	3659
7	1	3	KLT45	998605.7233	435357.3753	3640
7	1	3	KLT46	998776.1792	434796.349	3641
7	1	3	KLT47	999001.9826	436313.9712	3653
7	1	3	KLT48	999242.8729	436615.7412	3655
7	1	3	KLT49	998663.136	436004.4981	3651
7	1	3	KLT-5	999073.2113	437041.9639	3664
7	1	3	KLT50	998618.3859	434549.0163	3632
7	1	3	KLT51	998709.2531	434343.1672	3638
7	1	3	KLT52	998925.1151	436039.0623	3653
7	1	3	KLT53	998642.4992	435460.8677	3643
7	1	3	KLT54	998720.0742	434434.7455	3638
7	1	3	KLT55	998741.4259	434703.7842	3639
7	1	3	KLT56	998623.5444	435688.9226	3642
7	1	3	KLT57	998711.1707	435924.3159	3649

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	3	KLT58	999119.6568	437086.9373	3664
7	1	3	KLT59	999093.7334	436260.9043	3653
7	1	3	KLT6	999029.5806	436986.8837	3664
7	1	3	KLT61	998707.4745	435772.3198	3647
7	1	3	KLT62	998686.7764	434638.1091	3639
7	1	3	KLT63	998736.027	434900.2172	3639
7	1	3	KLT64	998663.697	435286.7683	3641
7	1	3	KLT65	999276.6943	436304.9522	3652
7	1	3	KLT66	998781.3337	434608.9336	3641
7	1	3	KLT67	998897.4673	434258.2049	3644
7	1	3	KLT68	998972.7735	434356.7605	3646
7	1	3	KLT69	998826.6487	434479.7883	3644
7	1	3	KLT7	998793.3838	437222.8835	3663
7	1	3	KLT70	999060.7266	434592.7036	3652
7	1	3	KLT71	998912.933	434136.3349	3643
7	1	3	KLT72	998624.0004	435207.4145	3639
7	1	3	KLT73	998822.2165	436107.6399	3653
7	1	3	KLT74	999036.9751	437493.205	3666
7	1	3	KLT75	999100.6813	436892.2412	3662
7	1	3	KLT76	998989.6654	434474.0998	3647
7	1	3	KLT77	998639.9068	435887.3995	3649
7	1	3	KLT78	998600.1908	435559.8188	3642
7	1	3	KLT79	999158.2473	434825.6636	3652
7	1	3	KLT80	999281.5927	436537.9689	3652
7	1	3	KLT81	999359.4431	436944.732	3659
7	1	3	KLT82	998872.0364	434295.4366	3642
7	1	3	KLT9	998656.7554	437525.5402	3665
7	1	3	KT8	999259.5832	436760.1735	3657
7	1	3	LSJ13	999506.4657	434608.6516	3653
7	1	3	MSA 1	999515.8826	434876.0615	3652
7	1	3	MSA 10	999643.7554	434798.8724	3651
7	1	3	MSA11	1000165.967	434015.9539	3652
7	1	3	MSA11ABN	999710.8176	433648.711	3642
7	1	3	MSA2	999799.4393	433436.6191	3641
7	1	3	MSA2	1000167.125	433799.6128	3647
7	1	3	MSA3	999924.5829	433682.8801	3642
7	1	3	MSA4	999711.7808	433429.4222	3641
7	1	3	MSA 5	999564.0127	434962.8037	3652
7	1	3	MSA 6	999750.259	434710.7743	3651
7	1	3	MSA7	999914.8278	434227.099	3651
7	1	3	MSA8	1000080.012	434116.4832	3652
7	1	3	MSA9	999524.6691	436274.8554	3657
7	1	3	MSJ1	1000088.048	433706.558	3644

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	3	MSJ10	999924.7977	433542.001	3641
7	1	3	MSJ11	999925.1817	434342.7324	3649
7	1	3	MSJ12	999608.0392	434601.6802	3650
7	1	3	MSJ14	998720.9609	435530.4898	3643
7	1	3	MSJ15	999477.3064	433774.9303	3644
7	1	3	MSJ16	999794.7158	434243.2651	3645
7	1	3	MSJ17	1000003.282	433618.769	3642
7	1	3	MSJ 18	999562.9934	434706.7264	3651
7	1	3	MSJ19	999419.5588	434666.902	3653
7	1	3	MSJ3	999541.2304	433530.8095	3640
7	1	3	MSJ4	999610.1354	433651.9713	3642
7	1	3	MSJ5	999686.9161	434303.9756	3643
7	1	3	MSJ6	999707.9073	434311.9963	3643
7	1	3	MSJ7	999887.0203	433433.0601	3642
7	1	3	MSJ 8	999403.9693	434051.6338	3642
7	1	3	MSJ9	999706.205	434575.893	3651
7	1	3	MSM1	996878.0262	438419.5048	3673
7	1	3	MSM3	996779.251	438469.3371	3675
7	1	3	MST1	999414.4941	433950.4007	3642
7	1	3	MST10	999597.8132	434162.8079	3642
7	1	3	MST11	999413.8969	433729.1263	3644
7	1	3	MST12	999533.819	433724.9625	3642
7	1	3	MST13	999467.6077	433532.0992	3641
7	1	3	MST14	999599.5858	434310.8149	3642
7	1	3	MST15	999491.4131	434385.0065	3654
7	1	3	MST16	999561.8708	434236.7696	3642
7	1	3	MST17	999584.7371	433412.9969	3640
7	1	3	MST18	999530.0955	434032.7223	3642
7	1	3	MST19	999438.3942	434462.8256	3653
7	1	3	MST-2	1000322.874	437555.9647	3669
7	1	3	MST20	999491.2636	433624.0027	3643
7	1	3	MST21	999447.5203	433855.5627	3643
7	1	3	MST22	999294.8167	434602.4677	3652
7	1	3	MST23	999536.3912	434460.7843	3648
7	1	3	MST24	999633.0256	434455.8268	3648
7	1	3	MST25	999696.7219	434191.957	3643
7	1	3	MST26	999736.0601	434467.5623	3647
7	1	3	MST27	999982.3598	433453.0669	3641
7	1	3	MST28	1000243.682	433882.7766	3648
7	1	3	MST-3	999360.4125	437396.36	3663
7	1	3	MST-4	999954.8713	437842.9924	3665
7	1	3	MST8	999418.5476	434305.5797	3652
7	1	3	MST 9	999463.8259	434155.6259	3643

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	3	RONR34	1001313.064	434512.9924	3682
7	1	3	RONT70	1000589.527	433343.6477	3652
7	1	4	MSM2	996616.1013	438595.7122	3682
7	1	2	D1	1006017.759	438024.9826	3750
7	1	2	D10	1005968.824	437950.0686	3757
7	1	2	D103	1006545.271	437868.5715	3781
7	1	2	D104	1006593.135	438175.2426	3793
7	1	2	D105	1006615.234	438182.7463	3793
7	1	2	D106	1006629.588	438209.5484	3792
7	1	2	D11	1006061.907	438203.9916	3762
7	1	2	D14	1006049.657	438026.2724	3758
7	1	2	D2	1005948.164	438056.1038	3750
7	1	2	D20	1005950.377	438023.0955	3750
7	1	2	D21	1006000.956	438061.2241	3750
7	1	2	D28	1005921.984	437979.3934	3750
7	1	2	D4	1006025.524	437976.6743	3750
7	1	2	D43	1006759.314	438122.3078	3794
7	1	2	D44	1006758.772	438136.4981	3794
7	1	2	D45	1006783.759	438134.5958	3794
7	1	2	D46	1006761.858	438108.537	3794
7	1	2	D46A	1006786.92	438105.1303	3794
7	1	2	D46B	1006816.35	438109.2098	3800
7	1	2	D47	1006760.939	438089.4015	3794
7	1	2	D48	1006853.685	438152.2842	3800
7	1	2	D49	1006853.638	438140.6199	3800
7	1	2	D5	1006063.281	437950.8603	3766
7	1	2	D50	1006852.59	438127.6668	3800
7	1	2	D50A	1006856.327	438111.6583	3800
7	1	2	D6	1006035.229	437936.6384	3757
7	1	2	D69	1006319.358	438304.0293	3782
7	1	2	D7	1006025.645	437912.8492	3757
7	1	2	D70	1006321.528	438281.7194	3782
7	1	2	D71	1006319.793	438265.8228	3782
7	1	2	D72	1006312.955	438247.4898	3782
7	1	2	D8	1006024.021	437893.6171	3757
7	1	2	D9	1006019.897	437872.0154	3757
7	1	2	DK10	1005867.399	437484.8021	3750
7	1	2	DK11	1005828.678	437497.0966	3750
7	1	2	DK12	1005939.138	437503.3398	3751
7	1	2	DK122	1006384.318	437477.0088	3761
7	1	2	DK123	1006035.924	436696.0496	3744
7	1	2	DK13	1005890.508	437428.6324	3744
7	1	2	DK137	1006361.03	433275.5142	3800

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	2	DK14	1006418.981	437705.8188	3780
7	1	2	DK145	1007047.513	433218.0113	3808
7	1	2	DK15	1005240.14	436707.7755	3722
7	1	2	DK19	1005908.56	437408.6043	3744
7	1	2	DK20	1005936.327	437371.0747	3752
7	1	2	DK21	1005739.734	437104.6535	3739
7	1	2	DK22	1005559.947	436816.8314	3732
7	1	2	DK23	1006253.441	435624.7626	3753
7	1	2	DK24	1004797.725	436597.9878	3719
7	1	2	DK26	1003979.313	434758.7023	3725
7	1	2	DK28	1005551.452	436954.4644	3733
7	1	2	DK29	1005809.869	437050.4439	3741
7	1	2	DK3	1005372.866	437461.148	3735
7	1	2	DK30	1006072.578	437663.0353	3762
7	1	2	DK31	1005838.512	437420.8683	3744
7	1	2	DK32	1005692.19	437202.2057	3740
7	1	2	DK35	1006294.065	438403.5743	3777
7	1	2	DK37	1006125.341	437715.932	3768
7	1	2	DK4	1005387.827	437183.681	3728
7	1	2	DK45	1005954.522	437748.7246	3760
7	1	2	DK46	1005655.937	437690.9171	3744
7	1	2	DK47	1005728.1	437971.5837	3746
7	1	2	DK48	1005935.675	437762.6859	3760
7	1	2	DK49	1005782.356	437708.9002	3748
7	1	2	DK5	1005592.959	437255.3718	3739
7	1	2	DK50	1005964.07	437857.7912	3757
7	1	2	DK51	1005584.911	438001.7102	3743
7	1	2	DK52	1005642.667	437836.6875	3742
7	1	2	DK53	1005545.195	438167.692	3742
7	1	2	DK56	1005950.129	437591.768	3760
7	1	2	DK58	1005975.002	437580.8782	3760
7	1	2	DK59	1006019.077	437549.6636	3751
7	1	2	DK6	1005802.633	437466.6391	3750
7	1	2	DK60	1005963.373	437706.5182	3760
7	1	2	DK61	1006013.14	437762.0539	3760
7	1	2	DK62	1005926.613	437602.9469	3760
7	1	2	DK63	1005860.594	437340.0472	3744
7	1	2	DK64	1005758.413	437246.0818	3740
7	1	2	DK65	1005976.162	437749.9603	3760
7	1	2	DK66	1005957.801	437656.607	3760
7	1	2	DK67	1005647.622	437087.8314	3737
7	1	2	DK68	1004521.278	436569.8733	3733
7	1	2	DK69	1005974.386	437687.3848	3760

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	2	DK7	1005567.401	437662.1278	3744
7	1	2	DK70	1005887.961	437530.1034	3750
7	1	2	DK8	1005020.282	437576.4995	3721
7	1	2	DK9	1005124.693	437144.1904	3723
7	1	2	DM1113	1006080.04	436879.0947	3748
7	1	2	DM1114	1006081.149	437370.986	3752
7	1	2	DM1203	1006121.522	437287.4544	3750
7	1	2	DM1235	1006355.967	438213.9411	3782
7	1	2	DM1236	1006483.321	438153.7258	3784
7	1	2	DM1254	1006163.258	438290.015	3765
7	1	2	DP249	1005782.141	438415.2941	3746
7	1	2	DP250	1005971.864	438409.4635	3755
7	1	2	DP251	1006380.678	438401.1648	3777
7	1	2	DR924	1007317.214	437813.6006	3835
7	1	2	DR925	1007275.754	437821.9557	3824
7	1	2	DRA33	1005670.407	437543.1746	3746
7	1	2	DRA34	1004870.176	437181.0262	3716
7	1	2	DRA36	1006497.871	438001.1479	3781
7	1	2	DRA39	1004322.865	437018.5275	3711
7	1	2	DRA42	1002013.724	434903.3617	3677
7	1	2	DRJ10	1007054.573	435079.4112	3782
7	1	2	DRJ100	1007167.531	438228.2716	3822
7	1	2	DRJ102	1006624.543	438148.9036	3793
7	1	2	DRJ105	1006613.534	438198	3793
7	1	2	DRJ116	1007250.831	438161.7224	3833
7	1	2	DRJ13	1007224.584	434954.1346	3795
7	1	2	DRJ14	1007016.282	435544.0751	3779
7	1	2	DRJ16	1006952.942	435584.639	3783
7	1	2	DRJ17	1006894.047	435639.426	3779
7	1	2	DRJ18	1006914.196	435538.7442	3774
7	1	2	DRJ19	1006893.825	435678.3276	3779
7	1	2	DRJ38	1006760.506	435656.8861	3772
7	1	2	DRJ39	1006714.406	435610.3036	3772
7	1	2	DRJ40	1006683.3	435661.0576	3772
7	1	2	DRJ41	1006591.169	435697.1878	3768
7	1	2	DRJ42	1006587.592	435747.4379	3768
7	1	2	DRJ43	1006616.637	435765.0913	3768
7	1	2	DRJ44	1006652.454	435792.8077	3768
7	1	2	DRJ45	1006722.948	435737.1605	3774
7	1	2	DRJ46	1006704.447	435788.7494	3774
7	1	2	DRJ47	1006729.427	435818.171	3774
7	1	2	DRJ48	1006732.877	435676.77	3772
7	1	2	DRJ64	1006556.168	438290.3354	3792

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	2	DRJ7	1007210.855	435006.0778	3795
7	1	2	DRJ72	1006640.066	434315.2796	3768
7	1	2	DRJ73	1006363.661	434304.4908	3768
7	1	2	DRJ74	1006381.024	434672.0719	3759
7	1	2	DRJ75	1006718.139	434603.5575	3775
7	1	2	DRJ76	1006535.572	434914.3441	3760
7	1	2	DRJ77	1006460.321	435353.3238	3759
7	1	2	DRJ78	1006776.181	434857.5847	3768
7	1	2	DRJ79	1006651.608	435128.3051	3769
7	1	2	DRJ8	1007139.94	435156.7608	3782
7	1	2	DRJ80	1006663.403	435514.1894	3764
7	1	2	DRJ81	1006818.94	434722.9598	3773
7	1	2	DRJ82	1006783.907	435299.6034	3762
7	1	2	DRJ83	1006829.255	434607.3034	3778
7	1	2	DRJ84	1006687.482	434467.8527	3778
7	1	2	DRJ85	1006723.68	435009.2898	3766
7	1	2	DRJ86	1006719.765	435211.2771	3762
7	1	2	DRJ87	1006735.928	435400.3948	3764
7	1	2	DRJ88	1006772.892	435684.7217	3772
7	1	2	DRJ9	1007100.484	435185.8494	3782
7	1	2	DRJ94	1006307.882	438364.4511	3777
7	1	2	DRJ95	1006541.742	438129.6874	3784
7	1	2	DRJ96	1007325.689	438077.3742	3836
7	1	2	DRJ97	1006427.99	438313.4272	3792
7	1	2	DRJ99	1006588.037	438258.9578	3792
7	1	2	DRM2	1006380.667	438233.8659	3782
7	1	2	DRM3	1006279.25	433304.5168	3795
7	1	2	DRM4	1006713.038	434033.8079	3777
7	1	2	DRM7	1006542.264	434200.729	3769
7	1	2	DRR100	1007044.979	437446.0412	3798
7	1	2	DRR101	1007068.03	436587.6255	3814
7	1	2	DRR102	1007201.866	436516.1072	3798
7	1	2	DRR103	1007220.921	436573.4329	3821
7	1	2	DRR104	1007158.799	436465.5863	3801
7	1	2	DRR105	1007148.596	436541.2978	3801
7	1	2	DRR106	1007276.106	436556.6095	3798
7	1	2	DRR107	1007261.223	436511.2349	3798
7	1	2	DRR108	1007125.643	436584.0278	3814
7	1	2	DRR109	1007151.161	436653.243	3814
7	1	2	DRR110	1007263.88	436381.0005	3799
7	1	2	DRR112	1007209.635	435992.7676	3801
7	1	2	DRR113	1007098.966	436102.3506	3785
7	1	2	DRR114	1007198.771	436257.3079	3801

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	2	DRR115	1007039.645	437147.8926	3808
7	1	2	DRR116	1007106.229	436809.6305	3813
7	1	2	DRR117	1006977.754	437082.0726	3808
7	1	2	DRR118	1007001.247	436224.0299	3779
7	1	2	DRR119	1007034.266	436948.7523	3803
7	1	2	DRR120	1006984.129	436329.5465	3793
7	1	2	DRR121	1007021.908	436853.6549	3803
7	1	2	DRR122	1007070.665	437048.8352	3815
7	1	2	DRR123	1006889.238	436265.8435	3772
7	1	2	DRR124	1006967.846	436436.8277	3793
7	1	2	DRR125	1006914.112	436526.9988	3784
7	1	2	DRR126	1006846.568	436429.1612	3782
7	1	2	DRR127	1006807.474	436334.6451	3782
7	1	2	DRR128	1006735.199	436405.518	3773
7	1	2	DRR129	1006699.502	436303.5613	3772
7	1	2	DRR130	1006796.79	436181.4929	3783
7	1	2	DRR131	1006689.365	436177.2693	3783
7	1	2	DRR132	1006907.044	435474.7755	3774
7	1	2	DRR133	1007076.098	435458.5684	3788
7	1	2	DRR40	1006748.68	437767.6376	3802
7	1	2	DRR42	1006639.091	437770.492	3791
7	1	2	DRR45	1006511.923	437761.3279	3783
7	1	2	DRR46	1006841.819	437768.3888	3808
7	1	2	DRR48	1006923.006	437812.9731	3808
7	1	2	DRR50	1006941.889	437767.6711	3813
7	1	2	DRR51	1006978.082	437818.5796	3813
7	1	2	DRR52	1006903.327	437859.1675	3801
7	1	2	DRR53	1007063.707	437805.013	3823
7	1	2	DRR55	1006938.377	437710.2952	3813
7	1	2	DRR56	1007121.806	437788.7129	3823
7	1	2	DRR59	1006881.281	437687.3649	3802
7	1	2	DRR60	1007182.874	437797.0483	3824
7	1	2	DRR63	1007235.401	437804.1185	3824
7	1	2	DRR65	1007300.683	437730.7449	3835
7	1	2	DRR66	1007196.372	437704.2045	3824
7	1	2	DRR75	1006989.604	437714.6344	3813
7	1	2	DRR80	1006928.005	437643.8765	3812
7	1	2	DRR83	1006841.767	437563.4813	3801
7	1	2	DRR89	1006989.216	437514.5884	3814
7	1	2	DRR93	1006950.833	437380.6505	3798
7	1	2	DRR97	1007058.997	437294.6577	3803
7	1	2	DRR98	1006981.372	436626.5681	3803
7	1	2	DRR99	1007078.852	437243.6395	3803

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	2	DRT100	1007087.245	434081.8625	3791
7	1	2	DRT102	1006058.415	433807.8117	3792
7	1	2	DRT91	1001942.451	433919.089	3690
7	1	2	DRT92	1002903.067	434178.4628	3682
7	1	2	DRT93	1003835.068	434472.5074	3715
7	1	2	DRT95	1003947.768	433234.5495	3704
7	1	2	DRT97	1006145.77	434693.5065	3753
7	1	2	DS532	1006660.966	437999.6473	3792
7	1	2	DS702	1006833.556	437672.0311	3802
7	1	2	DS703	1006519.337	437700.2572	3779
7	1	2	DS704	1006148.088	437735.9045	3768
7	1	2	DS705	1005790.703	437629.3385	3748
7	1	2	DS706	1005637.669	437375.3076	3742
7	1	2	DS708	1005672.748	437479.463	3746
7	1	2	DS709	1005656.654	436655.5811	3734
7	1	2	DS710	1005723.761	436580.5542	3737
7	1	2	DS711	1005629.365	436550.876	3735
7	1	2	DS712	1004450.691	436502.8257	3733
7	1	2	DS729	1006064.165	433267.3829	3789
7	1	2	DW30	1005955.627	437782.0053	3760
7	1	2	DW34	1006971.564	438303.0386	3820
7	1	2	DW37	1006945.23	438371.4898	3801
7	1	2	EN82	1006189.865	437309.2259	3756
7	1	2	Oil Well	1006501.961	433753.945	3794
7	1	11	FBM 161	1004216.847	429778.2901	3712
7	1	11	FBM 68	1004196.908	429752.5434	3712
7	1	11	FBM 71	1004106.079	429736.2484	3712
7	1	11	FBM 74	1004056.382	429739.5571	3712
7	1	11	FBM 72	1004070.103	429689.8515	3712
7	1	11	FBT 50	1004109.836	429706.5092	3712
7	1	11	FBM 70	1004162.024	429714.3904	3712
7	1	11	FBM 162	1004188.735	429710.0257	3712
7	1	11	FBM 69	1004219.095	429689.4687	3712
7	1	11	FBR 2	1004174.218	429674.0356	3712
7	1	11	FBM 163	1004109.91	429650.8659	3710
7	1	11	FBS 89	1004083.134	429640.9556	3710
7	1	11	FBT 56	1004141.331	429607.966	3710
7	1	11	FBS 90	1004079.462	429588.4664	3710
7	1	11	B 4	1004027.443	429040.5015	3692
7	1	11	FBJ 135	1004463.004	430370.8505	3737
7	1	11	FBJ 130	1004598.41	430283.6006	3739
7	1	11	FBK 33	1004532.802	430278.6862	3739
7	1	11	FBT 207	1004440.961	430261.0404	3739

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBT 9	1004580.019	430213.7075	3739
7	1	11	FBM 57	1004633.965	430189.5377	3739
7	1	11	FBM 54	1004504.794	430194.1696	3739
7	1	11	FBJ 26	1004381.362	430194.3001	3734
7	1	11	FBM 58	1004579.591	430168.6558	3732
7	1	11	FBJ 45	1004420.571	430148.4111	3731
7	1	11	FBT 187	1004360.654	430141.2804	3726
7	1	11	FBR 45	1004524.337	430133.532	3731
7	1	11	FBT 186	1004619.332	430127.7807	3732
7	1	11	FBT 20	1004393.829	430103.1574	3726
7	1	11	FBJ 20	1004497.573	430077.5045	3731
7	1	11	FBR 3	1004584.368	430091.0853	3732
7	1	11	FBM 59	1004543.154	430070.0932	3732
7	1	11	FBR 44	1004447.739	430065.0712	3731
7	1	11	FBM 180	1004618.168	430034.9219	3723
7	1	11	FBM 169	1004326.377	430009.0398	3718
7	1	11	FBT 64	1004412.154	430004.5216	3718
7	1	11	FBM 60	1004470.576	429990.4605	3721
7	1	11	FBS 78	1004524.92	429980.1457	3721
7	1	11	FBS 79	1004580.19	429979.2857	3723
7	1	11	FBM 61	1004422.828	429954.5795	3721
7	1	11	FBM 62	1004362.447	429953.1599	3718
7	1	11	FBM 96	1004344.064	429924.1757	3718
7	1	11	FBT 41	1004418.134	429929.7172	3721
7	1	11	FBS 77	1004492.985	429934.4766	3721
7	1	11	FBT 57	1004559.919	429943.1061	3723
7	1	11	FBS 80	1004617.892	429929.595	3723
7	1	11	FBS 87	1004531.205	429901.0598	3724
7	1	11	FBM 158	1004377.073	429889.7343	3716
7	1	11	FBS 88	1004447.686	429886.6741	3724
7	1	11	FBM 155	1004581.402	429876.0722	3727
7	1	11	FBM 183	1004462.395	429852.0818	3724
7	1	11	FBM 170	1004496.156	429814.3573	3724
7	1	11	FBT 89	1004460.377	429827.6116	3724
7	1	11	682.6	1004420.517	429811.7097	3724
7	1	11	FBM 166	1004357.26	429830.4388	3716
7	1	11	FBR 1	1004376.237	429792.4524	3715
7	1	11	FBM 171	1004334.411	429768.936	3715
7	1	11	FBJ 32	1004844.049	430353.4008	3760
7	1	11	FBT 8	1004719.446	430339.6296	3749
7	1	11	FBT 3	1004793.2	430331.4381	3760
7	1	11	FBT 198	1004894.412	430268.4032	3743
7	1	11	FBT 188	1004804.188	430277.6832	3743

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBT 22	1004748.331	430250.6374	3736
7	1	11	FBM 200	1004932.243	430227.9494	3743
7	1	11	FBK 37	1004842.574	430230.6859	3743
7	1	11	FBT 2	1004675.214	430223.7113	3736
7	1	11	FBT 63	1004756.263	430200.4779	3736
7	1	11	FBM 56	1004689.634	430190.6319	3736
7	1	11	FBM 186	1004799.657	430179.8783	3743
7	1	11	FBS 86	1004910.066	430170.3446	3743
7	1	11	FBM 155	1004746.247	430162.5229	3731
7	1	11	FBT 123	1004863.38	430143.9911	3739
7	1	11	FBM 202	1004667.771	430144.0706	3731
7	1	11	FBM 51	1004846.296	430137.0822	3739
7	1	11	FBM 185	1004706.565	430130.6317	3731
7	1	11	FBM 53	1004819.807	430117.2457	3739
7	1	11	FBK 32	1004896.323	430112.461	3739
7	1	11	FBM 54	1004758.662	430100.4222	3731
7	1	11	FBM 174	1004921.831	430099.5284	3745
7	1	11	FBM 173	1004668.226	430087.6769	3731
7	1	11	FBS 85	1004843.477	430072.5327	3739
7	1	11	FBS 84	1004761.202	430047.1344	3731
7	1	11	FBS 83	1004711.749	430033.8724	3735
7	1	11	FBS 82	1004666.823	430010.3564	3735
7	1	11	FBM 157	1004719.011	429994.3739	3735
7	1	11	FBT 91	1004912.401	429991.9603	3742
7	1	11	FBS 81	1004659.333	429951.2503	3723
7	1	11	FBM 156	1004700.238	429924.2304	3735
7	1	11	FBT 90	1004631.935	429868.9609	3727
7	1	11	FBM 153	1004965.342	430336.3739	3763
7	1	11	FBJ 98	1005159.259	430316.7058	3752
7	1	11	FBT 206	1005004.856	430294.6792	3743
7	1	11	FBJ 104	1005189.315	430226.1025	3741
7	1	11	FBJ 85	1005103.719	430227.9706	3754
7	1	11	FBK 4	1005042.809	430216.2668	3754
7	1	11	FBT 18	1005123.483	430184.5884	3754
7	1	11	FBT 61	1005015.746	430169.3685	3745
7	1	11	FBM 107	1005070.68	430152.0239	3752
7	1	11	FBK 31	1005134.79	430134.3236	3752
7	1	11	FBM 108	1004956.769	430138.8052	3745
7	1	11	FBK 40	1005031.401	430103.6494	3745
7	1	11	FBK 24	1005220.665	430087.907	3746
7	1	11	FBR 4	1005172.389	430077.6938	3746
7	1	11	FBM 176	1005083.209	430063.412	3752
7	1	11	FBM 177	1004944.855	430042.4406	3747

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Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBM 181	1004995.656	430036.46	3747
7	1	11	FBM 102	1005213.361	430029.7004	3741
7	1	11	FBT 40	1005066.032	430019.8668	3745
7	1	11	FBK 20	1004997.743	430003.0509	3747
7	1	11	FBT 28	1005125.937	429991.3431	3745
7	1	11	FBM 50	1005087.292	429976.4398	3745
7	1	11	FBK 7	1005168.898	429971.0426	3741
7	1	11	FBT 124	1005219.859	429943.8347	3741
7	1	11	FBM 105	1005187.723	429929.2309	3741
7	1	11	FBT 88	1005073.98	429931.4559	3745
7	1	11	FBK 21	1004997.069	429919.1485	3747
7	1	11	FBM 106	1005152.598	429900.2259	3741
7	1	11	FBK 22	1005210.953	429887.2467	3735
7	1	11	FBJ 87	1005355.521	430287.8258	3736
7	1	11	FBJ 75	1005487.985	430269.8778	3730
7	1	11	FBM 203	1005372.71	430211.2544	3736
7	1	11	FBA 7	1005515.405	430205.3872	3730
7	1	11	FBJ 81	1005387.447	430185.6059	3736
7	1	11	FBJ 62	1005505.948	430157.4951	3731
7	1	11	FBK 36	1005441.647	430130.2279	3731
7	1	11	FBK 30	1005308.667	430136.1868	3737
7	1	11	FBM 115	1005232.307	430137.7124	3746
7	1	11	FBM 188	1005429.7	430097.9495	3731
7	1	11	FBK 25	1005373.085	430079.113	3737
7	1	11	FBM 114	1005293.8	430076.7537	3737
7	1	11	FBR 26	1005502.083	430032.0307	3736
7	1	11	FBT 58	1005324.537	430032.9745	3742
7	1	11	FBK 35	1005434.74	430019.821	3736
7	1	11	FBR 5	1005402.237	429980.0861	3742
7	1	11	FBK 16	1005273.528	429982.7445	3741
7	1	11	FBB-1	1005246.958	429975.3437	3741
7	1	11	FBM 103	1005348.455	429968.5475	3742
7	1	11	FBM 52	1005462.364	429954.2276	3736
7	1	11	FBT 87	1005369.833	429932.3248	3742
7	1	11	FBT 65	1005301.991	429925.6555	3742
7	1	11	FBK 23	1005406.196	429921.8359	3742
7	1	11	FBS 94	1005439.017	429894.1422	3738
7	1	11	FBT 24	1005275.467	429876.2232	3735
7	1	11	FBM 104	1005330.51	429867.3813	3742
7	1	11	FBS 91	1005505.29	429869.5519	3738
7	1	11	FBS 92	1005462.654	429849.7902	3738
7	1	11	FBM 187	1005223.907	429812.9733	3735
7	1	11	FBM 109	1005287.063	429807.5563	3735

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Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBT 29	1005362.207	429806.1424	3742
7	1	11	FBR 66	1005454.836	429784.192	3734
7	1	11	FBT 60	1005238.59	429763.9794	3731
7	1	11	FBT 21	1005355.294	429733.4861	3736
7	1	11	FBM 110	1005297.55	429716.2904	3736
7	1	11	FBJ 143	1005488.19	429712.8308	3734
7	1	11	FBR 56	1005411.517	429687.8782	3736
7	1	11	FBM 191	1005350.944	429666.5434	3732
7	1	11	FBR 67	1005505.179	429656.2999	3724
7	1	11	FBT 23	1005374.813	429622.5104	3732
7	1	11	FBR 8	1005417.475	429573.1976	3724
7	1	11	FBM 111	1005285.986	429549.4777	3722
7	1	11	FBT 27	1005358.018	429544.8118	3732
7	1	11	FBM 113	1005422.446	429521.1563	3720
7	1	11	FBM 112	1005471.755	429497.1272	3720
7	1	11	FBW 9	1005411.87	429472.2617	3723
7	1	11	FBM 190	1005420.751	429467.1484	3720
7	1	11	FBS 73	1005479.157	429427.0037	3720
7	1	11	FBS 72	1005432.936	429400.131	3717
7	1	11	FBT 66	1005488.015	429364.1344	3717
7	1	11	PM 192	1005375.664	428885.2912	3712
7	1	11	FBJ 83	1005585.96	430320.7566	3741
7	1	11	FBJ 70	1005768.094	430287.6997	3747
7	1	11	FBJ 82	1005801.894	430248.3004	3746
7	1	11	FBJ 69	1005606.106	430250.7117	3743
7	1	11	FBJ 67	1005720.203	430199.9474	3747
7	1	11	FBJ 61	1005627.721	430150.1287	3737
7	1	11	FBJ 68	1005723.889	430108.6126	3741
7	1	11	FBK 26	1005535.297	430090.0647	3731
7	1	11	FBJ 56	1005574.339	430056.9587	3737
7	1	11	FBK 27	1005622.536	429997.1791	3723
7	1	11	FBJ 50	1005645.133	429964.9731	3723
7	1	11	FBK 28	1005713.769	429901.995	3719
7	1	11	FBM 16	1005552.829	429889.6782	3729
7	1	11	FBS 66	1005590.351	429855.8987	3729
7	1	11	FBK 10	1005603.903	429786.1988	3726
7	1	11	FBS 67	1005642.841	429778.9312	3726
7	1	11	FBM 17	1005715.683	429793.1547	3719
7	1	11	FBS 68	1005775.967	429696.9966	3714
7	1	11	FBS 69	1005671.733	429673.1904	3714
7	1	11	FBS 70	1005696.795	429567.542	3709
7	1	11	FBS 71	1005615.607	429509.8226	3717
7	1	11	FBT 59	1005511.978	429460.924	3720

POWERTECH (USA) INC.

Appendix 3.3-A
Historic TVA Drill Holes within the One Mile Perimeter around the Dewey-Burdock Uranium ISR Project Boundary

Township	Range	Section	Hole ID	SD State Plane 1983		Surface Elevation
				East (ft)	North (ft)	
7	1	11	FBS 74	1005552.706	429439.1813	3717
7	1	11	FBS 75	1005584.658	429385.8762	3715
7	1	11	FBS 76	1005659.155	429358.9929	3715
7	1	11	FBM 116	1005529.81	429351.356	3717
7	1	11	FBS 93	1005604.628	429344.5914	3715
7	1	11	FBT 67	1005525.535	429302.2221	3717
7	1	11	FBM 201	1005633.655	429295.7208	3715
7	1	11	FBT 26	1005575.496	429275.4925	3713
7	1	11	FBR 27	1005669.013	429254.116	3706
7	1	11	FBM 117	1005593.584	429245.1265	3713
7	1	11	FBT 68	1005553.171	429217.8624	3713
7	1	11	FBM 119	1005625.207	429177.3696	3713
7	1	11	FBM 118	1005559.451	429175.495	3713
7	1	11	FBR 33	1005578.639	429136.593	3705
7	1	11	FBW 7	1005734.11	429128.0352	3698
7	1	1	TP-1	1008136.033	435342.4501	3864
7	1	3	TP54A	999375.8258	435354.664	3652
7	1	3	TT11WDR	1000743.809	438538.9451	3677

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APPENDIX 3.3-B

SOIL MAPPING UNIT DESCRIPTIONS

"Aa" – Alice clay, 0 to 6 percent slope

The Alice clay mapping unit consists of very deep, well drained soils on upland hillslopes and river valley terraces. It occurs on moderately coarse textured alluvium and windblown material at elevations from 3000 to 5500 feet.

The mean annual precipitation is estimated to be 14 to 18 inches. The mean annual air temperature is approximately 49 degrees Fahrenheit. The frost-free season ranges from 120 to 150 days.

Slopes range from 0 to 15 percent. Parent material consists of moderately coarse textured material that is mainly alluvium but may include some eolian sands and loess.

A typical profile contains a 9 inch grayish brown fine sandy loam surface layer. The transition subsoil is a grayish brown fine sandy loam that is approximately 4 inches thick. The substratum is a light brownish gray fine sandy loam that extends to approximately to 26 inches in depth.

Permeability within the Alice soil is moderately rapid. Runoff is low on the gentler slopes and medium on the steeper slopes. The water erosion hazard is severe and the wind erosion hazard is severe.

Productivity and Reclamation Potential

There are twenty seven plant species that are common to this map unit: Needle and thread, Little bluestem, Prairie sandreed, Blue grama, Western wheatgrass, Big bluestem, Hairy grama, Sand bluestem, Sedge, Sideoats grama, Switchgrass, Blacksamson Echinacea, Breadroot scurfpea, Fringed sagewort, Louisiana sagewort, Prairie coneflower, Stiff sunflower, Heath aster, Leadplant, Plains pricklypear, Rose, Sand sagebrush, Silverleaf scurfpea, Slimflower scurfpea, Violet prairieclover, Wormwood, and Yucca .

In a favorable year (above average moisture), the production is approximately 2,300 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,300 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content. This map unit is a good source for roadfill. This map unit is a good source for topsoil.

"Ar" - Arvada fine sandy loam, 0 to 6 percent slope

The Arvada fine sandy loam mapping unit consists of very deep, well drained soils formed in alluvium and colluvium that was derived from sodic shale. It occurs on alluvial fans, fan remnants, fan terraces and hillslopes at elevations from 2,600 to 6,000 feet.

The mean annual precipitation is estimated to be 9 to 14 inches. The mean annual air temperature is approximately 46 degrees Fahrenheit. The frost-free season ranges from 100 to 160 days.

Slopes range from 0 to 25 percent. Parent material consists of moderately fine textured alluvium and colluvium derived from sedimentary rocks.

A typical profile contains a 4 inch light gray fine sandy loam surface layer. The transition subsoil is a brown clay that is approximately 10 inches thick. The substratum is a brown clay loam that extends to approximately to 20 inches in depth.

Permeability within the Arvada soil is very slow. Runoff is high on the gentler slopes and very high on the steeper slopes. The water erosion hazard is very slight and the wind erosion hazard is very slight.

Productivity and Reclamation Potential

There are twenty two plant species that are common to this map unit: Blue grama, Buffalograss, Thickspick wheatgrass,Western wheatgrass, Sideoats grama, Needle and thread, Alkali sacaton, Bluegrass, Inland saltgrass, Nuttall's alkaligrass, Prairie sandreed, Sand dropseed, Sedge, Tumblegrass, Big sagebrush, Broom snakeweed, Ericameria nauseosa ssp. nauseosa var nauseosa, Fringed sagewort, Greasewood, Nuttall's saltbush, Plains pricklypear, and Plains springparsley.

In a favorable year (above average moisture), the production is approximately 840 lbs/acres. In an unfavorable (drought) year, the production is approximately 420 lbs/acres.

According to NRCS information, this map unit is a poor source for roadfill; limitations include low strength and shrink-swell. This map unit is a poor source for topsoil; limitations include sodium content, too clayey and rock fragments. This map unit is a fair source of overall reclamation material; limitations include sodium content, too alkaline, too clayey, low organic matter content and water erosion.

"As" - Ascalon fine sandy loam, 0 to 6 percent slope

The Ascalon fine sandy loam mapping unit consists of very deep, well drained soils that formed in moderate coarse textured calcareous material. It occurs on upland hillslopes and tableland plains at elevation ranges from 4,000 feet to 6,000 feet.

The mean annual precipitation is estimated to be 13 to 17 inches. The mean annual air temperature is approximately 49 degrees Fahrenheit. The frost-free season ranges from 130 to 160 days.

Slopes range from 0 to 25 percent. Parent material consists of thick, moderately coarse textured, calcareous material.

A typical profile contains a 4 inch grayish brown fine sandy loam surface layer. The transition subsoil is a grayish brown fine sandy loam that is approximately 3 inches thick. The substratum is a brown sandy clay loam that extends to approximately to 14 inches in depth.

Saturated hydraulic conductivity within the Ascalon soil is high. Runoff is low on the gentler slopes and high on the steeper slopes. The water erosion hazard is severe and the wind erosion hazard is severe.

Productivity and Reclamation Potential

There are twenty seven plant species that are common to this map unit: Needle and thread, Little bluestem, Prairie sandreed, Blue grama, Western wheatgrass, Big bluestem, Hairy grama, Sand bluestem, Sedge, Sideoats grama, Switchgrass, Blacksamson Echinacea, Breadroot scurfpea, Fringed sagewort, Louisiana sagewort, Prairie coneflower, Stiff sunflower, Heath aster, Leadplant, Plains pricklypear, Rose, Sand sagebrush, Silverleaf scurfpea, Slimflower scurfpea, Violet prairieclover, Wormwood, and Yucca.

In a favorable year (above average moisture), the production is approximately 2,300 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,300 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content. This map unit is a good source for roadfill. This map unit is a good source for topsoil.

"Bc" - Barnum very fine sandy loam, 0 to 6 percent slope

The Barnum very fine sandy loam mapping unit consists of very deep, well drained soils formed in calcareous alluvium from red bed sediments. It occurs on flood plains and alluvial terraces with an elevation range from 4,000 feet to 6,600 feet.

The mean annual precipitation is estimated to be 10 to 14 inches. The mean annual air temperature is approximately 47 degrees Fahrenheit. The frost-free season ranges from 110 to 135 days.

Slopes range from 0 to 8 percent. Parent material consists of calcareous alluvium from red bed sediments.

A typical profile contains a 4 inch reddish brown very fine sandy loam surface layer. The transition subsoil and substratum is a reddish brown loam stratified with thin lenses of fine sandy loam and light clay loam that extends to approximately to 60 inches in depth.

Permeability within the Barnum soil is moderate or moderately slow because of stratification. Runoff is low on the gentler slopes and medium on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are twenty three plant species that are common to this map unit: Western wheatgrass, Green needlegrass, Needle and thread, Sideoats grama, Little bluestem, Bluegrass, Big bluestem, Fringed sagewort, Wormwood, Sedge, Switchgrass, Yellow Indiangrass, Blue grama, Breadroot scurfpea, Broom snakeweed, Hairy grama, Heath aster, Louisiana sagewort, Prairie coneflower, Silverleaf scurfpea, Leadplant, Skunkbush sumac, and Slimflower scurfpea.

In a favorable year (above average moisture), the production is approximately 2,300 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,300 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content and water erosion. This map unit is a fair source for roadfill; limitations include low strength and shrink-swell. This map unit is a fair source for topsoil; limitations include salinity.

"Bo" - Boneek silt loam, 0 to 6 percent slope

The Boneek silt loam mapping unit consists of deep and very deep, well drained soils formed in silty sediments underlain by sandstone or siltstone. It occurs on nearly level to moderately sloping high terraces and uplands at elevations from 2950 to 3940 feet.

The mean annual precipitation is estimated to be 15 to 18 inches. The mean annual air temperature is approximately 46 degrees Fahrenheit. The frost-free season ranges from 110 to 140 days.

Slopes range from 0 to 15 percent. Parent material consists of silty mantle overlying sandstone or siltstones, or in loess or silty alluvium.

A typical profile contains a 3 inch brown silt loam surface layer. The transition subsoil is a brown silt loam that is approximately 3 inches thick. The substratum is a brown silty clay that extends to approximately to 10 inches in depth.

Permeability within the Boneek soil is moderately slow in the solum and moderate in the underlying material. Runoff is low on the gentler slopes and medium on the steeper slopes. The water erosion hazard is very slight and the wind erosion hazard is very slight.

Productivity and Reclamation Potential

There are twenty three plant species that are common to this map unit: Western wheatgrass, Green needlegrass, Needle and thread, Sideoats grama, Little bluestem, Bluegrass, Big bluestem, Fringed sagewort, Wormwood, Sedge, Switchgrass, Yellow Indiangrass, Blue grama, Breadroot scurfpea, Broom snakeweed, Hairy grama, Heath aster, Louisiana sagewort, Prairie coneflower, Silverleaf scurfpea, Leadplant, Skunkbush sumac, and Slimflower scurfpea.

In a favorable year (above average moisture), the production is approximately 2,200 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,300 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content and water erosion. This map unit is a fair source for roadfill; limitations include low strength. This map unit is a good source for topsoil.

"Br" - Broadhurst clay, 6 to 15 percent slope

The Broadhurst clay mapping unit consists of very deep, well drained soils formed in clayey material derived from acid shales. It occurs on fans and terraces at elevations from 2950 to 3940 feet.

The mean annual precipitation is estimated to be 15 to 18 inches. The mean annual air temperature is approximately 47 degrees Fahrenheit. The frost-free season ranges from 110 to 140 days.

Slopes range from 0 to 15 percent. Parent material consists of clayey material derived from acid shales.

A typical profile contains a 3 inch light brownish gray clay surface layer. The transition subsoil is a grayish brown clay that is approximately 13 inches thick. The substratum is a grayish brown and light brownish gray clay that extends to approximately to 41 inches in depth.

Permeability within the Broadhurst soil is very slow except after dry periods when the initial intake in cracks is rapid. Runoff is medium on the gentler slopes and very high on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are nine plant species that are common to this map unit: Western wheatgrass, Thickspick wheatgrass, Green needlegrass, American vetch, Onion, Plains springparsley, Big sagebrush, Nuttall's saltbush, and Plains pricklypear.

In a favorable year (above average moisture), the production is approximately 1,700 lbs/acres. In an unfavorable (drought) year, the production is approximately 800 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include low organic matter content, water erosion, too clayey, too acid and salinity. This map unit is a poor source for roadfill; limitations include low strength and shrink-swell. This map unit is a poor source for topsoil; limitations include too clayey, salinity, too acid and slope.

"Bw" – Butche cobbly loam, 6 to 40 percent slope

The Butche cobbly loam mapping unit consists of shallow, well drained to excessively drained soils formed in loamy materials weathered from sandstone. It occurs on sloping to very steep uplands at elevations from 3000 to 5500 feet.

The mean annual precipitation is estimated to be 13 to 18 inches. The mean annual air temperature is approximately 46 degrees Fahrenheit. The frost-free season ranges from 110 to 140 days.

Slopes range from 1 to 60 percent. Parent material consists of loamy materials weathered from noncalcareous sandstone.

A typical profile contains a 4 inch dark grayish brown cobbly loam surface layer. The transition subsoil is a pale brown cobbly loam that is approximately 6 inches thick. The substratum is very pale brown indurated sandstone that extends to approximately to 60 inches in depth.

Permeability within the Butche soil is moderate or moderately rapid. Runoff is low on the gentler slopes and high on the steeper slopes. The water erosion hazard is negligible and the wind erosion hazard is negligible.

Productivity and Reclamation Potential

There are twenty seven plant species that are common to this map unit: Little bluestem, Sideoats grama, Big bluestem, Needle and thread, Switchgrass, Yellow Indiangrass, Bluegrass, Prairie dropseed, Prairie sandreed, Sedge, Western wheatgrass, Dropseed, Blacksamson Echinacea, Breadroot scurfpea, Broom snakeweed, Dotted gayfeather, Louisiana sagewort, Blue grama, Fringed sagewort, Hairy grama, Leadplant, Ponderosa pine, Silverleaf scurfpea, Skunkbush sumac, Slimflower scurfpea, True mountain mahogany, and Wormwood.

In a favorable year (above average moisture), the production is approximately 1,600 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,000 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include low organic matter content, droughty and depth to bedrock. This map unit is a poor source for roadfill; limitations include depth to bedrock and cobble content. This map unit is a poor source for topsoil; limitations include depth to bedrock, slope and rock fragments.

"Cn" – Colby silt loam, 6 to 15 percent slope

The Colby silt loam mapping unit consists of very deep, well drained and somewhat excessively drained soils formed in calcareous loess. It occurs on nearly level to steep hills and plains at elevations from 2620 to 3610 feet.

The mean annual precipitation is estimated to be 13 to 20 inches. The mean annual air temperature is approximately 45 to 55 degrees Fahrenheit. The frost-free season ranges from 130 to 150 days.

Slopes range from 0 to 60 percent. Parent material consists of calcareous silty loess.

A typical profile contains a 4 inch grayish brown silt loam surface layer. The transition subsoil is a light brownish gray silt loam that is approximately 4 inches thick. The substratum is a pale brown silt loam that extends to approximately to 20 inches in depth.

Permeability within the Colby soil is moderate. Runoff is low on the gentler slopes and very high on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are twenty three plant species that are common to this map unit: Needle and thread, Little bluestem, Western wheatgrass, Sedge, Prairie sandreed, Sideoats grama, Blue grama, Green needlegrass, Hairy grama, Inland saltgrass, Plains muhly, Big sagebrush, Blacksamson Echinacea, Broom snakeweed, Fringed sagewort, Louisiana sagewort, Missouri goldenrod, Oligoneuron rigidum var. rigidum, Plains pricklypear, Prairie coneflower, Violet prairieclover, Wormwood, and Yucca.

In a favorable year (above average moisture), the production is approximately 1,600 lbs/acres. In an unfavorable (drought) year, the production is approximately 800 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content, water erosion and carbonate content. This map unit is a poor source for roadfill; limitations include low strength and slope. This map unit is a poor source for topsoil; limitations include slope and carbonate content.

"Cy" - Cushman very fine sandy loam, 6 to 15 percent slope

The Cushman very fine sandy loam mapping unit consists of well drained soils that are moderately deep to bedrock and formed in slopewash alluvium and residuum from interbedded shales and siltstone and fine-grained argillaceous sandstone. It occurs on buttes, fan remnants, hills, piedmonts, ridges and terraces at elevations from 3,500 to 6,000 feet.

The mean annual precipitation is estimated to be 10 to 14 inches. The mean annual air temperature is approximately 45 degrees Fahrenheit. The frost-free season ranges from 105 to 130 days.

Slopes range from 0 to 20 percent. Parent material consists of moderately fine textured slopewash alluvium and residuum.

A typical profile contains a 2 inch light brownish gray very fine sandy loam surface layer. The transition subsoil is a brown clay loam that is approximately 6 inches thick. The substratum is a yellowish brown clay loam that extends to approximately to 14 inches in depth.

Permeability within the Cushman soil is moderate. Runoff is medium. The water erosion hazard is slight and the wind erosion hazard is slight.

Productivity and Reclamation Potential

There are twenty six plant species that are common to this map unit: Western wheatgrass, Green needlegrass, Needle and thread, Sideoats grama, Little bluestem, Prairie sandreed, Sand dropseed, Fringed sagewort, Louisiana sagewort, Missouri goldenrod, Oligoneuron rigidum var. rigidum, Silverleaf scurfpea, American vetch, Big sagebrush, Blue grama, Bluegrass, Breadroot scurfpea, Buffalograss, Heath aster, Leadplant, Prairie coneflower, Rose, Sedge, Skunkbush sumac, Slimflower scurfpea, and Western yarrow.

In a favorable year (above average moisture), the production is approximately 2,300 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,300 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content, droughty and depth to bedrock. This map unit is a poor source for roadfill; limitations include depth to bedrock, low strength and shrink-swell. This map unit is a fair source for topsoil; limitations include depth to bedrock.

"Dg" – Demar loam, 0 to 6 percent slope

The Demar loam mapping unit consists of deep or very deep, moderately well drained soils formed in clayey alluvium from acid clay shales. It occurs on micro-highs on nearly level to gently sloping alluvial terraces having pronounced micro-relief at elevations from 2950 to 3940 feet.

The mean annual precipitation is estimated to be 12 to 18 inches. The mean annual air temperature is approximately 47 degrees Fahrenheit. The frost-free season ranges from 110 to 140 days.

Slopes range from 0 to 6 percent. Parent material consists of clayey alluvium derived from acid clay shales.

A typical profile contains a 5 inch pale brown loam surface layer. The transition subsoil is a brown silty clay loam that is approximately 7 inches thick. The substratum is a grayish brown silty clay that extends to approximately to 24 inches in depth.

Permeability within the Demar soil is very slow. Runoff is medium. The water erosion hazard is very slight and the wind erosion hazard is very slight.

Productivity and Reclamation Potential

There are fifteen plant species that are common to this map unit: Western wheatgrass, Blue grama, Needle and thread, Buffalograss, Green needlegrass, Prairie sandreed, Sedge, American vetch, Broom snakeweed, Fringed sagewort, Louisiana sagewort, Scarlet globemallow, Big sagebrush, Ericameria nauseosa ssp. nauseosa var.nauseosa, and Plains pricklypear.

In a favorable year (above average moisture), the production is approximately 1,600 lbs/acres. In an unfavorable (drought) year, the production is approximately 900 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content, water erosion, too clayey, too acid and salinity. This map unit is a poor source for roadfill; limitations include depth to bedrock, low strength and shrink-swell. This map unit is a fair source for topsoil; limitations include too clayey and sodium content.

"Gr" – Grummit clay, 0 to 6, 6 to 15 and 15 to 60 percent slope

The Grummit clay mapping unit consists of shallow, well drained soils formed in clayey residuum from acid shale on uplands. It occurs on gently sloping to very steep uplands at elevations from 2950 to 3940 feet.

The mean annual precipitation is estimated to be 12 to 18 inches. The mean annual air temperature is approximately 46 degrees Fahrenheit. The frost-free season ranges from 110 to 140 days.

Slopes range from 2 to 60 percent. Parent material consists of clayey residuum weathered from acid shales.

A typical profile contains a 3 inch light brownish gray clay surface layer. The transition subsoil is a grayish brown clay that is approximately 4 inches thick. The substratum is a grayish brown and gray clay that extends to approximately to 17 inches in depth.

Permeability within the Grummit soil is moderate or moderately slow in the upper part and moderate in the underlying material. Runoff is low on the gentler slopes and medium on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are twenty six plant species that are common to this map unit: Little bluestem, Western wheatgrass, Sideoats grama, Green needlegrass, Blue grama, Big bluestem, Hairy grama, Needle and thread, Prairie sandreed, Rocky Mountain juniper, Sedge, Big sagebrush, Blacksamson Echinacea, Broom snakeweed, Rose, Silver buffaloberry, Skunkbush sumac, Breadroot scurfpea, Fringed sagewort, Leadplant, Louisiana sagewort, Prairie coneflower, Silverleaf scurfpea, Slimflower scurfpea, Violet prairieclover, and Yucca.

In a favorable year (above average moisture), the production is approximately 1,400 lbs/acres. In an unfavorable (drought) year, the production is approximately 800 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include low organic matter content, droughty, too clayey, depth to bedrock and too acid. This map unit is a poor source for roadfill; limitations include depth to bedrock and slope. This map unit is a poor source for topsoil; limitations include depth to bedrock, slope, too clayey and too acid.

"Ha" - Haverson loam, 0 to 6 percent slope

The Haverson loam mapping unit consists of very deep, well drained soils that formed in alluvium from mixed sources. It occurs on floodplains and low terraces at elevations from 2950 to 3940 feet.

The mean annual precipitation is estimated to be 14 to 18 inches. The mean annual air temperature is approximately 49 degrees Fahrenheit. The frost-free season ranges from 125 to 180 days.

Slopes range from 0 to 9 percent. Parent material consists of highly stratified, calcareous, recent alluvium derived from mixed sources.

A typical profile contains a 3 inch pale brown loam surface layer. The transition subsoil is a pale brown loam that is approximately 3 inches thick. The substratum is a light brownish gray loam that extends to approximately to 12 inches in depth.

Permeability within the Haverson soil is moderate. Runoff is negligble on the gentler slopes and medium on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are twenty four plant species that are common to this map unit: Western wheatgrass, Green needlegrass, Prairie sandreed, Needle and thread, Blue grama, Buffalograss, Bluegrass, Fringed sagewort, Sedge, Heath aster, Western yarrow, Wormwood, Big bluestem, Big sagebrush, Boxelder, Common chokecherry, Green ash, Leadplant, Little bluestem, Louisiana sagewort, Plains cottonwood, Silver buffaloberry, Skunkbush sumac, and Western snowberry.

In a favorable year (above average moisture), the production is approximately 2,800 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,600 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content. This map unit is a fair source for roadfill; limitations include shrink-swell. This map unit is a good source for topsoil.

"He" - Hisle silt loam, 0 to 6 percent slope

The Hisle silt loam mapping unit consists of moderately deep, well drained and moderately well drained soils formed in clayey sediments weathered from clay shale on uplands. It occurs on nearly level to moderately sloping on uplands at elevations around 3,020 feet.

The mean annual precipitation is estimated to be 12 to 16 inches. The mean annual air temperature is approximately 45 degrees Fahrenheit. The frost-free season ranges from 130 to 150 days.

Slopes range from 0 to 15 percent. Parent material consists of clays transported locally or weathered in place from clay shales.

A typical profile contains a 1 inch light gray silt loam surface layer. The transition subsoil is a light brownish gray clay that is approximately 1 inch thick. The substratum is a light brownish gray clay that extends to approximately to 9 inches in depth.

Permeability within the Hisle soil is very slow, but after dry periods initial intake commonly is rapid because of cracks. Runoff is medium on the gentler slopes and very high on the steeper slopes. The water erosion hazard is very slight and the wind erosion hazard is very slight.

Productivity and Reclamation Potential

There are twenty two plant species that are common to this map unit: Blue grama, Buffalograss, Thickspick wheatgrass, Western wheatgrass, Sideoats grama, Needle and thread, Alkali sacaton, Bluegrass, Inland saltgrass, Nuttall's alkaligrass, Prairie sandreed, Sand dropseed, Sedge, Tumblegrass, Big sagebrush, Broom snakeweed, Ericameria nauseosa ssp. nauseosa var. nauseosa, Fringed sagewort, Greasewood, Nuttall's saltbush, Plains pricklypear, and Plains springparsley.

In a favorable year (above average moisture), the production is approximately 1,100 lbs/acres. In an unfavorable (drought) year, the production is approximately 500 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include sodium content, droughty, too clayey, depth to bedrock and salinity. This map unit is a poor source for roadfill; limitations include low strength, depth to bedrock and shrink-swell. This map unit is a poor source for topsoil; limitations include too clayey, salinity, depth to bedrock and sodium content.

"Ky" – Kyle clay, 0 to 6 percent slope

The Kyle clay mapping unit consists of very deep and well drained soils formed in sediments weathered from clay shale on uplands. It occurs on nearly level to strongly sloping on uplands and colluvial fans at elevations from 2620 to 3610 feet.

The mean annual precipitation is estimated to be 12 to 19 inches. The mean annual air temperature is approximately 47 degrees Fahrenheit. The frost-free season ranges from 130 to 150 days.

Slopes range from 0 to 15 percent. Parent material consists of clayey sediments weathered from calcareous clay shale.

A typical profile contains a 4 inch grayish brown clay surface layer. The transition subsoil is a grayish brown clay that is approximately 4 inches thick. The substratum is a grayish brown clay that extends to approximately to 16 inches in depth.

Permeability within the Kyle soil is very slow, except after dry periods when the initial intake into cracks is rapid. Runoff is medium on the gentler slopes and very high on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are nineteen plant species that are common to this map unit: Western wheatgrass, Green needlegrass, Sideoats grama, Needle and thread, Blue grama, Bluegrass, Buffalograss, Sedge, Big sagebrush, Fringed sagewort, Heath aster, Louisiana sagewort, Plains pricklypear, Silverleaf scurfpea, Western yarrow, American vetch, Breadroot scurfpea, Scarlet globemallow, and Slimflower scurfpea.

In a favorable year (above average moisture), the production is approximately 2,300 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,300 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include low organic matter content, water erosion, too clayey and sodium content. This map unit is a poor source for roadfill; limitations include low strength and shrink-swell. This map unit is a poor source for topsoil; limitations include too clayey and sodium content.

"Lo" – Lohmiller silty clay loam, 0 to 6 percent slope

The Lohmiller silty clay loam mapping unit consists of very deep, well drained soils formed in alluvium on bottom lands. It occurs on flood plains and high bottom lands of rivers and streams and on alluvial fans of foot slopes at elevations from 2620 to 3610 feet.

The mean annual precipitation is estimated to be 10 to 19 inches. The mean annual air temperature is approximately 46 degrees Fahrenheit. The frost-free season ranges from 130 to 150 days.

Slopes range from 0 to 8 percent. Parent material consists of calcareous alluvium from sedimentary rock.

A typical profile contains a 4 inch grayish brown silty clay loam surface layer. The transition subsoil is a grayish brown clay loam that is approximately 4 inches thick. The substratum is a grayish brown clay loam that extends to approximately to 60 inches in depth.

Permeability within the Lohmiller soil is slow or moderately slow. Runoff is low on the gentler slopes and medium on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are twenty four plant species that are common to this map unit: Western wheatgrass, Green needlegrass, Prairie sandreed, Needle and thread, Blue grama, Buffalograss, Bluegrass, Fringed sagewort, Sedge, Heath aster, Western yarrow, Wormwood, Big bluestem, Big sagebrush, Boxelder, Common chokecherry, Green ash, Leadplant, Little bluestem, Louisiana sagewort, Plains cottonwood, Silver buffaloberry, Skunkbush sumac, and Western snowberry.

In a favorable year (above average moisture), the production is approximately 2,600 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,500 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include low organic matter content, water erosion and too clayey. This map unit is a poor source for roadfill; limitations include low strength and shrink-swell. This map unit is a poor source for topsoil; limitations include too clayey.

"Mm" – Mathias extremely stony very fine sandy loam, 15 to 40 percent slope

The Mathias extremely stony very fine sandy loam mapping unit consists of very deep, well drained soils formed in colluvial sediments weathered from interbedded sandstone and shale on uplands. It occurs below sandstone outcrops on mountain side slopes at elevations from 2,950 to 5,600 feet.

The mean annual precipitation is estimated to be 15 to 18 inches. The mean annual air temperature is approximately 45degrees Fahrenheit. The frost-free season ranges from 110 to 140 days.

Slopes range from 15 to 70 percent. Parent material consists of material weathered from interbedded fine grain sandstone and shale.

A typical profile contains a 2 inch dark grayish brown extremely stony very fine sandy loam surface layer. The transition subsoil is a light brownish gray very fine sandy loam that is approximately 7 inches thick. The substratum is a brown very fine sandy loam that extends to approximately to 13 inches in depth.

Permeability within the Mathias soil is moderate. Runoff is high on the gentler slopes and very high on the steeper slopes. The water erosion hazard is negligible and the wind erosion hazard negligible.

Productivity and Reclamation Potential

There are twenty six plant species that are common to this map unit: Sedge, Little bluestem, Sideoats grama, Achnatherum richardsonii, Big bluestem, Dropseed, Green needlegrass, Leadplant, Prairie dropseed, Prairie junegrass, Rose, Switchgrass, Yellow Indiangrass, Bearded wheatgrass, Ponderosa pine, Slender wheatgrass, Western wheatgrass, Rocky Mountain juniper, Breadroot scurfpea, Dotted gayfeather, Missouri goldenrod, Oligoneuron rigidum var. rigidum, Prairie coneflower, Silverleaf scurfpea, Slimflower scurfpea, and Columbia needlegrass.

In a favorable year (above average moisture), the production is approximately 2,900 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,700 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content, cobble content and stone content. This map unit is a poor source for roadfill; limitations include slope, cobble content and stone content. This map unit is a poor source for topsoil; limitations include slope, rock fragments and hard to reclaim (rock fragments).

"Ne" – Nevee silt loam, 6 to 15 percent slope

The Nevee silt loam mapping unit consists of deep and very deep, well drained soils formed in reddish silty alluvial-colluvial sediments on terraces and uplands. It occurs on nearly level to steep on terraces, uplands, and alluvial fans at elevations from 2950 to 3510 feet.

The mean annual precipitation is estimated to be 15 to 18 inches. The mean annual air temperature is approximately 46 degrees Fahrenheit. The frost-free season ranges from 110 to 140 days.

Slopes range from 1 to 30 percent. Parent material consists of silty alluvium weathered from reddish colored silty shale, siltstone, or sandstone.

A typical profile contains a 4 inch reddish brown silt loam surface layer. The transition subsoil is a yellowish red silt loam that is approximately 4 inches thick. The substratum is a reddish yellow silt loam that extends to approximately to 24 inches in depth.

Permeability within the Nevee soil is moderate. Runoff is very low on the gentler slopes and high on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are nineteen plant species that are common to this map unit:Little bluestem, Sideoats grama, Needle and thread, Sedge, Blue grama, Hairy grama, Western wheatgrass, Buffalograss, Green needlegrass, Blacksamson Echinacea, Breadroot scurfpea, Fringed sagewort, Heath aster, Louisiana sagewort, Plains pricklypear, Rose, Silverleaf scurfpea, Slimflower scurfpea, and Wormwood.

In a favorable year (above average moisture), the production is approximately 2,000 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,200 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; water erosion and carbonate content. This map unit is a poor source for roadfill; limitations include depth to bedrock and low strength. This map unit is a poor source for topsoil; limitations include slope and carbonate content.

"Nf" – Nihill gravelly loam, 15 to 50 percent slope

The Nihill gravelly loam mapping unit consists of very deep, well drained soils formed in gravelly alluvium from mixed sources. It occurs on Pleistocene terraces and terrace remnants at elevations from 2,600 to 6,800 feet.

The mean annual precipitation is estimated to be 10 to 19 inches. The mean annual air temperature is approximately 46 degrees Fahrenheit. The frost-free season ranges from 105 to 130 days.

Slopes range from 0 to 80 percent. Parent material consists of calcareous gravelly alluvium from mixed sources.

A typical profile contains a 5 inch dark brown gravelly loam surface layer. The transition subsoil is a light yellowish brown very gravelly clay loam that is approximately 25 inches thick. The substratum is a very pale brown very gravelly sandy clay loam that extends to approximately to 60 inches in depth.

Permeability within the Nihill soil is moderate. Runoff is medium on the gentler slopes and high on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are eighteen plant species that are common to this map unit: Sedge, Needle and thread, Sideoats grama, Blue grama, Hairy grama, Bluegrass, Little bluestem, Sand dropseed, Western wheatgrass, Blacksamson Echinacea, Broom snakeweed, Fringed sagewort, Hairy goldenaster, Louisiana sagewort, Plains pricklypear, Skunkbush sumac, Violet prairieclover, and Wormwood.

In a favorable year (above average moisture), the production is approximately 1,100 lbs/acres. In an unfavorable (drought) year, the production is approximately 600 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content and droughty. This map unit is a fair source for roadfill; limitations include slope. This map unit is a poor source for topsoil; limitations include slope, hard to reclaim (rock fragments) and rock fragments.

"No" – Norka loam, 0 to 6 percent slope

The Norka loam mapping unit consists of very deep well drained soils that formed in thick, calcareous, eolian or alluvial materials high in very fine sand. It occurs on hills, ridges, slope breaks and valley sideslopes at elevations from 2620 to 3610 feet.

The mean annual precipitation is estimated to be 13 to 18 inches. The mean annual air temperature is approximately 48 degrees Fahrenheit. The frost-free season ranges from 130 to 150 days.

Slopes range from 0 to 12 percent. Parent material consists of thick, calcareous, eolian or alluvial materials often containing a large proportion of very fine sand.

A typical profile contains a 4 inch grayish brown loam surface layer. The transition subsoil is a grayish brown silt loam that is approximately 3 inches thick. The substratum is a grayish brown light silty clay loam that extends to approximately to 13 inches in depth.

Permeability within the Norka soil is moderate. Runoff is low on the gentler slopes and high on the steeper slopes. The water erosion hazard is very slight and the wind erosion hazard is very slight.

Productivity and Reclamation Potential

There are twenty six plant species that are common to this map unit: Western wheatgrass, Green needlegrass, Needle and thread, Sideoats grama, Little bluestem, Prairie sandreed, Sand dropseed, Fringed sagewort, Louisiana sagewort, Missouri goldenrod, Oligoneuron rigidum var. rigidum, Silverleaf scurfpea, American vetch, Big sagebrush, Blue grama, Bluegrass, Breadroot scurfpea, Buffalograss, Heath aster, Leadplant, Prairie coneflower, Rose, Sedge, Skunkbush sumac, Slimflower scurfpea, and Western yarrow.

In a favorable year (above average moisture), the production is approximately2,300 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,300 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content. This map unit is a good source for roadfill. This map unit is a good source for topsoil.

"Nu" – Nunn clay loam, 0 to 6 and 6 to 15 percent slope

The Nunn clay loam mapping unit consists of very deep, well drained soils that formed in loess and mixed alluvium. It occurs on terraces or alluvial fans, and in drainageways at elevations from 2620 to 3610 feet.

The mean annual precipitation is estimated to be 14 inches. The mean annual air temperature is approximately 48 degrees Fahrenheit. The frost-free season ranges from 120 to 210 days.

Slopes range from 0 to 25 percent. Parent material consists mixed alluvium.

A typical profile contains a 6 inch grayish brown clay loam surface layer. The transition subsoil is a grayish brown clay loam that is approximately 4 inches thick. The substratum is a pale brown clay loam that extends to approximately to 24 inches in depth.

Permeability within the Nunn soil is moderately slow to slow. Runoff is negligible on the gentler slopes and very high on the steeper slopes. The water erosion hazard is very slight and the wind erosion hazard is very slight.

Productivity and Reclamation Potential

There are twenty six plant species that are common to this map unit: Western wheatgrass, Green needlegrass, Needle and thread, Sideoats grama, Little bluestem, Prairie sandreed, Sand dropseed, Fringed sagewort, Louisiana sagewort, Missouri goldenrod, Oligoneuron rigidum var. rigidum, Silverleaf scurfpea, American vetch, Big sagebrush, Blue grama, Bluegrass, Breadroot scurfpea, Buffalograss, Heath aster, Leadplant, Prairie coneflower, Rose, Sedge, Skunkbush sumac, Slimflower scurfpea, and Western yarrow.

In a favorable year (above average moisture), the production is approximately 1,900 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,100 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include low organic matter content, too clayey and water erosion. This map unit is a fair source for roadfill; limitations include shrink-swell. This map unit is a poor source for topsoil; limitations include too clayey.

"Pa" – Paunsaugunt gravelly loam, 6 to 15 percent slope

The Paunsaugunt gravelly loam mapping unit consists of well drained soils that are shallow to limestone and formed in residuum from limestone and calcareous sandstone. It occurs on mesas and hillsides at elevations from 6,000 to 8,400 feet.

The mean annual precipitation is estimated to be 16 to 22 inches. The mean annual air temperature is approximately 43 degrees Fahrenheit. The frost-free season ranges from 70 to 100 days.

Slopes range from 2 to 70 percent. Parent material consists of residuum on limestone and calcareous sandstone.

A typical profile contains a 3 inch brown gravelly loam surface layer. The transition subsoil is a grayish brown cobbly sandy loam that is approximately 5 inches thick. The substratum is a light brownish gray very cobbly sandy loam that extends to approximately to 15 inches in depth.

Permeability within the Paunsaugunt soil is moderate. Runoff is medium on the gentler slopes and rapid on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are twenty nine plant species that are common to this map unit:

Little bluestem, Sideoats grama, Needle and thread, Blue grama, Bluegrass, Dropseed, Hairy grama, Idaho fescue, Prairie dropseed, Sedge, Prairie junegrass, Bearded wheatgrass, Skunkbush sumac, Achnatherum richardsonii, Blacksamson Echinacea, Breadroot scurfpea, Broom snakeweed, Columbia needlegrass, Dotted gayfeather, Fringed sagewort, Green needlegrass, Heath aster, Louisiana sagewort, Prairie coneflower, Silverleaf scurfpea, Slender wheatgrass, Slimflower scurfpea, True mountain mahogany, and Western wheatgrass.

In a favorable year (above average moisture), the production is approximately 1,600 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,000 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include droughty and depth to bedrock. This map unit is a poor source for roadfill; limitations include depth to bedrock. This map unit is a poor source for topsoil; limitations include depth to bedrock, slope and rock fragments.

"Pg" – Penrose channery loam, 15 to 40 percent slope

The Penrose channery loam mapping unit consists of shallow, well and somewhat excessively drained soils formed in thin, calcareous, loamy materials weathered in place from limestone and interbedded limy materials. It occurs on hills, plains, ridges, hogbacks, cuestas, and mesa tops at elevations from 3,000 to 6,500 feet.

The mean annual precipitation is estimated to be 11 to 15 inches. The mean annual air temperature is approximately 51 degrees Fahrenheit. The frost-free season ranges from 125 to 165 days.

Slopes range from 1 to 65 percent. Parent material consists of residuum and slope alluvium derived from limestone and interbedded limy materials.

A typical profile contains a 4 inch light brownish gray channery loam surface layer. The transition subsoil is a light gray channery loam that is approximately 11 inches thick. The substratum is limestone bedrock that extends to approximately to 15 inches in depth.

Permeability within the Penrose soil is moderate to moderately slow. Runoff is low on the gentler slopes and very rapid on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are six plant species that are common to this map unit: Sideoats grama, Blue grama, Achnatherum scribneri, Indian ricegrass, Juniper, and Little bluestem.

In a favorable year (above average moisture), the production is approximately 800 lbs/acres. In an unfavorable (drought) year, the production is approximately 300 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include low organic matter content, droughty and depth to bedrock. This map unit is a poor source for roadfill; limitations include depth to bedrock. This map unit is a poor source for topsoil; limitations include depth to bedrock, slope and rock fragments.

"Pe" – Pierre clay, 0 to 6 and 6 to 15 percent slope

The Pierre clay mapping unit consists of moderately deep, well drained soils formed in clayey residuum weathered from shale bedrock on uplands. It occurs on nearly nearly level to steep uplands at elevations from 1300 to 3600 feet.

The mean annual precipitation is estimated to be 10 to 13 inches. The mean annual air temperature is approximately 46 degrees Fahrenheit. The frost-free season ranges from 130 to 150 days.

Slopes range from 0 to 30 percent. Parent material consists of residuum weathered from clay shale.

A typical profile contains a 2 inch grayish brown clay surface layer. The transition subsoil is a light brownish gray clay that is approximately 5 inches thick. The substratum is a light brownish gray clay that extends to approximately to 20 inches in depth.

Permeability within the Pierre soil is very slow, except after dry periods when the initial intake may be rapid due to cracks. Runoff is low on the gentler slopes and medium to very high on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are nineteen plant species that are common to this map unit: Western wheatgrass, Green needlegrass, Sideoats grama, Needle and thread, Blue grama, Bluegrass, Buffalograss, Sedge, Big sagebrush, Fringed sagewort, Heath aster, Louisiana sagewort, Plains pricklypear, Silverleaf scurfpea, Western yarrow, American vetch, Breadroot scurfpea, Scarlet globemallow, and Slimflower scurfpea.

In a favorable year (above average moisture), the production is approximately 2,200 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,200 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include low organic matter content, depth to bedrock, droughty, too clayey and sodium content. This map unit is a poor source for roadfill; limitations include depth to bedrock, low strength and shrink-swell. This map unit is a poor source for topsoil; limitations include depth to bedrock, too clayey and sodium content.

"Sa" – Samsil clay, 15 to 40 percent slope

The Samsil clay mapping unit consists of shallow, well drained soils formed in alluvium or residuum weathered from shale. It occurs on gently sloping to very steep hills, ridges and breaks of dissected shale plains at elevations from 2620 to 3610 feet.

The mean annual precipitation is estimated to be 14 to 19 inches. The mean annual air temperature is approximately 47 degrees Fahrenheit. The frost-free season ranges from 130 to 150 days.

Slopes range from 2 to 60 percent. Parent material consists of alluvium or residuum weathered from shale.

A typical profile contains a 2 inch light brownish gray clay surface layer. The transition subsoil is a light grayish brown clay that is approximately 5 inches thick. The substratum is a light grayish brown clay that extends to approximately to 11 inches in depth.

Permeability within the Samsil soil is slow. Runoff is medium on the gentler slopes and very high on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are twenty six plant species that are common to this map unit: Little bluestem, Western wheatgrass, Sideoats grama, Green needlegrass, Blue grama, Big bluestem, Hairy grama, Needle and thread, Prairie sandreed, Rocky Mountain juniper, Sedge, Big sagebrush, Blacksamson echinacea, Broom snakeweed, Rose, Silver buffaloberry, Skunkbush sumac, Breadroot scurfpea, Fringed sagewort, Leadplant, Louisiana sagewort, Prairie coneflower, Silverleaf scurfpea, Slimflower scurfpea, Violet prairieclover, and Yucca.

In a favorable year (above average moisture), the production is approximately 1,400 lbs/acres. In an unfavorable (drought) year, the production is approximately 800 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include low organic matter content, droughty, too clayey, depth to bedrock and water erosion. This map unit is a poor source for roadfill; limitations include depth to bedrock, slope, low strength and shrink-swell. This map unit is a poor source for topsoil; limitations include depth to bedrock, slope and too clayey.

"Sc" – Satanta loam, 0 to 6 percent slope

The Satanta loam mapping unit consists of very deep well drained soils that formed in eolian deposits. It occurs on plains or high stream terraces in the Central High Tablelands at elevations from 2000 to 4500 feet.

The mean annual precipitation is estimated to be 14 to 22 inches. The mean annual air temperature is approximately 56 degrees Fahrenheit. The frost-free season ranges from 140 to 200 days.

Slopes range from 0 to 15 percent. Parent material consists of eolian deposits.

A typical profile contains a 4 inch dark grayish brown loam surface layer. The transition subsoil is a dark grayish brown loam that is approximately 4 inches thick. The substratum is a very dark grayish brown loam that extends to approximately to 19 inches in depth.

Saturated hydraulic conductivity within the Satanta soil is moderately high. Runoff is low on the gentler slopes and medium on the steeper slopes. The water erosion hazard is very slight and the wind erosion hazard is very slight.

Productivity and Reclamation Potential

There are twenty six plant species that are common to this map unit: Western wheatgrass, Green needlegrass, Needle and thread, Sideoats grama, Little bluestem, Prairie sandreed, Sand dropseed, Fringed sagewort, Louisiana sagewort, Missouri goldenrod, Oligoneuron rigidum var. rigidum, Silverleaf scurfpea, American vetch, Big sagebrush, Blue grama, Bluegrass, Breadroot scurfpea, Buffalograss, Heath aster, Leadplant, Prairie coneflower, Rose, Sedge, Skunkbush sumac, Slimflower scurfpea, and Western yarrow.

In a favorable year (above average moisture), the production is approximately 2,200 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,300 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content. This map unit is a good source for roadfill. This map unit is a good source for topsoil.

"Sn" – Shingle clay loam, 15 to 40 percent slope

The Shingle clay loam mapping unit consists of well drained soils that are very shallow or shallow to bedrock and formed in residuum and colluvium derived from interbedded shale and sandstone or in alluvium from mudstone. It occurs on bedrock controlled hillslopes and ridges at elevations from 3,200 to 6,500 feet.

The mean annual precipitation is estimated to be 10 to 14 inches. The mean annual air temperature is approximately 45 degrees Fahrenheit. The frost-free season ranges from 105 to 130 days.

Slopes range from 0 to 80 percent. Parent material consists of colluvium and residuum weathered from soft, interbedded sandstone and shale or in alluvium from mudstone.

A typical profile contains a 4 inch light brownish gray clay surface layer. The transition subsoil is a light yellowish brown clay loam that is approximately 4 inches thick. The substratum is a light yellowish brown clay loam that extends to approximately to 15 inches in depth.

Permeability within the Shingle soil is moderate. Runoff is medium on the gentler slopes and high on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are twenty nine plant species that are common to this map unit: Little bluestem, Sideoats grama, Needle and thread, Western wheatgrass, Big bluestem, Blue grama, Green needlegrass, Hairy grama, Prairie sandreed, Sedge, Plains muhly, Rocky Mountain juniper, American vetch, Blacksamson echinacea, Breadroot scurfpea, Broom snakeweed, Fringed sagewort, Leadplant, Louisiana sagewort, Missouri goldenrod, Nineanther prairieclover, Oligoneuron rigidum var. rigidum, Prairie coneflower, Rose, Silver buffaloberry, Silverleaf scurfpea, Skunkbush sumac, Slimflower scurfpea, and Violet prairieclover.

In a favorable year (above average moisture), the production is approximately 1,400 lbs/acres. In an unfavorable (drought) year, the production is approximately 800 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include low organic matter content, droughty and depth to bedrock. This map unit is a poor source for roadfill; limitations include depth to bedrock, slope, low strength and shrink-swell. This map unit is a poor source for topsoil; limitations include depth to bedrock, slope and rock fragments.

"Gs" – Snomo clay, 6 to 15 percent slope

The Snomo clay mapping unit consists of deep or very deep, well drained soils formed in clayey materials weathered from acid shale on the uplands. It occurs on gently sloping to moderately steep uplands at elevations from 2620 to 3610 feet.

The mean annual precipitation is estimated to be 14 to 18 inches. The mean annual air temperature is approximately 45 degrees Fahrenheit. The frost-free season ranges from 130 to 150 days.

Slopes range from 2 to 20 percent. Parent material consists of clayey materials weathered from acid shale.

A typical profile contains a 2 inch light gray silty clay surface layer. The transition subsoil is a light gray clay that is approximately 3 inches thick. The substratum is a light brownish gray clay that extends to approximately to 14 inches in depth.

Permeability within the Snomo soil is moderate. Runoff is very low on the gentler slopes and medium on the steeper slopes. The water erosion hazard is moderate and the wind erosion hazard is moderate.

Productivity and Reclamation Potential

There are nineteen plant species that are common to this map unit: Little bluestem, Sedge, Western wheatgrass, Sideoats grama, Blue grama, Bur oak, Ponderosa pine, Prairie sandreed, Big bluestem, Switchgrass, Yellow Indiangrass, Fringed sagewort, Louisiana sagewort, Blacksamson Echinacea, Breadroot scurfpea, Heath aster, Silverleaf scurfpea, Slimflower scurfpea, and Wormwood.

In a favorable year (above average moisture), the production is approximately 1,700 lbs/acres. In an unfavorable (drought) year, the production is approximately 800 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include low organic matter content, droughty, too clayey, too acid and water erosion. This map unit is a poor source for roadfill; limitations include low strength and shrink-swell. This map unit is a poor source for topsoil; limitations slope, too clayey and too acid.

"Ta" – Tilford silt loam, 0 to 6 percent slope

The Tilford silt loam mapping unit consists of very deep or deep, well drained soils formed in local alluvium and residuum from weathered reddish shales on uplands and terraces. It occurs on nearly level to rolling on uplands, stream terraces and fans at elevations from 2950 to 3510 feet.

The mean annual precipitation is estimated to be 14 to 18 inches. The mean annual air temperature is approximately 45 degrees Fahrenheit. The frost-free season ranges from 110 to 140 days.

Slopes range from 0 to 15 percent. Parent material consists of silty local alluvium and residuum derived from reddish colored silty shales.

A typical profile contains a 5 inch dark brown silt loam surface layer. The transition subsoil is a dark reddish gray silt loam that is approximately 4 inches thick. The substratum is a reddish brown silt loam that extends to approximately to 16 inches in depth.

Permeability within the Tilford soil is moderate. Runoff is low on the gentler slopes and medium on the steeper slopes. The water erosion hazard is very slight and the wind erosion hazard is very slight.

Productivity and Reclamation Potential

There are twenty six plant species that are common to this map unit: Western wheatgrass, Green needlegrass, Needle and thread, Sideoats grama, Little bluestem, Prairie sandreed, Sand dropseed, Fringed sagewort, Louisiana sagewort, Missouri goldenrod, Oligoneuron rigidum var. rigidum, Silverleaf scurfpea, American vetch, Big sagebrush, Blue grama, Bluegrass, Breadroot scurfpea, Buffalograss, Heath aster, Leadplant, Prairie coneflower, Rose, Sedge, Skunkbush sumac, Slimflower scurfpea, and Western yarrow.

In a favorable year (above average moisture), the production is approximately 2,500 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,300 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content and water erosion. This map unit is a fair source for roadfill; limitations include low strength. This map unit is a good source for topsoil.

"Wt" – Winetti gravelly sandy loam, 0 to 6 percent slope

The Winetti gravelly sandy loam mapping unit consists of very deep, somewhat excessively drained, moderately rapidly permeable soils that formed in mixed alluvium from sedimentary rocks. It occurs on long, narrow, gently sloping bottoms or valleys and strongly sloping toeslopes at elevations from 7,100 to 8,000 feet.

The mean annual precipitation is estimated to be 12 to 18 inches. The mean annual air temperature is approximately 44 degrees Fahrenheit. The frost-free season ranges from 80 to 100 days.

Slopes range from 0 to 8 percent. Parent material consists of mixed alluvium from sandstone, limestone and shale.

A typical profile contains a 4 inch brown gravelly sandy loam surface layer. The transition subsoil is a light yellowish brown gravelly loamy sand that is approximately 3 inches thick. The substratum is a light yellowish brown very gravelly sandy loam that extends to approximately to 17 inches in depth.

Permeability within the Winetti soil is moderately rapid. Runoff is medium. The water erosion hazard is negligible and the wind erosion hazard is negligible.

Productivity and Reclamation Potential

There are twenty eight plant species that are common to this map unit: Western wheatgrass, Big bluestem, Switchgrass, Yellow Indiangrass, Green needlegrass, Little bluestem, Prairie sandreed, Sideoats grama, Bluegrass, Sedge, Blue grama, American elm, Common chokecherry, Eastern cottonwood, Fringed sagewort, Green ash, Hairy grama, Heath aster, Leadplant, Louisiana sagewort, Missouri goldenrod, Oligoneuron rigidum var. rigidum, Silver buffaloberry, Violet prairieclover, Western snowberry, Western yarrow, Woods' rose, and Wormwood.

In a favorable year (above average moisture), the production is approximately 3,800 lbs/acres. In an unfavorable (drought) year, the production is approximately 2,300 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content and droughty. This map unit is a good source for roadfill. This map unit is a poor source for topsoil; limitations include hard to reclaim (rock fragments), rock fragments.

"202" – Worfka clay loam, 15 to 40 percent slope

The Worfka clay loam mapping unit consists of well drained soils that are very shallow or shallow to bedrock and formed in slopewash alluvium and residuum derived from interbedded calcareous shale and argillaceous sandstone. It occurs on ridge crests, shoulders, footslopes and toeslopes as well as uplands, ridges and hills at elevations from 3,500 to 6,500 feet.

The mean annual precipitation is estimated to be 10 to 14 inches. The mean annual air temperature is approximately 46 degrees Fahrenheit. The frost-free season ranges from 130 to 150 days.

Slopes range from 0 to 30 percent. Parent material consists of alluvium and residuum weathered from calcareous shales and argillaceous sandstone.

A typical profile contains a 2 inch light brownish gray light clay loam surface layer. The transition subsoil is a grayish brown clay loam that is approximately 5 inches thick. The substratum is a pale brown clay loam that extends to approximately to 13 inches in depth.

Permeability within the Worfka soil is slow. Runoff is medium on the gentler slopes and rapid on the steeper slopes. The water erosion hazard is very slight and the wind erosion hazard is very slight.

Productivity and Reclamation Potential

There are five plant species that are common to this map unit: Green needlegrass, Western wheatgrass, Bluebunch wheatgrass, Big sagebrush, and Blue grama.

In a favorable year (above average moisture), the production is approximately 1,000 lbs/acres. In an unfavorable (drought) year, the production is approximately 450 lbs/acres.

According to NRCS information, this map unit is a poor source of overall reclamation material; limitations include low organic matter content, droughty, too clayey, depth to bedrock and water erosion. This map unit is a poor source for roadfill; limitations include depth to bedrock, low strength and shrink-swell. This map unit is a poor source for topsoil; limitations include depth to bedrock, slope and too clayey.

"Zn" – Zigweid loam, 6 to 15 and 6 to 40 percent slope

The Zigweid loam mapping unit consists of very deep, well drained soils formed in alluvium from mixed sedimentary sources. It occurs on fan aprons, alluvial fans, fan piedmonts, fan remnants, terraces, ridges and hills at elevations from 3,500 to 6,600 feet.

The mean annual precipitation is estimated to be 10 to 14 inches. The mean annual air temperature is approximately 46 degrees Fahrenheit. The frost-free season ranges from 105 to 130 days.

Slopes range from 0 to 20 percent. Parent material consists of calcareous, moderately fine textured sediments derived from interbedded shale and soft sandstone.

A typical profile contains a 4 inch light brownish gray loam surface layer. The transition subsoil is a brown clay loam that is approximately 13 inches thick. The substratum is a brown clay loam that extends to approximately to 34 inches in depth.

Permeability within the Zigweid soil is moderate. Runoff is medium on the gentler slopes and rapid on the steeper slopes. The water erosion hazard is very slight and the wind erosion hazard is very slight.

Productivity and Reclamation Potential

There are twenty three plant species that are common to this map unit: Needle and thread, Little bluestem, Western wheatgrass, Sedge, Prairie sandreed, Sideoats grama, Blue grama, Green needlegrass, Hairy grama, Inland saltgrass, Plains muhly, Big sagebrush, Blacksamson Echinacea, Broom snakeweed, Fringed sagewort, Louisiana sagewort, Missouri goldenrod, Oligoneuron rigidum var. rigidum, Plains pricklypear, Prairie coneflower, Violet prairieclover, Wormwood, and Yucca.

In a favorable year (above average moisture), the production is approximately 1,800 lbs/acres. In an unfavorable (drought) year, the production is approximately 1,000 lbs/acres.

According to NRCS information, this map unit is a fair source of overall reclamation material; limitations include low organic matter content. This map unit is a poor source for roadfill; limitations include low strength and shrink-swell. This map unit is a fair source for topsoil; limitations include slope.

POWERTECH (USA) INC.

APPENDIX 3.3-C

SOIL SERIES DESCRIPTIONS

POWERTECH (USA) INC.

BROADHURST
SILTY CLAY

Soil Mapping Unit "Br"
Lab/BKS Sample ID: G08020803-001_006SDF

Typical Pedon: Broadhurst silty clay- native grass. When described the soil was dry below 20 inches. (Colors are for dry soil unless otherwise stated.)

The Broadhurst series consists of very deep, well drained soils formed in clayey material derived from acid shales on colluvial fans and terraces. These soils have very slow permeability. Slopes range from 0 to 15 percent. Mean annual precipitation is about 15 inches, and mean annual air temperature is about 47 degrees F.

A - 0-3 inches. Light brownish gray (10YR 6/2) silty clay, moist; weak thick platy structure; very hard, very firm, sticky and plastic; few roots; moderately acid (pH 5.8); abrupt smooth boundary, noneffervescent.

C1 – 3-8 inches. Dark gray (10YR 4/1D, 10YR 3/1W) silty clay, moist; weak coarse blocky and subangular blocky structure; very hard, very firm, sticky and plastic; few roots; moderately acid (pH 5.7); gradual smooth boundary, noneffervescent.

C2 – 8-24 inches. Dark gray (10YR 4/1D, 10YR 3/1W) silty clay, moist; massive; extremely hard, very firm, sticky and plastic; moderately acid (pH 5.7); clear smooth boundary, noneffervescent.

C4 – 24-40 inches. Dark gray (10YR 4/1D, 10YR 3/1W) silty clay, moist; massive; extremely hard, very firm, sticky and plastic; moderately acid (pH 5.8); clear smooth boundary, noneffervescent.

C5n – 40-54 inches. Very dark grayish brown (2.5Y 3/2 DW) silty clay, moist; massive; hard, very firm, sticky and plastic; common fine fragments of shale; common fine nests of gypsum and other salts; very strongly acid (pH 5.0). noneffervescent.

C6n – 54-60 inches. Dark gray (10YR 4/1D, 10YR 3/1W) silty clay, moist; massive; hard, very firm, sticky and plastic; common fine fragments of shale; common fine nests of gypsum and other salts; very strongly acid (pH 4.5). noneffervescent.

Type Location - Butte County, South Dakota; refer to waypoint 17 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Colors throughout the soil are largely inherited from the parent rock. The control section averages between 60 and 70 percent clay. The soil has an Ustic moisture regime that borders on Aridic. Consistence is hard to extremely hard when dry and very firm when moist. When the soil is dry, cracks 1/2 to 1 inch wide and several feet long extend downward for 20 inches or more. The soil typically is very strongly acid but ranges from extremely acid to moderately acid.

A and AC horizons have hue of 10YR or 2.5Y, value of 5 or 6 and 3 or 4 moist, and chroma of 1 or 2.

The C horizon has hue of 10YR, 2.5Y, or 5Y; value of 5 or 6 and 3 or 4 moist; and chroma of 1 or 2. Few or common partially weathered very fine fragments of shale are in the C horizon in most pedons. Nests of gypsum and other salts are few or common in the lower part of the C horizon.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer than typical for the series.

Taxonomic Class - Very-fine, smectitic, acid, mesic Torrertic Ustorthents

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 0-60 inches. Saturation percentage was marginal at 8-24 inches. pH was unsuitable (acidic) at 54-60 inches. Estimated stripping depth is 8 inches.

Geographic Setting (According to Official Series Description) - Broadhurst soils are on colluvial fans and terraces. Slope gradients range from 0 to 15 percent. These soils formed in clayey material derived from acid shales. Mean annual air temperature ranges from 43 to 48 degrees F, and mean annual precipitation ranges from 15 to 18 inches.

KYLE
NONCALCAREOUS VARIANT

Soil Mapping Unit "Ky"
Lab/BKS Sample ID: G08020803-007_011

Typical Pedon: Kyle silty clay loam - on a west-facing plane slope of 2 percent in native grass. (Colors are for dry soil unless otherwise stated.)

The Kyle series consists of very deep and well drained soils formed in sediments weathered from clay shale on uplands. Permeability is very slow. Slopes range from 0 to 15 percent. Mean annual precipitation is about 16 inches, and mean annual air temperature is about 47 degrees F.

A - 0-2 inches. Grayish brown (2.5YR 5/2) silty clay loam, moist; moderate medium and fine granular structure; hard, firm, sticky and plastic; thin crust in upper 1/4 inch of light brownish gray (2.5Y 6/2); common fine roots; neutral; clear wavy boundary, slightly alkaline (pH 7.4); noneffervescent.

Bt - 2-17 inches. Olive brown (2.5Y 4/3DW) silty clay, moist; weak coarse blocky structure parting to weak medium blocky; extremely hard, very firm, very sticky and very plastic; few intersecting slickensides; few fine roots; gradual wavy boundary; moderately alkaline (pH 7.9); very slightly effervescent.

C1n – 17-24 inches. Dark grayish brown (2.5Y 4/2D, 2.5Y 3/2W) silty clay, moist; weak coarse subangular blocky structure parting to weak medium and fine blocky; extremely hard, very firm, very sticky and very plastic; few intersecting slickensides; few fine roots; clear wavy boundary; moderately alkaline (pH 8.0); noneffervescent.

C2 – 24-39 inches. Dark grayish brown (2.5Y 4/2D, 2.5Y 3/2W) silty clay, moist; weak medium subangular blocky structure in upper part becoming massive in lower part; extremely hard, very firm, very sticky and very plastic; few intersecting slickensides; common fine and medium nests of gypsum; strong effervescence; slightly alkaline; gradual wavy boundary. moderately alkaline (pH 7.9); noneffervescent.

C3n – 39-60 inches. Dark grayish brown (2.5Y 4/2DW) silty clay, moist; massive; very hard, firm, sticky and plastic; few fine accumulations of carbonate and gypsum; moderately alkaline (pH 7.9). noneffervescent.

Type Location - Fall River County, South Dakota; refer to waypoint 27 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The soil typically does not have carbonates to depths of 4 to 6 inches, but some pedons contain carbonates to the surface. When the soil is dry, cracks 1/2 inch to 2 inches wide and several feet long extend downward through the solum. The control section averages 60 to 65 percent clay. The soil does not have a mollic epipedon but the upper 10 inches of the solum has an average organic carbon content between 0.6 and 1.7 percent. When the soil is dry, a porous surface crust 1/8 inch to 1/2 inch thick with dry color value of 6 or 7 is typical. Gypsum and other salts are below depths of 20 inches.

The A horizon has hue of 10YR, 2.5Y or 5Y, value of 5 or 6 and 3 to 5 moist, and chroma of 1 to 3. It typically is clay but some is silty clay. It is neutral or slightly alkaline.

The Bw and Bss horizons have hue of 2.5Y or 5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 to 4. Both dry and moist colors of the surface of peds range from 1/2 to 1 value darker than the crushed peds. They are extremely hard or very hard when dry and extremely firm or very firm when moist. They are slightly alkaline or moderately alkaline.

The BCss horizon has hue of 2.5Y or 5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 to 4. It has few to common accumulations of gypsum and other salts in most pedons. It is slightly alkaline or moderately alkaline.

Some pedons have a Bk horizon that has colors similar to the BC horizon. It has few to common accumulations of carbonate. It is slightly alkaline or moderately alkaline.

The Cy horizon has hue of 2.5Y or 5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 to 4. It is clay and some pedons contain up to 35 percent fragments of shale below 40 inches. It has few to many accumulations of gypsum or other salts. Unweathered shale typically is at depths greater than 5 feet but is as shallow as 40 inches in some pedons. It is slightly alkaline or moderately alkaline.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer than typical for the series.

Taxonomic Class - Very-fine, smectitic, mesic Aridic Haplusterts

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 2-60 inches. Saturation percentage was marginal at 24-39 inches. Sodium absorption ratio was marginal at 17-60 inches. Estimated stripping depth is 17 inches.

Geographic Setting (According to Official Series Description) - Kyle soils are nearly level to strongly sloping on uplands and colluvial fans. Slopes are plane to convex, and slope gradients range from 0 to 15 percent. Gilgai microrelief is in most areas. The soil formed in clayey sediments weathered from calcareous clay shale. Mean annual air temperature ranges from 45 to 53 degrees F, and mean annual precipitation ranges from about 12 to 19 inches.

KYLE
NONCALCAREOUS VARIANT

Soil Mapping Unit "Ky"
Lab/BKS Sample ID: G08020803-012_016

Typical Pedon: Kyle silty clay loam- on a west-facing plane slope of 2 percent in native grass. (Colors are for dry soil unless otherwise stated.)

The Kyle series consists of very deep and well drained soils formed in sediments weathered from clay shale on uplands. Permeability is very slow. Slopes range from 0 to 15 percent. Mean annual precipitation is about 16 inches, and mean annual air temperature is about 47 degrees F.

A - 0-2 inches. Brown (10YR 4/3D, 10YR 4/2W) silty clay loam, moist; moderate medium and fine granular structure; hard, firm, sticky and plastic; thin crust in upper 1/4 inch of light brownish gray (2.5Y 6/2); common fine roots; neutral; clear wavy boundary, moderately alkaline (pH 8.0); noneffervescent.

Bt1 - 2-15 inches. Brown (10YR 4/3D, 10YR 4/2W) silty clay, moist; weak coarse blocky structure parting to weak medium blocky; extremely hard, very firm, very sticky and very plastic; few intersecting slickensides; few fine roots; gradual wavy boundary; moderately alkaline (pH 8.0); very slightly effervescent.

Bt2n – 15-26 inches. Dark grayish brown (2.5Y 4/2DW) silty clay, moist; weak coarse subangular blocky structure parting to weak medium and fine blocky; extremely hard, very firm, very sticky and very plastic; few intersecting slickensides; few fine roots; clear wavy boundary; moderately alkaline (pH 8.0); very slightly effervescent.

C1 – 26-36 inches. Dark grayish brown (2.5Y 4/2DW) silty clay, moist; weak medium subangular blocky structure in upper part becoming massive in lower part; extremely hard, very firm, very sticky and very plastic; few intersecting slickensides; common fine and medium nests of gypsum; strong effervescence; slightly alkaline; gradual wavy boundary. moderately alkaline (pH 8.0); very slightly effervescent.

C2 – 36-60 inches. Olive brown (2.5Y 4/3DW) clay, moist; massive; very hard, firm, sticky and plastic; few fine accumulations of carbonate and gypsum; moderately alkaline (pH 8.0); slightly effervescent.

Type Location - Fall River County, South Dakota; refer to waypoint 36 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The soil typically does not have carbonates to depths of 4 to 6 inches, but some pedons contain carbonates to the surface. When the soil is dry, cracks 1/2 inch to 2 inches wide and several feet long extend downward through the solum. The control section averages 60 to 65 percent clay. The soil does not have a mollic epipedon but the upper 10 inches of the solum has an average organic carbon content between 0.6 and 1.7 percent. When the soil is dry, a porous surface crust 1/8 inch to 1/2 inch thick with dry color value of 6 or 7 is typical. Gypsum and other salts are below depths of 20 inches.

The A horizon has hue of 10YR, 2.5Y or 5Y, value of 5 or 6 and 3 to 5 moist, and chroma of 1 to 3. It typically is clay but some is silty clay. It is neutral or slightly alkaline.

The Bw and Bss horizons have hue of 2.5Y or 5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 to 4. Both dry and moist colors of the surface of peds range from 1/2 to 1 value darker than the crushed peds. They are extremely hard or very hard when dry and extremely firm or very firm when moist. They are slightly alkaline or moderately alkaline.

The BCss horizon has hue of 2.5Y or 5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 to 4. It has few to common accumulations of gypsum and other salts in most pedons. It is slightly alkaline or moderately alkaline.

Some pedons have a Bk horizon that has colors similar to the BC horizon. It has few to common accumulations of carbonate. It is slightly alkaline or moderately alkaline.

The Cy horizon has hue of 2.5Y or 5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 to 4. It is clay and some pedons contain up to 35 percent fragments of shale below 40 inches. It has few to many accumulations of gypsum or other salts. Unweathered shale typically is at depths greater than 5 feet but is as shallow as 40 inches in some pedons. It is slightly alkaline or moderately alkaline.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer than typical for the series.

Taxonomic Class - Very-fine, smectitic, mesic Aridic Haplusterts

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 2-60 inches. Saturation percentage was marginal at 2-16 and 26-36 inches. Sodium absorption ratio was marginal at 15-36 inches. Estimated stripping depth is 2 inches.

Geographic Setting (According to Official Series Description) - Kyle soils are nearly level to strongly sloping on uplands and colluvial fans. Slopes are plane to convex, and slope gradients range from 0 to 15 percent. Gilgai microrelief is in most areas. The soil formed in clayey sediments weathered from calcareous clay shale. Mean annual air temperature ranges from 45 to 53 degrees F, and mean annual precipitation ranges from about 12 to 19 inches.

HISLE
SILT LOAM

Soil Mapping Unit "He"
Lab/BKS Sample ID: G08020803-017_021

Typical Pedon: Hisle silt loam - on an east-facing plane slope of 3 percent in native grass at 3,020 feet elevation. When described the soil was moist below a depth of 2 inches. (Colors are for dry soil unless otherwise stated.)

The Hisle series consists of moderately deep, well drained and moderately well drained soils formed in clayey sediments weathered from clay shale on uplands. Permeability is very slow. Slopes range from 0 to 15 percent. Mean annual precipitation is about 15 inches, and mean annual air temperature is about 45 degrees F.

A - 0-2 inches. Light gray (10YR 7/2) silt loam, moist; weak very thin platy structure parting to weak fine granular; soft, very friable; surface crust about 1/8 inch thick; abrupt smooth boundary; neutral (pH 6.8); noneffervescent.

Bt – 2-15 inches. Grayish brown (10YR 5/2D, 10YR 4/2W) silty clay loam, moist; weak medium prismatic structure parting to strong medium and fine blocky; very hard, firm, sticky and plastic; gradual wavy boundary; neutral (pH 7.3); noneffervescent.

C1k – 15-32 inches. Light yellowish brown (2.5Y 6/3D, 2.5Y 4/3W) clay loam, moist; common medium distinct dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) mottles; fine earth is massive; hard, firm, sticky; 50 to 70 percent by volume of fragments of shale; few fine accumulations of carbonate and salt; clear wavy boundary; moderately alkaline (pH 8.0); strongly effervescent.

C2k – 32-52 inches. Brown (10YR 5/3D, 10YR 4/3W) clay loam, fractured soft shale; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) iron stains and mottles in the seams; moderately alkaline (pH 8.0); strongly effervescent.

C3 – 52-60 inches. Light brownish gray (10YR 6/2D, 10YR 4/2W) silt loam, fractured soft shale; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) iron stains and mottles in the seams; moderately alkaline (pH 8.1). slightly effervescent.

Type Location - Shannon County, South Dakota; refer to waypoint 39 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The depth to bedded shale typically is about 20 to 26 inches and ranges from 20 to 40 inches. Colors of the soil commonly are inherited from the underlying shale. A few small pebbles are on the surface and mixed throughout the solum in some pedons.

The E horizon has hue of 10YR or 2.5Y, value of 5 to 8 and 3 to 5 moist, and chroma of 1 to 3. It is silt loam or loam and ranges from slightly acid to slightly alkaline. When dry, the surface is crusted up to 1/8 inch thick.

The Btn horizon has hue of 10YR, 2.5Y, or 5Y, value of 5 to 7 and 4 to 6 moist, and chroma of 1 to 4. It is clay or silty clay averaging between 50 and 60 percent clay. It ranges from slightly to strongly alkaline. The Btn horizon has weak or moderate, fine to coarse columnar structure parting to moderate or strong, fine to coarse blocky structure in the upper part. Accumulations of salts and carbonates are in the lower Btn horizon of some pedons.

The Bkz horizon has hue of 10R to 5Y, value of 5 to 8 and 3 to 5 moist, and chroma of 1 to 4. It is silty clay or clay. It has few to many accumulations of carbonate and typically has accumulations of gypsum and salts. It ranges from slightly to strongly alkaline. It contains up to 15 percent fragments of shale by volume.

The C horizon has hue of 10R to 5Y, value of 5 to 8 and 3 to 5 moist, and chroma of 1 to 4. It is clay, or silty clay. Fragments of shale increase with depth and range up to 80 percent by volume. It ranges from slightly to strongly alkaline. Most pedons contain accumulations of carbonate and salts.

The Cr horizon is shale and hue of 10R to 5Y. It ranges from slightly acid to moderately alkaline.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer or have slightly less clay than typical for the series.

Taxonomic Class - Fine, smectitic, mesic Leptic Torrertic Natrustalfs

Suitability for Topsoil (According to WDEQ Guideline 1) - No unsuitable or marginal values were present. Strongly calcareous at 15 inches. Estimated stripping depth is 60 inches.

Geographic Setting (According to Official Series Description) - Hisle soils are nearly level to moderately sloping on uplands. Slope gradients range from 0 to 15 percent. Hisle soils formed in clays transported locally or weathered in place from clay shales. The mean annual soil temperature ranges from 45 to 53 degrees F, and mean annual precipitation ranges from 12 to 16 inches.

HISLE
NONCALCAREOUS VARIANT

Soil Mapping Unit "He"
Lab/BKS Sample ID: G08020803-022_026

Typical Pedon: Hisle silty clay loam - on an east-facing plane slope of 3 percent in native grass at 3,020 feet elevation. When described the soil was moist below a depth of 2 inches. (Colors are for dry soil unless otherwise stated.)

The Hisle series consists of moderately deep, well drained and moderately well drained soils formed in clayey sediments weathered from clay shale on uplands. Permeability is very slow. Slopes range from 0 to 15 percent. Mean annual precipitation is about 15 inches, and mean annual air temperature is about 45 degrees F.

A - 0-4 inches. Light gray (10YR 7/2) silty clay loam, moist; weak very thin platy structure parting to weak fine granular; soft, very friable; surface crust about 1/8 inch thick; abrupt smooth boundary; neutral (pH 6.6); noneffervescent.

Bt1 – 4-14 inches. Light olive brown (2.5Y 5/3D, 2.5Y 4/3W) silty clay loam, moist; weak medium prismatic structure parting to strong medium and fine blocky; very hard, firm, sticky and plastic; gradual wavy boundary; neutral (pH 7.1); noneffervescent.

Bt2 – 14-27 inches. Light olive brown (2.5Y 5/3D, 2.5Y 4/3W) silty clay loam, moist; few faint yellowish brown (10YR 5/6) mottles; weak medium and fine subangular blocky structure; very hard, firm, sticky and plastic; many small pebbles and fragments of shale; few fine dark concretions (Fe and Mn oxides); common fine threads and accumulations of carbonate and salt; clear wavy boundary; slightly alkaline (pH 7.8); noneffervescent.

Bt3n – 27-38 inches. Olive brown (2.5Y 4/3D, 2.5Y 4/2W) silty clay, fractured soft shale; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) iron stains and mottles in the seams; moderately alkaline (pH 8.1); noneffervescent.

Cn – 38-60 inches. Olive brown (2.5Y 4/3D, 2.5Y 4/2W) silty clay, fractured soft shale; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) iron stains and mottles in the seams; moderately alkaline (pH 7.9); noneffervescent.

Type Location - Shannon County, South Dakota; refer to waypoint 40 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The depth to bedded shale typically is about 20 to 26 inches and ranges from 20 to 40 inches. Colors of the soil commonly are inherited from the underlying shale. A few small pebbles are on the surface and mixed throughout the solum in some pedons.

The E horizon has hue of 10YR or 2.5Y, value of 5 to 8 and 3 to 5 moist, and chroma of 1 to 3. It is silt loam or loam and ranges from slightly acid to slightly alkaline. When dry, the surface is crusted up to 1/8 inch thick.

The Btn horizon has hue of 10YR, 2.5Y, or 5Y, value of 5 to 7 and 4 to 6 moist, and chroma of 1 to 4. It is clay or silty clay averaging between 50 and 60 percent clay. It ranges from slightly to strongly alkaline. The Btn horizon has weak or moderate, fine to coarse columnar structure parting to moderate or strong, fine to coarse blocky structure in the upper part. Accumulations of salts and carbonates are in the lower Btn horizon of some pedons.

The Bkz horizon has hue of 10R to 5Y, value of 5 to 8 and 3 to 5 moist, and chroma of 1 to 4. It is silty clay or clay. It has few to many accumulations of carbonate and typically has accumulations of gypsum and salts. It ranges from slightly to strongly alkaline. It contains up to 15 percent fragments of shale by volume.

The C horizon has hue of 10R to 5Y, value of 5 to 8 and 3 to 5 moist, and chroma of 1 to 4. It is clay, or silty clay. Fragments of shale increase with depth and range up to 80 percent by volume. It ranges from slightly to strongly alkaline. Most pedons contain accumulations of carbonate and salts.

The Cr horizon is shale and hue of 10R to 5Y. It ranges from slightly acid to moderately alkaline.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer than typical for the series.

Taxonomic Class - Fine, smectitic, mesic Leptic Torrertic Natrustalfs

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 27-60 inches. Estimated stripping depth is 60 inches.

Geographic Setting (According to Official Series Description) - Hisle soils are nearly level to moderately sloping on uplands. Slope gradients range from 0 to 15 percent. Hisle soils formed in clays transported locally or weathered in place from clay shales. The mean annual soil temperature ranges from 45 to 53 degrees F, and mean annual precipitation ranges from 12 to 16 inches.

NEVEE
SILT LOAM

Soil Mapping Unit "Ne"
Lab/BKS Sample ID: G08020803-027_031

Typical Pedon: Nevee silt loam- on a southwest-facing slope of 8 percent in native grass. When described, the soil was dry throughout. (Colors are for dry soil unless otherwise stated.)

The Nevee series consists of deep and very deep, well drained soils formed in reddish silty alluvial-colluvial sediments on terraces and uplands. Permeability is moderate. Slopes range from 1 to 30 percent. Mean annual precipitation is about 16 inches, and mean annual air temperature is about 46 degrees F.

A - 0-4 inches. Reddish brown (5YR 4/4) silt loam, moist; weak fine granular structure; soft, very friable; many fine roots; clear smooth boundary; slightly alkaline (pH 7.7); noneffervescent.

AC - 4-21 inches. Brown (7.5YR 5/4D, 7.5YR 4/4W) silty clay loam, moist; massive; slightly hard, very friable; common fine roots; few fine accumulations of carbonate; gradual wavy boundary; slightly alkaline (pH 7.7); strongly effervescent.

C1k – 21-36 inches. Reddish brown (5YR 5/4D, 5YR 4/4W) silt, moist; massive; hard, very friable; few fine roots; gradual wavy boundary; strongly alkaline (pH 8.6); strongly effervescent.

C2k – 36-45 inches. Yellowish red (5YR 5/6D, 5YR 4/4W) silt loam, moist; massive; hard, very friable; many coarse fragments of siltstone; gradual wavy boundary; strongly alkaline (pH 8.7); strongly effervescent.

C3k – 45-60 inches. Yellowish red (5YR 5/6D, 5YR 4/4W) loam, moist; extremely hard, friable; strongly alkaline (pH 8.7); strongly effervescent.

Type Location - Butte County, South Dakota; refer to waypoint 41 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Depth to bedrock typically ranges from 40 to 60 inches or more. Depth to free carbonates is less than 10 inches. The control section is silt loam, loam, or very fine sandy loam averaging between 10 and 18 percent clay. Some pedons have up to 35 percent coarse fragments greater than 3 inches in the surface.

The A horizon has hue of 5YR to 10YR, value of 4 to 6 and 3 or 4 moist, and chroma of 2 to 6. Where the color value is as dark or darker than 5.5 and 3.5 moist, the horizon has chroma of 4 or more or is too thin for a mollic epipedon. It is typically silt loam, but some pedons are loam or very fine sandy loam. It ranges from neutral to moderately alkaline. Some pedons have an AC horizon. It has colors an textures of the A horizon.

The C horizon has hue of 2.5YR to 7.5YR, value of 5 to 7 and 4 to 6 moist, and chroma of 3 to 6. It is loam, silt loam, or very fine sandy loam, but some pedons are silty clay loam in the lower part. It typically has few to many, fine or medium accumulations of carbonate in the upper part. It ranges from slightly to strongly alkaline.

The Cr horizon is reddish colored silty shale, siltstone, or sandstone and is below depths of 40 inches. It ranges from slightly to strongly alkaline.

Range in Characteristics (according to field observations, lab analysis): No significant range in characteristics was found.

Taxonomic Class - Coarse-silty, mixed, superactive, calcareous, mesic Aridic Ustorthents

Suitability for Topsoil (According to WDEQ Guideline 1) – Electrical conductivity was unsuitable at 21-60 inches. Sodium absorption ratio was unsuitable at 21-60 inches. Boron was unsuitable at 21-36 inches. Selenium was marginal at 21-60 inches. Strongly effervescent at 4 inches. Estimated stripping depth is 21 inches.

Geographic Setting (According to Official Series Description) - Nevee soils are nearly level to steep on terraces, uplands, and alluvial fans. Surfaces are dominantly smooth plane, and slope gradients range from 1 to 30 percent. The Nevee soils formed in silty alluvium weathered from reddish colored silty shale, siltstone, or sandstone. Mean annual air temperature is 43 to 48 degrees F, and mean annual precipitation ranges from 15 to 18 inches.

BARNUM
SILT LOAM

Soil Mapping Unit "Bc"
Lab/BKS Sample ID: G08020803-032_035

Typical Pedon: Barnum silt loam-rangeland. (Colors are for dry soil unless otherwise stated.)

The Barnum series consists of very deep, well drained soils formed in calcareous alluvium from red bed sediments. Barnum soils are on flood plains and alluvial terraces. Slopes are simple and range from 0 to 8 percent. The mean annual precipitation is about 12 inches, and the mean annual temperature is about 47 degrees F.

A - 0-6 inches. Reddish brown (5YR 4/4) silt loam, moist; moderate very fine granular structure; soft, very friable; calcium carbonate disseminated; clear smooth boundary; slightly alkaline (pH 7.8); noneffervescent.

C1k - 6-17 inches. Reddish brown (5YR 5/4D, 5YR 4/4W) silt loam, moist; massive with lenses of unaltered parent sediment; slightly hard, very friable; calcium carbonate disseminated and as soft masses in some lenses; moderately alkaline (pH 8.3); strongly effervescent.

C2k – 17-39 inches. Reddish brown (5YR 5/4D, 5YR 4/4W) silt loam, moist; massive with lenses of unaltered parent sediment; slightly hard, very friable; calcium carbonate disseminated and as soft masses in some lenses; strongly alkaline (pH 8.6); strongly effervescent.

C3kn – 39-60 inches. Yellowish red (5YR 4/6D, 5YR 4/4W) silt loam, moist; massive with lenses of unaltered parent sediment; slightly hard, very friable; calcium carbonate disseminated and as soft masses in some lenses; strongly alkaline (pH 8.5); strongly effervescent.

Type Location - Johnson County, Wyoming; refer to waypoint 42 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - These soils typically contain free carbonates throughout but may be leached a few inches in some pedons. Organic carbon ranges from .6 to 3 percent in the upper 10 inches and decreases irregularly with depth. The mean annual soil temperature is about 47 to 53 degrees F. The particle size control section is highly stratified and typically averages loam or light clay loam with 18 to 35 percent clay and more than 15 percent fine or coarser sand. Strata of sandy loam, silt loam, silty clay loam, and fine sandy loam are common. Rock fragments are variable between strata but average from 0 to 10 percent pebbles. Exchangeable sodium ranges from 4 to 15 percent throughout the soil. EC typically ranges from 2 to 8 mmhos throughout under natural conditions but may range to 16 mmhos where poorly irrigated.

The A horizon has hue of 7.5YR through 2.5YR, value of 4 through 6 dry, 3 through 5 moist, and chroma of 2 through 6. Reaction is slightly through strongly alkaline.

The C horizon has hue of 5YR through 10R, value of 4 through 7 dry, 3 through 5 moist, and chroma of 2 through 6. Some strata have visual accumulations of salts and carbonates which are typically discontinuous throughout the extent of the pedon. Reaction is slightly through strongly alkaline. Some pedons may have buried horizons below 40 inches.

Range in Characteristics (according to field observations, lab analysis): Textures are finer than typical for the series.

Taxonomic Class - Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torrifluvents

Suitability for Topsoil (According to WDEQ Guideline 1) - Electrical conductivity was unsuitable at 6-39 inches. Sodium absorption ratio was unsuitable at 6-39 inches. Selenium was unsuitable at 6-17 inches. Strongly effervescent at 6 inches. Estimated stripping depth is 6 inches.

Geographic Setting (According to Official Series Description) - Barnum soils are on flood plains and alluvial terraces. These soils formed in calcareous alluvium derived from red beds containing siltstone, shale, and sandstone. Slopes are 0 to 8 percent. Elevations are 4,000 to 6,600 feet. The mean annual precipitation is about 12 inches and ranges from 10 to 14 inches with about half falling as snow or rain in April, May, and early June. The mean annual temperature is about 43 to 49 degrees F. The frost-free season is estimated to range from 110 to 135 days depending upon elevation, aspect, and air drainage

Ascalon
CLAY LOAM

Soil Mapping Unit "As"
Lab/BKS Sample ID: G08020803-036_039

Typical Pedon: Ascalon clay loam- grassland. (Colors are for dry soil unless otherwise stated.)

The Ascalon series consists of very deep, well drained soils that formed in moderate coarse textured calcareous material. Ascalon soils are on upland hillslopes and tableland plains. Slopes range from 0 to 25 percent. The mean annual precipitation is about 41 centimeters (16 inches) and the mean annual air temperature is about 10 degrees C (49 degrees F) at the type location.

A - 0-2 inches. Grayish brown (10YR 5/2) clay loam; moist; moderate very fine granular structure; soft, very friable; 3 percent pebbles; clear smooth boundary; slightly acid (pH 6.2); noneffervescent.

Bt - 2-14 inches. Dark grayish brown (10YR 4/2DW) clay, moist; moderate medium prismatic structure parting to moderate medium subangular blocks; very hard, very friable; many distinct clay films on faces of peds; 3 percent pebbles; gradual smooth boundary; slightly alkaline (pH 7.4); noneffervescent.

C1k – 14-38 inches. Light yellowish brown (2.5Y 6/3D. 2.5Y 5/2W) clay loam, moist; weak medium subangular blocky structure; hard, very friable; concretions, thin seams and streaks of calcium carbonate; few faint clay films on faces of some peds; 5 percent pebbles, gradual smooth boundary; strongly alkaline (pH 8.5); violently effervescent.

C2k – 38-60 inches. Pale yellow (2.5Y 7/3) loam, moist; massive; slightly hard, very friable; 5 percent pebbles; concretions, thin seams and streaks of calcium carbonate; strongly alkaline (pH 8.8); strongly effervescent.

Type Location - Washington County, Colorado; refer to waypoint 43 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Depth to bedrock typically ranges from 40 to 60 inches or more. Depth to free carbonates is less than 10 inches. The control section is silt loam, loam, or very fine sandy loam averaging between 10 and 18 percent clay. Some pedons have up to 35 percent coarse fragments greater than 3 inches in the surface.

The A horizon has hue of 5YR to 10YR, value of 4 to 6 and 3 or 4 moist, and chroma of 2 to 6. Where the color value is as dark or darker than 5.5 and 3.5 moist, the horizon has chroma of 4 or more or is too thin for a mollic epipedon. It is typically silt loam, but some pedons are loam or very fine sandy loam. It ranges from neutral to moderately alkaline. Some pedons have an AC horizon. It has colors an textures of the A horizon.

The C horizon has hue of 2.5YR to 7.5YR, value of 5 to 7 and 4 to 6 moist, and chroma of 3 to 6. It is loam, silt loam, or very fine sandy loam, but some pedons are silty clay loam in the lower part. It typically has few to many, fine or medium accumulations of carbonate in the upper part. It

ranges from slightly to strongly alkaline.

The Cr horizon is reddish colored silty shale, siltstone, or sandstone and is below depths of 40 inches. It ranges from slightly to strongly alkaline.

Mean annual soil temperature: 8 to 15 degrees C (47 to 58 degrees F).
Mean summer soil temperature: 15 to 26 degrees C (59 to 78 degrees F).
Mollic epipedon: thickness ranges from 18 to 51 centimeters (7 to 20 inches)
Depth to secondary calcium carbonate: 20 to 76 centimeters (8 to 30 inches)
Depth to the base of the Bt horizon: 38 to 76 centimeters (15 to 30 inches)
Organic carbon: ranges from .6 to 2 percent in the mollic epipedon and decreases uniformly with depth.
Rock fragments: range from 0 to 15 percent but are usually less than 5 percent.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer than typical for the series.

Taxonomic Class - Fine-loamy, mixed, superactive, mesic Aridic Argiustolls

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 2-14 inches. Sodium absorption ratio was unsuitable at 38-60 inches. Violently effervescent at 14 inches. Estimated stripping depth is 14 inches.

Geographic Setting (According to Official Series Description) –
Parent material: thick, moderately coarse textured, calcareous material.
Landform: hills and plains
Slope: 0 to 25 percent
Elevation: 1219 to 1829 meters (4000 to 6000 feet).
Mean annual precipitation: 33 to 43 centimeters (13 to 17 inches), with peak periods of precipitation occurring during the spring and summer.
Mean annual temperature: 10 to 12 degrees C (49 to 53 degrees F).
Average summer temperature: 20 to 23 Degree C (68 to 73 degrees F).
Frost-free season: about 130 to 160 days.

CUSHMAN
LOAM

Soil Mapping Unit "Cy"
Lab/BKS Sample ID: G08020803-040_043

Typical Pedon: Cushman loam - on south facing slope of about 3 percent under native grass vegetation. (Colors are for dry soil unless otherwise stated.)

The Cushman series consists of well drained soils that are moderately deep to bedrock. These soils formed in slopewash alluvium and residuum from interbedded shales and siltstone and fine-grained argillaceous sandstone. Cushman soils are on buttes, fan remnants, hills, piedmonts, ridges and terraces. Slopes are 0 to 20 percent. The mean annual precipitation is about 13 inches, and the mean annual air temperature is about 45 degrees F

A - 0-2 inches. Light brownish gray (10YR 6/2) loam, moist; moderate medium granular structure; soft, friable, slightly sticky and slightly plastic; common very fine, fine, and few medium roots; clear smooth boundary; neutral (pH 6.6); noneffervescent.

Bt - 2-7 inches. Brown (10YR 5/3) clay loam, moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic; common very fine, fine and few medium roots; few faint clay films on faces of peds and lining pores; clear smooth boundary; slightly alkaline (pH 7.4); noneffervescent.

Btk – 7-13 inches. Brown (10YR 4/3DW) clay loam, moist; moderate coarse prismatic structure parting to strong medium angular blocky; hard, firm, moderately sticky and moderately plastic; few fine, medium and coarse roots; common distinct clay films on faces of peds, lining pores and root channels; clear wavy boundary; moderately alkaline (pH 8.1); strongly effervescent.

Ck – 13-25 inches. Dark grayish brown (10YR 4/2D, 10YR 3/2W) clay loam, moist; moderate coarse prismatic structure parting to moderate fine and very fine subangular blocky; hard, firm, moderately sticky and moderately plastic; few fine roots; few faint clay films on faces of peds; calcium carbonate on faces of peds and in pores as common distinct irregularly shaped filaments and masses; clear smooth boundary; moderately alkaline (pH 8.3); strongly effervescent.

Type Location - Sheridan County, Wyoming; refer to waypoint 50 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Depth to a paralithic contact and bedrock is typically about 28 to 32 inches but ranges from 20 to 40 inches. Depth to continuous horizons of carbonate accumulation is 7 to 26 inches. Depth to the base of the argillic horizon ranges from 10 to 26 inches. Rock fragments range from 0 to 15 percent and are soft shale channers or semirounded sandstone pebbles. The soil is dry in the moisture control section more than half the time cumulative that the soil temperature at a depth of 20 inches is 41 degrees F., which occurs about April 21-27, and is dry in all parts of the moisture control section for at least 60 consecutive days from July 15 to October 25 and for at least 90 cumulative days during this period. The mean annual soil temperature is 47 to 53 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 192 days. EC ranges from 0 to 2 mmhos throughout.

The A horizon has hue of 10YR or 2.5Y, value of 4 to 6 dry, 3 to 5 moist, and chroma of 2 to 4. Reaction is neutral or slightly alkaline.

The Bt horizon has hue of 10YR or 2.5Y, value of 4 to 6 dry, 3 to 5 moist, and chroma of 2 to 4. Texture of the Bt is clay loam or loam with 20 to 35 percent clay and more than 15 percent but less than 35 percent fine sand or coarser. Reaction is neutral to moderately alkaline.

The Btk horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry, 4 to 6 moist, and chroma of 2 to 4. Texture is loam or clay loam with 20 to 35 percent clay. Reaction is moderately alkaline or strongly alkaline. Calcium carbonate ranges from 3 to 12 percent.

The Bk horizon has hue of 10YR and 2.5Y, value of 6 to 8 dry, 4 to 6 moist, and chroma of 2 to 4. Texture is loam or clay loam with 20 to 30 percent total clay of which about 2 to 4 percent is carbonate clay. Reaction is typically moderately alkaline but may be strongly alkaline when sodic shales are present. Calcium carbonate equivalent is 5 to 15 percent, but some horizons may exceed 15 percent but are discontinuous or too thin to be considered as a calcic.

The Cr is weakly consolidated sedimentary rock. It is primarily calcareous shale; but siltstone or thinly interbedded fine grained argillaceous sandstone is common. The rock is typically moderately alkaline or strongly alkaline when crushed, but slightly alkaline or neutral shales are not uncommon.

Range in Characteristics (according to field observations, lab analysis): No significant range in characteristics was found.

Taxonomic Class - Fine-loamy, mixed, superactive, mesic Ustic Haplargids

Suitability for Topsoil (According to WDEQ Guideline 1) - No marginal or unsuitable parameters were found. Strongly effervescent at 7 inches. Estimated stripping depth is 25 inches.

Geographic Setting (According to Official Series Description) - Cushman soils are on buttes, fan remnants fan piedmonts, hills and ridges. Slopes range from 0 to 20 percent. The soils formed in moderately fine textured slopewash alluvium and residuum. Surface erosion is common in overgrazed areas, and some thin eolian deposits overlie these soils in some areas. Elevations are 3,500 to 6,000 feet. The mean annual precipitation is 13 inches and ranges from 10 to 14 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September and October. The mean annual temperature is 43 to 51 degrees F. The frost-free season is about 105 to 130 days depending upon elevation, aspect, and air drainage.

ZIGWEID
SILTY CLAY LOAM

Soil Mapping Unit "Zn"
Lab/BKS Sample ID: G08020803-044_048

Typical Pedon: Zigweid silty clay loam - on a 3 percent southwest facing slope utilized as rangeland. (Colors are for dry soil unless otherwise stated.)

The Zigweid series consists of very deep, well drained soils formed in alluvium from mixed sedimentary sources on fan aprons, alluvial fans, fan piedmonts, fan remnants, terraces, ridges and hills. Slopes range from 0 to 20 percent. Permeability is moderate. The mean annual precipitation is about 13 inches, and the mean annual air temperature is about 46 degrees F.

A - 0-3 inches. Light brownish gray (10YR 6/2) silty clay loam, moist; moderate fine and medium granular structure; slight hard, friable, nonsticky and nonplastic; many very fine and fine roots throughout; clear smooth boundary; slightly alkaline (pH 7.4); noneffervescent.

B1 - 3-14 inches. Brown (10YR 5/3D, 10YR 4/2W) silty clay loam, moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots throughout and few medium throughout; carbonates are disseminated throughout; gradual wavy boundary; slightly alkaline (pH 7.7); very slightly effervescent.

B2 – 14-26 inches. Dark grayish brown (10YR 4/2DW) silty clay loam, moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; gradual wavy boundary; slightly alkaline (pH 7.6); very slightly effervescent.

C1 – 26-36 inches. Yellowish brown (10YR 5/4D, 10YR 4/3W) silt loam, moist; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; gradual wavy boundary; slightly alkaline (pH 7.5); very slightly effervescent.

C2 – 36-60 inches. Brown (10YR 5/3D, 10YR 4/2W) loam, moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots throughout; common fine irregular light gray (10YR 7/2) carbonate threads throughout; slightly alkaline (pH 7.7); strongly effervescent.

Type Location - Campbell County, Wyoming; refer to waypoint 56 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Depth to carbonates ranges from 0 to 8 inches. Depth to the Bk horizon and the base of the cambic horizon ranges from 10 to 22 inches. The particle-size control section and soil profile are clay loam or loam. Clay ranges from 18 to 35 percent, silt from 20 to 55 percent, and sand from 15 to 50 percent with more than 15 percent but less than 35 percent fine sand or coarser. Rock fragments range from

0 to 15 but are typically less than 5 percent and are mostly soft shale chips. The moisture control section is usually dry in all parts for 90 cumulative days following the summer solstice and for 60 consecutive days during this period. The mean annual soil temperature is 47 to 53 degrees F. The soil temperature at a depth of 20 inches is 41 degrees F. or warmer for 175 to 192 days.

The A horizon has hue of 5Y, 2.5Y or 10YR, value of 4 to 6 dry, 3 to 5 moist, and chroma of 2 or 3. It is loam or clay loam. Reaction is neutral to moderately alkaline.

The Bw horizon has hue of 5Y, 2.5Y or 10YR, value of 5 or 6 dry, 4 or 5 moist, and chroma of 2 to 4. It is loam or clay loam. Reaction is slightly alkaline or moderately alkaline.

The Bk horizon has hue of 5Y, 2.5Y or 10YR, value of 5 to 7 dry, 4 to 6 moist, and chroma of 2 to 4. It is loam or clay loam. It has 5 to 14 percent calcium carbonate equivalent and may have a few scattered crystals of calcium sulfate. Reaction is moderately alkaline or strongly alkaline.

Some pedons have a C horizon with similar properties as the Bk horizon. Some pedons may have sandy clay loam textures below 40 inches. It typically has 3 to 5 percent less calcium carbonate than the overlying Bk horizon.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer than typical for the series.

Taxonomic Class - Fine-loamy, mixed, superactive, mesic Ustic Haplocambids

Suitability for Topsoil (According to WDEQ Guideline 1) - No marginal or unsuitable parameters were found. Strongly effervescent at 36 inches. Estimated stripping depth is 60 inches.

Geographic Setting (According to Official Series Description) - These soils are on fan aprons, alluvial fans, terraces, fan piedmonts, fan remnants, ridges and hills. In many areas they are dissected. Slopes range from 0 to 20 percent. These soils formed in calcareous, moderately fine textured sediments derived from interbedded shale and soft sandstone. Elevations are 3,500 to 6,600 feet. The mean annual precipitation is 13 inches with over half of the annual precipitation falling in April, May, and June and less than one inch falling in each month of July, August, September, and October. Precipitation ranges from 10 to 14 inches. The mean annual temperature is about 46 degrees F., and ranges from 43 to 51 degrees F. The frost-free season is about 105 to 130 days.

BUTCHE
CLAY LOAM

Soil Mapping Unit "Bw"
Lab/BKS Sample ID: G08020803-049_050

Typical Pedon: Butche clay loam - on a west-facing convex slope of 25 percent under native grass. When described the soil was moist to 10 inches. (Colors are for dry soil unless otherwise stated.)

The Butche series consists of shallow, well drained to excessively drained soils formed in loamy materials weathered from sandstone. Permeability is moderate or moderately rapid. Slopes range from 1 to 60 percent. Mean annual precipitation is about 17 inches, and mean annual temperature is about 46 degrees F.

A - 0-2 inches. Dark grayish brown (2.5Y 4/2DW) loam, moist; weak fine granular structure; soft, very friable; coarse fragments make up about 20 percent by volume; clear wavy boundary; slightly alkaline (pH 7.6); noneffervescent.

C - 2-8 inches. Grayish brown (2.5Y 5/2DW) sandy loam, moist; weak medium and coarse subangular blocky structure; slightly hard, very friable; coarse fragments make up about 30 percent by volume; abrupt wavy boundary; slightly alkaline (pH 7.6); very slightly effervescent.

Type Location - Custer County, South Dakota; refer to waypoint 57 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The soil has an Ustic moisture regime that borders on Aridic. Depth to sandstone ranges from 7 to 20 inches. Coarse fragments ranging in size from channery sandstone fragments up to massive slabs of sandstone about 3 feet in diameter are on the surface and mixed throughout the A and C horizons. Some pedons also have rounded cobble and stones of igneous and metamorphic rocks unrelated to the underlying sedimentary sandstone. The coarse fragments and flagstones make up 10 to 35 percent by volume of the soil mass. The control section typically is loam averaging between 15 and 25 percent clay and more than 15 percent fine sand or coarser.

The A horizon has hue of 10YR or 7.5YR, value of 4 to 6 and 2 to 4 moist, and chroma of 1.5 to 3 dry or moist. Where the color value is as dark or darker than 5.5 and 3.5 moist, the A horizon is too thin for a mollic epipedon. The A horizon is cobbly loam, cobbly fine sandy loam, stony loam, stony fine sandy loam, channery loam, loam, sandy loam, or fine sandy loam. It is slightly acid or neutral.

The C horizon typically has 10YR hue, but some pedons have hue of 7.5YR or 5YR due to variations in color of the underlying sandstone, value of 5 to 7 and 4 to 6 moist, and chroma of 2 to 6. The C horizon is cobbly loam, channery loam, stony loam, stony fine sandy loam, channery fine sandy loam, loam, sandy loam and fine sandy loam. It ranges from slightly acid to slightly alkaline. In some pedons there is an incipient cambic horizon 1 to 2 inches thick that is intermediate in color between the A and C horizon and has more pronounced structure than the C horizon. It is not continuous and is irregular in its shape and occurrence.

The R horizon is very hard sandstone and is hard and difficult to penetrate. It lacks free carbonates.

Range in Characteristics (according to field observations, lab analysis): No significant range in characteristics was found.

Taxonomic Class - Loamy, mixed, superactive, nonacid, mesic Aridic Lithic Ustorthents

Suitability for Topsoil (According to WDEQ Guideline 1) - No marginal or unsuitable parameters were found. Estimated stripping depth is 8 inches.

Geographic Setting (According to Official Series Description) - Butche soils are sloping to very steep on uplands with gradients ranging from 1 to 60 percent. The Butche soils are formed in loamy materials weathered from noncalcareous sandstone. The mean annual temperature ranges from 45 to 49 degrees F, and mean annual precipitation from 13 to 18 inches. Elevations range from 3000 to 5500 feet.

SAMSIL
CLAY LOAM

Soil Mapping Unit "Sa"
Lab/BKS Sample ID: G08020805-001_002

Typical Pedon: Samsil clay loam - on a convex, southwest-facing slope of 15 percent in native grass. When described the soil was moist to 12 inches, dry from 12 to 21 inches, and moist below 21 inches. (Colors are for dry soil unless otherwise stated.)

The Samsil series consists of shallow, well drained soils formed in alluvium or residuum weathered from shale. Permeability is slow. Slope ranges from 2 to 60 percent. Mean annual precipitation is about 15 inches, and mean annual air temperature is about 47 degrees F.

A - 0-3 inches. Light brownish gray (2.5Y 6/2) clay loam, moist; moderate fine granular structure; slightly hard, friable, sticky and plastic; common fine roots; few very fine fragments of shale; clear wavy boundary; slightly alkaline (pH 7.5); noneffervescent.

AC - 3-10 inches. Gray (10YR 5/1D) clay, moist; weak medium subangular blocky structure parting to weak medium granular; hard, friable, sticky and plastic; common fine roots; common fine fragments of soft shale; clear wavy boundary; moderately alkaline (pH 8.4); strongly effervescent.

Ck – 10-18 inches. Very dark gray (10YR 3/1D) silt loam, moist; massive; hard, friable, sticky and plastic; common fine roots; about 50 percent by volume of fragments of soft shale; common distinct olive yellow (2.5Y 6/6) stains on faces of shale fragments; few fine and medium accumulations of carbonate; gradual wavy boundary; moderately alkaline (pH 8.2); strongly effervescent.

Type Location - Pennington County, South Dakota; refer to waypoint 60 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The control section is clay and contains 50 to 65 percent clay. The depth to bedded shale ranges from 6 to 20 inches. Horizons above the shale range from loose to hard when dry, and friable or firm when moist. These horizons contain free carbonates. Effervescence ranges from slight to strong and reaction is slightly alkaline or moderately alkaline. The C1 and C2 horizons and upper part of the Cr horizons commonly have accumulations of carbonate, gypsum, and other salts. Colors throughout, including mottles and stains, are inherited from the shale.

The A horizon has hue of 5Y, 2.5Y, or 10YR, value of 4 to 7 and 3 to 6 moist, and chroma of 2 to 4. It is clay, silty clay, silty clay loam or clay loam and commonly contains few to common fragments of shale ranging from 2 to 25 mm in diameter. It has fine or medium subangular blocky or fine or very fine granular structure. The upper 1/4 to 1/2 inch commonly is a fragile crust or mulch or very fine granules when dry.

The AC horizon has hue of 5Y, 2.5Y, or 10YR, value of 4 to 7 and 3 to 6 moist, and chroma of 1 to 4. It contains up to 35 percent fragments of shales by volume that range from less than 2 mm to 30 mm in diameter.

The C horizon has hue of 5Y, 2.5Y or 10YR, value of 4 to 7 and 3 to 6 moist, and chroma of 1 to 4. It is clay. The C horizon contains from 35 to more than 50 percent fragments of shale by volume that range from less than 2 mm to 35 mm in diameter.

The Cr horizon has the same range in color as the overlying C horizons. It ranges from medium acid to moderately alkaline.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer and have less clay than typical for the series.

Taxonomic Class - Clayey, smectitic, calcareous, mesic, shallow Aridic Ustorthents

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 3-10 inches. Electrical conductivity was marginal at 10-18 inches. Sodium absorption ratio was marginal at 3-18 inches. Selenium was marginal at 10-18 inches. Strongly effervescent at 3 inches. Estimated stripping depth is 3 inches.

Geographic Setting (According to Official Series Description) - Samsil soils are on gently sloping to very steep hills, ridges and breaks of dissected shale plains. Surfaces mainly are convex, and slope gradients range from 2 to 60 percent or more. The soil formed in alluvium or residuum weathered from shale. Mean annual air temperature ranges from 45 to 48 degrees F, and mean annual precipitation ranges from 14 to 19 inches.

PAUNsAUGUNT
LOAM

Soil Mapping Unit "Pa"
Lab/BKS Sample ID: G08020805-004_006

Typical Pedon: Paunsaugunt loam-rangeland. (Colors are for dry soil unless otherwise stated.)

The Paunsaugunt series consists of well drained, moderately permeable soils that are shallow to limestone. They formed in residuum from limestone and calcareous sandstone. Paunsaugunt soils are on mesas and hillsides with slopes ranging from 2 to 70 percent. The average annual precipitation is about 15 inches. The mean annual temperature is about 43 degrees F.

A - 0-2 inches. Brown (10YR 5/3) loam, moist, crushed; weak medium subangular blocky structure that parts to weak fine granular structure; soft, friable, common fine and medium roots; common fine and very fine interstitial pores; 30 percent cobbles; strongly calcareous; carbonates are disseminated; clear smooth boundary; slightly acid (pH 6.4); noneffervescent.

Bo - 2-6 inches. Dark yellowish brown (10YR 4/4D) loam, moist, crushed; weak medium subangular blocky structure that parts to weak fine granular structure; soft, friable, common fine and medium roots; common fine and very fine interstitial pores; 30 percent cobbles; strongly calcareous; carbonates are disseminated; clear smooth boundary; neutral (pH 7.3); noneffervescent.

Ck – 6-18 inches. Very pale brown (10YR 7/4D) clay loam, moist; crushed; weak fine subangular blocky structure parting to weak fine granular structure; soft, friable; many medium and coarse roots; few fine and very fine pores; 45 percent cobbles; strongly calcareous; carbonates are disseminated; abrupt wavy boundary; moderately alkaline (pH 7.4); strongly effervescent.

Type Location - Garfield County, Utah; refer to waypoint 63 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The mean annual soil temperature is 41 to 47 degrees F., and a mean summer soil temperature immediately above bedrock of about 59 to 64 degrees F. The soil moisture regime is typic ustic.

The mollic epipedon is 4 to 12 inches thick and constitutes over one-third the thickness of soil above bedrock. The depth to bedrock ranges from 10 to 20 inches. Rock fragments average 35 to 60 percent in the particle-size control section. Clay content ranges from 15 to 27 percent.

The A horizon has hue of 7.5YR or 10YR, value of 3 to 5 dry, and chroma of 1 to 3 dry and moist. Reaction is mildly to moderately alkaline.

The C horizon has hue of 7.5YR or 10YR, value of 5 to 7 dry, 3 to 5 moist and chroma of 2 or 3. It is very channery, very gravelly or very cobbly loam, or very cobbly sandy loam.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer than typical for the series.

Taxonomic Class - Loamy-skeletal, mixed, superactive, frigid Lithic Haplustolls

Suitability for Topsoil (According to WDEQ Guideline 1) - No marginal or unsuitable parameters were found. Strongly effervescent at 6 inches. Estimated stripping depth is 18 inches.

Geographic Setting (According to Official Series Description) - The Paunsaugunt soils are on undulating mesas, gently sloping to very steep hills, and mountainsides. Elevations range from 6,000 to 8,400 feet. The soils formed in residuum on limestone and calcareous sandstone. Slope gradients are 2 to 70 percent. The average annual precipitation is 16 to 22 inches and the freeze free period ranges from 70 to 100 days. The mean annual temperature is 39 to 45 degrees F., and the average summer temperature is 59 to 64 degrees F.

BOnEEk
SILTY CLAY LOAM

Soil Mapping Unit "Bo"
Lab/BKS Sample ID: G08020805-007_011

Typical Pedon: Boneek silty clay loam - on a northeast-facing plane slope of 4 percent under native grass at 3500 feet elevation. (Colors are for dry soil unless otherwise stated.)

The Boneek series consists of deep and very deep, well drained soils formed in silty sediments underlain by sandstone or siltstone. Permeability is moderately slow in the solum and moderate in the underlying material. Slopes range from 0 to 15 percent. Mean annual precipitation is about 17 inches, and mean annual temperature is about 46 degrees F.

A - 0-6 inches. Dark yellowish brown (10YR 4/4D) silty clay loam, moist; moderate thin platy structure parting to weak fine granular; slightly hard, very friable; many fine roots; clear wavy boundary; neutral (pH 7.1); noneffervescent.

Btk - 6-17 inches. Brown (10YR 5/3D) silty clay loam, moist; moderate medium prismatic structure parting to moderate medium and fine subangular blocky; very hard, friable, slightly sticky and slightly plastic; common fine roots; shiny films on faces of peds; clear wavy boundary; moderately alkaline (pH 8.1); noneffervescent.

C1k – 17-33 inches. Light yellowish brown (10YR 6/2D) silty clay loam, moist; weak medium and coarse subangular blocky structure; very hard, friable, slightly sticky and slightly plastic; few fine roots; common fine and medium accumulations of carbonate; gradual wavy boundary; strongly alkaline (pH 8.5); strongly effervescent.

C2k – 33-42 inches. Grayish brown (10YR 5/2D) silty clay loam, moist; few fine and medium prominent mottles of strong brown (7.5YR 5/8) moist; weak coarse subangular blocky structure; very hard, friable; few fine roots; clear wavy boundary; moderately alkaline (pH 8.0); strongly effervescent.

C3k – 42-60 inches. Light olive brown (2.5Y 5/3D) silty clay loam, moist; thin platy rock structure; faces of fractures stained strong brown (7.5YR 5/6) moist; few coatings of carbonates on faces of fractures, but matrix is noncalcareous; moderately alkaline (pH 8.1); strongly effervescent.

Type Location - Butte County, South Dakota; refer to waypoint 64 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Depth to bedrock is 40 to 60 inches or more. Depth to carbonates ranges from 11 to 24 inches. Thickness of the mollic epipedon ranges from 7 to 15 inches and extends into the Bt horizon of some pedons.

The A horizon has hue of 10YR or 7.5YR, value of 4 or 5 and 2 or 3 moist, and chroma of 2 or 3. It typically is silt loam, but some pedons are loam. It is slightly acid or neutral.

The Bt1 horizon has hue of 7.5YR or 5YR, value of 4 or 6 and 3 or 4 moist, and chroma of 2 to 4. It is silty clay loam or silty clay. Average clay content ranges from 35 to 45 percent with less than

15 percent fine sand or coarser. It is slightly acid or neutral.

The Bt2 horizon has hue of 10YR or 7.5Y, value of 5 or 6 and 3 or 5 moist, and chroma of 2 to 4. It is silty clay loam averaging between 30 and 40 percent clay and less than 15 percent fine sand or coarser. It is neutral or slightly alkaline.

The Bk and C horizons have hue of 10YR or 2.5Y, value of 5 through 7 and 4 or 5 moist, and chroma of 1 to 3. They typically are silt loam or silty clay loam, but some pedons are loam. They are slightly alkaline to strongly alkaline. Few to many, fine or medium accumulations of carbonate are in the Bk horizon.

The Cr horizon has hue of 10YR or 7.5YR.

Range in Characteristics (according to field observations, lab analysis): No significant range in characteristics was found.

Taxonomic Class - Fine, smectitic, mesic Aridic Argiustolls

Suitability for Topsoil (According to WDEQ Guideline 1) - Electrical conductivity was marginal at 33-42 inches. pH was marginal (Alkaline) at 17-33 inches. Selenium was marginal at 33-42 inches. Strongly effervescent at 17 inches. Estimated stripping depth is 17 inches.

Geographic Setting (According to Official Series Description) - Boneek soils are nearly level to moderately sloping on high terraces and uplands. Surfaces are plane to slightly convex and slope gradients range from 0 to 15 percent. The soils formed in a silty mantle overlying sandstone or siltstones, or in loess or silty alluvium. Mean annual temperature ranges from 43 to 48 degrees, and mean annual precipitation ranges from 15 to 18 inches. Most of the precipitation comes in the spring and summer.

ARVADA
SILTY CLAY LOAM

Soil Mapping Unit "Ar"
Lab/BKS Sample ID: G08020805-012_016

Typical Pedon: Arvada silty clay loam - rangeland. (Colors are for dry soil unless otherwise stated.)

The Arvada series consists of very deep, well drained soils formed in alluvium and colluvium derived from sodic shale. Arvada soils are on alluvial fans, fan remnants, fan terraces and hillslopes. Slopes are 0 to 25 percent. The mean annual precipitation is about 12 inches, and the mean annual air temperature is about 46 degrees F.

A - 0-3 inches. Light gray (10YR 7/2) silty clay loam, moist; moderate very thin platy structure parting to moderate very fine granular; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; abrupt smooth boundary; slightly acid (pH 6.3); noneffervescent.

Bt - 3-18 inches. Dark grayish brown (2.5Y 4/2DW) clay loam, moist; moderate medium columnar structure parting to moderate medium angular blocky; extremely hard, firm, sticky and very plastic; common medium roots; many prominent clay films on faces of peds and in root channels; ESP is 20 percent; clear smooth boundary; slightly alkaline (pH 7.6); noneffervescent.

Btn– 18-28 inches. Dark grayish brown (2.5Y 4/2D, 2.5Y 5/2W) silty clay, moist; massive; hard, friable, sticky and plastic; common medium soft masses of calcium carbonate and gypsum as crystals in thin seams and as filaments or threads; 20 percent exchangeable sodium; moderately alkaline (pH 7.9); very slightly effervescent.

C1n – 28-43 inches. Grayish brown (2.5Y 5/2D, 2.5Y 4/2W) silt loam, moist; massive; hard, friable, sticky and plastic; common medium soft masses of calcium carbonate and gypsum as crystals in thin seams and as filaments or threads; 20 percent exchangeable sodium; moderately alkaline (pH 8.2); very slightly effervescent.

C2nsa – 43-60 inches. Very dark grayish brown (10 YR 3/2DW) silt loam, moist; massive; hard, friable, sticky and plastic; common medium soft masses of calcium carbonate and gypsum as crystals in thin seams and as filaments or threads; 20 percent exchangeable sodium; moderately alkaline (pH 8.3); slightly effervescent.

Type Location - Sheridan County, Wyoming; refer to waypoint 72 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Depth to effervescent material ranges from 0 to 19 inches. Depth to layers with greater than 15 percent exchangeable sodium is 4 to 10 inches. The depth to the base of the Bt horizon is 15 inches or more. A thin A horizon occurs in some pedons. A light colored platy E horizon is generally present but is absent in some pedons. Gravel is typically less than 5 percent but ranges from 0 to 15 percent. The moisture control section is usually dry for 60 consecutive days during the 90 day period following the summer solstice. The mean annual soil temperature is 47 to 53 degrees F., and the soil temperature at a depth of 20 inches is 41 degrees F. or more for 175 to 195 days. The soil has an aridic moisture regime that borders on ustic.

The E and A horizons have hue of 10YR, 2.5Y or 5Y, value of 4 to 7, 4 or 5 moist, and chroma of 2 to 4. Texture is fine sandy loam, loam, silt loam, clay loam or very fine sandy loam. Reaction ranges from neutral through strongly alkaline. EC ranges from 0 to 4 mmhos/cm.

The Btn horizon has hue of 7.5YR, 10YR, 2.5Y or 5Y, value of 4 to 6 dry, 4 or 5 moist, and chroma of 2 to 4. Texture is clay, clay loam, silty clay or silty clay loam and has 35 to 60 percent clay, 10 to 50 percent silt, and 5 to 45 percent sand. This horizon is strongly alkaline or very strongly alkaline (pH 8.8 to 10.0), has 15 to 34 percent exchangeable sodium, and an EC of 4 to 16 mmhos/cm. Some pedons when buffered by gypsum are moderately alkaline. The Btkn horizon, when present, has a calcium carbonate equivalent of 3 to 12 percent and an exchangeable sodium percent of 10 to 30. A thin Bt horizon is present above the Btn in some pedons. Some pedons have a Btkny horizon.

The Bkny horizon has hue of 7.5YR, 10YR or 2.5Y, value of 5 or 6 dry, 4 or 5 moist. Textures are clay, clay loam, silty clay or silty clay loam. Reaction ranges from strongly alkaline or very strongly alkaline (pH 8.6 to 10.0). This horizon contains 4 to 15 percent calcium carbonate equivalent. Some pedons when buffered by gypsum are moderately alkaline. Exchangeable sodium typically ranges from 10 to 30 percent but decreases with increasing depth. Electrical conductivity is 4 to 16 mmhos/cm. Some pedons have a C horizon.

Some pedons have a C horizon below 40 inches. It has properties similar to those of the Bkny horizon.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer than typical for the series.

Taxonomic Class - Fine, smectitic, mesic Ustertic Natrargids

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 18-28 inches. Electrical conductivity was marginal at 28-60 inches. Sodium absorption ratio was marginal at 28-43 inches and was unsuitable at 43-60 inches. Selenium was marginal at 18-60 inches. Strongly effervescent at 3 inches. Estimated stripping depth is 18 inches.

Geographic Setting (According to Official Series Description) - The Arvada soils are on alluvial fans, fan remnants, terraces and hillslopes. The soils formed in moderately fine textured alluvium and colluvium derived from sedimentary rocks. Slopes range from 0 to 25 percent. Elevations range from 2,600 to 6,000 feet. The average annual precipitation is about 12 inches but ranges from 9 to 14 inches with about half the precipitation occurring during April, May, and early June. The mean annual air temperature is about 43 to 53 degrees F., and the mean summer temperature is 63 degrees F. The frost-free season is estimated to range from 100 to 160 day

LOHMILLER
LOAM

Soil Mapping Unit "Lo"
Lab/BKS Sample ID: G08020805-017_022

Typical Pedon: Lohmiller loam - on a plane slope of less than 1 percent in a cultivated field. When described the soil was moist throughout. (Colors are for dry soil unless otherwise stated.)

The Lohmiller series consists of very deep, well drained soils formed in alluvium on bottom lands. Permeability is slow or moderately slow. Slopes range from 0 to 8 percent. Mean annual precipitation is about 15 inches, and mean annual air temperature is about 46 degrees F.

A - 0-3 inches. Light gray (10YR 6/1) loam, moist; moderate medium granular structure; hard, friable; many fine roots; neutral; clear smooth boundary; slightly alkaline (pH 7.4); noneffervescent.

AC - 3-15 inches. Dark grayish brown (2.5Y 4/2W) silty clay, moist; weak thin platy structure parting to weak fine granular; very hard, firm; common fine roots, clear smooth boundary; moderately alkaline (pH 7.9); noneffervescent.

C1 – 15-23 inches. Dark grayish brown (2.5Y 4/2W) silty clay, moist; massive; very hard, firm; thin bedding planes evident; common very fine roots; slighty alkaline (pH 7.8); noneffervescent.

C2n – 22-34 inches. Dark grayish brown (2.5Y 4/2W) silty clay, moist; massive; very hard, firm; thin bedding planes evident; common very fine roots; moderately alkaline (pH 8.0); very slightly effervescent.

C3k – 34-38 inches. Grayish brown (2.5Y 5/2W) silty clay, moist; massive; very hard, firm; thin bedding planes evident; common very fine roots; moderately alkaline (pH 8.0); very slightly effervescent.

C4n – 38-60 inches. Dark grayish brown (2.5Y 4/2W) clay, moist; massive; very hard, firm; thin bedding planes evident; common very fine roots; moderately alkaline (pH 8.0); very slightly effervescent.

Type Location - Fall River County, South Dakota; refer to waypoint 73 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Carbonates are within 10 inches of the surface. The control section averages from 35 to 50 percent clay.

The A horizon has hue of 10YR or 2.5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 to 4. Some pedons have value of 4 dry and 3 moist in the upper 4 inches. It typically is silty clay loam or clay loam but is silty clay in some pedons. It ranges from neutral to moderately alkaline.

The C horizon has hue of 10YR, 2.5Y, or 5Y; value of 5 to 7 and 4 to 6 moist; and chroma of 2 to 4. It typically is clay loam or silty clay loam but is silty clay or clay in some pedons. It is stratified with thin layers of loamy sand, fine sandy loam, loam, sandy clay or silt loam. It is

slightly alkaline or moderately alkaline. Some pedons have accumulations of carbonates.

Range in Characteristics (according to field observations, lab analysis): Textures have slightly more clay than typical for the series.

Taxonomic Class - Fine, smectitic, calcareous, mesic Torrertic Ustifluvents

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 3-60 inches. Saturation percentage was marginal at 15-34 inches and 38-60 inches. Sodium absorption ratio was unsuitable at 3-60 inches. Electrical conductivity was marginal at 15-23 inches and was unsuitable at 23-60 inches. Selenium was marginal at 15-60 inches. Estimated stripping depth is 3 inches.

Geographic Setting (According to Official Series Description) - Lohmiller soils are on flood plains and high bottom lands of rivers and streams and on alluvial fans of foot slopes. Slopes are typically less than 2 percent but range from 0 to 8 percent. The soils formed in calcareous alluvium from sedimentary rock. Mean annual air temperature ranges from 45 to 48 degrees F, and mean annual precipitation ranges from 10 to 19 inches.

PIERRE
SANDY CLAY LOAM

Soil Mapping Unit "Pe"
Lab/BKS Sample ID: G08020805-023_028

Typical Pedon: Pierre sandy clay loam - on a convex slope of 7 percent in native grass. (Colors are for dry soil unless otherwise stated.)

The Pierre series consists of moderately deep, well drained soils formed in clayey residuum weathered from shale bedrock on uplands. Permeability is very slow. Slopes range from 0 to 30 percent. Mean annual precipitation is about 15 inches, and mean annual air temperature is about 46 degrees F.

A - 0-3 inches. Grayish brown (2.5Y 5/2) sandy clay loam, moist; moderate fine subangular blocky structure parting to weak very fine granular; hard, firm, sticky and plastic; 1 percent pebbles; clear smooth boundary; slightly alkaline (pH 7.8); noneffervescent.

AC- 3-15 inches. Dark grayish brown (2.5Y 4/2W) sandy clay loam, moist; moderate medium and coarse prismatic structure; extremely hard, very firm, very sticky and very plastic; common distinct intersecting slickensides; few fine accumulations of iron; 1 percent pebbles; gradual wavy boundary; moderately alkaline (pH 8.3); strongly effervescent.

C1k – 15-27 inches. Grayish brown (2.5Y 5/2W) clay loam, moist; moderate coarse prismatic structure; extremely hard, very firm, very sticky and very plastic; common distinct intersecting slickensides; few fine nests of iron and common fine accumulations of gypsum; 1 percent pebbles; gradual wavy boundary; strongly alkaline (pH 8.5); violently effervescent.

C2n – 27-38 inches. Dark grayish brown (2.5Y 4/2W) loam, moist; common distinct strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) iron stains; many fine accumulations of gypsum and carbonate; 1 percent pebbles; gradual wavy boundary; strongly alkaline (pH 8.5); slightly effervescent.

C3k – 38-51 inches. Dark grayish brown (2.5Y 4/2W) loam, moist; common distinct strong brown (7.5YR 5/6) iron stains; 1 percent pebbles; moderately alkaline (pH 8.4); strongly effervescent.

C4n – 51-60 inches. Dark grayish brown (2.5Y 4/2W) sand loam, moist; common distinct strong brown (7.5YR 5/6) iron stains; 1 percent pebbles; moderately alkaline (pH 8.4); very slightly effervescent.

Type Location - Haakon County, South Dakota; refer to waypoint 74 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The soil contains carbonates at or within 6 inches of the surface. The depth to soft shale bedrock ranges from 20 to 40 inches but commonly is at depths of 25 to 35 inches. The horizon above the shale has 0 to 60 percent, by volume soft shale fragments. The control section is 50 to 60 percent clay. When the soil is dry, cracks 1/2 inch to 2 inches wide and several feet long extend downward through the

solum. The soil does not have a mollic epipedon, but the upper 10 inches of the solum has an average organic carbon content between 0.6 and 1.7 percent. The soil has a SAR of 1 to 7.

The A horizon has hue of 10YR to 5Y, value of 4 to 6 and 3 to 5 moist, and chroma of 1 to 3. It typically is clay but is silty clay in some pedons. It ranges from slightly acid to moderately alkaline. When the soil is dry it has a light gray (2.5Y 7/2) smooth, porous, platy surface crust ranging from 1/4 to 1 inch in thickness. Where the horizon has mollic colors, it is too thin to be a mollic epipedon. Some pedons do not have an AB horizon.

The Bss horizons have hue of 2.5Y or 5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 1 to 3. They are extremely hard or very hard when dry and extremely firm to firm when moist. They range from neutral to moderately alkaline.

Bk and C horizons are present in some pedons.

The Cr horizon is soft shale bedrock and ranges from slightly acid to moderately alkaline. Bedding planes are evident in the partially weathered shale in some pedons. Gypsum and other salts are concentrated in very thin seams within the shale in some pedons.

Range in Characteristics (according to field observations, lab analysis): Textures are coarser and have less clay than typical for the series.

Taxonomic Class - Fine, smectitic, mesic Aridic Leptic Haplusterts

Suitability for Topsoil (According to WDEQ Guideline 1) - pH was marginal (alkaline) at 15-38 inches. Sodium absorption ratio was unsuitable at 15-60 inches. Electrical conductivity was unsuitable at 27-60 inches. Selenium was marginal at 15-60 inches. Strongly effervescent at 3 inches. Estimated stripping depth is 15 inches.

Geographic Setting (According to Official Series Description) - Pierre soils are on nearly level to steep uplands. Slope gradient typically is 3 to 15 percent, but ranges from 0 to 30 percent. The soils formed in residuum weathered from clay shale. Gilgai microrelief is in most areas. Mean annual air temperature is 44 to 53 degrees F, and mean annual precipitation ranges from 12 to 16 inches. Growing season is 125 to 140 days; average growing season precipitation is 10 to 13 inches; and growing degree days are 2600 to 3100. Elevation is 1300 to 3600 feet.

HAVERSON
CLAY LOAM

Soil Mapping Unit "Ha"
Lab/BKS Sample ID: G08020805-029_033

Typical Pedon: Haverson clay loam - grassland. (Colors are for dry soil unless otherwise stated.)

The Haverson series consists of very deep, well drained soils that formed in alluvium from mixed sources. Haverson soils are on floodplains and low terraces and have slopes of 0 to 9 percent. The mean annual precipitation is about 15 inches and the mean annual air temperature is about 49 degrees F.

A - 0-4 inches. Brown (10YR 4/3D, 10YR 4/2W) clay loam, moist; strong fine granular structure; slightly hard, very friable; clear smooth boundary; slightly alkaline (pH 7.8); noneffervescent.

AC - 4-15 inches. Brown (10YR 4/3D, 10YR 4/2W) silty clay loam, moist; weak coarse subangular blocky structure; very hard, friable; clear smooth boundary; slightly alkaline (pH 7.7); very slightly effervescent.

C1 – 15-35 inches. Brown (10YR 4/3D, 10YR 4/2W) silty clay loam, moist; massive; hard, friable; gradual smooth boundary; slightly alkaline (pH 7.6); slightly effervescent.

C2n – 35-46 inches. Brown (10YR 4/3D, 10YR 4/2W) silty clay loam, moist; massive; slightly hard, very friable; few fine irregularly shaped masses and seams of lime; slightly alkaline (pH 7.8); slightly effervescent.

C3 – 46-60 inches. Brown (10YR 4/3D, 10YR 4/2W) silty clay loam, moist; massive; slightly hard, very friable; few fine irregularly shaped masses and seams of lime; slightly alkaline (pH 7.8); slightly effervescent.

Type Location - Weld County, Colorado; refer to waypoint 75 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Mean annual soil temperature ranges from 47 to 55 degrees F. and mean summer soil temperature ranges from 59 to 78 degrees F. Organic carbon ranges from 0.5 to 2.0 percent in the surface horizon but decreases irregularly with depth. The particle-size control section is stratified with strata ranging from sandy loam to clay loam, but averaging approximately loam. On a weighted average basis, clay ranges from 18 to 35 percent, silt from 10 to 50 percent, and sand from 20 to 60 percent with more than 15 percent but less than 35 percent being fine or coarser sand. Rock fragments are generally less that 5 percent and range from 0 to 20 percent. Some visible calcium carbonate may occur at any depth in these soils, but it is not concentrated into any consistent horizon of accumulation. This soil is not dry in all parts of the moisture control section for more than one-half the time the soil temperature is above 41 degrees F. (195 to 210 days) and is not dry for 45 consecutive days following July 15.

The A horizon has hue of 2.5Y or 10YR, value of 4 to 6 dry, 3 to 5 moist and chroma of 2 or 3. When the value of the surface horizon is as dark as 5 dry and 3 moist, the horizon is thin enough so that if mixed to 7 inches it is too light colored or contains too little organic carbon to qualify as

a mollic epipedon or are finely stratified. The A horizon usually has granular primary structure but it has subangular blocky structure in some pedons. It is soft or slightly hard. It is neutral through moderately alkaline.

The C horizon has hue of 2.5Y, 10YR or 7.5YR, value of 5 or 6 dry, 4 or 5 moist and chroma of 2 or 3. It is slightly alkaline to very strongly alkaline. It has from less-than-one to about 15 percent calcium carbonate equivalent, which differs erratically from stratum to stratum.

Range in Characteristics (according to field observations, lab analysis): Textures are finer and have more clay than typical for the series.

Taxonomic Class - Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustifluvents

Suitability for Topsoil (According to WDEQ Guideline 1) - Sodium absorption ratio was marginal at 15-35 inches and unsuitable at 35-60 inches. Estimated stripping depth is 35 inches.

Geographic Setting (According to Official Series Description) - The Haverson soils are on floodplains and low terraces of major rivers. Slope is 0 to 9 percent. The soils formed in highly stratified, calcareous, recent alluvium derived from mixed sources. At the type location the average annual precipitation is 14 to 18 inches with peak periods of precipitation occurring during the early spring and summer. The mean annual air temperature ranges from 47 to 52 degrees F. and the mean summer temperature is 77 degrees F. The frost-free season is 125 to 180 days.

DEMAR
LOAM

Soil Mapping Unit "Dg"
Lab/BKS Sample ID: G08020805-034_038

Typical Pedon: Demar loam - on a plane slope of less than 1 percent. When described the soil was moist to 5 inches and dry below. (Colors are for dry soil unless otherwise stated.)

The Demar series consists of deep or very deep, moderately well drained soils formed in clayey alluvium from acid clay shales. These soils are on terraces. They have very slow permeability. Slopes range from 0 to 6 percent. Mean annual precipitation is about 15 inches, and mean annual air temperature is about 47 degrees F.

A - 0-2 inches. Pale brown (10YR 6/3) loam, moist; weak thin platy structure parting to weak fine granular; slightly hard, friable, slightly sticky; many roots; abrupt wavy boundary; strongly acid (pH 5.3); noneffervescent.

Bt - 2-21 inches. Grayish brown (2.5Y 5/2D) silty clay, moist; moderate medium blocky structure; very hard, very firm, sticky and plastic; very few roots; clear smooth boundary; slightly alkaline (pH 7.7); noneffervescent.

Btn – 21-29 inches. Very dark grayish brown (2.5Y 3/2D) clay, moist; few fine prominent yellowish brown (10YR 5/6) mottles; weak coarse subangular blocky structure; very hard, very firm, sticky and plastic; very few roots; common fine nests of gypsum and other salts; gradual boundary; neutral (pH 6.9); very slightly effervescent.

C1 – 29-46 inches. Dark grayish brown (2.5Y 4/2D) silty clay loam, moist; many coarse prominent brownish yellow (10YR 6/6) mottles; weak coarse subangular blocky structure; very hard, very firm; partially weathered shale fragments make up about 40 percent by volume; common bands of crystals of gypsum; gradual boundary; slightly alkaline (pH 7.6); very slightly effervescent.

C2 – 46-60 inches. Grayish brown (2.5Y 5/2D) silty clay loam, moist; many coarse prominent brownish yellow (10YR 6/6) and yellowish brown (10YR 5/6) iron stains along fractures; neutral (pH 7.3); very slightly effervescent.

Type Location - Butte County, South Dakota; refer to waypoint 76 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The depth to bedded shale ranges from 40 to 60 inches or more. These soils range from neutral to strongly acid in the upper 12 inches and from very strongly acid to extremely acid below this depth.

The E horizon has hue of 10YR or 2.5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 or 3. It typically is loam but is clay loam in some pedons.

The Bt horizon has hue of 10YR or 2.5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 or 3. The clay content of the Bt horizon is between 35 and 60 percent. Structure of the Bt horizon ranges from weak or moderate, medium or coarse columnar in the Bt1 horizon and moderate or

strong, medium or coarse blocky in the Bt2 horizon.

The Bz horizon has hue of 10YR or 2.5Y, value of 5 or 6 and 4 to 5 moist, and chroma of 2 to 3. It has common or many accumulations of gypsum and other salts.

The C horizon has hue of 10YR or 2.5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 or 3. It contains 20 to 50 percent fragments of shale.

Range in Characteristics (according to field observations, lab analysis): No significant range in characteristics was found.

Taxonomic Class - Fine, smectitic, mesic Torrertic Haplustalfs

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 2-29 inches. Sodium absorption ratio was marginal at 2-29 inches and unsuitable at 29-60 inches. Selenium was marginal at 46-60 inches. Estimated stripping depth is 2 inches.

Geographic Setting (According to Official Series Description) - Demar soils are on micro-highs on nearly level to gently sloping alluvial terraces having pronounced micro-relief. Slope gradients range from 0 to 6 percent. These soils formed in clayey alluvium derived from acid clay shales. The mean annual air temperature ranges from 45 to 49 degrees F, and mean annual precipitation ranges from 12 to 18 inches.

PENROSE
CLAY LOAM

Soil Mapping Unit "Pg"
Lab/BKS Sample ID: G08020805-039_042

Typical Pedon: Penrose clay loam-grassland. (Colors are for dry soil unless otherwise stated.)

The Penrose series consists of shallow, well and somewhat excessively drained, moderate to slowly permeable soils formed in thin, calcareous, loamy materials weathered in place from limestone and interbedded limy materials. Penrose soils are on hills, plains, ridges, hogbacks, cuestas, and mesa tops. Slopes are 1 to 65 percent. Mean annual precipitation is about 13 inches and mean annual temperature is about 51 degrees F.

A - 0-4 inches. Light brownish gray (2.5Y 6/2) clay loam, moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; 25 percent channers; calcareous; clear smooth boundary; slightly alkaline (pH 7.6); slightly effervescent.

C1k - 4-17 inches. Dark grayish brown (10YR 4/2D) clay loam, moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; 20 percent limestone channels; calcareous; abrupt smooth boundary; slightly alkaline (pH 7.7); strongly effervescent.

C2k – 17-36 inches. Grayish brown (10YR 5/2D) silt loam, limestone bedrock; moderately alkaline (pH 8.0); very slightly effervescent.

Cr – 36-48 inches. Grayish brown (10YR 5/2D) silt loam, limestone bedrock; slightly alkaline (pH 7.8); very slightly effervescent.

Type Location - Fremont County, Colorado; refer to waypoint 77 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) –

Soil moisture: The soil moisture control section is moist intermittently April through August; aridic moisture regime bordering on ustic.
Mean annual soil temperature: 52 to 59 degrees F.
Mean summer soil temperature: 68 to 76 degrees F.
Depth to lithic contact: 10 to 20 inches to limestone
Depth to secondary calcium carbonate: 0 to about 5 inches and is not more than 1/4 the thickness of the control section
Gypsum content: 0 to 1.5 percent by weight
Calcium carbonate equivalent: 40 to 75 percent
Electrical conductivity: 0 to 14 millimhos/cm in a major part of the control section
Continuous subhorizons of secondary calcium carbonate and/or sulfate do not occur within the control section although some visible accumulation occurs in some pedons

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Sand content: 15 to 70 percent
Rock fragments: 0 to 35 percent, dominantly to 10 inches in diameter.

A horizon:
Hue: 7.5YR through 2.5Y
Value: 5 through 8, 3 through 6 moist
Chroma: 1 through 4.
Calcium carbonate equivalent: 35 to 70 percent
Reaction: mildly alkaline or moderately alkaline.
Rock fragments: 0 to 35 percent

C horizon:
Hue: 7.5YR through 2.5Y
Textures of the fine earth fraction: loam, silt loam, clay loam
Clay content: 18 to 35 percent
Rock fragments: 0 to 35
Calcium carbonate equivalent: 40 to 75 percent
Reaction: moderately alkaline or strongly alkaline.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer than typical for the series.

Taxonomic Class - Loamy, carbonatic, mesic Lithic Ustic Torriorthents

Suitability for Topsoil (According to WDEQ Guideline 1) – Boron was unsuitable at 36-48 inches. Strongly effervescent at 4 inches. Estimated stripping depth is 36 inches.

Geographic Setting (According to Official Series Description) –
Parent material: residuum and slope alluvium derived from limestone and interbedded limy materials.
Landform: hills, mesas, and ridges
Slopes: 1 to 65 percent
Elevation: 3,000 to 6,500 feet
Mean annual temperature: 50 to 53 degrees F
Mean annual precipitation: 11 to 15 inches
Precipitation pattern: peak periods between April and August, dries between November and February
Frost-free period: 125 to 165 days.

DEMAR
SILTY CLAY LOAM

Soil Mapping Unit "Dg"
Lab/BKS Sample ID: G08020805-043_047

Typical Pedon: Demar silty clay loam - on a plane slope of less than 1 percent. When described the soil was moist to 5 inches and dry below. (Colors are for dry soil unless otherwise stated.)

The Demar series consists of deep or very deep, moderately well drained soils formed in clayey alluvium from acid clay shales. These soils are on terraces. They have very slow permeability. Slopes range from 0 to 6 percent. Mean annual precipitation is about 15 inches, and mean annual air temperature is about 47 degrees F.

A - 0-3 inches. Pale brown (10YR 6/3) silty clay loam, moist; weak thin platy structure parting to weak fine granular; slightly hard, friable, slightly sticky; many roots; abrupt wavy boundary; slightly acid (pH 6.1); noneffervescent.

Bt - 3-17 inches. Very dark grayish brown (10YR 3/2D) silty clay, moist; moderate medium blocky structure; very hard, very firm, sticky and plastic; very few roots; clear smooth boundary; extremely acid (pH 4.1); noneffervescent.

C1 – 17-30 inches. Dark grayish brown (10YR 4/2D) clay, moist; few fine prominent yellowish brown (10YR 5/6) mottles; weak coarse subangular blocky structure; very hard, very firm, sticky and plastic; very few roots; common fine nests of gypsum and other salts; gradual boundary; extremely acid (pH 3.6); noneffervescent.

C2 – 30-42 inches. Dark grayish brown (10YR 4/2D) clay, moist; many coarse prominent brownish yellow (10YR 6/6) mottles; weak coarse subangular blocky structure; very hard, very firm; partially weathered shale fragments make up about 40 percent by volume; common bands of crystals of gypsum; gradual boundary; extremely acid (pH 3.7); noneffervescent.

Cr – 42-60 inches. Dark grayish brown (10YR 4/2D) clay, moist; many coarse prominent brownish yellow (10YR 6/6) and yellowish brown (10YR 5/6) iron stains along fractures; extremely acid (pH 3.6); noneffervescent.

Type Location - Butte County, South Dakota; refer to waypoint 79 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The depth to bedded shale ranges from 40 to 60 inches or more. These soils range from neutral to strongly acid in the upper 12 inches and from very strongly acid to extremely acid below this depth.

The E horizon has hue of 10YR or 2.5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 or 3. It typically is loam but is clay loam in some pedons.

The Bt horizon has hue of 10YR or 2.5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 or 3. The clay content of the Bt horizon is between 35 and 60 percent. Structure of the Bt horizon ranges from weak or moderate, medium or coarse columnar in the Bt1 horizon and moderate or strong, medium or coarse blocky in the Bt2 horizon.

The Bz horizon has hue of 10YR or 2.5Y, value of 5 or 6 and 4 to 5 moist, and chroma of 2 to 3. It has common or many accumulations of gypsum and other salts.

The C horizon has hue of 10YR or 2.5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 or 3. It contains 20 to 50 percent fragments of shale.

Range in Characteristics (according to field observations, lab analysis): No significant range in characteristics was found.

Taxonomic Class - Fine, smectitic, mesic Torrertic Haplustalfs

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 3-60 inches. pH was unsuitable (acidic) at 3-60 inches. Estimated stripping depth is 3 inches.

Geographic Setting (According to Official Series Description) - Demar soils are on micro-highs on nearly level to gently sloping alluvial terraces having pronounced micro-relief. Slope gradients range from 0 to 6 percent. These soils formed in clayey alluvium derived from acid clay shales. The mean annual air temperature ranges form 45 to 49 degrees F, and mean annual precipitation ranges from 12 to 18 inches.

SATANTA
LOAM

Soil Mapping Unit "Sc"
Lab/BKS Sample ID: G08020806-001_005

Typical Pedon: Satanta loam - in a cultivated field. (Colors are for dry soil unless otherwise stated.)

The Satanta series consists of very deep well drained soils that formed in eolian deposits. These soils are on plains or high stream terraces in the Central High Tablelands (MLRA 72). Slopes range from 0 to 15 percent. Mean annual temperature is 13 degrees C. (56 degrees F.) and mean annual precipitation is 48 centimeters (19 inches) at the type location.

A - 0-4 inches. Dark grayish brown (10YR 4/2) loam, moist; weak fine granular and weak medium platy structure; friable, slightly hard; many fine and medium roots throughout; clear smooth boundary; strongly acid (pH 5.3); noneffervescent.

Bt - 4-12 inches. Dark yellowish brown (10YR 3/4D) clay loam, moist; weak medium platy structure; friable, slightly hard; many fine and medium roots throughout; abrupt smooth boundary; neutral (pH 7.1); noneffervescent.

BC – 12-17 inches. Brown (10YR 4/3D) sandy clay loam, moist; moderate medium subangular blocky and weak medium platy structure; friable, slightly hard; common fine roots throughout; 10 percent continuous distinct clay films on faces of peds; gradual smooth boundary; slightly alkaline (pH 7.6); strongly effervescent.

C1k – 17-28 inches. Brown (10YR 5/3D) sandy clay loam, moist; moderate medium subangular blocky and moderate medium prismatic structure; friable, hard; common fine roots throughout; common fine moderate continuity tubular pores; 10 percent continuous distinct clay films on faces of peds; gradual smooth boundary; moderately alkaline (pH 7.9); strongly effervescent.

C2k – 28-43 inches. Grayish brown (10YR 5/2D) sandy clay loam, moist; moderate medium prismatic and moderate medium subangular blocky structure; friable, hard; common fine roots throughout; common fine and medium moderate continuity tubular pores; 10 percent continuous distinct clay films on faces of peds; clear smooth boundary; moderately alkaline (pH 7.9); strongly effervescent.

Type Location - Haskell County, Kansas; refer to waypoint 82 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) –

Calcium carbonate equivalent in the series control section: less than 15 percent
Coarse fragments: 0 to 10 percent gravel by volume
Depth to carbonates: 30 to 91 centimeters (12 to 36 inches)
Mollic epipedon thickness: 20 to 51 centimeters (8 to 20 inches)
Phases recognized: Sandy substratum, gravelly substratum, dry, elevation greater than 1219 meters (4,000 feet)

A horizon:
Hue: 10YR
Value: 4 to 5, 2 to 3 moist
Chroma: 2 to 3
Reaction: slightly acid to slightly alkaline
Texture: loam, very fine sandy loam, clay loam, fine sandy loam
Comments: Some pedons have a BA horizon that is intermediate in color and texture between the A and Bt horizons.

Bt horizon:
Hue: 7.5YR to 2.5Y
Value: 4 to 6, 3 to 5 moist
Chroma: 2 to 4
Reaction: neutral to moderately alkaline
Texture: loam, sandy clay loam, clay loam with 15 to 35 percent fine and coarser sand and less than 50 percent sand

Bk or 2Bkb horizons:
Hue: 7.5YR to 2.5Y
Value: 4 to 6, 3 to 5 moist
Chroma: 2 to 6
Reaction: slightly to strongly alkaline
Texture: loam, sandy clay loam, clay loam with 15 to 35 percent fine and coarser sand and less than 50 percent sand

C or 3Ck horizons:
Hue: 10YR, 2.5Y
Value: 5 to 7, 4 to 6 moist
Chroma: 2 to 6
Reaction: slightly or moderately alkaline
Texture: loam, silt loam, clay loam, sandy clay loam, very fine sandy loam, loamy fine sand, fine sandy loam
Comments: Some pedons have a BCk horizon that has few carbonates that occur as seams, threads or concretions.

Range in Characteristics (according to field observations, lab analysis): Textures are coarser than typical for the series.

Taxonomic Class - Fine-loamy, mixed, superactive, mesic Aridic Argiustolls

Suitability for Topsoil (According to WDEQ Guideline 1) - pH was marginal (acidic) at 0-4 inches. Strongly effervescent at 12 inches. Estimated stripping depth is 43 inches.

Geographic Setting (According to Official Series Description) –
Landscape: terraces on nearly level to undulating plains
Landform: plains, high stream terraces
Slopes: 0 to 15 percent
Elevation: 610 to 1372 meters (2000 to 4500 feet)

Parent material: eolian deposits
Mean annual air temperature: 7 to 14 degrees C. (45 to 57 degrees F.)
Mean annual precipitation: 35 to 56 centimeters (14 to 22 inches)
Frost-free period: 140 to 200 days
Thornthwaite Annual PE Index: 25 to 40

SNOMO
SILTY CLAY LOAM

Soil Mapping Unit "Gs"
Lab/BKS Sample ID: G08020806-006_011

Typical Pedon: Snomo silty clay loam- on an 8 percent north-facing slope in scattered trees with native grass understory. (Colors are for dry soil unless otherwise stated.)

The Snomo series consists of deep or very deep, well drained soils formed in clayey materials weathered from acid shale on the uplands. These soils have moderate permeability. Slopes range from 2 to 20 percent. Mean annual precipitation is about 17 inches and mean annual air temperature is about 45 degrees F.

A - 0-3 inches. Light gray (10YR 6/1) silty clay loam, moist; weak thick platy structure parting to weak fine granular; hard, friable, slightly sticky and slightly plastic; many fine and medium roots; clear smooth boundary; very strongly acid (pH 4.8); noneffervescent.

Bt1 - 3-17 inches. Grayish brown (10YR 5/2D) silty clay, moist, rubbed dark grayish brown (10YR 4/2) moist; weak coarse prismatic structure parting to weak medium and fine subangular blocky; very hard, friable, sticky and plastic; common fine roots; clear smooth boundary; very strongly acid (pH 4.8); noneffervescent.

BtC – 17-33 inches. Dark grayish brown (10YR 4/2D) silty clay, moist; weak coarse prismatic structure parting to weak medium subangular blocky; hard, friable, sticky and plastic; few fine roots; few fine fragments of shale; clear wavy boundary; moderately acid (pH 5.7); noneffervescent.

C1n – 33-42 inches. Grayish brown (10YR 5/2D) silt loam, moist; few fine distinct mottles of yellow (2.5Y 8/6) massive; slightly hard, friable, sticky and plastic; few fine roots; many fine fragments of shale, abrupt wavy boundary; slightly acid (pH 7.6); noneffervescent.

C2n – 42-52 inches. Brown (10YR 5/3D) silt loam, moist; massive; slightly hard, friable, sticky and plastic; many coarse fragments of brittle shale; extremely acid; clear wavy boundary; moderately acid (pH 7.9); noneffervescent.

C3n – 52-60 inches. Pale brown (10YR 6/3D) silt loam, moist; yellow (5Y 8/6) and yellowish red (5YR 5/8) coatings on fracture faces of shale; moderately acid (pH 7.9); noneffervescent.

Type Location - Butte County, South Dakota; refer to waypoint 83 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Bedded shale typically is between a depth of 40 and 60 inches but is below 60 inches in some pedons. Colors throughout the soil are inherent to the shale.

The A horizon has hue of 10YR, value of 5 to 7 and 3 or 4 moist, and chroma of 1 or 2. It is silty clay or clay and contains 0 to 15 percent by volume of fine fragments of shale less than 3 mm in size. It is extremely acid to slightly acid. Some pedons have a thin distinct E horizon as evidenced by prominent clean silt and sand grains.

The Bw horizon has hue of 10YR, 2.5Y, and 7.5YR, value of 5 or 6 and 3 or 4 moist, and chroma of 2 to 4. Moist value typically is one unit higher when rubbed. It has 0 to 20 percent by volume of fine fragments of shale less than 3 mm in size. It is strongly acid to extremely acid.

The BC and C horizons have hue of 10YR or 2.5Y, value of 5 or 6 and 3 to 5 moist, and chroma of 1 to 3. Moist value typically is one unit higher when rubbed. They have 15 to 50 percent by volume of fine to coarse fragments of shale ranging from 1 to 25 mm in size. They are very strongly acid or extremely acid.

The Cr horizon is multicolored in hue of 10YR, 2.5Y, or 5Y; and is very hard and brittle but has a hardness of less than 3 on the Moh's scale of hardness. It is very strongly acid or extremely acid.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer and have less clay than typical for the series.

Taxonomic Class - Very-fine, smectitic, mesic Torrertic Dystrustepts

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 3-33 inches. pH was unsuitable (acidic) at 0-17 inches. Saturation percentage was marginal at 45-52 inches. Boron was unsuitable at 33-60 inches. Estimated stripping depth is 0 inches.

Geographic Setting (According to Official Series Description) - Snomo soils are on gently sloping to moderately steep uplands. Slope gradients range from 2 to 20 percent. The soil formed in clayey materials weathered from acid shale. Mean annual temperature ranges from 43 to 48 degrees F, and precipitation from 14 to 18 inches.

LOHMILLER
SILTY CLAY LOAM

Soil Mapping Unit "Lo"
Lab/BKS Sample ID: G08020806-012_016

Typical Pedon: Lohmiller silty clay loam- on a plane slope of less than 1 percent in a cultivated field. (Colors are for dry soil unless otherwise stated.)

The Lohmiller series consists of very deep, well drained soils formed in alluvium on bottom lands. Permeability is slow or moderately slow. Slopes range from 0 to 8 percent. Mean annual precipitation is about 15 inches, and mean annual air temperature is about 46 degrees F.

A - 0-5 inches. Light gray (10YR 6/1) silty clay loam, moist; moderate medium granular structure; hard, friable; many fine roots; neutral; clear smooth boundary; slightly alkaline (pH 7.4); noneffervescent.

C1n - 5-18 inches. Very dark grayish brown (10YR 3/2D) silty clay loam, moist; massive; very hard, firm; thin bedding planes evident; common very fine roots; moderately alkaline (pH 8.2); noneffervescent.

C2n – 18-37 inches. Brown (10YR 4/3D) silty clay, moist; massive; very hard, firm; thin bedding planes evident; common very fine roots; moderately alkaline (pH 8.4); noneffervescent.

C3n – 37-47 inches. Brown (10YR 5/3D) silty clay loam, moist; massive; very hard, firm; thin bedding planes evident; common very fine roots; moderately alkaline (pH 8.3); very slightly effervescent.

C4n – 47-60 inches. Dark grayish brown (10YR 4/2D) clay loam, moist; massive; very hard, firm; thin bedding planes evident; common very fine roots; moderately alkaline (pH 8.1); very slightly effervescent.

Type Location - Fall River County, South Dakota; refer to waypoint 84 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Carbonates are within 10 inches of the surface. The control section averages from 35 to 50 percent clay.

The A horizon has hue of 10YR or 2.5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 to 4. Some pedons have value of 4 dry and 3 moist in the upper 4 inches. It typically is silty clay loam or clay loam but is silty clay in some pedons. It ranges from neutral to moderately alkaline.

The C horizon has hue of 10YR, 2.5Y, or 5Y; value of 5 to 7 and 4 to 6 moist; and chroma of 2 to 4. It typically is clay loam or silty clay loam but is silty clay or clay in some pedons. It is stratified with thin layers of loamy sand, fine sandy loam, loam, sandy clay or silt loam. It is slightly alkaline or moderately alkaline. Some pedons have accumulations of carbonates.

Range in Characteristics (according to field observations, lab analysis): No significant range in characteristics was found.

Taxonomic Class - Fine, smectitic, calcareous, mesic Torrertic Ustifluvents

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 18-37 inches. Saturation percentage was marginal at 0-18 inches. Sodium absorption ratio was marginal at 5-18 inches and 37-47 inches and was unsuitable at 18-37 inches. Electrical conductivity was marginal at 5-18 inches and 37-60 inches and was unsuitable at 18-37 inches. Estimated stripping depth is 5 inches.

Geographic Setting (According to Official Series Description) - Lohmiller soils are on flood plains and high bottom lands of rivers and streams and on alluvial fans of foot slopes. Slopes are typically less than 2 percent but range from 0 to 8 percent. The soils formed in calcareous alluvium from sedimentary rock. Mean annual air temperature ranges from 45 to 48 degrees F, and mean annual precipitation ranges from 10 to 19 inches.

KYLE
LOAM

Soil Mapping Unit "Ky"
Lab/BKS Sample ID: G08020806-017_020

Typical Pedon: Kyle loam- on a west-facing plane slope of 2 percent in native grass. (Colors are for dry soil unless otherwise stated.)

The Kyle series consists of very deep and well drained soils formed in sediments weathered from clay shale on uplands. Permeability is very slow. Slopes range from 0 to 15 percent. Mean annual precipitation is about 16 inches, and mean annual air temperature is about 47 degrees F.

A - 0-2 inches. Grayish brown (2.5YR 5/2) loam, moist; moderate medium and fine granular structure; hard, firm, sticky and plastic; thin crust in upper 1/4 inch of light brownish gray (2.5Y 6/2); common fine roots; neutral; clear wavy boundary; slightly acid (pH 6.3); noneffervescent.

Bt1 - 2-7 inches. Very dark grayish brown (10YR 3/2D) silty clay loam, moist; weak coarse blocky structure parting to weak medium and fine blocky; very hard, very firm, sticky and plastic; common fine roots; gradual wavy boundary; neutral (pH 7.3); noneffervescent.

Bt2 – 7-17 inches. Brown (10YR 4/3D)silty clay loam, moist; weak coarse subangular blocky structure parting to weak medium and fine blocky; extremely hard, very firm, very sticky and very plastic; few intersecting slickensides; few fine roots; clear wavy boundary; moderately alkaline (pH 7.9); strongly effervescent.

Ck – 17-30 inches. Brown (10YR 4/3D) clay loam, moist; weak coarse subangular blocky structure parting to weak medium and fine blocky; extremely hard, very firm, very sticky and very plastic; few intersecting slickensides; few fine roots; clear wavy boundary; moderately alkaline (pH 8.0); strongly effervescent.

Type Location - Fall River County, South Dakota; refer to waypoint 85 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The soil typically does not have carbonates to depths of 4 to 6 inches, but some pedons contain carbonates to the surface. When the soil is dry, cracks 1/2 inch to 2 inches wide and several feet long extend downward through the solum. The control section averages 60 to 65 percent clay. The soil does not have a mollic epipedon but the upper 10 inches of the solum has an average organic carbon content between 0.6 and 1.7 percent. When the soil is dry, a porous surface crust 1/8 inch to 1/2 inch thick with dry color value of 6 or 7 is typical. Gypsum and other salts are below depths of 20 inches.

The A horizon has hue of 10YR, 2.5Y or 5Y, value of 5 or 6 and 3 to 5 moist, and chroma of 1 to 3. It typically is clay but some is silty clay. It is neutral or slightly alkaline.

The Bw and Bss horizons have hue of 2.5Y or 5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 to 4. Both dry and moist colors of the surface of peds range from 1/2 to 1 value darker than

the crushed peds. They are extremely hard or very hard when dry and extremely firm or very firm when moist. They are slightly alkaline or moderately alkaline.

The BCss horizon has hue of 2.5Y or 5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 to 4. It has few to common accumulations of gypsum and other salts in most pedons. It is slightly alkaline or moderately alkaline.

Some pedons have a Bk horizon that has colors similar to the BC horizon. It has few to common accumulations of carbonate. It is slightly alkaline or moderately alkaline.

The Cy horizon has hue of 2.5Y or 5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 2 to 4. It is clay and some pedons contain up to 35 percent fragments of shale below 40 inches. It has few to many accumulations of gypsum or other salts. Unweathered shale typically is at depths greater than 5 feet but is as shallow as 40 inches in some pedons. It is slightly alkaline or moderately alkaline.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer and have less clay than typical for the series.

Taxonomic Class - Very-fine, smectitic, mesic Aridic Haplusterts

Suitability for Topsoil (According to WDEQ Guideline 1) - Saturation percentage was marginal at 2-7 inches. Strongly effervescent at 7 inches. Estimated stripping depth is 30 inches.

Geographic Setting (According to Official Series Description) - Kyle soils are nearly level to strongly sloping on uplands and colluvial fans. Slopes are plane to convex, and slope gradients range from 0 to 15 percent. Gilgai microrelief is in most areas. The soil formed in clayey sediments weathered from calcareous clay shale. Mean annual air temperature ranges from 45 to 53 degrees F, and mean annual precipitation ranges from about 12 to 19 inches.

SAMSIL
NON CALCAREOUS VARIANT

Soil Mapping Unit "Sa"
Lab/BKS Sample ID: G08020806-021_023

Typical Pedon: Samsil clay loam- on a convex, southwest-facing slope of 15 percent in native grass. When described the soil was moist to 12 inches, dry from 12 to 21 inches, and moist below 21 inches. (Colors are for dry soil unless otherwise stated.)

The Samsil series consists of shallow, well drained soils formed in alluvium or residuum weathered from shale. Permeability is slow. Slope ranges from 2 to 60 percent. Mean annual precipitation is about 15 inches, and mean annual air temperature is about 47 degrees F.

A - 0-2 inches. Light brownish gray (2.5Y 6/2) clay loam, moist; moderate fine granular structure; slightly hard, friable, sticky and plastic; common fine roots; few very fine fragments of shale; clear wavy boundary; neutral (pH 6.7); noneffervescent.

AC - 2-9 inches. Light yellowish brown (2.5Y 6/3D) silty clay, moist; weak medium subangular blocky structure parting to weak medium granular; hard, friable, sticky and plastic; common fine roots; common fine fragments of soft shale; clear wavy boundary; slightly alkaline (pH 7.8); noneffervescent.

C - 9-18 inches. Grayish brown (2.5Y 5/2D) silt, moist; massive; hard, friable, sticky and plastic; common fine roots; about 50 percent by volume of fragments of soft shale; common distinct olive yellow (2.5Y 6/6) stains on faces of shale fragments; few fine and medium accumulations of carbonate; gradual wavy boundary; slightly alkaline (pH 7.6); noneffervescent.

Type Location - Pennington County, South Dakota; refer to waypoint 88 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The control section is clay and contains 50 to 65 percent clay. The depth to bedded shale ranges from 6 to 20 inches. Horizons above the shale range from loose to hard when dry, and friable or firm when moist. These horizons contain free carbonates. Effervescence ranges from slight to strong and reaction is slightly alkaline or moderately alkaline. The C1 and C2 horizons and upper part of the Cr horizons commonly have accumulations of carbonate, gypsum, and other salts. Colors throughout, including mottles and stains, are inherited from the shale.

The A horizon has hue of 5Y, 2.5Y, or 10YR, value of 4 to 7 and 3 to 6 moist, and chroma of 2 to 4. It is clay, silty clay, silty clay loam or clay loam and commonly contains few to common fragments of shale ranging from 2 to 25 mm in diameter. It has fine or medium subangular blocky or fine or very fine granular structure. The upper 1/4 to 1/2 inch commonly is a fragile crust or mulch or very fine granules when dry.

The AC horizon has hue of 5Y, 2.5Y, or 10YR, value of 4 to 7 and 3 to 6 moist, and chroma of 1 to 4. It contains up to 35 percent fragments of shales by volume that range from less than 2 mm to 30 mm in diameter.

The C horizon has hue of 5Y, 2.5Y or 10YR, value of 4 to 7 and 3 to 6 moist, and chroma of 1 to 4. It is clay. The C horizon contains from 35 to more than 50 percent fragments of shale by volume that range from less than 2 mm to 35 mm in diameter.

The Cr horizon has the same range in color as the overlying C horizons. It ranges from medium acid to moderately alkaline.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer and have less clay than typical for the series.

Taxonomic Class - Clayey, smectitic, calcareous, mesic, shallow Aridic Ustorthents

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 2-9 inches. Estimated stripping depth is 18 inches.

Geographic Setting (According to Official Series Description) - Samsil soils are on gently sloping to very steep hills, ridges and breaks of dissected shale plains. Surfaces mainly are convex, and slope gradients range from 2 to 60 percent or more. The soil formed in alluvium or residuum weathered from shale. Mean annual air temperature ranges from 45 to 48 degrees F, and mean annual precipitation ranges from 14 to 19 inches.

PIERRE
SILTY CLAY LOAM

Soil Mapping Unit "Pe"
Lab/BKS Sample ID: G08020806-024_027

Typical Pedon: Pierre silty clay loam - on a convex slope of 7 percent in native grass. (Colors are for dry soil unless otherwise stated.)

The Pierre series consists of moderately deep, well drained soils formed in clayey residuum weathered from shale bedrock on uplands. Permeability is very slow. Slopes range from 0 to 30 percent. Mean annual precipitation is about 15 inches, and mean annual air temperature is about 46 degrees F.

A - 0-2 inches. Grayish brown (2.5Y 5/2) silty clay loam, moist; moderate fine subangular blocky structure parting to weak very fine granular; hard, firm, sticky and plastic; 1 percent pebbles; clear smooth boundary; strongly acid (pH 5.4); noneffervescent.

Bt- 2-18 inches. Brown (10YR 5/3) silty clay, moist; moderate medium and coarse prismatic structure; extremely hard, very firm, very sticky and very plastic; common distinct intersecting slickensides; few fine accumulations of iron; 1 percent pebbles; gradual wavy boundary; slightly alkaline (pH 7.7); strongly effervescent.

C1n – 18-31 inches. Grayish brown (10YR 5/2) silty clay, moist; moderate coarse prismatic structure; extremely hard, very firm, very sticky and very plastic; common distinct intersecting slickensides; few fine nests of iron and common fine accumulations of gypsum; 1 percent pebbles; gradual wavy boundary; slightly alkaline (pH 7.8); strongly effervescent.

C2n – 31-37 inches. Light brownish gray (2.5Y 6/2) silty clay, moist; common distinct strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) iron stains; many fine accumulations of gypsum and carbonate; 1 percent pebbles; gradual wavy boundary; slightly alkaline (pH 7.7); very slightly effervescent.

Type Location - Haakon County, South Dakota; refer to waypoint 89 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The soil contains carbonates at or within 6 inches of the surface. The depth to soft shale bedrock ranges from 20 to 40 inches but commonly is at depths of 25 to 35 inches. The horizon above the shale has 0 to 60 percent, by volume soft shale fragments. The control section is 50 to 60 percent clay. When the soil is dry, cracks 1/2 inch to 2 inches wide and several feet long extend downward through the solum. The soil does not have a mollic epipedon, but the upper 10 inches of the solum has an average organic carbon content between 0.6 and 1.7 percent. The soil has a SAR of 1 to 7.

The A horizon has hue of 10YR to 5Y, value of 4 to 6 and 3 to 5 moist, and chroma of 1 to 3. It typically is clay but is silty clay in some pedons. It ranges from slightly acid to moderately alkaline. When the soil is dry it has a light gray (2.5Y 7/2) smooth, porous, platy surface crust ranging from 1/4 to 1 inch in thickness. Where the horizon has mollic colors, it is too thin to be a mollic epipedon. Some pedons do not have an AB horizon.

The Bss horizons have hue of 2.5Y or 5Y, value of 5 or 6 and 4 or 5 moist, and chroma of 1 to 3. They are extremely hard or very hard when dry and extremely firm to firm when moist. They range from neutral to moderately alkaline.

Bk and C horizons are present in some pedons.

The Cr horizon is soft shale bedrock and ranges from slightly acid to moderately alkaline. Bedding planes are evident in the partially weathered shale in some pedons. Gypsum and other salts are concentrated in very thin seams within the shale in some pedons.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer than typical for the series.

Taxonomic Class - Fine, smectitic, mesic Aridic Leptic Haplusterts

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 2-37 inches. pH was marginal (acid) at 0-2 inches. Strongly effervescent at 2 inches. Estimated stripping depth is 2 inches.

Geographic Setting (According to Official Series Description) - Pierre soils are on nearly level to steep uplands. Slope gradient typically is 3 to 15 percent, but ranges from 0 to 30 percent. The soils formed in residuum weathered from clay shale. Gilgai microrelief is in most areas. Mean annual air temperature is 44 to 53 degrees F, and mean annual precipitation ranges from 12 to 16 inches. Growing season is 125 to 140 days; average growing season precipitation is 10 to 13 inches; and growing degree days are 2600 to 3100. Elevation is 1300 to 3600 feet.

GRUMMIT
SILTY CLAY

Soil Mapping Unit "Gr"
Lab/BKS Sample ID: G08020806-028_030

Typical Pedon: Grummit silty clay - on a convex slope of 5 percent in native grass. When described, the soil was moist to bedded shale. (Colors are for dry soil unless otherwise stated.)

The Grummit series consists of shallow, well drained soils formed in clayey residuum from acid shale on uplands. Permeability is moderate or moderately slow. Slopes range from 2 to 60 percent. Mean annual precipitation is about 15 inches, and mean annual temperature is about 46 degrees F.

A - 0-2 inches. Light brownish gray (10YR 6/2) silty clay, moist; moderate fine granular structure; loose, friable; many fine roots; many very fine fragments of shale; clear smooth boundary; neutral (pH 6.8); noneffervescent.

AC - 2-8 inches. Grayish brown (10YR 5/2) silty clay, moist; weak coarse subangular blocky structure; hard, friable; many fine roots; 25 percent very fine fragments of shale; gradual wavy boundary; slightly alkaline (pH 7.4); noneffervescent.

C - 8-20 inches. Grayish brown (10YR 5/2) silty clay, moist; common distinct mottles of yellowish brown (10YR 5/6); weak coarse subangular blocky structure; hard, friable; partially weathered fragments of shale make up 35 percent by volume; common roots; clear smooth boundary; slightly alkaline (pH 7.7); noneffervescent.

Type Location - Butte County, South Dakota; refer to waypoint 90 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Depth to shale ranges from 10 to 20 inches. Colors throughout the soil are inherited from the shale. The horizons overlying the bedded shales typically average 50 to 65 percent clay but ranges from 35 to 65 percent clay. The low clay percentage is due to sand-size shale fragments. Consistence ranges from loose to hard when dry but is friable when moist. The soil ranges from strongly acid to extremely acid.

The A horizon has hue of 10YR or 2.5Y, value of 5 or 6 and 3 or 4 moist, and chroma of 1 or 2 dry or moist. It typically is clay but is clay loam in some pedons. It has weathered fragments of shale that make up 5 to 35 percent by volume. The A horizon contains less than 1 percent more organic matter than the C.

The C horizon has hue of 10YR, 2.5Y, or 5Y; value of 5 or 6 and 3 or 4 moist; and chroma of 1 or 2. Weathered fragments of shale make up 20 to over 50 percent by volume of the C horizon.

The fissile shale is very hard and brittle and will not disperse in water or in sodium hexametaphosphate.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer

than typical for the series.

Taxonomic Class - Clayey, smectitic, acid, mesic, shallow Aridic Ustorthents

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 0-20 inches. Estimated stripping depth is 20 inches.

Geographic Setting (According to Official Series Description) - Grummit soils are gently sloping to very steep on uplands. Slope gradients range from 2 to 60 percent. The soil formed in clayey residuum weathered from acid shales. Mean annual temperature ranges from 43 to 50 degrees F, and mean annual precipitation is about 12 to 18 inches.

BONEEK
CLAY LOAM

Soil Mapping Unit "Bo"
Lab/BKS Sample ID: G08020806-031_035

Typical Pedon: Boneek clay loam - on a northeast-facing plane slope of 4 percent under native grass at 3500 feet elevation. (Colors are for dry soil unless otherwise stated.)

The Boneek series consists of deep and very deep, well drained soils formed in silty sediments underlain by sandstone or siltstone. Permeability is moderately slow in the solum and moderate in the underlying material. Slopes range from 0 to 15 percent. Mean annual precipitation is about 17 inches, and mean annual temperature is about 46 degrees F.

AC - 0-4 inches. Very dark grayish brown (10YR 3/2D) clay loam, moist; moderate thin platy structure parting to weak fine granular; slightly hard, very friable; many fine roots; clear wavy boundary; slightly alkaline (pH 7.6); very slight effervescent.

C1n - 4-19 inches. Dark grayish brown (10YR 4/2D) silt loam, moist; moderate medium prismatic structure parting to moderate medium and fine subangular blocky; very hard, friable, slightly sticky and slightly plastic; common fine roots; shiny films on faces of peds; clear wavy boundary; slightly alkaline (pH 7.8); slight effervescent.

C2n – 19-40 inches. Brown (10YR 4/3D) silt loam, moist; weak medium and coarse subangular blocky structure; very hard, friable, slightly sticky and slightly plastic; few fine roots; common fine and medium accumulations of carbonate; gradual wavy boundary; moderately alkaline (pH 8.4); noneffervescent.

C3n – 40-48 inches. Dark yellowish brown (10YR 4/4D) silty clay loam, moist; few fine and medium prominent mottles of strong brown (7.5YR 5/8); weak coarse subangular blocky structure; very hard, friable; few fine roots; clear wavy boundary; moderately alkaline (pH 8.4); noneffervescent.

C4n – 48-60 inches. Very dark grayish brown (10YR 3/2D) silt loam, moist; thin platy rock structure; faces of fractures stained strong brown (7.5YR 5/6) moist; few coatings of carbonates on faces of fractures, but matrix is noncalcareous; moderately alkaline (pH 8.3); noneffervescent.

Type Location - Butte County, South Dakota; refer to waypoint 91 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Depth to bedrock is 40 to 60 inches or more. Depth to carbonates ranges from 11 to 24 inches. Thickness of the mollic epipedon ranges from 7 to 15 inches and extends into the Bt horizon of some pedons.

The A horizon has hue of 10YR or 7.5YR, value of 4 or 5 and 2 or 3 moist, and chroma of 2 or 3. It typically is silt loam, but some pedons are loam. It is slightly acid or neutral.

The Bt1 horizon has hue of 7.5YR or 5YR, value of 4 or 6 and 3 or 4 moist, and chroma of 2 to 4. It is silty clay loam or silty clay. Average clay content ranges from 35 to 45 percent with less than 15 percent fine sand or coarser. It is slightly acid or neutral.

The Bt2 horizon has hue of 10YR or 7.5Y, value of 5 or 6 and 3 or 5 moist, and chroma of 2 to 4. It is silty clay loam averaging between 30 and 40 percent clay and less than 15 percent fine sand or coarser. It is neutral or slightly alkaline.

The Bk and C horizons have hue of 10YR or 2.5Y, value of 5 through 7 and 4 or 5 moist, and chroma of 1 to 3. They typically are silt loam or silty clay loam, but some pedons are loam. They are slightly alkaline to strongly alkaline. Few to many, fine or medium accumulations of carbonate are in the Bk horizon.

The Cr horizon has hue of 10YR or 7.5YR.

Range in Characteristics (according to field observations, lab analysis): Textures have slightly less clay than typical for the series.

Taxonomic Class - Fine, smectitic, mesic Aridic Argiustolls

Suitability for Topsoil (According to WDEQ Guideline 1) - Saturation percentage was marginal at 4-19 inches and 40-60 inches. Sodium absorption ratio was unsuitable at 19-60 inches. Electrical conductivity was unsuitable at 19-60. Selenium was marginal at 48-60 inches. Estimated stripping depth is 19 inches.

Geographic Setting (According to Official Series Description) - Boneek soils are nearly level to moderately sloping on high terraces and uplands. Surfaces are plane to slightly convex and slope gradients range from 0 to 15 percent. The soils formed in a silty mantle overlying sandstone or siltstones, or in loess or silty alluvium. Mean annual temperature ranges from 43 to 48 degrees, and mean annual precipitation ranges from 15 to 18 inches. Most of the precipitation comes in the spring and summer.

SAMSIL
SILTY CLAY LOAM

Soil Mapping Unit "Sa"
Lab/BKS Sample ID: G08020806-021_023

Typical Pedon: Samsil silty clay loam - on a convex, southwest-facing slope of 15 percent in native grass. When described the soil was moist to 12 inches, dry from 12 to 21 inches, and moist below 21 inches. (Colors are for dry soil unless otherwise stated.)

The Samsil series consists of shallow, well drained soils formed in alluvium or residuum weathered from shale. Permeability is slow. Slope ranges from 2 to 60 percent. Mean annual precipitation is about 15 inches, and mean annual air temperature is about 47 degrees F.

AC - 0-7 inches. Dark grayish brown (10YR 4/2D) silty clay loam, moist; moderate fine granular structure; slightly hard, friable, sticky and plastic; common fine roots; few very fine fragments of shale; clear wavy boundary; slightly alkaline (pH 7.5); very slightly effervescent.

C – 7-19 inches. Dark grayish brown (10YR 4/2D) silty clay, moist; weak medium subangular blocky structure parting to weak medium granular; hard, friable, sticky and plastic; common fine roots; common fine fragments of soft shale; clear wavy boundary; slightly alkaline (pH 7.6); slightly effervescent.

Type Location - Pennington County, South Dakota; refer to waypoint 92 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - The control section is clay and contains 50 to 65 percent clay. The depth to bedded shale ranges from 6 to 20 inches. Horizons above the shale range from loose to hard when dry, and friable or firm when moist. These horizons contain free carbonates. Effervescence ranges from slight to strong and reaction is slightly alkaline or moderately alkaline. The C1 and C2 horizons and upper part of the Cr horizons commonly have accumulations of carbonate, gypsum, and other salts. Colors throughout, including mottles and stains, are inherited from the shale.

The A horizon has hue of 5Y, 2.5Y, or 10YR, value of 4 to 7 and 3 to 6 moist, and chroma of 2 to 4. It is clay, silty clay, silty clay loam or clay loam and commonly contains few to common fragments of shale ranging from 2 to 25 mm in diameter. It has fine or medium subangular blocky or fine or very fine granular structure. The upper 1/4 to 1/2 inch commonly is a fragile crust or mulch or very fine granules when dry.

The AC horizon has hue of 5Y, 2.5Y, or 10YR, value of 4 to 7 and 3 to 6 moist, and chroma of 1 to 4. It contains up to 35 percent fragments of shales by volume that range from less than 2 mm to 30 mm in diameter.

The C horizon has hue of 5Y, 2.5Y or 10YR, value of 4 to 7 and 3 to 6 moist, and chroma of 1 to 4. It is clay. The C horizon contains from 35 to more than 50 percent fragments of shale by volume that range from less than 2 mm to 35 mm in diameter.

The Cr horizon has the same range in color as the overlying C horizons. It ranges from medium acid to moderately alkaline.

Range in Characteristics (according to field observations, lab analysis): Textures are slightly finer than typical for the series.

Taxonomic Class - Clayey, smectitic, calcareous, mesic, shallow Aridic Ustorthents

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 7-19 inches. Saturation percentage was marginal at 7-19 inches Estimated stripping depth is 7 inches.

Geographic Setting (According to Official Series Description) - Samsil soils are on gently sloping to very steep hills, ridges and breaks of dissected shale plains. Surfaces mainly are convex, and slope gradients range from 2 to 60 percent or more. The soil formed in alluvium or residuum weathered from shale. Mean annual air temperature ranges from 45 to 48 degrees F, and mean annual precipitation ranges from 14 to 19 inches.

SHINGLE
LOAM

Soil Mapping Unit "Sn"
Lab/BKS Sample ID: G08020806-021_023

Typical Pedon: Shingle loam-rangeland. (Colors are for dry soil unless otherwise stated.)

The Shingle series consists of well drained soils that are very shallow or shallow to bedrock. They formed in residuum and colluvium derived from interbedded shale and sandstone or in alluvium from mudstone. Shingle soils are on bedrock controlled hillslopes and ridges. Slopes are 0 to 80 percent. The mean annual precipitation is about 13 inches, and the mean annual temperature is 45 degrees F.

A - 0-4 inches. Light brownish gray (10YR 6/2) loam, moist; moderate very fine granular structure; soft, very friable, moderately sticky and moderately plastic; calcium carbonate disseminated; clear smooth boundary; neutral (pH 7.2); very slightly effervescent.

C – 4-8 inches. Light yellowish brown (2.5Y 6/3) loam, moist; weak medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; calcium carbonate disseminated; gradual smooth boundary; slightly alkaline (pH 7.5); strongly effervescent.

Type Location - Goshen County, Wyoming; refer to waypoint 93 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Depth to soft bedrock and paralithic contact ranges from 4 to 20 inches. The mean annual soil temperature is 47 to 53 degrees F. The soils commonly are calcareous throughout, but some pedons are leached to 6 inches. The particle size control section averages 20 to 35 percent clay and has more than 15 percent but less than 35 percent fine or coarser sand. The soil is usually dry. The moisture control section is usually moist in April, May and early June. It is dry for 60 consecutive days or more during the 90 day period following the summer solstice. EC is 0 to 2 mmhos throughout.

The A horizon has hue of 5Y through 7.5YR, value of 5 through 7 dry, 3 through 6 moist, and chroma of 1 through 6. Reaction is neutral through strongly alkaline. Some pedons have a light gravel lag on the surface. Texture is loam, silt loam, clay loam, silty clay loam, cobbly loam, and gravelly clay loam. Rock fragments or shale channers range from 0 to 35 percent.

A Bw or AC horizon, when present, has the combined properties of the A and C horizons.

The C horizon has hue of 5Y through 7.5YR, value of 4 through 7 dry, 3 through 6 moist, and chroma of 1 through 6. It is loam, silt loam, clay loam or silty clay loam. Rock fragments or shale channers range from 0 to 35 percent. Reaction is slightly alkaline through strongly alkaline.

Range in Characteristics (according to field observations, lab analysis): Textures have less clay than typical for the series.

Taxonomic Class - Loamy, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents

Suitability for Topsoil (According to WDEQ Guideline 1) - No marginal or unsuitable parameters were found. Strongly effervescent at 4 inches. Estimated stripping depth is 8 inches.

Geographic Setting (According to Official Series Description) - The Shingle soils occur on all hillslope positions. Slopes are 0 to 80 percent. These soils formed in colluvium and residuum weathered from soft, interbedded sandstone and shale or in alluvium from mudstone. Elevation is 3,200 to 6,500 feet. The mean annual precipitation is about 10 to 14 inches, most of which falls in April, May, and June. The mean annual temperature is about 45 degrees F.but ranges from 43 to 51 degrees F. The frost-free season is about 105 to 130 days.

BOnEEk
NONCALCAREOUS VARIANT

Soil Mapping Unit "Bo"
Lab/BKS Sample ID: G08020806-040_045

Typical Pedon: Boneek silty clay - on a northeast-facing plane slope of 4 percent under native grass at 3500 feet elevation. (Colors are for dry soil unless otherwise stated.)

The Boneek series consists of deep and very deep, well drained soils formed in silty sediments underlain by sandstone or siltstone. Permeability is moderately slow in the solum and moderate in the underlying material. Slopes range from 0 to 15 percent. Mean annual precipitation is about 17 inches, and mean annual temperature is about 46 degrees F.

A - 0-2 inches. Brown (10YR 5/3) silty clay, moist; moderate thin platy structure parting to weak fine granular; slightly hard, very friable; many fine roots; clear wavy boundary; neutral (pH 6.9) noneffervescent.

C1 - 2-8 inches. Very dark grayish brown (10YR 3/2D) silty clay, moist; weak coarse subangular blocky structure; hard, very friable; many fine roots; clear wavy boundary; slighty alkaline (pH 7.6); noneffervescent.

C2n – 8-20 inches. Very dark grayish brown (10YR 3/2D) silty clay, moist; moderate medium prismatic structure parting to moderate medium and fine subangular blocky; very hard, friable, slightly sticky and slightly plastic; common fine roots; shiny films on faces of peds; clear wavy boundary; slighty alkaline (pH 7.5); noneffervescent.

C3n – 20-32 inches. Very dark grayish brown (10YR 3/2D) silty clay loam, moist; weak medium and coarse subangular blocky structure; very hard, friable, slightly sticky and slightly plastic; few fine roots; gradual wavy boundary; slighty alkaline (pH 7.6); noneffervescent.

C4n – 32-44 inches. Very dark grayish brown (10YR 3/2D) silty clay, moist; weak coarse subangular blocky structure; very hard, friable; few fine roots; violent; clear wavy boundary; slighty alkaline (pH 7.6); noneffervescent.

C5n – 44-60 inches. Dark brown (10YR 3/3D) silty clay, moist; thin platy rock structure; faces of fractures stained strong brown (7.5YR 5/6) moist; few coatings of carbonates on faces of fractures, but matrix is noncalcareous; slighty alkaline (pH 7.8); noneffervescent.

Type Location - Butte County, South Dakota; refer to waypoint 94 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Depth to bedrock is 40 to 60 inches or more. Depth to carbonates ranges from 11 to 24 inches. Thickness of the mollic epipedon ranges from 7 to 15 inches and extends into the Bt horizon of some pedons.

The A horizon has hue of 10YR or 7.5YR, value of 4 or 5 and 2 or 3 moist, and chroma of 2 or 3. It typically is silt loam, but some pedons are loam. It is slightly acid or neutral.

The Bt1 horizon has hue of 7.5YR or 5YR, value of 4 or 6 and 3 or 4 moist, and chroma of 2 to 4.

It is silty clay loam or silty clay. Average clay content ranges from 35 to 45 percent with less than 15 percent fine sand or coarser. It is slightly acid or neutral.

The Bt2 horizon has hue of 10YR or 7.5Y, value of 5 or 6 and 3 or 5 moist, and chroma of 2 to 4. It is silty clay loam averaging between 30 and 40 percent clay and less than 15 percent fine sand or coarser. It is neutral or slightly alkaline.

The Bk and C horizons have hue of 10YR or 2.5Y, value of 5 through 7 and 4 or 5 moist, and chroma of 1 to 3. They typically are silt loam or silty clay loam, but some pedons are loam. They are slightly alkaline to strongly alkaline. Few to many, fine or medium accumulations of carbonate are in the Bk horizon.

The Cr horizon has hue of 10YR or 7.5YR.

Range in Characteristics (according to field observations, lab analysis): Textures have slightly more clay than typical for the series.

Taxonomic Class - Fine, smectitic, mesic Aridic Argiustolls

Suitability for Topsoil (According to WDEQ Guideline 1) - Marginal texture (clay) was found from 2-20 inches and 32-60 inches. Saturation percentage was marginal at 0-60 inches. Estimated stripping depth is 2 inches.

Geographic Setting (According to Official Series Description) - Boneek soils are nearly level to moderately sloping on high terraces and uplands. Surfaces are plane to slightly convex and slope gradients range from 0 to 15 percent. The soils formed in a silty mantle overlying sandstone or siltstones, or in loess or silty alluvium. Mean annual temperature ranges from 43 to 48 degrees, and mean annual precipitation ranges from 15 to 18 inches. Most of the precipitation comes in the spring and summer.

BONEEK
LOAM

Soil Mapping Unit "Bo"
Lab/BKS Sample ID: G08020806-046_050

Typical Pedon: Boneek loam - on a northeast-facing plane slope of 4 percent under native grass at 3500 feet elevation. (Colors are for dry soil unless otherwise stated.)

The Boneek series consists of deep and very deep, well drained soils formed in silty sediments underlain by sandstone or siltstone. Permeability is moderately slow in the solum and moderate in the underlying material. Slopes range from 0 to 15 percent. Mean annual precipitation is about 17 inches, and mean annual temperature is about 46 degrees F.

A - 0-2 inches. Brown (10YR 5/3) loam, moist; moderate thin platy structure parting to weak fine granular; slightly hard, very friable; many fine roots; clear wavy boundary; neutral (pH 7.1) noneffervescent.

Bt - 2-8 inches. Brown (7.5 YR 4/3D) loam, moist; weak coarse subangular blocky structure; hard, very friable; many fine roots; clear wavy boundary; slighty alkaline (pH 7.6); noneffervescent.

C1k – 8-17 inches. Brown (7.5 YR 5/3D) loam, moist; moderate medium prismatic structure parting to moderate medium and fine subangular blocky; very hard, friable, slightly sticky and slightly plastic; common fine roots; shiny films on faces of peds; clear wavy boundary; moderately alkaline (pH 7.9); strongly effervescent.

C2k – 17-24 inches. Brown (10YR 5/3D) loam, moist; weak coarse prismatic structure parting to moderate medium subangular blocky; very hard, friable, slightly sticky and slightly plastic; common fine roots; many fine and medium accumulations of carbonate; gradual wavy boundary; moderately alkaline (pH 8.3); strongly effervescent.

C3k – 24-38 inches. Dark grayish brown (10YR 4/2D) clay loam, moist; weak medium and coarse subangular blocky structure; very hard, friable, slightly sticky and slightly plastic; few fine roots; common fine and medium accumulations of carbonate; gradual wavy boundary; moderately alkaline (pH 8.3); strongly effervescent.

Type Location - Butte County, South Dakota; refer to waypoint 95 on map included in this report.

Range in Soil Characteristics (According to Official Series Description) - Depth to bedrock is 40 to 60 inches or more. Depth to carbonates ranges from 11 to 24 inches. Thickness of the mollic epipedon ranges from 7 to 15 inches and extends into the Bt horizon of some pedons.

The A horizon has hue of 10YR or 7.5YR, value of 4 or 5 and 2 or 3 moist, and chroma of 2 or 3. It typically is silt loam, but some pedons are loam. It is slightly acid or neutral.

The Bt1 horizon has hue of 7.5YR or 5YR, value of 4 or 6 and 3 or 4 moist, and chroma of 2 to 4. It is silty clay loam or silty clay. Average clay content ranges from 35 to 45 percent with less than 15 percent fine sand or coarser. It is slightly acid or neutral.

The Bt2 horizon has hue of 10YR or 7.5Y, value of 5 or 6 and 3 or 5 moist, and chroma of 2 to 4. It is silty clay loam averaging between 30 and 40 percent clay and less than 15 percent fine sand or coarser. It is neutral or slightly alkaline.

The Bk and C horizons have hue of 10YR or 2.5Y, value of 5 through 7 and 4 or 5 moist, and chroma of 1 to 3. They typically are silt loam or silty clay loam, but some pedons are loam. They are slightly alkaline to strongly alkaline. Few to many, fine or medium accumulations of carbonate are in the Bk horizon.

The Cr horizon has hue of 10YR or 7.5YR.

Range in Characteristics (according to field observations, lab analysis): Textures are coarser and have less clay than typical for the series.

Taxonomic Class - Fine, smectitic, mesic Aridic Argiustolls

Suitability for Topsoil (According to WDEQ Guideline 1) - Selenium was marginal at 24-38 inches. Strongly effervescent at 8 inches. Estimated stripping depth is 24 inches.

Geographic Setting (According to Official Series Description) - Boneek soils are nearly level to moderately sloping on high terraces and uplands. Surfaces are plane to slightly convex and slope gradients range from 0 to 15 percent. The soils formed in a silty mantle overlying sandstone or siltstones, or in loess or silty alluvium. Mean annual temperature ranges from 43 to 48 degrees, and mean annual precipitation ranges from 15 to 18 inches. Most of the precipitation comes in the spring and summer.

POWERTECH (USA) INC.

APPENDIX 3.3-D

ORIGINAL LABORATORY DATA SHEETS

POWERTECH (USA) INC.

ENERGY LABORATORIES, INC. * 400 W Boxelder Rd * Gillette, WY 82718-5315
Toll Free 866.686.7175 * 307.686.7175 * FAX 307.682.4625 * gillette@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Knight Piesold and Company
Project: 451b Dewey-Burdock Soils
Workorder: G08020803

Report Date: 03/28/08
Date Received: 02/28/08

		Analysis	OM	Coarse Fragments	Sand	Silt	Clay	Texture	SAT	pH-sat paste	EC-sat paste	Ca-sat paste	Mg-sat paste	Na-sat paste	SAR-sat paste
		Units	%	%	%	%	%		wt%	s_u_	mmhos/cm	meq/l	meq/l	meq/l	milliless
Sample ID	Client Sample ID	Depth	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results
G08020803-001	Hole #17	0-3	3.0	< 0.1	8	46	46	SiC	75.7	5.8	0.51	3.00	0.73	0.24	0.2
G08020803-002	Hole #17	3-8	1.6	< 0.1	5	45	50	SiC	72.0	5.7	0.39	2.36	0.54	0.27	0.2
G08020803-003	Hole #17	8-24	1.7	< 0.1	3	44	53	SiC	80.0	5.7	0.70	5.44	1.49	0.73	0.4
G08020803-004	Hole #17	24-40	1.3	< 0.1	< 1	46	54	SiC	75.9	5.8	1.25	7.02	3.76	2.02	0.8
G08020803-005	Hole #17	40-54	0.8	< 0.1	1	48	51	SiC	78.9	5.0	3.49	24.5	23.0	4.43	0.9
G08020803-006	Hole #17	54-60	0.9	< 0.1	9	46	45	SiC	75.7	4.5	3.83	23.4	30.8	4.78	0.9
G08020803-007	Hole #27	0-2	2.6	< 0.1	9	58	33	SiCL	63.3	7.4	0.56	2.41	1.14	2.41	1.8
C08020803-008	Hole #27	2-17	1.3	< 0.1	4	47	40	SiC	83.5	7.0	4.60	24.2	10.3	20.0	7.0
G08020803-009	Hole #27	17-24	1.2	4.5	4	43	53	SiC	77.5	8.0	0.10	22.7	14.0	50.3	11.7
G08020803-010	Hole #27	24-39	1.0	1.8	3	47	50	SiC	84.5	7.9	5.62	22.3	13.3	43.4	10.3
G08020803-011	Hole #27	39-60	0.8	< 0.1	5	50	45	SiC	79.0	7.9	5.88	21.9	15.9	44.7	10.3
G08020803-012	Hole #36	0-2	2.1	1.9	14	54	32	SiCL	68.0	8.0	0.64	2.10	0.88	3.61	3.0
C08020803-013	Hole #36	2-15	1.3	< 0.1	9	46	45	SiC	84.2	8.0	4.08	23.8	11.1	34.0	8.1
C08020803-014	Hole #36	15-28	1.1	< 0.1	9	46	45	SiC	78.6	8.0	6.15	23.3	16.2	47.7	10.7
G08020803-015	Hole #36	28-38	0.9	< 0.1	9	41	50	SiC	84.1	8.0	7.41	28.8	24.6	60.4	11.7
G08020803-016	Hole #36	38-60	0.8	< 0.1	11	39	50	C	77.4	8.0	6.22	22.7	21.3	45.8	9.8
G08020803-017	Hole #39	0-2	4.1	< 0.1	19	55	26	SiL	50.0	6.8	0.57	3.04	1.95	0.14	< 0.1
G08020803-018	Hole #39	2-15	1.9	4.3	17	46	37	SiCL	63.7	7.3	0.49	2.40	1.58	0.42	0.3
C08020803-019	Hole #39	15-32	1.0	1.7	31	37	32	CL	58.4	8.0	0.83	2.67	2.76	2.60	1.6
G08020803-020	Hole #39	32-52	0.7	< 0.1	27	36	37	CL	62.0	8.0	5.14	22.0	31.2	10.7	1.8
G08020803-021	Hole #39	52-60	0.7	< 0.1	21	72	7	SiL	75.4	8.1	5.25	23.5	34.5	10.1	1.6
G08020803-022	Hole #40	0-4	4.2	< 0.1	17	50	33	SiCL	71.4	6.6	0.59	3.15	1.47	0.14	0.1
G08020803-023	Hole #40	4-14	2.4	< 0.1	12	55	33	SiCL	60.7	7.1	0.58	3.54	1.48	0.50	0.3
G08020803-024	Hole #40	14-27	1.5	< 0.1	7	58	35	SiCL	57.8	7.8	0.76	4.25	1.64	1.95	1.1
C08020803-025	Hole #40	27-38	1.6	< 0.1	1	52	47	SiC	74.8	8.1	1.52	4.42	2.01	0.67	5.4
G08020803-026	Hole #40	38-60	1.7	< 0.1	3	51	46	SiC	75.0	7.9	4.42	24.0	11.3	25.1	6.0
G08020803-027	Hole #41	0-4	4.2	3.9	25	56	19	SiL	45.5	7.7	1.03	7.70	2.09	0.23	0.1
G08020803-028	Hole #41	4-21	1.1	1.7	11	54	35	SiCL	64.2	7.7	3.78	27.7	20.1	8.30	1.7
G08020803-029	Hole #41	21-36	0.6	1.2	< 1	95	5	Si	63.8	8.6	13.3	25.3	100	148	18.7
C08020803-030	Hole #41	36-45	0.8	1.8	18	64	18	SiL	42.4	8.7	16.6	27.0	122	216	25.0
C08020803-031	Hole #41	45-60	0.5	0.9	34	49	17	L	33.6	8.7	14.8	25.0	107	175	21.4
G08020803-032	Hole #42	0-6	3.4	1.5	22	62	16	SiL	44.6	7.8	7.56	28.7	54.2	37.2	5.8
G08020803-033	Hole #42	6-17	1.3	8.0	26	60	14	SiL	40.2	8.3	15.4	30.9	191	135	12.9
G08020803-034	Hole #42	17-39	0.6	< 0.1	28	62	10	SiL	35.0	8.6	14.5	31.2	187	125	12.0
G08020803-035	Hole #42	39-60	0.5	< 0.1	30	56	14	SiL	37.1	8.5	10.9	28.5	109	83.5	10.1
C08020803-036	Hole #43	0-2	11.7	1.1	24	48	28	CL	63.7	6.2	1.11	5.45	3.02	0.61	0.3
C08020803-037	Hole #43	2-14	2.1	< 0.1	22	36	42	C	68.8	7.4	0.80	5.28	3.27	0.87	0.4
G08020803-038	Hole #43	14-38	1.0	< 0.1	32	36	32	CL	43.3	8.5	0.81	1.13	1.12	4.10	3.9
G08020803-039	Hole #43	38-60	0.8	< 0.1	50	28	22	L	39.8	8.8	1.76	1.25	1.76	15.3	12.5
G08020803-040	Hole #50	0-2	2.3	2.6	44	38	18	L	30.8	6.6	0.37	1.97	1.10	0.14	0.1

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LABORATORY ANALYTICAL REPORT

Client: Knight Piesold and Company
Project: 451b Dewey-Burdock Soils
Workorder: G08020803

Report Date: 03/28/08
Date Received: 02/28/08

		Analysis	OM	Coarse Fragments	Sand	Silt	Clay	Texture	SAT	pH-sat paste	EC-sat paste	Ca-sat paste	Mg-sat paste	Na-sat paste	SAR-sat paste
		Units	%	%	%	%	%		wt%	s_u_	mmhos/cm	meq/L	meq/L	meq/L	unitless
Sample ID	Client Sample ID	Depth	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results
G08020803-041	Hole #50	2-7	1.8	2.6	32	34	34	CL	46.9	7.4	0.58	3.72	2.03	0.29	0.2
G08020803-042	Hole #50	7-13	1.9	2.4	26	38	36	CL	66.8	8.1	0.42	2.37	1.47	0.42	0.3
G08020803-043	Hole #50	13-25	1.0	3.1	44	29	27	CL	39.1	8.3	0.48	1.53	1.52	1.62	1.3
G08020803-044	Hole #56	0-3	6.0	< 0.1	16	56	28	SiCL	74.9	7.4	0.96	7.78	1.33	0.09	< 0.1
G08020803-045	Hole #56	3-14	2.5	< 0.1	< 1	72	28	SiCL	48.0	7.7	1.07	8.69	1.92	0.29	0.1
G08020803-046	Hole #56	14-26	2.2	< 0.1	8	60	32	SiCL	50.8	7.6	3.08	32.2	8.13	1.42	0.3
G08020803-047	Hole #56	26-36	2.0	1.5	18	56	26	SiL	46.4	7.5	3.43	36.7	9.58	2.45	0.5
G08020803-048	Hole #56	36-60	1.2	3.0	34	44	22	L	39.2	7.7	3.70	36.9	12.1	2.29	0.5
G08020803-049	Hole #57	0-2	2.1	5.4	22	42	36	CL	73.1	7.6	2.49	32.1	1.11	0.23	< 0.1
G08020803-050	Hole #57	2-8	0.7	< 0.1	32	38	30	CL	64.3	7.6	2.55	30.7	3.92	0.35	< 0.1

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LABORATORY ANALYTICAL REPORT

Client: Knight Piesold and Company
Project: 451b Dewey-Burdock Soils
Workorder: G08020803

Report Date: 03/28/08
Date Received: 02/28/08

		Analysis	B-Hot H20	Se-Hot H20
		Units	mg/kg	mg/kg
Sample ID	Client Sample ID	Depth	Results	Results
G08020803-001	Hole #17	0-3	0.3	< 0.01
G08020803-002	Hole #17	3-8	0.3	< 0.01
G08020803-003	Hole #17	8-24	0.5	< 0.01
G08020803-004	Hole #17	24-40	0.0	< 0.01
G08020803-005	Hole #17	40-54	0.8	< 0.01
G08020803-006	Hole #17	54-60	0.8	< 0.01
G08020803-007	Hole #27	0-2	0.3	< 0.01
G08020803-008	Hole #27	2-17	2.0	0.03
G08020803-009	Hole #27	17-24	2.3	0.07
G08020803-010	Hole #27	24-39	1.0	0.06
G08020803-011	Hole #27	39-60	1.1	0.08
G08020803-012	Hole #36	0-2	0.4	< 0.01
G08020803-013	Hole #36	2-15	1.7	0.02
G08020803-014	Hole #36	15-26	2.3	0.03
G08020803-015	Hole #36	26-38	2.3	0.03
G08020803-016	Hole #36	38-60	1.5	0.03
G08020803-017	Hole #39	0-2	0.2	< 0.01
G08020803-018	Hole #39	2-15	0.3	< 0.01
G08020803-019	Hole #39	15-32	0.4	< 0.01
G08020803-020	Hole #39	32-52	0.9	0.04
G08020803-021	Hole #39	52-60	2.5	0.03
G08020803-022	Hole #40	0-4	0.3	< 0.01
G08020803-023	Hole #40	4-14	0.3	< 0.01
G08020803-024	Hole #40	14-27	0.4	< 0.01
G08020803-025	Hole #40	27-38	0.8	0.02
G08020803-026	Hole #40	38-60	0.7	0.06
G08020803-027	Hole #41	0-4	0.4	< 0.01
G08020803-028	Hole #41	4-21	0.7	0.03
G08020803-029	Hole #41	21-36	7.7	0.25
G08020803-030	Hole #41	36-45	4.2	0.24
G08020803-031	Hole #41	45-60	1.5	0.22
G08020803-032	Hole #42	0-6	1.0	0.07
G08020803-033	Hole #42	6-17	1.1	0.15
G08020803-034	Hole #42	17-39	1.8	0.09
G08020803-035	Hole #42	39-60	1.2	0.04
G08020803-036	Hole #43	0-2	0.4	< 0.01
G08020803-037	Hole #43	2-14	0.2	< 0.01
G08020803-038	Hole #43	14-38	0.5	< 0.01
G08020803-039	Hole #43	38-60	0.8	0.01
G08020803-040	Hole #50	0-2	0.1	< 0.01

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LABORATORY ANALYTICAL REPORT

Client: Knight Piesold and Company
Project: 451b Dewey-Burdock Soils
Workorder: G08020803

Report Date: 03/28/08
Date Received: 02/28/08

		Analysis	B-Hot H20	Se-Hot H20
		Units	mg/kg	mg/kg
Sample ID	Client Sample ID	Depth	Results	Results
G08020803-041	Hole #50	2-7	0.1	< 0.01
G08020803-042	Hole #50	7-13	0.3	< 0.01
G08020803-043	Hole #50	13-25	0.2	< 0.01
G08020803-044	Hole #56	0-3	0.2	< 0.01
G08020803-045	Hole #56	3-14	0.3	< 0.01
G08020803-046	Hole #56	14-26	0.3	< 0.01
G08020803-047	Hole #56	26-36	0.3	< 0.01
G08020803-048	Hole #56	36-60	0.2	< 0.01
G08020803-049	Hole #57	0-2	0.3	< 0.01
G08020803-050	Hole #57	2-8	0.3	< 0.01

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LABORATORY ANALYTICAL REPORT

Client: Knight Piesold and Company
Project: 451h Dewey-Burdock Soils
Workorder: G08020806

Report Date: 03/31/08
Date Received: 02/28/08

Sample ID	Client Sample ID	Analysis / Units / Depth	OM % Results	Coarse Fragments % Results	Sand % Results	Silt % Results	Clay % Results	Texture Results	SAT wt% Results	pH-sat paste s_u_ Results	EC-sat paste mmhos/cm Results	Ca-sat paste meq/L Results	Mg-sat paste meq/L Results	Na-sat paste meq/L Results	SAR-sat paste unitless Results
G08020805-001	Hole #60	0-3	3.4	3.5	30	40	30	CL	69.2	7.5	0.75	4.69	2.03	1.47	0.8
G08020805-002	Hole #60	3-10	1.8	< 0.1	20	38	42	C	74.1	8.4	1.55	1.18	1.86	13.5	11
G08020805-003	Hole #60	10-18	1.3	4.8	24	70	6	SIL	69.5	8.2	9.21	22.1	61.0	79.7	12
G08020805-004	Hole #63	0-2	3.0	14.3	52	36	12	L	33.2	6.4	0.79	5.94	1.88	0.56	0.3
G08020805-005	Hole #63	2-6	1.9	8.8	39	38	23	L	40.1	7.3	0.92	8.85	1.68	0.34	0.2
G08020805-006	Hole #63	6-18	1.9	8.2	22	51	27	CL	40.1	7.4	2.98	30.1	9.02	5.25	1.2
G08020805-007	Hole #64	0-6	2.4	< 0.1	14	53	33	SICL	62.6	7.1	0.97	6.25	4.69	0.35	0.2
G08020805-008	Hole #64	6-17	1.7	< 0.1	8	59	33	SICL	64.7	8.1	0.67	2.87	2.98	1.74	1.0
G08020805-009	Hole #64	17-33	0.8	< 0.1	6	61	33	SICL	54.2	8.5	2.27	1.60	5.81	16.0	8.3
G08020805-010	Hole #64	33-42	0.7	< 0.1	10	61	29	SICL	46.8	8.0	8.02	27.8	61.1	50.6	7.6
G08020805-011	Hole #64	42-60	0.6	< 0.1	18	57	27	SICL	45.9	8.1	7.62	27.7	50.5	45.2	7.2
G08020805-012	Hole #72	0-3	3.3	< 0.1	17	51	32	SICL	50.4	8.3	0.52	2.98	1.09	0.32	0.2
G08020805-013	Hole #72	3-18	1.2	< 0.1	28	39	33	CL	55.3	7.6	0.49	1.74	0.51	2.86	2.7
G08020805-014	Hole #72	18-28	1.2	2.0	10	47	43	SIC	69.7	7.9	4.52	20.2	12.3	30.1	7.5
G08020805-015	Hole #72	28-43	1.0	1.7	16	69	15	SIL	69.0	8.2	8.21	23.5	50.0	69.8	12
G08020805-016	Hole #72	43-60	0.8	2.1	22	53	25	SIL	67.4	8.3	10.0	21.9	73.5	94.0	14
G08020805-017	Hole #73	0-3	3.1	< 0.1	44	35	21	L	51.1	7.4	0.99	5.50	3.21	2.31	1.1
G08020805-018	Hole #73	3-15	1.7	< 0.1	10	41	49	SIC	77.6	7.9	0.51	8.5	9.4	52.4	18
G08020805-019	Hole #73	15-23	0.9	< 0.1	2	58	40	SIC	97.4	7.8	11.2	24.7	20.4	113	22
G08020805-020	Hole #73	23-34	1.1	< 0.1	< 1	60	40	SIC	95.5	8.0	12.9	35.5	35.5	134	22
G08020805-021	Hole #73	34-38	0.9	< 0.1	0	42	52	SIC	75.1	8.0	13.8	34.0	30.9	142	24
G08020805-022	Hole #73	38-60	0.0	< 0.1	4	31	65	C	97.7	8.0	12.2	33.0	31.8	123	22
G08020805-023	Hole #74	0-3	1.6	< 0.1	59	16	25	SCL	30.0	7.8	0.73	5.47	2.04	0.79	0.4
G08020805-024	Hole #74	3-15	0.8	< 0.1	54	19	27	SCL	46.2	8.3	0.60	1.62	1.45	4.66	3.8
G08020805-025	Hole #74	15-27	0.6	< 0.1	36	35	29	CL	51.5	8.5	5.68	5.4	15.0	55.9	17
G08020805-026	Hole #74	27-38	1.3	< 0.1	40	37	23	L	37.0	8.5	13.7	28.2	95.0	162	21
G08020805-027	Hole #74	38-51	0.5	< 0.1	50	31	19	L	34.3	8.4	13.2	25.9	92.3	150	20
G08020805-028	Hole #74	51-60	0.4	< 0.1	64	17	19	SL	33.1	8.4	12.7	23.9	82.0	143	20
G08020805-029	Hole #75	0-4	2.5	< 0.1	28	45	27	CL	60.4	7.8	0.84	4.62	1.79	2.13	1.2
G08020805-030	Hole #75	4-15	2.2	< 0.1	14	53	33	SICL	63.9	7.7	1.78	7.76	2.04	8.47	3.7
G08020805-031	Hole #75	15-35	1.3	< 0.1	16	55	29	SICL	52.2	7.6	6.61	28.4	15.6	48.5	10
G08020805-032	Hole #75	35-46	1.0	< 0.1	15	58	27	SICL	53.9	7.8	8.46	28.3	24.1	74.1	14
G08020805-033	Hole #75	46-60	1.0	< 0.1	12	59	29	SICL	54.5	7.8	8.23	27.4	24.2	69.8	14
G08020805-034	Hole #76	0-2	1.9	< 0.1	48	39	13	L	31.5	5.3	1.04	3.70	2.44	2.75	1.6
G08020805-035	Hole #76	2-21	1.3	< 0.1	14	42	44	SIC	69.1	7.7	5.77	19.6	14.2	43.2	11
G08020805-036	Hole #76	21-29	0.9	2.7	20	39	41	C	67.0	6.9	6.84	23.5	16.7	53.1	12
G08020805-037	Hole #76	29-46	1.0	5.7	19	45	36	SICL	60.6	7.6	4.87	7.22	6.07	43.4	17
G08020805-038	Hole #76	46-60	0.6	< 0.1	10	58	32	SICL	53.8	7.3	4.57	3.85	3.15	44.1	24
G08020805-039	Hole #77	0-4	2.0	1.7	36	37	27	CL	52.6	7.6	0.54	4.10	1.14	0.43	0.3
G08020805-040	Hole #77	4-17	1.5	< 0.1	22	41	37	CL	68.4	7.7	1.21	6.47	3.13	4.01	1.8

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LABORATORY ANALYTICAL REPORT

Client: Knight Piesold and Company
Project: 451b Dewey-Burdock Soils
Workorder: G08020805

Report Date: 03/31/08
Date Received: 02/28/08

		Analysis	OM	Coarse Fragments	Sand	Silt	Clay	Texture	SAT	pH-sat paste	EC-sat paste	Ca-sat paste	Mg-sat paste	Na-sat paste	SAR-sat paste
		Units	%	%	%	%	%		wt%	s_u_	mmhos/cm	meq/L	meq/L	meq/L	unitless
Sample ID	Client Sample ID	Depth	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results
G08020805-041	Hole #77	17-36	0.9	< 0.1	22	73	5	SiL	67.2	8.0	5.66	23.7	44.8	27.1	4.6
G08020805-042	Hole #77	36-48	0.8	< 0.1	24	61	15	SiL	64.9	7.8	6.62	23.8	62.6	32.0	4.9
G08020805-043	Hole #79	0-3	5.1	< 0.1	18	46	36	SiCL	58.5	6.1	0.78	1.65	1.19	4.02	3.4
G08020805-044	Hole #79	3-17	1.6	< 0.1	12	41	47	SiC	73.7	4.1	4.61	22.4	22.1	22.9	4.9
G08020805-045	Hole #79	17-30	0.9	6.8	18	33	49	C	72.4	3.6	4.75	24.7	20.4	21.9	4.6
G08020805-046	Hole #79	30-42	0.9	5.0	22	32	46	C	65.1	3.7	2.50	11.4	7.65	9.50	3.1
G08020805-047	Hole #79	42-60	0.9	9.5	16	37	47	C	61.9	3.6	2.30	10.1	6.32	7.31	2.6

POWERTECH (USA) INC.

ENERGY LABORATORIES, INC. * 400 W Boxelder Rd * Gillette, WY 82718-5315
Toll Free 866.686.7175 * 307.686.7175 * FAX 307.682.4625 * gillette@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Knight Piesold and Company
Project: 451b Dewey-Burdock Soils
Workorder: G08020806

Report Date: 03/31/08
Date Received: 02/28/08

Sample ID	Client Sample ID	Analysis / Units / Depth	B-Hot H20 mg/kg Results	Se-Hot H20 mg/kg Results
G08020805-001	Hole #60	0-3	0.2	< 0.01
G08020805-002	Hole #60	3-10	0.4	0.01
G08020805-003	Hole #60	10-18	1.5	0.11
G08020805-004	Hole #63	0-2	0.1	< 0.01
G08020805-005	Hole #63	2-6	< 0.1	< 0.01
G08020805-006	Hole #63	6-16	0.3	< 0.01
G08020805-007	Hole #64	0-6	< 0.1	< 0.01
G08020805-008	Hole #64	6-17	0.2	< 0.01
G08020805-009	Hole #64	17-33	1.1	0.03
G08020805-010	Hole #64	33-42	2.7	0.12
G08020805-011	Hole #64	42-60	1.5	0.08
G08020805-012	Hole #72	0-3	0.2	< 0.01
G08020805-013	Hole #72	3-18	0.2	< 0.01
G08020805-014	Hole #72	18-28	1.1	0.12
G08020805-015	Hole #72	28-43	2.0	0.27
G08020805-016	Hole #72	43-60	1.6	0.10
G08020805-017	Hole #73	0-3	0.2	< 0.01
G08020805-018	Hole #73	3-15	0.8	0.08
G08020805-019	Hole #73	15-23	2.5	0.34
G08020805-020	Hole #73	23-34	2.3	0.44
G08020805-021	Hole #73	34-38	1.7	0.42
G08020805-022	Hole #73	38-60	1.8	0.37
G08020805-023	Hole #74	0-3	0.2	< 0.01
G08020805-024	Hole #74	3-15	0.2	< 0.01
G08020805-025	Hole #74	15-27	1.1	0.08
G08020805-026	Hole #74	27-38	2.5	0.21
G08020805-027	Hole #74	38-51	1.7	0.20
G08020805-028	Hole #74	51-60	1.3	0.16
G08020805-029	Hole #75	0-4	0.3	< 0.01
G08020805-030	Hole #75	4-15	0.4	< 0.01
G08020805-031	Hole #75	15-35	0.5	< 0.01
G08020805-032	Hole #75	35-46	0.7	< 0.01
G08020805-033	Hole #75	46-60	0.0	0.01
G08020805-034	Hole #76	0-2	0.2	< 0.01
G08020805-035	Hole #76	2-21	1.2	0.02
G08020805-036	Hole #76	21-29	0.8	< 0.01
G08020805-037	Hole #76	29-46	0.6	0.04
G08020805-038	Hole #76	46-60	0.5	0.17
G08020805-039	Hole #77	0-4	0.2	< 0.01
G08020805-040	Hole #77	4-17	0.5	< 0.01

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LABORATORY ANALYTICAL REPORT

Client: Knight Piesold and Company
Project: 451b Dewey-Burdock Soils
Workorder: G08020805

Report Date: 03/31/08
Date Received: 02/28/08

		Analysis	B-Hot H20	Se-Hot H20
		Units	mg/kg	mg/kg
Sample ID	Client Sample ID	Depth	Results	Results
G08020805-041	Hole #77	17-36	4.4	0.03
G08020805-042	Hole #77	36-48	6.3	0.04
G08020805-043	Hole #79	0-3	0.6	< 0.01
G08020805-044	Hole #79	3-17	0.9	< 0.01
G08020805-045	Hole #79	17-30	0.6	< 0.01
G08020805-046	Hole #79	30-42	0.4	< 0.01
G08020805-047	Hole #79	42-60	0.3	< 0.01

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LABORATORY ANALYTICAL REPORT

Client: Knight Piesold and Company
Project: 451b Dewey-Durdock Soils
Workorder: G08020806

Report Date: 04/07/08
Date Received: 02/26/08

Sample ID	Client Sample ID	Analysis Units Depth	OM % Results	Coarse Fragments % Results	Sand % Results	Silt % Results	Clay % Results	Texture Results	SAT wt% Results	pH-sat paste s_u_ Results	EC-sat paste mmhos/cm Results	Ca-sat paste meq/L Results	Mg-sat paste meq/L Results	Na-sat paste meq/L Results	SAR-sat paste unitless Results
G08020806-001	Hole #82	0-4	3.0	0.0	51	32	17	L	35.7	6.3	1.78	8.06	4.01	0.10	0.08
G08020806-002	Hole #82	4-12	1.9	2.0	40	27	33	CL	49.3	7.1	1.16	5.93	3.57	1.95	0.89
G08020806-003	Hole #82	12-17	1.6	< 0.1	54	24	22	SCL	40.7	7.6	0.98	5.10	3.38	1.46	0.71
G08020806-004	Hole #82	17-28	1.3	< 0.1	54	24	22	SCL	39.0	7.9	0.89	5.09	3.19	3.75	2.12
G08020806-005	Hole #82	28-43	0.7	< 0.1	58	22	20	SCL	39.2	7.9	2.98	6.68	12.5	14.1	4.55
G08020806-006	Hole #83	0-3	3.2	< 0.1	14	53	33	SICL	53.3	4.8	0.43	1.23	0.72	1.20	1.22
G08020806-007	Hole #83	3-17	1.0	< 0.1	14	43	43	SIC	52.2	4.8	0.31	0.40	0.23	1.02	3.23
G08020806-008	Hole #83	17-33	1.0	< 0.1	9	47	44	SIC	09.4	5.7	4.85	25.3	25.0	22.3	4.44
G08020806-009	Hole #83	33-42	0.6	< 0.1	8	69	23	SIL	78.1	7.6	5.71	26.5	35.1	30.4	5.47
G08020806-010	Hole #83	42-52	0.5	< 0.1	8	69	23	SIL	82.3	7.9	6.61	26.0	46.3	38.3	6.37
G08020806-011	Hole #83	52-60	0.4	< 0.1	12	79	9	SIL	74.9	7.9	6.67	24.4	42.7	42.6	7.36
G08020806-012	Hole #84	0-5	8.0	< 0.1	4	59	37	SICL	87.0	7.4	1.87	1.83	6.46	12.7	6.22
G08020806-013	Hole #84	5-18	1.8	< 0.1	9	52	39	SICL	83.2	8.2	11.8	24.5	105	112	14.0
G08020806-014	Hole #84	18-37	0.8	< 0.1	12	40	42	SIC	70.8	8.4	14.0	22.8	149	148	15.9
G08020806-015	Hole #84	37-47	1.1	< 0.1	6	55	39	SICL	70.8	8.3	11.6	23.5	103	108	13.5
G08020806-016	Hole #84	47-60	0.6	< 0.1	32	37	31	CL	59.7	8.1	8.14	21.8	60.2	61.6	9.63
G08020806-017	Hole #85	0-2	4.2	< 0.1	32	48	20	L	51.5	6.3	0.43	2.37	1.44	0.23	0.16
G08020806-018	Hole #85	2-7	2.3	< 0.1	20	41	39	SICL	80.6	7.3	0.71	4.24	2.30	0.73	0.40
G08020806-019	Hole #85	7-17	1.0	< 0.1	10	40	38	SICL	00.9	7.9	0.71	2.58	1.79	2.93	1.98
G08020806-020	Hole #85	17-30	1.3	< 0.1	22	40	38	CI	85.4	8.0	1.71	4.81	4.08	9.26	4.39
G08020806-021	Hole #88	0-2	3.0	2.1	21	46	33	CL	64.7	6.7	0.54	3.27	1.99	0.43	0.26
G08020806-022	Hole #88	2-9	1.8	< 0.1	11	43	46	SIC	77.9	7.8	0.80	4.04	1.88	2.48	1.44
G08020806-023	Hole #88	9-18	1.3	< 0.1	14	82	4	SI	77.9	7.6	3.00	31.4	13.3	13.6	2.88
G08020806-024	Hole #89	0-2	4.4	3.1	12	54	34	SICL	72.4	5.4	0.80	4.78	2.40	0.32	0.17
G08020806-025	Hole #89	2-18	2.4	3.7	9	45	46	SIC	87.3	7.7	1.41	5.88	4.12	5.67	2.54
G08020806-026	Hole #89	18-31	1.5	< 0.1	6	43	51	SIC	83.7	7.8	3.75	23.8	14.0	16.3	3.76
G08020806-027	Hole #89	31-37	1.5	< 0.1	3	49	48	SIC	86.0	7.7	3.98	27.7	15.5	16.0	3.44
G08020806-028	Hole #90	0-2	2.6	< 0.1	1	48	51	SIC	84.1	6.8	0.37	2.25	0.89	0.42	0.34
G08020806-029	Hole #90	2-8	1.8	< 0.1	2	44	54	SIC	89.8	7.4	0.44	2.82	0.78	0.76	0.66
G08020806-030	Hole #90	8-20	1.5	< 0.1	6	41	53	SIC	09.0	7.7	0.76	4.84	1.35	1.80	1.00
G08020806-031	Hole #91	0-4	2.0	< 0.1	20	44	36	CL	65.3	7.0	1.21	10.9	3.22	0.65	0.24
G08020806-032	Hole #91	4-19	1.2	< 0.1	22	67	11	SI	85.3	7.8	4.65	25.3	14.5	26.3	5.89
G08020806-033	Hole #91	19-40	0.5	< 0.1	16	74	10	SIL	79.9	8.4	12.7	23.7	81.7	144	19.8
G08020806-034	Hole #91	40-48	0.8	< 0.1	19	47	34	SICL	80.9	8.4	13.7	23.4	98.1	156	20.0
G08020806-035	Hole #91	48-60	0.6	< 0.1	10	68	22	SIL	04.3	8.3	14.4	25.1	109	170	20.7
G08020806-036	Hole #92	0-7	2.3	< 0.1	10	44	36	SICL	74.9	7.5	0.79	4.99	1.58	2.09	1.16
G08020806-037	Hole #92	7-19	1.0	< 0.1	12	48	40	SIC	88.2	7.0	3.32	27.6	9.68	10.4	2.42
G08020806-038	Hole #93	0-4	2.9	< 0.1	50	38	12	L	41.8	7.2	0.77	6.13	1.94	0.22	0.11
G08020806-039	Hole #93	4-8	2.1	< 0.1	50	32	18	L	39.4	7.5	0.71	6.25	1.80	0.14	0.07
G08020806-040	Hole #94	0-2	6.3	< 0.1	8	48	44	SIC	85.7	6.9	0.92	4.54	3.22	1.06	0.54

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LABORATORY ANALYTICAL REPORT

Client: Knight Piesold and Company
Project: 451b Dewey-Burdock Soils
Workorder: G08020806

Report Date: 04/07/08
Date Received: 02/28/08

		Analysis	OM	Coarse Fragments	Sand	Silt	Clay	Texture	SAT	pH-sat paste	EC-sat paste	Ca-sat paste	Mg-sat paste	Na-sat paste	SAR-sat paste
		Units	%	%	%	%	%		wt%	s_u_	mmhos/cm	meq/L	meq/L	meq/L	unitless
Sample ID	Client Sample ID	Depth	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results	Results
G08020806-041	Hole #94	2-8	1.8	< 0.1	8	48	44	SiC	87.8	7.6	0.66	3.55	1.58	1.61	1.00
G08020806-042	Hole #94	8-20	1.2	6.0	19	41	40	SiC	85.6	7.5	2.27	20.6	5.30	3.89	1.08
G08020806-043	Hole #94	20-32	1.0	3.1	16	45	39	SiCL	82.6	7.6	3.00	26.0	9.46	5.36	1.27
G08020806-044	Hole #94	32-44	1.2	8.9	9	49	42	SiC	87.2	7.6	3.81	26.2	18.1	13.4	2.84
G08020806-045	Hole #94	44-60	0.9	5.0	12	47	41	SiC	87.0	7.8	5.22	23.7	27.5	29.4	5.82
G08020806-046	Hole #95	0-2	3.6	< 0.1	39	43	18	L	46.4	7.1	0.70	5.33	2.36	0.10	0.05
G08020806-047	Hole #95	2-8	2.0	< 0.1	41	39	20	L	43.8	7.6	0.93	7.16	2.64	0.40	0.18
G08020806-048	Hole #95	8-17	1.2	< 0.1	40	41	19	L	39.5	7.9	0.65	3.56	2.66	0.71	0.40
G08020806-049	Hole #95	17-24	0.7	< 0.1	35	39	26	L	51.3	8.3	0.90	1.18	2.30	5.73	4.34
G08020806-050	Hole #95	24-38	1.0	< 0.1	34	33	33	CL	62.7	8.3	6.10	15.6	37.7	41.7	8.08

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LABORATORY ANALYTICAL REPORT

Client: Knight Piesold and Company
Project: 451b Dewey-Burdock Soils
Workorder: G08020806

Report Date: 04/07/08
Date Received: 02/28/08

		Analysis	B-Hot H20	Se-Hot H20
		Units	mg/kg	mg/kg
Sample ID	Client Sample ID	Depth	Results	Results
G08020806-001	Hole #82	0-4	0.3	< 0.01
G08020806-002	Hole #82	4-12	0.3	< 0.01
G08020806-003	Hole #82	12-17	0.3	< 0.01
G08020806-004	Hole #82	17-28	0.3	< 0.01
G08020806-005	Hole #82	28-43	0.6	< 0.01
G08020806-006	Hole #83	0-3	0.3	< 0.01
G08020806-007	Hole #83	3-17	0.3	< 0.01
G08020806-008	Hole #83	17-33	1.9	< 0.01
G08020806-009	Hole #83	33-42	5.4	0.02
G08020806-010	Hole #83	42-52	8.4	0.04
G08020806-011	Hole #83	52-60	5.2	0.07
G08020806-012	Hole #84	0-5	1.0	< 0.01
G08020806-013	Hole #84	5-18	1.6	0.02
G08020806-014	Hole #84	18-37	2.8	0.05
G08020806-015	Hole #84	37-47	2.9	0.02
G08020806-016	Hole #84	47-60	1.8	< 0.01
G08020806-017	Hole #85	0-2	0.2	< 0.01
G08020806-018	Hole #85	2-7	0.2	< 0.01
G08020806-019	Hole #85	7-17	0.5	< 0.01
G08020806-020	Hole #85	17-30	0.8	< 0.01
G08020806-021	Hole #88	0-2	0.2	< 0.01
G08020806-022	Hole #88	2-9	0.4	< 0.01
G08020806-023	Hole #88	9-18	1.2	< 0.01
G08020806-024	Hole #89	0-2	0.3	< 0.01
G08020806-025	Hole #89	2-18	0.6	< 0.01
G08020806-026	Hole #89	18-31	1.3	0.02
G08020806-027	Hole #89	31-37	1.5	0.01
G08020806-028	Hole #90	0-2	0.3	< 0.01
G08020806-029	Hole #90	2-8	0.4	< 0.01
G08020806-030	Hole #90	8-20	0.8	< 0.01
G08020806-031	Hole #91	0-4	0.2	< 0.01
G08020806-032	Hole #01	4-10	0.3	0.02
G08020806-033	Hole #01	10-40	1.5	0.07
G08020806-034	Hole #91	40-48	1.0	0.08
G08020806-035	Hole #91	48-60	1.0	0.10
G08020806-036	Hole #92	0-7	0.2	< 0.01
G08020806-037	Hole #92	7-19	0.7	< 0.01
G08020806-038	Hole #03	0-4	< 0.1	< 0.01
G08020806-039	Hole #03	4-8	0.1	< 0.01
G08020806-040	Hole #94	0-2	0.6	< 0.01

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LABORATORY ANALYTICAL REPORT

Client: Knight Piesold and Company
Project: 451b Dewey-Burdock Soils
Workorder: G08020806

Report Date: 04/07/08
Date Received: 02/28/08

		Analysis	B-Hot H20	Se-Hot H20
		Units	mg/kg	mg/kg
Sample ID	Client Sample ID	Depth	Results	Results
G08020806-041	Hole #94	2-8	0.4	< 0.01
G08020806-042	Hole #94	8-20	0.5	< 0.01
G08020806-043	Hole #94	20-32	0.7	< 0.01
G08020806-044	Hole #94	32-44	1.1	< 0.01
G08020806-045	Hole #94	44-60	0.8	0.02
G08020806-046	Hole #95	0-2	0.2	< 0.01
G08020806-047	Hole #95	2-8	0.1	< 0.01
G08020806-048	Hole #95	8-17	0.1	< 0.01
G08020806-049	Hole #95	17-24	0.2	< 0.01
G08020806-050	Hole #95	24-38	1.5	0.15

POWERTECH (USA) INC.

APPENDIX 3.3-E

PRIME FARMLAND DESIGNATION

POWERTECH (USA) INC.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
200 Fourth Street SW
Huron, South Dakota 57350

Phone: (605) 352-1200
Fax: (605) 352-1270

September 5, 2008

Mr. Adam Beilke
BKS Environmental Associates, Inc.
P.O. Box 3467
Gillette, Wyoming 82717

RE: Maps for Custer and Fall River Counties, South Dakota (SD)

Dear Mr. Beilke:

Attached are the prime and important farmland maps you requested for the Sections in Township 6 and 7 North and Range 1 East in Custer and Fall River Counties in SD.

Important farmland is land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, fiber, forage, and oil seed crops. Criteria for defining and delineating this land are to be determined by the appropriate state agency or agencies.

Generally, additional farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmlands if conditions are favorable. Below is the criteria we use in determining important farmland in South Dakota:

A map unit is "Farmland of Statewide Importance" if 50 percent or more of named Components meet the Criteria and the Land Capability Class of all named components is Class 4 or less.

Mesic or frigid temperature regime
Available Water Capacity (AWC): 5.00 or Better (high) in top 40 inches.
pH: 4.5 - 8.4 in top 24 inches
EC: less than 8 in top 24 inches
SAR: less than 15 in top 24 inches
Surface Fragments > 3 in: less than 10%
Water erosion: Kw*slope Representative Value < 3.
Wind Erosion: I*C < 60.
Flooding or Ponding: Less than Frequent
Wetness: High Water table > 6 inches.
Mapunit is not prime farmland under all conditions

If I can be a further assistance, do not hesitate to let me know.

Sincerely,

DANIEL SHURTLIFF
Acting State Soil Scientist

Attachments

cc: Kory Bossert, DC, NRCS, Hot Springs FO

Helping People Help the Land

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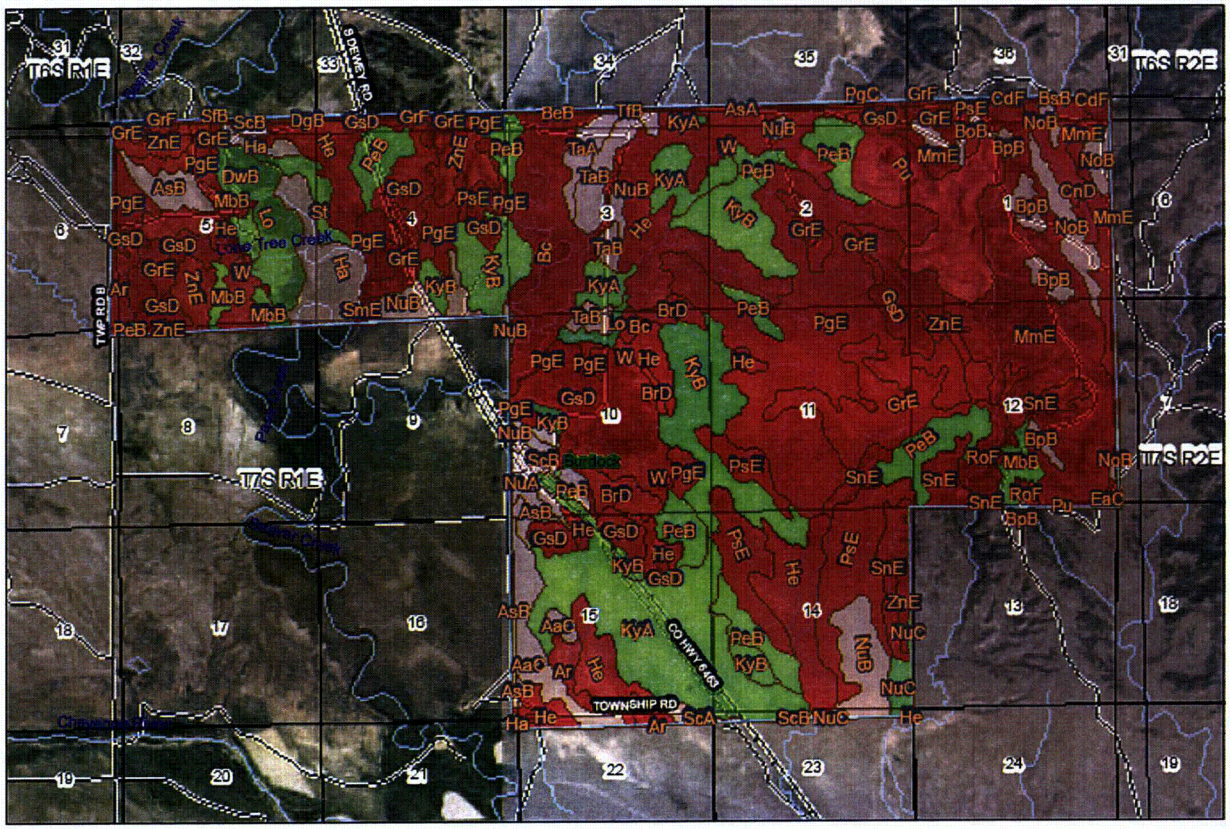
POWERTECH (USA) INC.

Farmland Classification–Custer and Pennington Counties, Black Hills Parts, South Dakota; and Fall River County, South Dakota
(BKS Env 7S 1E)



N

Meters: 0, 500, 1,000, 2,000, 3,000

Feet: 0, 3,000, 6,000, 12,000, 18,000

Farmland Classification—Custer and Pennington Counties, Black Hills Parts, South Dakota; and Fall River County, South Dakota
(HKS Inv 75 1F)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Soil Ratings
- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Political Features

Public Land Survey
- Township and Range
- Section

Municipalities
- Cities
- Urban Areas

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails

Roads
- Interstate Highways
- US Routes
- State Highways
- Local Roads
- Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 13N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below

Soil Survey Area: Custer and Pennington Counties, Black Hills Parts, South Dakota
Survey Area Data: Version 0, Feb 6, 2008

Soil Survey Area: Fall River County, South Dakota
Survey Area Data: Version 10, Feb 6, 2008

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Date(s) aerial images were photographed: 1991; 1994

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident

Farmland Classification

Farmland Classification—Summary by Map Unit — Custer and Pennington Counties, Black Hills Parts, South Dakota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AsA	Arvada-Stickspots complex, 0 to 3 percent slopes	Not prime farmland	11.1	0.2%
BeB	Bamum-Winefil complex, 0 to 6 percent slopes	Not prime farmland	5.0	0.1%
BrB	Buffiat silt loam, 3 to 6 percent slopes	Not prime farmland	1.2	0.0%
BsB	Buffiat-Cordeston silt loams, 2 to 9 percent slopes	Not prime farmland	2.7	0.0%
CdF	Canyon-Rock outcrop complex, 15 to 60 percent slopes	Not prime farmland	6.7	0.1%
DgB	Demar-Grummit-Stickspots complex, 0 to 6 percent slopes	Not prime farmland	5.2	0.1%
GrD	Grummit-Rock outcrop complex, 6 to 15 percent slopes	Not prime farmland	1.5	0.0%
GrF	Grummit-Rock outcrop complex, 15 to 60 percent slopes	Not prime farmland	14.6	0.2%
HaA	Haverson loam, 0 to 2 percent slopes	Prime farmland if irrigated	0.7	0.0%
NfE	Nihill-Zigweld complex, 15 to 50 percent slopes	Not prime farmland	1.8	0.0%
PgC	Pierre-Grummit clays, 2 to 9 percent slopes	Not prime farmland	7.8	0.1%
SfB	Sarlanta-Arvada complex, 2 to 6 percent slopes	Not prime farmland	2.5	0.0%
TfB	Tilford silt loam, 2 to 6 percent slopes	Prime farmland if irrigated	3.5	0.1%
ZnD	Zigweld-Nihill complex, 6 to 15 percent slopes	Not prime farmland	1.5	0.0%

Farmland Classification—Summary by Map Unit — Fall River County, South Dakota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AaC	Alice fine sandy loam, 2 to 9 percent slopes	Prime farmland if irrigated	59.8	1.5%
Ar	Arvada loam	Not prime farmland	69.0	1.0%
AsB	Ascalon fine sandy loam, 0 to 6 percent slopes	Prime farmland if irrigated	66.4	1.0%

Farmland Classification—Summary by Map Unit — Fall River County, South Dakota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Bc	Barnum silt loam	Not prime farmland	251.7	3.8%
BcB	Boneek silt loam, 2 to 6 percent slopes	Prime farmland if irrigated	19.1	0.3%
BpB	Boneek silt loam, bedrock substratum, 2 to 6 percent slopes	Prime farmland if irrigated	56.2	0.9%
BrD	Broadhurst clay, 2 to 15 percent slopes	Not prime farmland	66.4	1.0%
CnD	Colby-Norka silt loams, 6 to 15 percent slopes	Not prime farmland	99.5	1.5%
DwB	Dwyer loamy fine sand, 2 to 6 percent slopes	Not prime farmland	13.7	0.2%
EaC	Eckley loam, 0 to 9 percent slopes	Not prime farmland	5.0	0.1%
GrE	Grummit-Rock outcrop complex, 3 to 40 percent slopes	Not prime farmland	327.9	5.0%
GsD	Grummit-Stromo clays, 3 to 15 percent slopes	Not prime farmland	523.3	7.9%
Ha	Haverson loam	Prime farmland if irrigated	130.0	2.0%
He	Hisle-Stickspots complex	Not prime farmland	733.9	11.1%
KyA	Kyle clay, 0 to 2 percent slopes	Farmland of statewide importance	466.2	7.1%
KyB	Kyle clay, 2 to 6 percent slopes	Farmland of statewide importance	421.1	6.4%
Lo	Lohmiller silty clay loam	Farmland of statewide importance	131.5	2.0%
MbB	Manzanola silty clay loam, 2 to 6 percent slopes	Farmland of statewide importance	75.0	1.1%
MmE	Mathias-Midway-Rock outcrop complex, 15 to 30 percent slopes	Not prime farmland	512.2	7.7%
NbB	Norka silt loam, 2 to 6 percent slopes	Prime farmland if irrigated	92.5	1.4%
NuA	Nunn clay loam, 0 to 2 percent slopes	Prime farmland if irrigated	26.0	0.4%
NuB	Nunn clay loam, 2 to 6 percent slopes	Prime farmland if irrigated	160.5	2.4%
NuC	Nunn clay loam, 6 to 9 percent slopes	Farmland of statewide importance	25.3	0.4%
PeB	Pierre clay, 2 to 6 percent slopes	Farmland of statewide importance	322.0	4.9%
PgE	Pierre-Grummit clays, 6 to 25 percent slopes	Not prime farmland	747.0	11.3%
PsE	Pierre-Samsil clays, 6 to 25 percent slopes	Not prime farmland	289.6	4.4%

Farmland Classification—Summary by Map Unit — Fall River County, South Dakota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Pu	Pits, mine	Not prime farmland	214.8	3.2%
RoF	Rock outcrop-Mathias-Butche complex, 30 to 75 percent slopes	Not prime farmland	52.7	0.8%
ScA	Satanta loam, 0 to 2 percent slopes	Prime farmland if irrigated	13.3	0.2%
ScB	Satanta loam, 2 to 6 percent slopes	Prime farmland if irrigated	38.6	0.6%
ScC	Satanta loam, 6 to 9 percent slopes	Farmland of statewide importance	0.0	0.0%
SmE	Schamber-Eckley complex, 9 to 40 percent slopes	Not prime farmland	7.1	0.1%
SnE	Shingle-Penrose-Rock outcrop complex, 15 to 40 percent slopes	Not prime farmland	158.7	2.4%
St	Stetter clay	Farmland of statewide importance	36.0	0.5%
TaA	Tilford silt loam, 0 to 2 percent slopes	Prime farmland if irrigated	42.7	0.6%
TaB	Tilford silt loam, 2 to 6 percent slopes	Prime farmland if irrigated	75.0	1.1%
W	Water	Not prime farmland	9.9	0.1%
ZnE	Zigweid-Nihill complex, 6 to 20 percent slopes	Not prime farmland	160.5	2.4%
Totals for Area of Interest (AOI)			6,609.1	100.0%

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Prime and other Important Farmlands

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Report—Prime and other Important Farmlands

Prime and other Important Farmlands--Custer and Pennington Counties, Black Hills Parts, South Dakota		
Map Symbol	Map Unit Name	Farmland Classification
AsA	Arvada-Slickspots complex, 0 to 3 percent slopes	Not prime farmland
BeB	Barnum-Winetti complex, 0 to 6 percent slopes	Not prime farmland
BrB	Bullfat silt loam, 3 to 6 percent slopes	Not prime farmland
BsB	Bullfat-Cordeston silt loams, 2 to 9 percent slopes	Not prime farmland
CdF	Canyon-Rock outcrop complex, 15 to 60 percent slopes	Not prime farmland
DgB	Demar-Grummit-Slickspots complex, 0 to 6 percent slopes	Not prime farmland
GrD	Grummit-Rock outcrop complex, 6 to 15 percent slopes	Not prime farmland
GrF	Grummit-Rock outcrop complex, 15 to 60 percent slopes	Not prime farmland
HaA	Haverson loam, 0 to 2 percent slopes	Prime farmland if irrigated
NfE	Nihill-Zigweid complex, 15 to 50 percent slopes	Not prime farmland
PgC	Pierre-Grummit clays, 2 to 9 percent slopes	Not prime farmland
SfB	Satanta-Arvada complex, 2 to 6 percent slopes	Not prime farmland
TfB	Tilford silt loam, 2 to 6 percent slopes	Prime farmland if irrigated
ZnD	Zigweid-Nihill complex, 6 to 15 percent slopes	Not prime farmland

Prime and other Important Farmlands--Fall River County, South Dakota		
Map Symbol	Map Unit Name	Farmland Classification
AaC	Alice fine sandy loam, 2 to 9 percent slopes	Prime farmland if irrigated
Ar	Arvada loam	Not prime farmland
AsB	Ascalon fine sandy loam, 0 to 6 percent slopes	Prime farmland if irrigated
Bc	Barnum silt loam	Not prime farmland
BdB	Boneek silt loam, 2 to 6 percent slopes	Prime farmland if irrigated
BpB	Boneek silt loam, bedrock substratum, 2 to 6 percent slopes	Prime farmland if irrigated

Prime and other Important Farmlands--Fall River County, South Dakota		
Map Symbol	Map Unit Name	Farmland Classification
BrD	Broadhurst clay, 2 to 15 percent slopes	Not prime farmland
CnD	Colby-Norka silt loams, 6 to 15 percent slopes	Not prime farmland
DwB	Dwyer loamy fine sand, 2 to 6 percent slopes	Not prime farmland
EaC	Eckley loam, 0 to 9 percent slopes	Not prime farmland
GrE	Grummit-Rock outcrop complex, 3 to 40 percent slopes	Not prime farmland
GsD	Grummit-Smoma clays, 3 to 15 percent slopes	Not prime farmland
Ha	Haverson loam	Prime farmland if irrigated
He	Histe-Slickspots complex	Not prime farmland
KyA	Kyle clay, 0 to 2 percent slopes	Farmland of statewide importance
KyB	Kyle clay, 2 to 6 percent slopes	Farmland of statewide importance
Lo	Lohmiller silty clay loam	Farmland of statewide importance
MbB	Manzanola silty clay loam, 2 to 6 percent slopes	Farmland of statewide importance
MmE	Mathias-Midway-Rock outcrop complex, 15 to 30 percent slopes	Not prime farmland
NbB	Norka silt loam, 2 to 6 percent slopes	Prime farmland if irrigated
NuA	Nunn clay loam, 0 to 2 percent slopes	Prime farmland if irrigated
NuB	Nunn clay loam, 2 to 6 percent slopes	Prime farmland if irrigated
NuC	Nunn clay loam, 6 to 9 percent slopes	Farmland of statewide importance
PeB	Pierre clay, 2 to 6 percent slopes	Farmland of statewide importance
PgE	Pierre-Grummit clays, 6 to 25 percent slopes	Not prime farmland
PsE	Pierre-Samsil clays, 6 to 25 percent slopes	Not prime farmland
Pu	Pits, mine	Not prime farmland
RbF	Rock outcrop-Mathias-Sutche complex, 30 to 75 percent slopes	Not prime farmland
ScA	Satanta loam, 0 to 2 percent slopes	Prime farmland if irrigated
ScB	Satanta loam, 2 to 6 percent slopes	Prime farmland if irrigated
ScC	Satanta loam, 6 to 9 percent slopes	Farmland of statewide importance
SmE	Schamber-Eckley complex, 9 to 40 percent slopes	Not prime farmland
SnE	Shingle-Penrose-Rock outcrop complex, 15 to 40 percent slopes	Not prime farmland
St	Stetter clay	Farmland of statewide importance
TaA	Tilford silt loam, 0 to 2 percent slopes	Prime farmland if irrigated
TaB	Tilford silt loam, 2 to 6 percent slopes	Prime farmland if irrigated
W	Water	Not prime farmland
ZnE	Zigweid-Nihill complex, 6 to 20 percent slopes	Not prime farmland

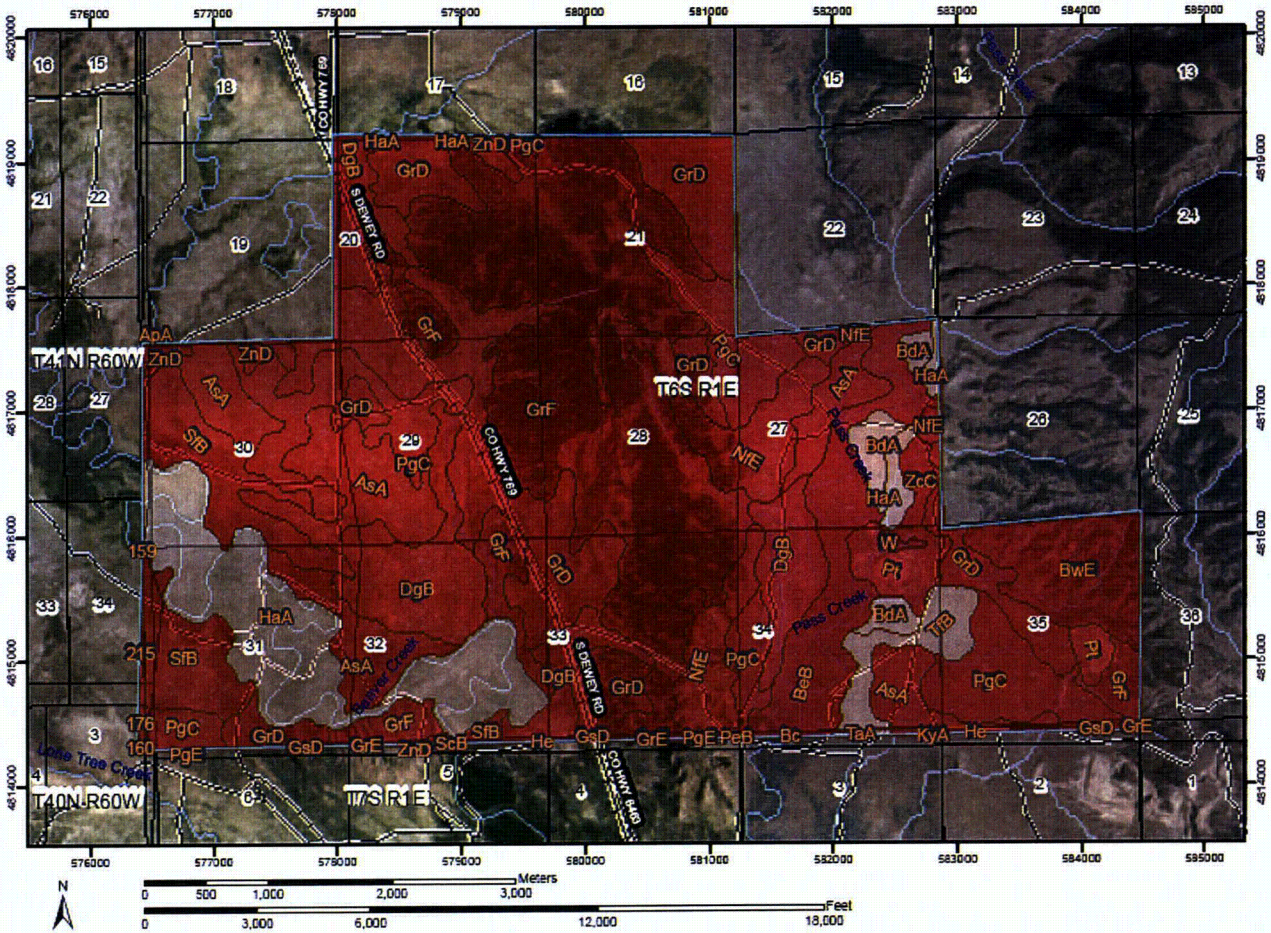
Data Source Information

Soil Survey Area: Custer and Pennington Counties, Black Hills Parts, South Dakota
Survey Area Data: Version 9, Feb 6, 2008

Soil Survey Area: Fall River County, South Dakota
Survey Area Data: Version 10, Feb 6, 2008

POWERTECH (USA) INC.

Farmland Classification–Custer and Pennington Counties, Black Hills Parts, South Dakota; Fall River County, South Dakota; and Niobrara County, Wyoming
(BKS_Farmland_4)



Farmland Classification–Custer and Pennington Counties, Black Hills Parts, South Dakota; Fall River County, South Dakota; and Niobrara County, Wyoming
(BKS_Farmland_4)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Soil Ratings
- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Political Features

Public Land Survey
- Township and Range
- Section

Municipalities
- Cities
- Urban Areas

Water Features
- Oceans
- Streams and Canals

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- Rails

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- Local Roads
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Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 13N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Custer and Pennington Counties, Black Hills Parts, South Dakota
Survey Area Data: Version 10, Aug 26, 2008

Soil Survey Area: Fall River County, South Dakota
Survey Area Data: Version 10, Feb 6, 2008

Soil Survey Area: Niobrara County, Wyoming
Survey Area Data: Version 6, Mar 4, 2008

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Date(s) aerial images were photographed: 1991; 1994

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Farmland Classification—Summary by Map Unit — Custer and Pennington Counties, Black Hills Parts, South Dakota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
ApA	Arvada variant loam, 0 to 2 percent slopes	Not prime farmland	6.8	0.1%
AsA	Arvada-Slickspots complex, 0 to 3 percent slopes	Not prime farmland	610.9	8.5%
BdA	Barnum very fine sandy loam, 0 to 3 percent slopes	Prime farmland if irrigated	87.5	1.2%
BeB	Barnum-Winetti complex, 0 to 6 percent slopes	Not prime farmland	343.7	4.8%
BwE	Bullhe-Rock outcrop complex, 9 to 60 percent slopes	Not prime farmland	256.0	3.6%
DgB	Demar-Grummit-Slickspots complex, 0 to 6 percent slopes	Not prime farmland	602.8	8.4%
GrD	Grummit-Rock outcrop complex, 6 to 15 percent slopes	Not prime farmland	1,116.0	15.6%
GrF	Grummit-Rock outcrop complex, 15 to 60 percent slopes	Not prime farmland	1,657.8	23.2%
HaA	Haverson loam, 0 to 2 percent slopes	Prime farmland if irrigated	635.7	8.9%
NtE	Nihill-Zigweid complex, 15 to 50 percent slopes	Not prime farmland	373.1	5.2%
PgC	Pierre-Grummit clays, 2 to 9 percent slopes	Not prime farmland	697.2	9.7%
Pt	Pits, quarries	Not prime farmland	119.5	1.7%
SrB	Satanta-Arvada complex, 2 to 6 percent slopes	Not prime farmland	379.9	5.3%
TfB	Tilford silt loam, 2 to 6 percent slopes	Prime farmland if irrigated	109.9	1.5%
W	Water	Not prime farmland	8.1	0.1%
ZcC	Zigweid-Canyon complex, 2 to 15 percent slopes	Not prime farmland	35.5	0.5%
ZnD	Zigweid-Nihill complex, 6 to 15 percent slopes	Not prime farmland	33.5	0.5%

Farmland Classification—Summary by Map Unit — Fall River County, South Dakota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Bc	Barnum silt loam	Not prime farmland	7.2	0.1%
GrE	Grummit-Rock outcrop complex, 3 to 40 percent slopes	Not prime farmland	10.7	0.1%
GsD	Grummit-Snomo clays, 3 to 15 percent slopes	Not prime farmland	13.3	0.2%
Ha	Haverson loam	Prime farmland if irrigated	0.5	0.0%
He	Hisle-Slickspots complex	Not prime farmland	19.7	0.3%
KyA	Kyle clay, 0 to 2 percent slopes	Farmland of statewide importance	0.1	0.0%
PeB	Pierre clay, 2 to 6 percent slopes	Farmland of statewide importance	2.0	0.0%
PgE	Pierre-Grummit clays, 6 to 25 percent slopes	Not prime farmland	4.7	0.1%
Pu	Pits, mine	Not prime farmland	0.1	0.0%
ScB	Satanta loam, 2 to 6 percent slopes	Prime farmland if irrigated	1.8	0.0%
TaA	Tilford silt loam, 0 to 2 percent slopes	Prime farmland if irrigated	4.9	0.1%
ZnE	Zigweid-Nihill complex, 6 to 20 percent slopes	Not prime farmland	1.3	0.0%

Farmland Classification—Summary by Map Unit — Niobrara County, Wyoming				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
159	Lohmiller-Haverdad complex, saline, 1 to 4 percent slopes	Not prime farmland	0.0	0.0%
160	Manzanola silty clay loam, 0 to 6 percent slopes	Not prime farmland	1.1	0.0%
176	Pierre-Grummit clays, 6 to 25 percent slopes	Not prime farmland	4.1	0.1%
185	Samday-Savageton-Bahl association, 3 to 10 percent slopes	Not prime farmland	0.4	0.0%
215	Ulm-Forkwood loams, 0 to 6 percent slopes	Not prime farmland	6.5	0.1%
Totals for Area of Interest (AOI)			7,153.3	100.0%

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Prime and other Important Farmlands

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Report—Prime and other Important Farmlands

Prime and other Important Farmlands--Custer and Pennington Counties, Black Hills Parts, South Dakota		
Map Symbol	Map Unit Name	Farmland Classification
ApA	Arvada variant loam, 0 to 2 percent slopes	Not prime farmland
AsA	Arvada-Slickspots complex, 0 to 3 percent slopes	Not prime farmland
BdA	Barnum very fine sandy loam, 0 to 3 percent slopes	Prime farmland if irrigated
BeB	Barnum-Winetti complex, 0 to 6 percent slopes	Not prime farmland
BwE	Butche-Rock outcrop complex, 9 to 60 percent slopes	Not prime farmland
DgB	Demar-Grummit-Slickspots complex, 0 to 6 percent slopes	Not prime farmland
GrD	Grummit-Rock outcrop complex, 6 to 15 percent slopes	Not prime farmland
GrF	Grummit-Rock outcrop complex, 15 to 60 percent slopes	Not prime farmland
HaA	Haverson loam, 0 to 2 percent slopes	Prime farmland if irrigated
NfE	Nihill-Zigweid complex, 15 to 50 percent slopes	Not prime farmland
PgC	Pierre-Grummit clays, 2 to 9 percent slopes	Not prime farmland
Pt	Pits, quarries	Not prime farmland
SfB	Satanta-Arvada complex, 2 to 6 percent slopes	Not prime farmland
TfB	Tilford silt loam, 2 to 6 percent slopes	Prime farmland if irrigated
W	Water	Not prime farmland
ZcC	Zigweid-Canyon complex, 2 to 15 percent slopes	Not prime farmland
ZhD	Zigweid-Nihill complex, 6 to 15 percent slopes	Not prime farmland

Prime and other Important Farmlands--Fall River County, South Dakota		
Map Symbol	Map Unit Name	Farmland Classification
Bc	Barnum silt loam	Not prime farmland
GrE	Grummit-Rock outcrop complex, 3 to 40 percent slopes	Not prime farmland
GsD	Grummit-Smoma clays, 3 to 15 percent slopes	Not prime farmland

Prime and other Important Farmlands– Fall River County, South Dakota		
Map Symbol	Map Unit Name	Farmland Classification
Ha	Haverson loam	Prime farmland if irrigated
He	Histe-Stickspots complex	Not prime farmland
KyA	Kyte clay, 0 to 2 percent slopes	Farmland of statewide importance
PeB	Pierre clay, 2 to 6 percent slopes	Farmland of statewide importance
PgE	Pierre-Grummit clays, 6 to 25 percent slopes	Not prime farmland
Pu	Pits, mine	Not prime farmland
ScB	Salanta loam, 2 to 6 percent slopes	Prime farmland if irrigated
TaA	Tilford silt loam, 0 to 2 percent slopes	Prime farmland if irrigated
ZnE	Zigweid-Nihill complex, 6 to 20 percent slopes	Not prime farmland

Prime and other Important Farmlands– Niobrara County, Wyoming		
Map Symbol	Map Unit Name	Farmland Classification
159	Lohmiller-Haverdad complex, saline, 1 to 4 percent slopes	Not prime farmland
160	Manzanola silty clay loam, 0 to 6 percent slopes	Not prime farmland
176	Pierre-Grummit clays, 6 to 25 percent slopes	Not prime farmland
185	Samday-Savageton-Sahl association, 3 to 10 percent slopes	Not prime farmland
215	Ulm-Forkwood loams, 0 to 6 percent slopes	Not prime farmland

Data Source Information

Soil Survey Area: Custer and Pennington Counties, Black Hills Parts, South Dakota
Survey Area Data: Version 10, Aug 26, 2008

Soil Survey Area: Fall River County, South Dakota
Survey Area Data: Version 10, Feb 6, 2008

Soil Survey Area: Niobrara County, Wyoming
Survey Area Data: Version 6, Mar 4, 2008

POWERTECH (USA) INC.

APPENDIX 3.3-F

SITE PHOTOGRAPHS

POWERTECH (USA) INC.

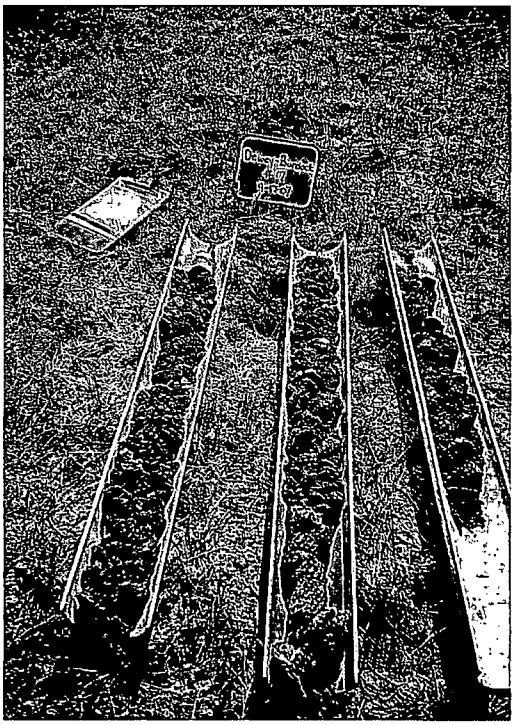

Photo 1: Hole 17 Profile

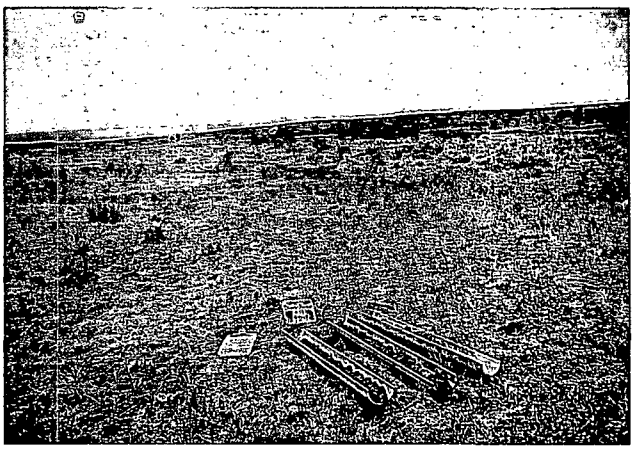

Photo 2: Hole 17 General View W

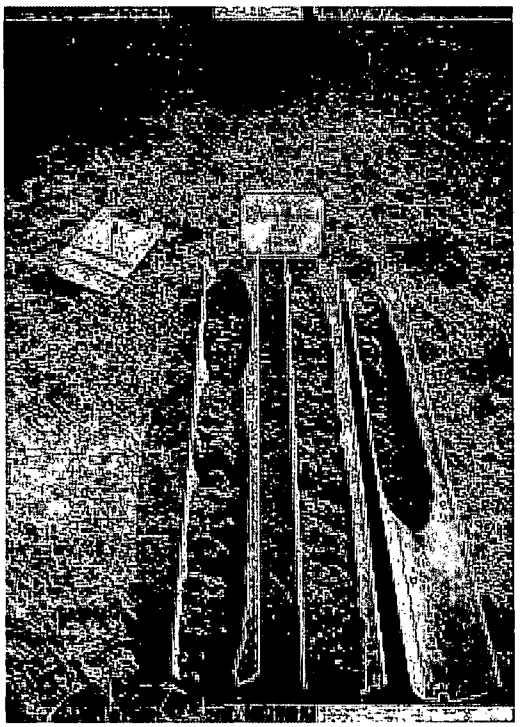

Photo 3: Hole 27 Profile

Photo 4: Hole 27 General View N

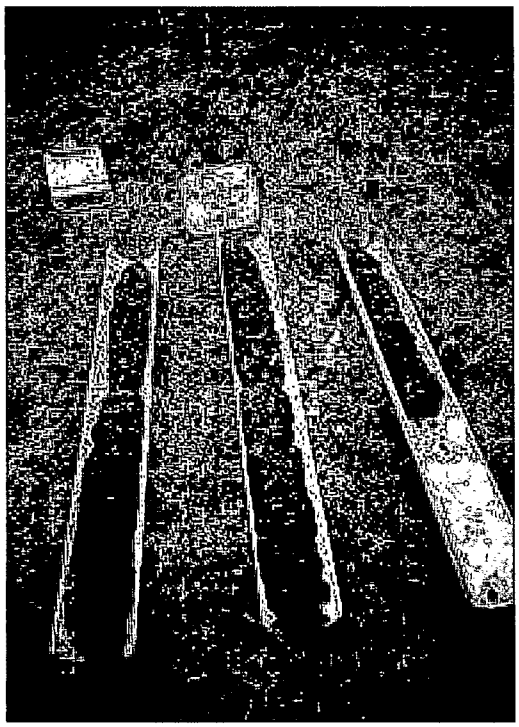

Photo 5: Hole 36 Profile

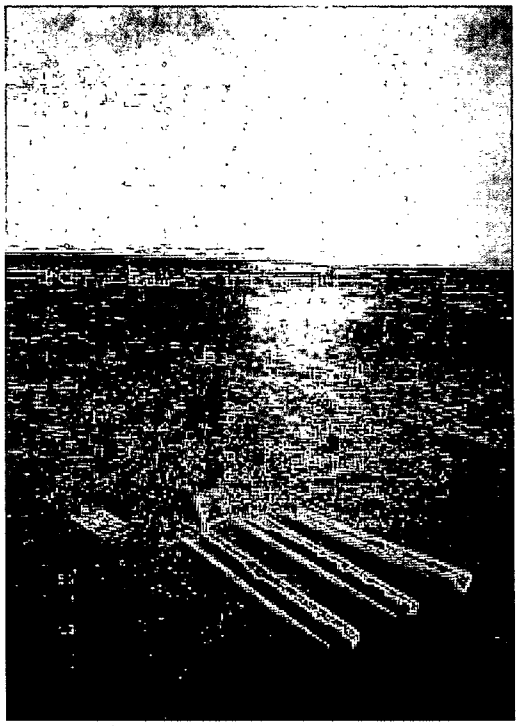

Photo 6: Hole 36 General View S

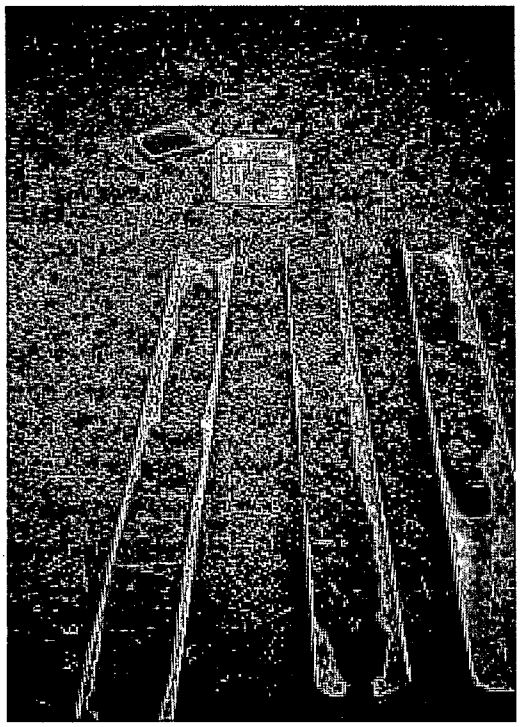

Photo 7: Hole 39 Profile

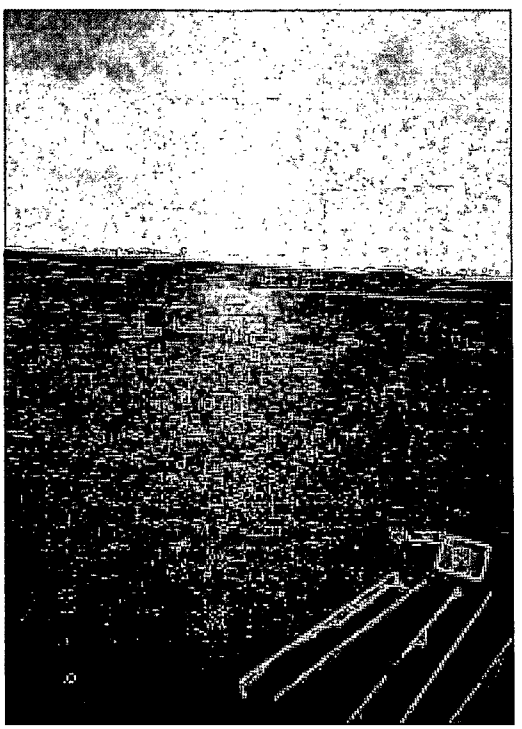

Photo 8: Hole 39 General View E

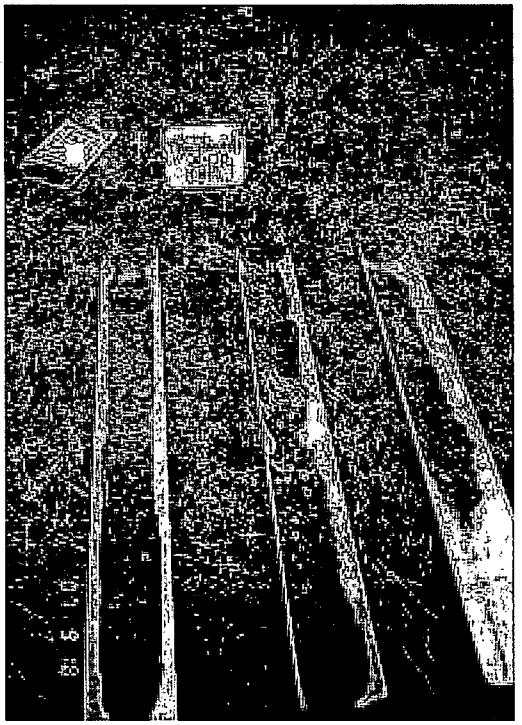

Photo 9: Hole 40 Profile

Photo 10: Hole 40 General View W

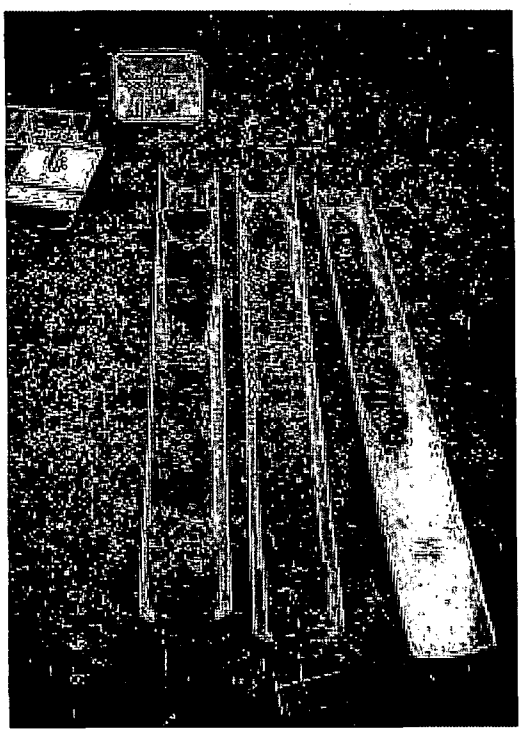

Photo 11: Hole 41 Profile

Photo 12: Hole 41 General View W

Photo 13: Hole 42 Profile

Photo 14: Hole 42 General View

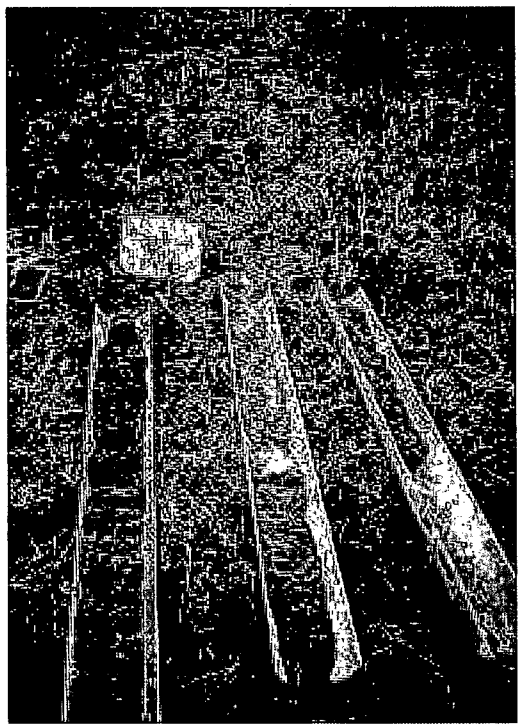

Photo 15: Hole 43 Profile

Photo 16: Hole 43 General View NW

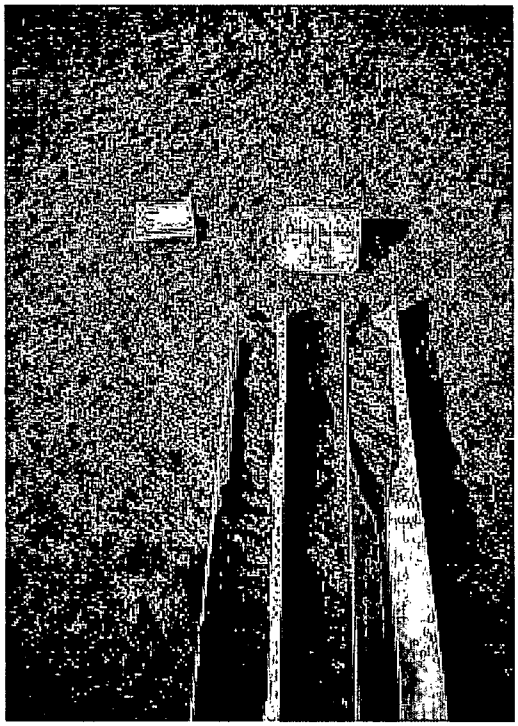

Photo 17: Hole 50 Profile

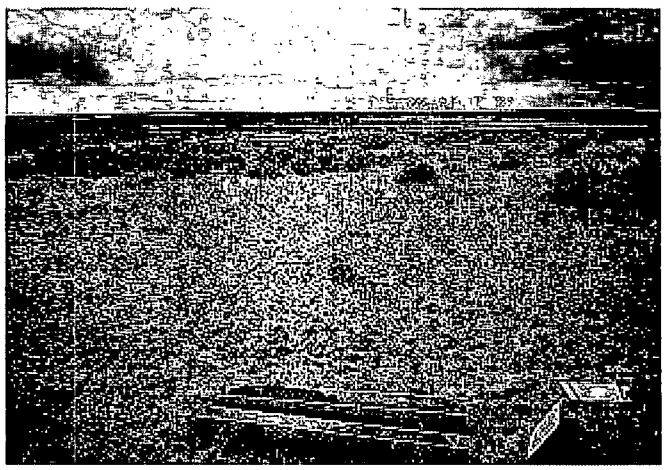

Photo 18: Hole 50 General View

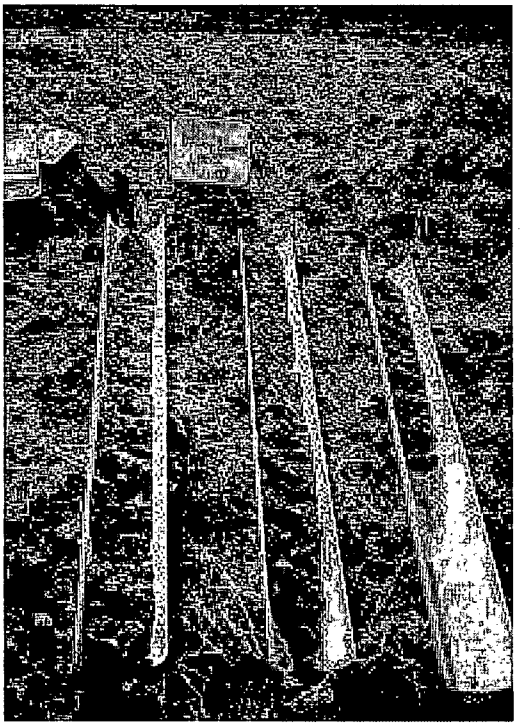

Photo 19: Hole 56 Profile

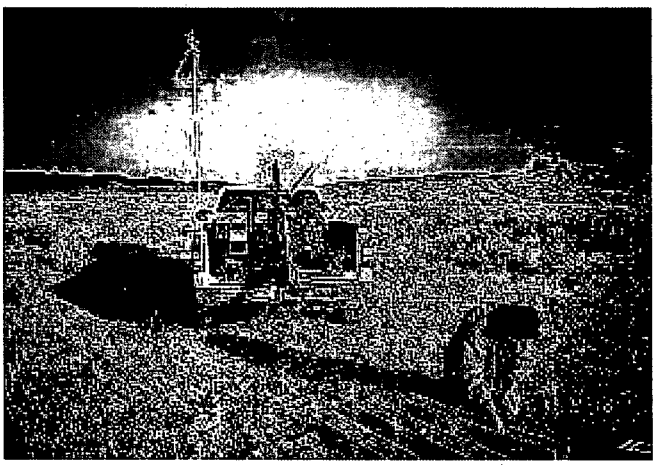

Photo 20: Hole 56 General View

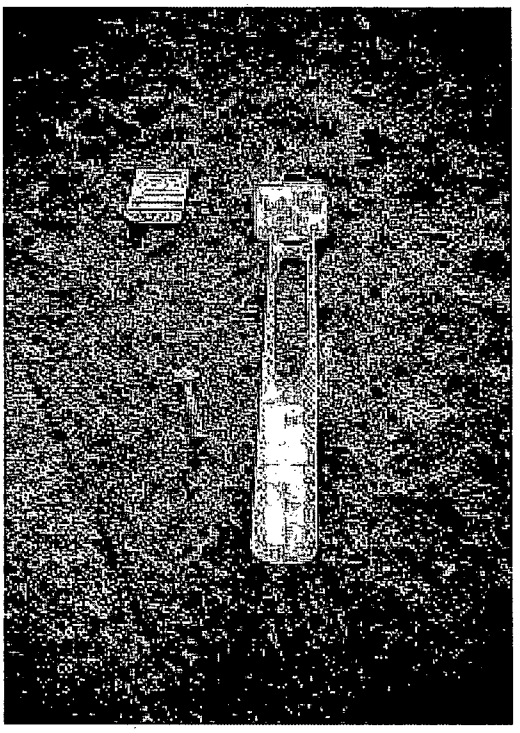

Photo 21: Hole 57 Profile

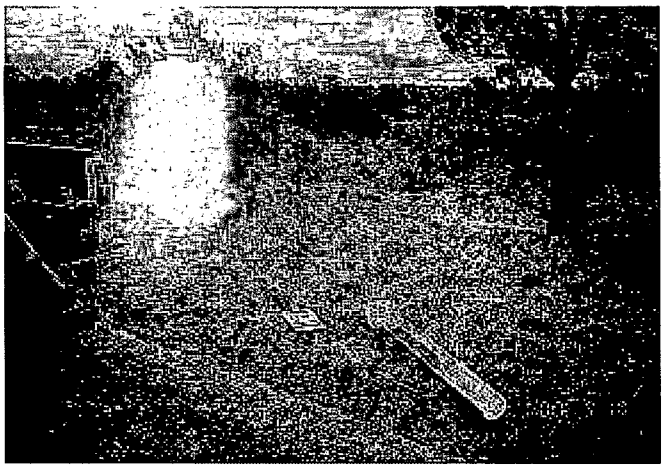

Photo 22: Hole 57 General View ESE

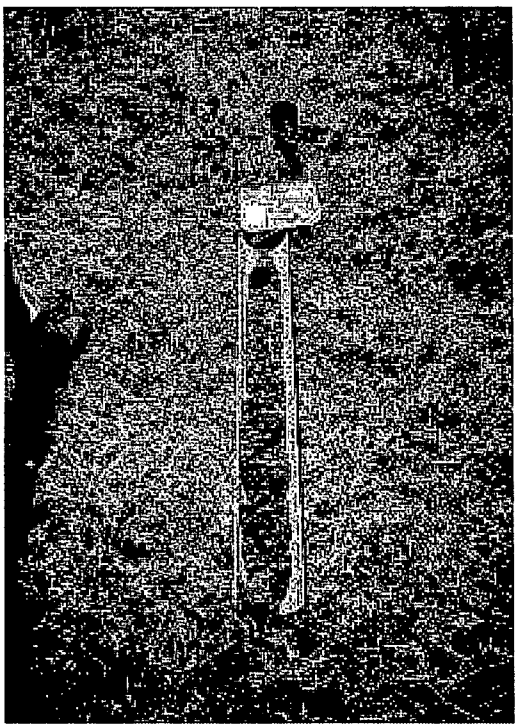

Photo 23: Hole 60 Profile

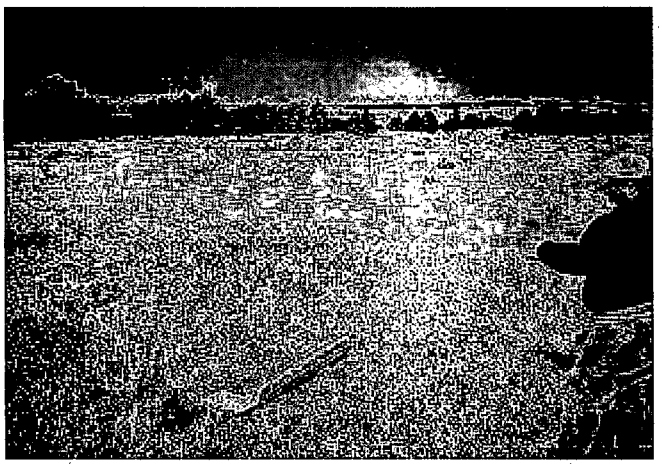

Photo 24: Hole 60 General View W

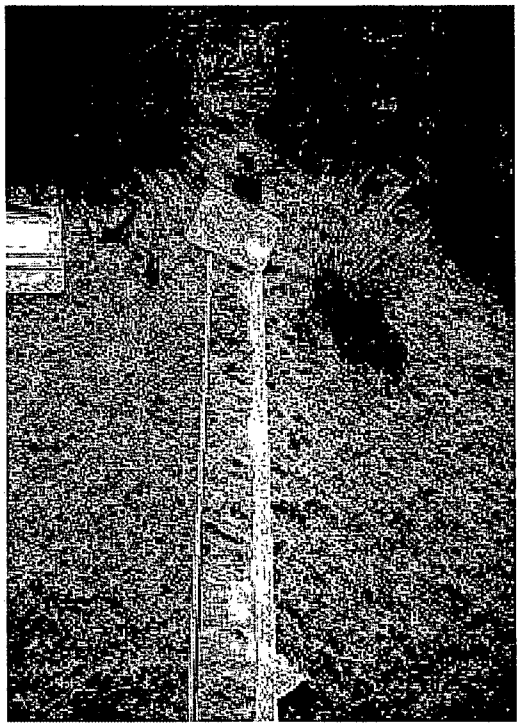

Photo 25: Hole 63 Profile

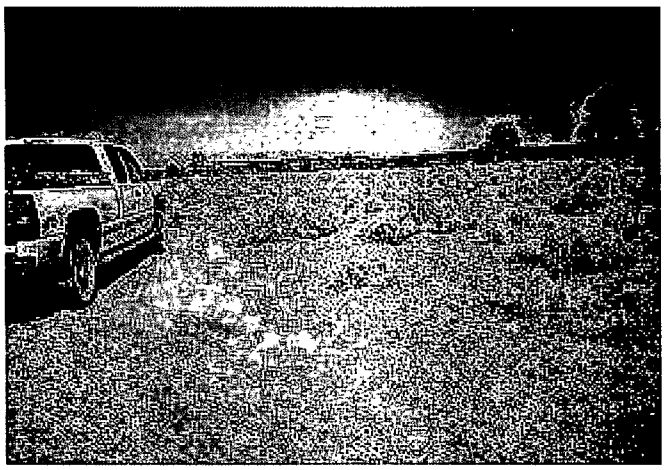

Photo 26: Hole 63 General View N

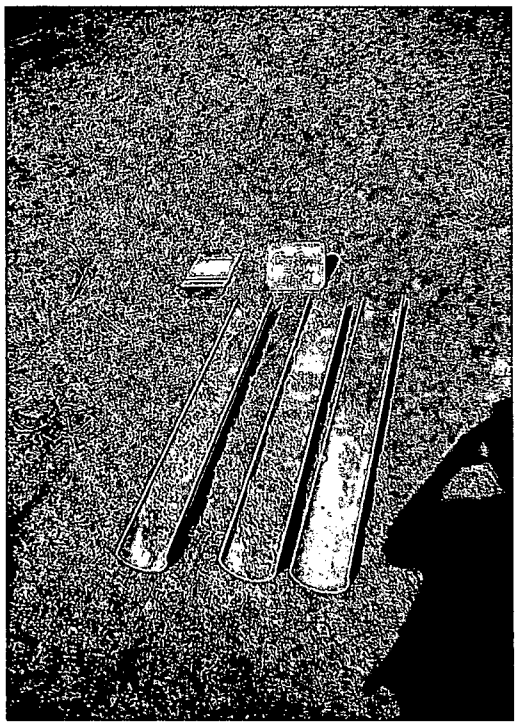

Photo 27: Hole 64 Profile

Photo 28: Hole 64 General View N

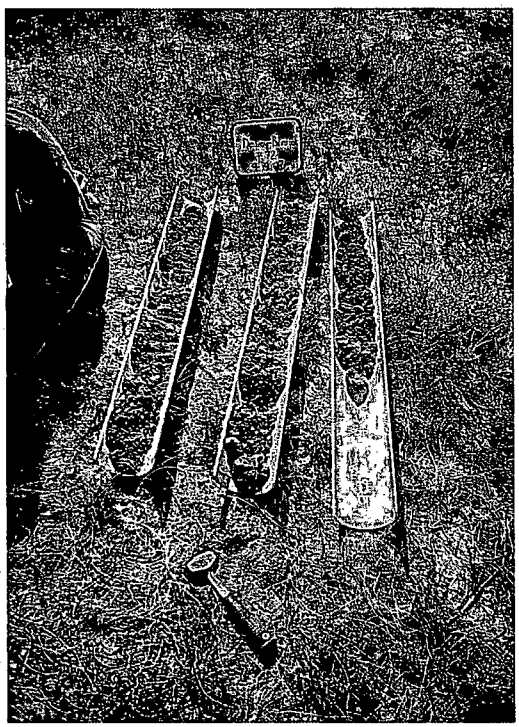

Photo 29: Hole 72 Profile

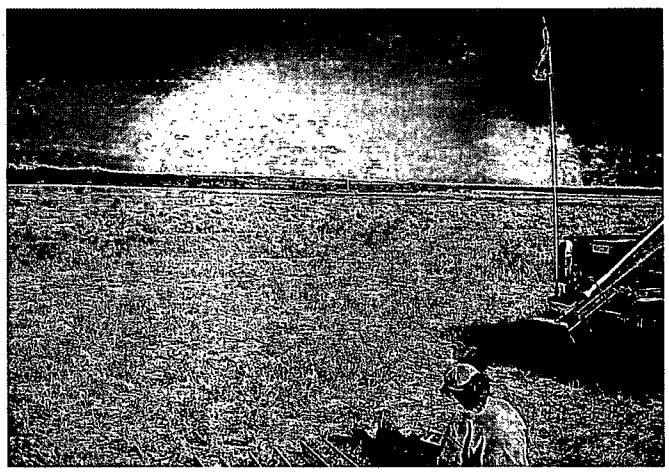

Photo 30: Hole 72 General View E

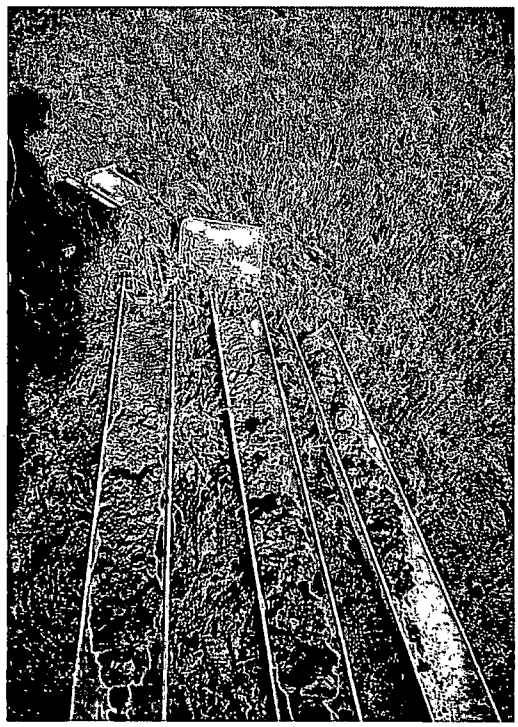

Photo 31: Hole 73 Profile

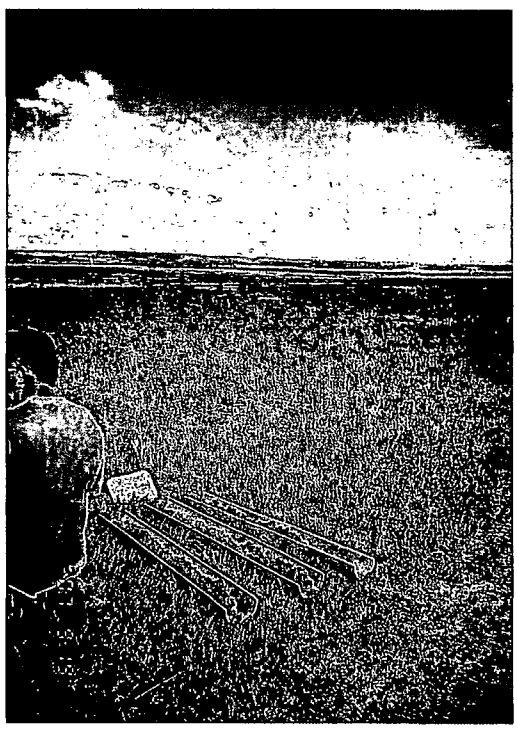

Photo 32: Hole 73 General View E

Photo 33: Hole 74 Profile

Photo 34: Hole 74 General View E

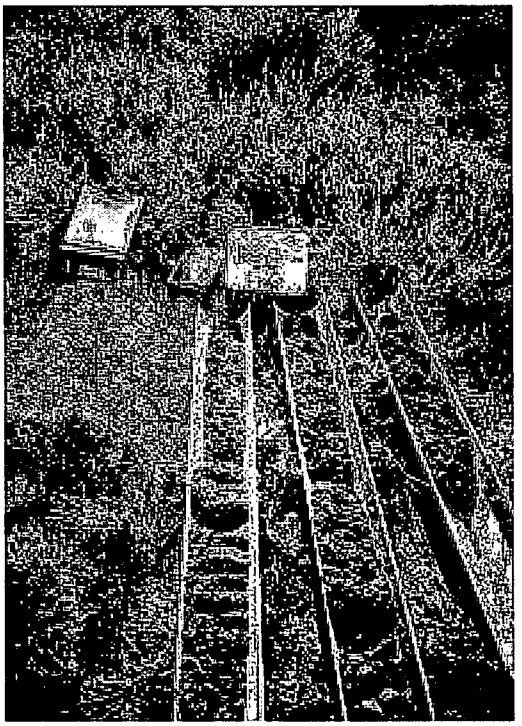

Photo 35: Hole 75 Profile

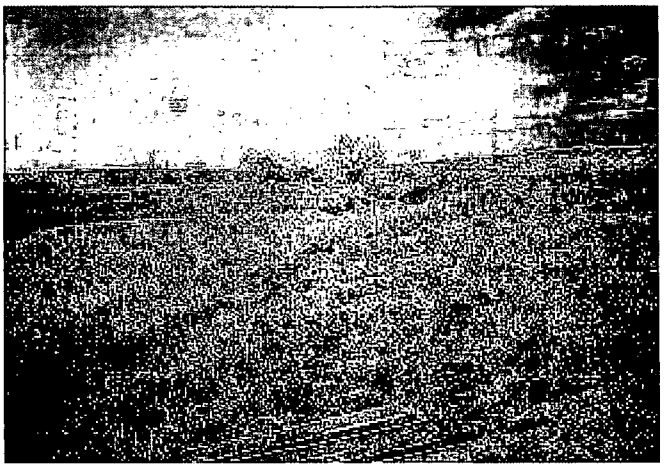

Photo 36: Hole 75 General View N

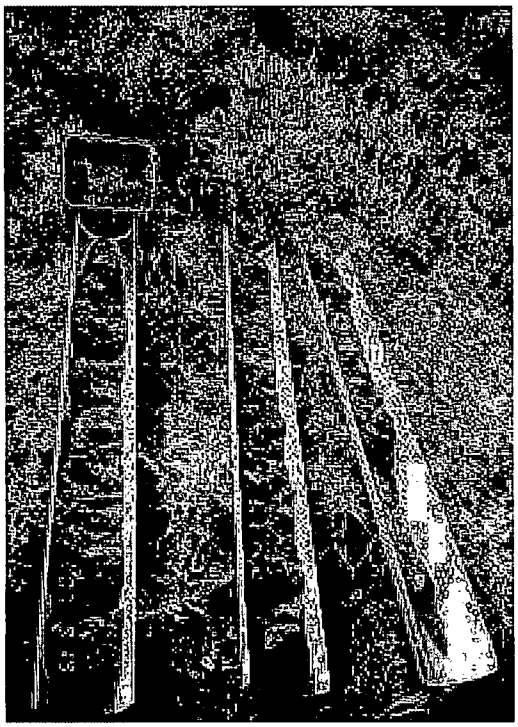

Photo 37: Hole 76 Profile

Photo 38: Hole 76 General View N

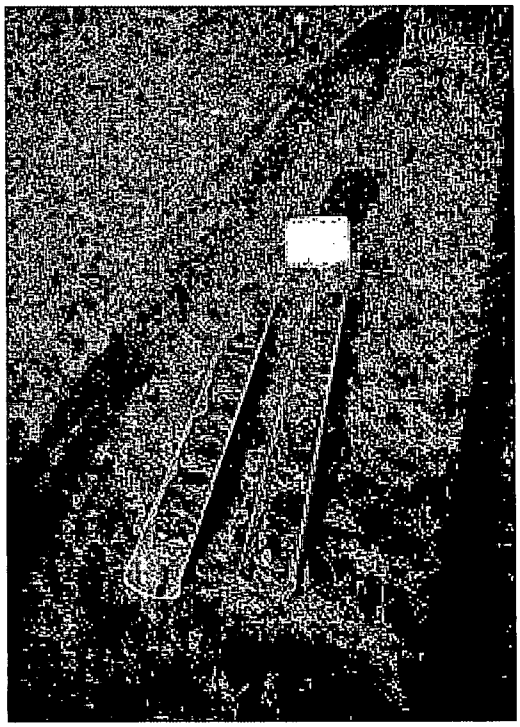

Photo 39: Hole 77 Profile

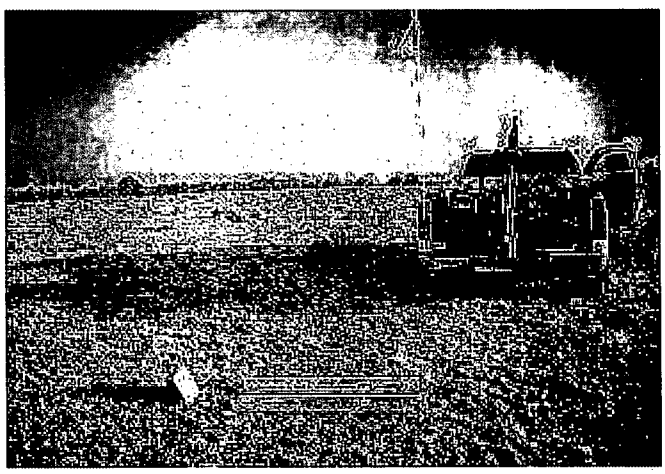

Photo 40: Hole 77 General View N

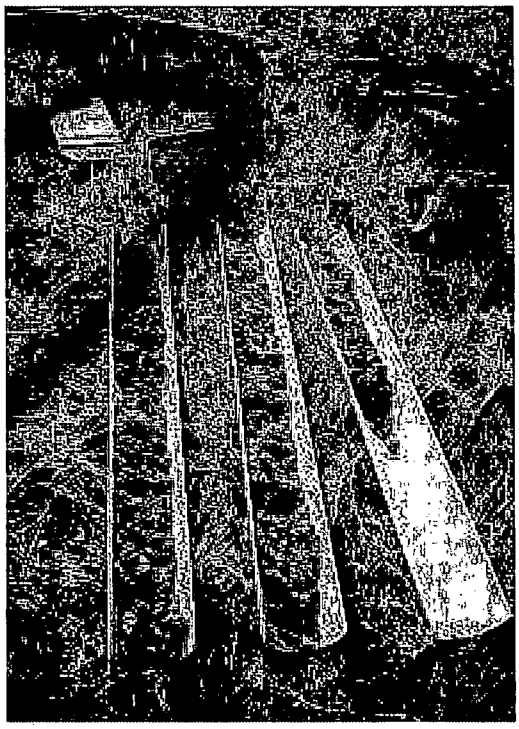

Photo 41: Hole 79 Profile

Photo 42: Hole 79 General View NE

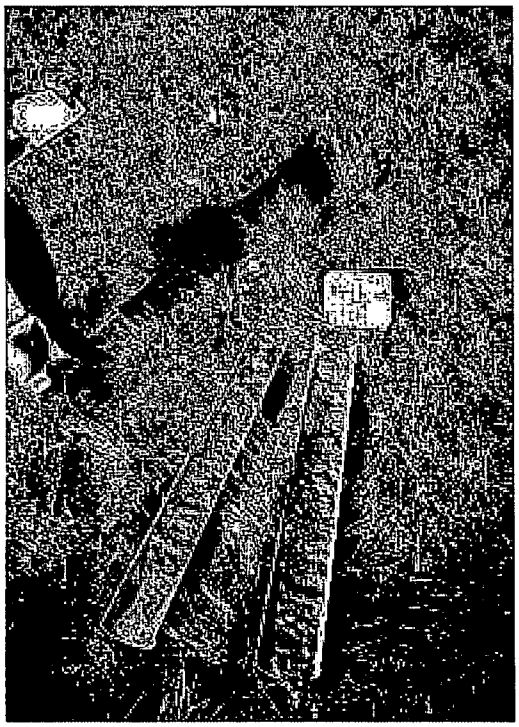

Photo 43: Hole 82 Profile

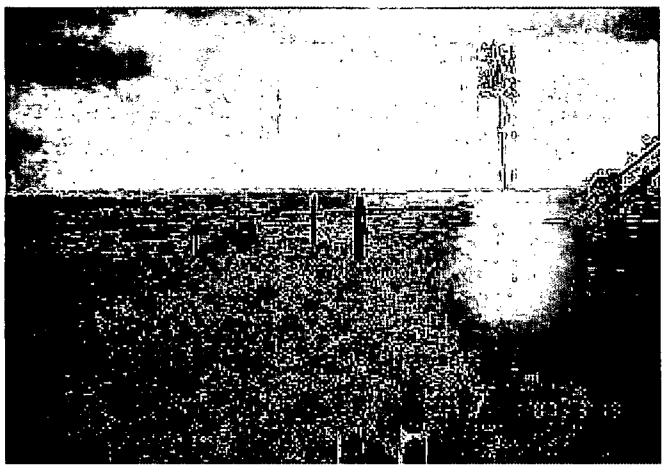

Photo 44: Hole 82 General View E

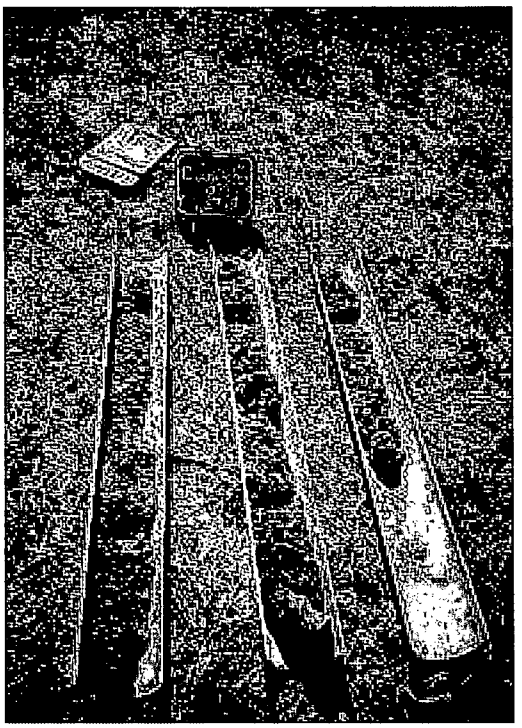

Photo 45: Hole 83 Profile

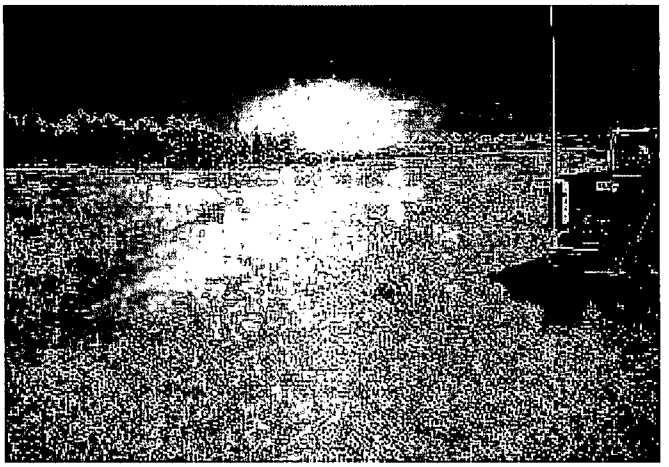

Photo 46: Hole 83 General View N

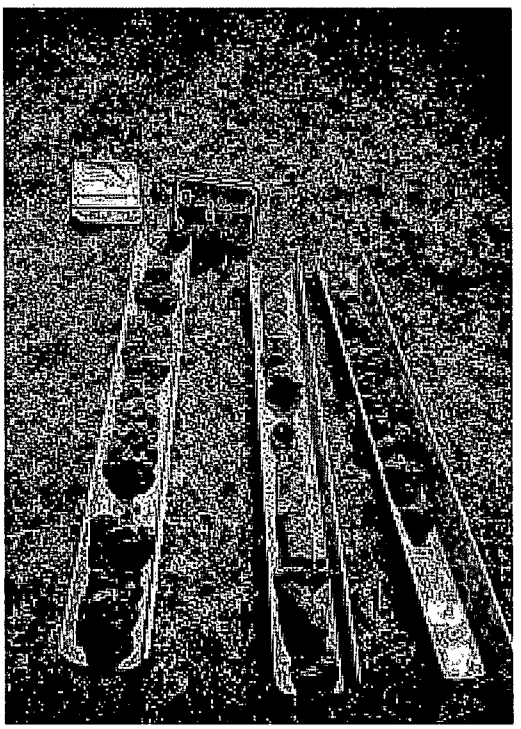

Photo 47: Hole 84 Profile

Photo 48: Hole 84 General View SE

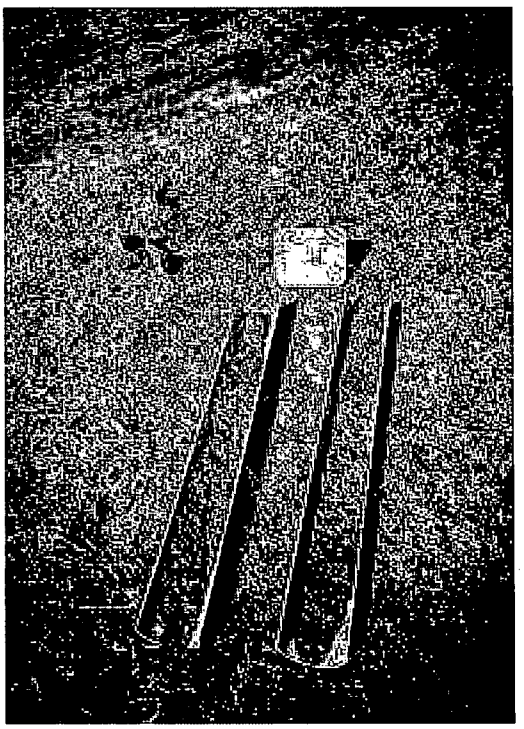

Photo 49: Hole 85 Profile

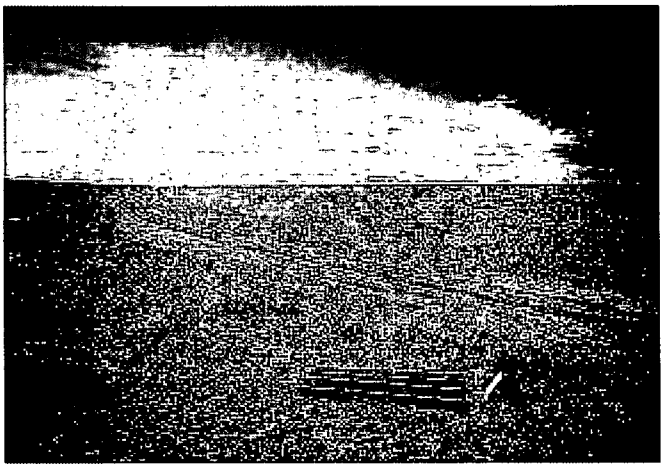

Photo 50: Hole 85 General View S

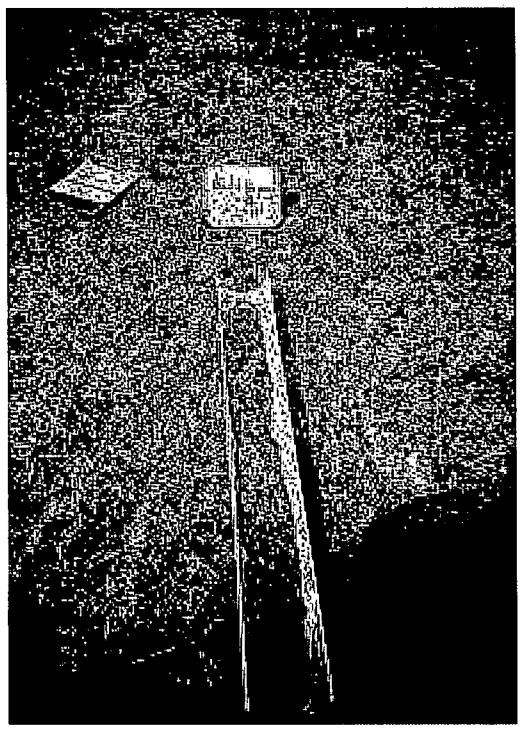

Photo 51: Hole 88 Profile

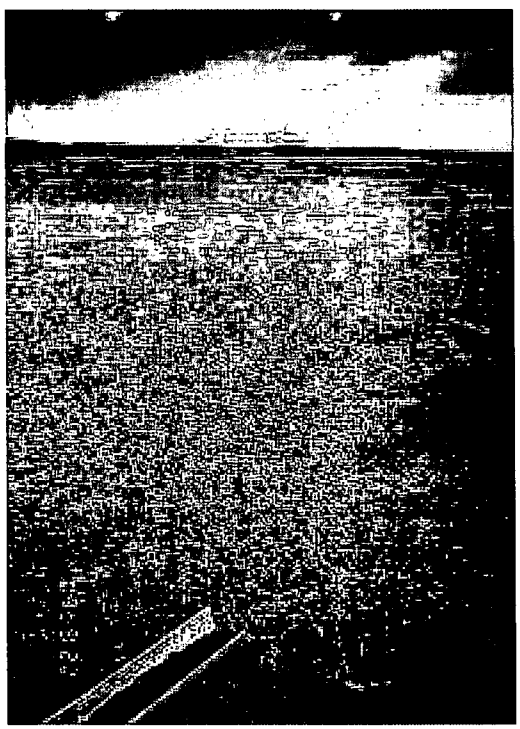

Photo 52: Hole 88 General View

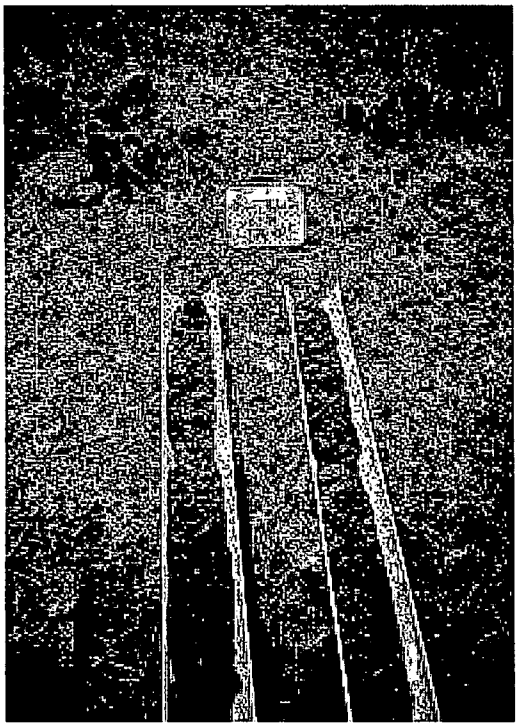

Photo 53: Hole 89 Profile

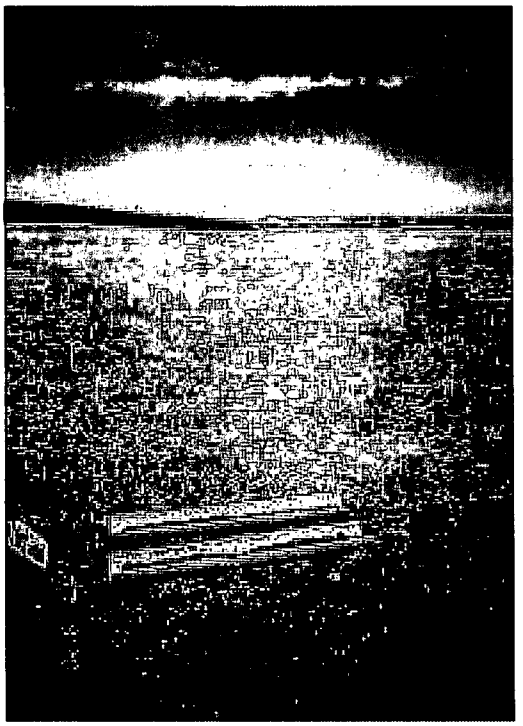

Photo 54: Hole 89 General View N

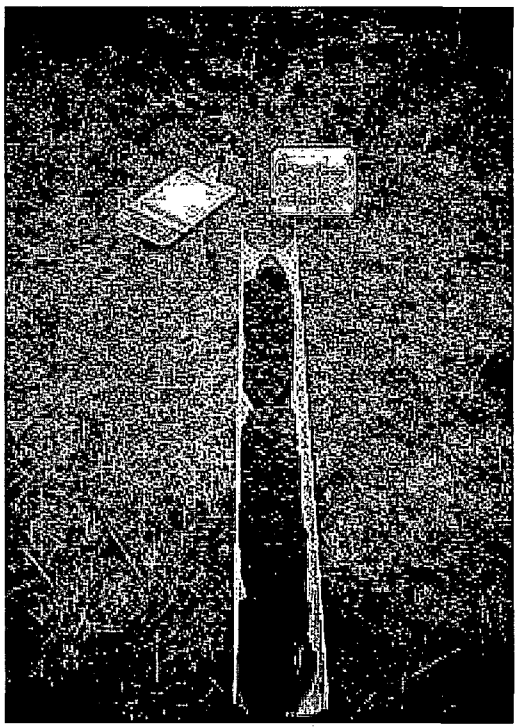

Photo 55: Hole 90 Profile

Photo 56: Hole 90 General View

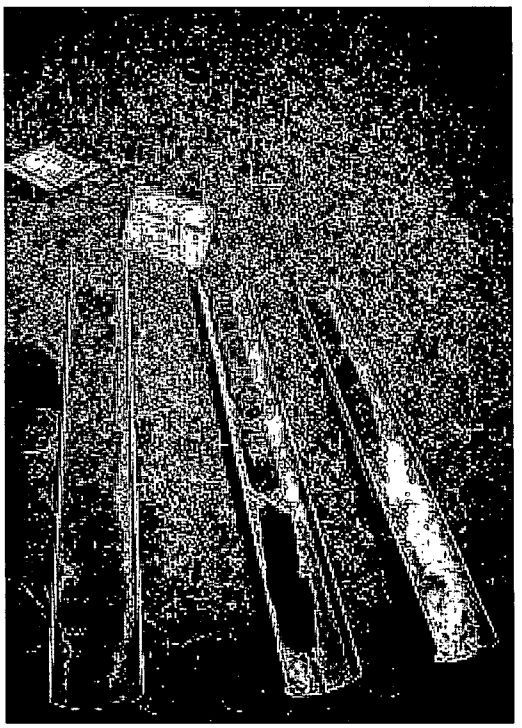

Photo 57: Hole 91 Profile

Photo 58: Hole 91 General View N

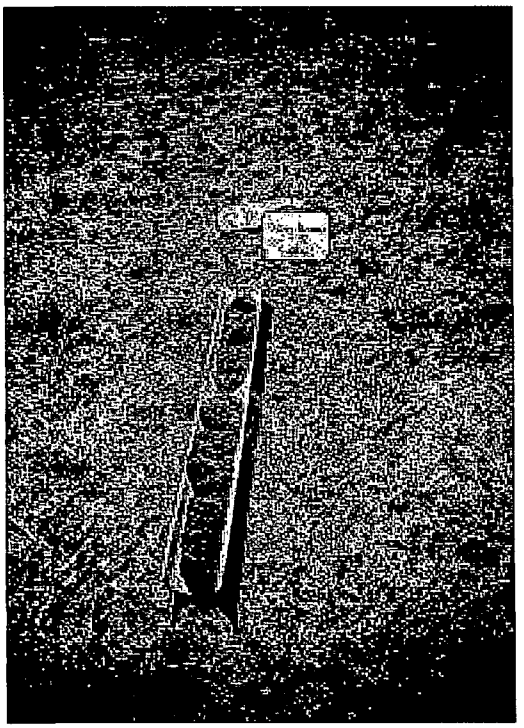

Photo 59: Hole 92 Profile

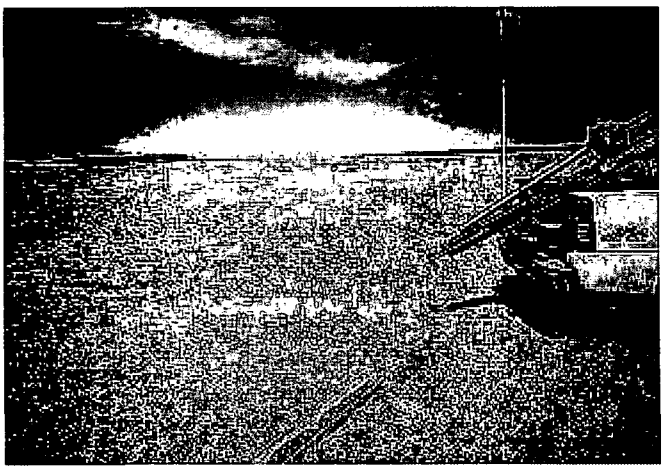

Photo 60: Hole 92 General View N

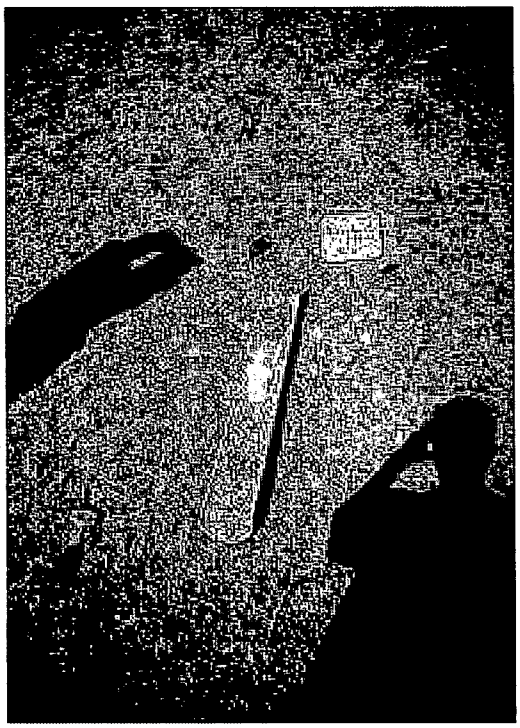

Photo 61: Hole 93 Profile

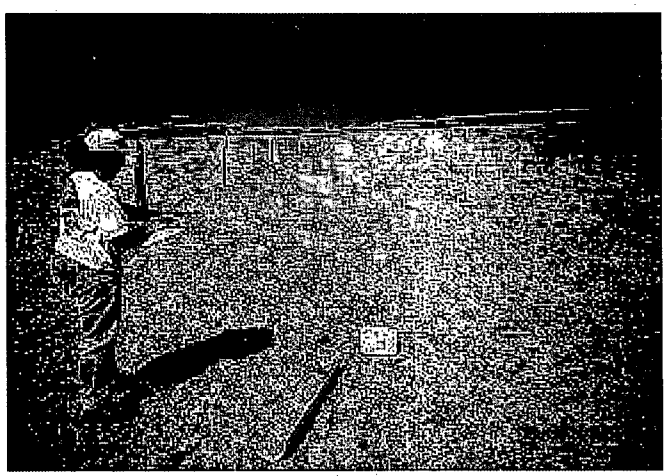

Photo 62: Hole 93 General View N

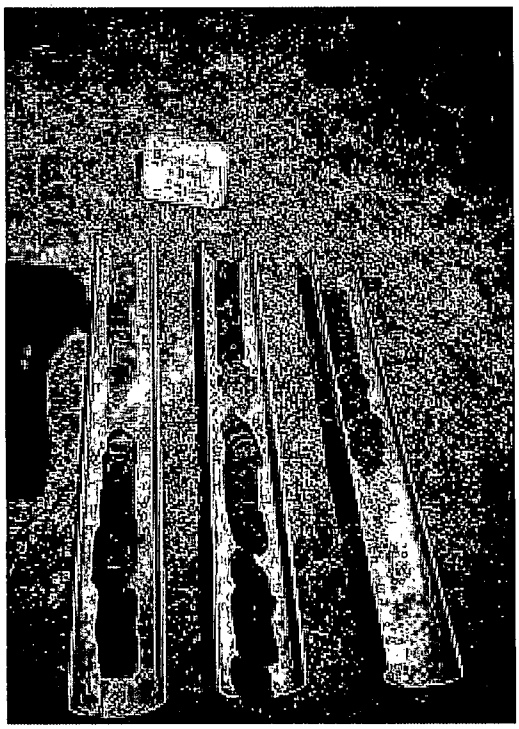

Photo 63: Hole 94 Profile

Photo 64: Hole 94 General View SSE

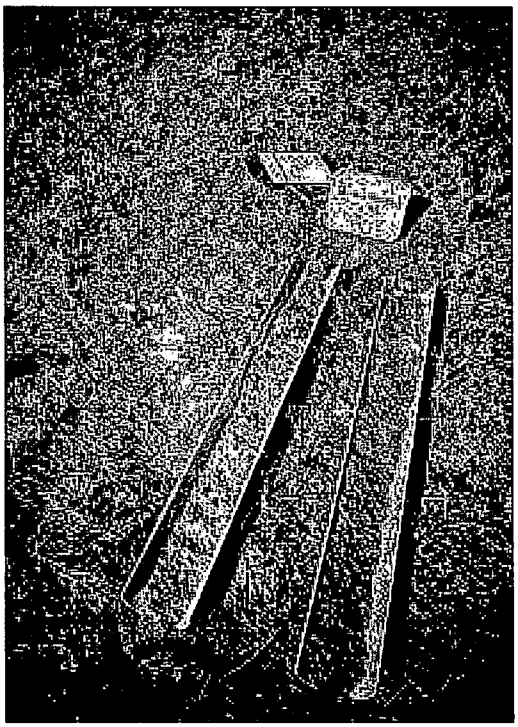

Photo 65: Hole 95 Profile

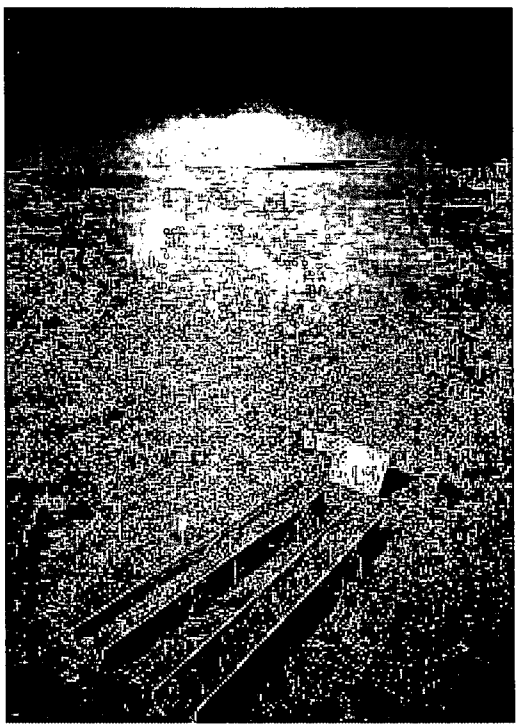

Photo 66: Hole 95 General View N

POWERTECH (USA) INC.

APPENDIX 3.3-G

USGS EARTHQUAKE DATABASE RESULTS

POWERTECH (USA) INC.

USGS
science for a changing world

NEIC: Earthquake Search Results

U. S. GEOLOGICAL SURVEY

EARTHQUAKE DATA BASE

FILE CREATED: Mon Apr 7 18:18:37 2008
Circle Search Earthquakes= 10
Circle Center Point Latitude: 43.300N Longitude: 103.900W
Radius: 100.000 km
Catalog Used: PDE
Data Selection: Historical & Preliminary Data

CAT	YEAR	MO	DA	ORIG TIME	LAT	LONG	DEP	MAGNITUDE	IEFM DTSVNWG	DIST km
									NFPO TFS	
PDE	1975	05	16	055701.50	43.24	-103.68	5		4F	19
PDE	1987	01	01	080224.07	42.79	-103.48	5	3.50 LgGS	3F	66
PDE	1992	11	02	065410.34	42.74	-104.39	5	3.00 MLGS	5F	73
PDE	1994	03	18	225143.15	43.40	-103.50	5	2.80 LgGS	.F	34
PDE	1994	03	20	071506	43.40	-103.50	5	2.30 LgGS	.F	34
PDE	1996	02	06	160836.75	43.98	-103.73	5	3.70 LgGS	5F	76
PDE	1996	04	09	024808.19	43.07	-104.10	5	3.70 LgGS	3F	30
PDE	1996	05	03	074751.53	43.04	-104.02	5	3.10 LgGS	.. . .	30
PDE	2004	01	05	025316.58	43.60	-104.00	5	2.80 LgGS	.F	33
PDE	2004	01	24	040901.30	44.00	-103.20	5	2.50 LgGS	.F	96

POWERTECH (USA) INC.

USGS
science for a changing world

NEIC: Earthquake Search Results

U. S. GEOLOGICAL SURVEY

EARTHQUAKE DATA BASE

FILE CREATED: Wed Apr 16 16:32:15 2008
Circle Search Earthquakes= 49
Circle Center Point Latitude: 43.300N Longitude: 103.900W
Radius: 200.000 km
Catalog Used: PDE
Data Selection: Historical & Preliminary Data

CAT	YEAR	MO	DA	ORIG TIME	LAT	LONG	DEP	MAGNITUDE	IEFM DTSVNWG DIST km	NFPO TFS
PDE	1975	05	16	055701.50	43.24	-103.68	5		4F	19
PDE	1976	09	03	041816.20	44.04	-106.15	10	4.80 mb GS	.F	199
PDE	1978	01	16	035001.70	42.44	-105.32	5	3.00 MLGS	.F	150
PDE	1978	05	07	160619.60	42.30	-101.93	15	4.30 MLGS	5F	195
PDE	1981	09	13	221629.74	43.04	-101.85	5	3.40 LgTUL	5F	169
PDE	1983	02	13	134444.09	42.23	-105.73	5	4.00 MLGS	4F	190
PDE	1983	05	06	061446.95	42.96	-102.20	5	3.30 MLGS	.. . .	143
PDE	1983	11	15	123312.19	43.02	-105.96	5	3.00 MLGS	3F	170
PDE	1984	05	29	201832.68	44.23	-105.96	18	5.00 mb GS	5F	195
PDE	1984	10	18	153023.06	42.38	-105.72	33	5.50 MLGOL	6D M	180
PDE	1984	10	18	155737.38	42.37	-105.81	33	4.50 mb GS	.F	187
PDE	1984	10	18	173827.41	42.41	-105.77	33	3.80 MLGOL	.. . .	181
PDE	1984	10	19	162904.44	42.41	-105.77	33	3.30 MLGS	.. . .	182

PDE	1984	10	20	115108.63	42.40	-105.87	33	3.50	MLGS	..	. .....
189											
PDE	1984	10	22	111756.30	42.40	-105.88	33	3.10	MLGS	..	. .....
190											
PDE	1984	10	24	090354.78	42.32	-105.72	21	3.20	MLGS	..	. .....
184											
PDE	1984	11	06	113852.51	42.31	-105.71	33	3.30	MLGS	..	. .....
184											
PDE	1984	12	06	040452.33	42.44	-105.82	20	2.90	MLGS	..	. .....
183											
PDE	1984	12	17	093132.24	42.36	-105.73	33	3.30	MLGS	..	. .....
182											
PDE	1986	06	12	151434.03	42.40	-105.69	20	3.00	MLGS	..	. .....
177											
PDE	1987	01	01	080224.07	42.79	-103.48	5	3.50	LgGS	3F	. .....
66											
PDE	1989	02	09	051545.80	42.69	-101.90	5	3.80	LgGS	5F	. .....
176											
PDE	1990	01	28	045959.19	43.31	-102.50	5	4.00	LgTUL	5F	. .....
113											
PDE	1990	03	02	041527	43.30	-102.50	5	3.20	MLGS	4F	. .....
113											
PDE	1991	11	05	161849	44.35	-103.75	0	2.50	MLGS	.F	. ....R..
117											
PDE	1992	11	02	065410.34	42.74	-104.39	5	3.00	MLGS	5F	. .....
73											
PDE	1993	02	24	235217.58	43.71	-105.29	0	3.60	MLGS	.F	. ....E..
121											
PDE	1993	06	30	065057.83	42.99	-105.37	5	3.00	MLGS	..	. .....
124											
PDE	1993	07	23	063023.84	42.48	-105.70	5	3.70	MLGS	4F	. .....
173											
PDE	1993	09	05	081235.50	44.40	-103.80	5	2.70	MLGS	3F	. .....
122											
PDE	1993	10	10	041746.76	42.42	-105.87	5	3.70	MLGS	4F	. .....
188											
PDE	1993	12	13	145103.05	42.33	-105.50	5	3.50	MLGS	..	. .....
169											
PDE	1994	03	18	225143.15	43.40	-103.50	5	2.80	LgGS	.F	. .....
34											
PDE	1994	03	20	071506	43.40	-103.50	5	2.30	LgGS	.F	. .....
34											
PDE	1996	02	06	160836.75	43.98	-103.73	5	3.70	LgGS	5F	. .....
76											
PDE	1996	04	09	024808.19	43.07	-104.10	5	3.70	LgGS	3F	. .....
30											
PDE	1996	05	03	074751.53	43.04	-104.02	5	3.10	LgGS	..	. .....
30											
PDE	1996	10	19	132757.97	43.09	-106.06	5	4.20	MLGS	.F	. .....
176											
PDE	1998	06	18	162638.32	42.62	-103.00	5	3.40	LgGS	.F	. .....
104											
PDE	2000	04	13	181731.73	42.41	-105.81	5	3.30	MLGS	..	. .....
185											

POWERTECH (USA) INC.

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PDE  2003  02 01 184411.53  43.08 -106.18   5 3.70 MLGS    .F . .......
186
PDE  2003  05 25 073233.39  43.09 -101.79   5 4.00 LgGS    4F . .......
172
PDE  2004  01 05 025316.58  43.60 -104.00   5 2.80 LgGS    .F . .......
33
PDE  2004  01 24 040901.30  44.00 -103.20   5 2.50 LgGS    .F . .......
96
PDE  2004  02 15 031818.02  42.94 -105.40  10 3.50 MLGS    3F . .......
128
PDE  2004  08 29 184944.26  42.89 -105.49   5 3.80 MLGS    4F . .......
136
PDE  2006  09 07 062320.02  42.98 -102.24   5 2.60 LgGS    .. . .......
140
PDE  2007  02 07 103558.70  44.03 -102.58   5 3.10 LgGS    3F . .......
134
PDE  2007  04 24 093501.26  42.58 -102.94   5 2.70 LgGS    .. . .......
111
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APPENDIX 3.4-A

WELL LOCATION DATA

POWERTECH (USA) INC.

Table 1. Locations of All Wells in the Dewey-Burdock Database (Page 1 of 9)

Well I.D.	Legal Location				SD State Plane 1983		Elevation (ft)	Aquifer
	T.	R.	Sec.	Qrt Qrt	East (ft)	North (ft)		
1	7	1	9	SESE	996095.098	429227.773	3,624	Lakota
2	7	1	16	SESE	995122.6159	423922.589	3,554	Lakota
3	7	1	22	SWNW	ND	ND	ND	Lakota
4	7	1	15	SESE	1000915.012	423080.6142	3,580	unknown
5	7	1	14	NENW	1003580.429	427284.2174	3,643	Lakota
6	7	1	14	NESE	1005616.918	425012.4771	3,671	unknown
7	7	1	23	NWNW	1001702.774	422416.855	3,574	Fall River
8	7	1	23	SWSE	1004451.179	418514.8505	3,558	Fall River
9	7	1	23	NENE	ND	ND	ND	Fall River
10	7	1	13	NENE	ND	ND	ND	Lakota
11	7	1	24	NWSW	ND	ND	ND	Sundance/Unkpapa
12	7	1	4	SESE	995376.7972	434378.5136	3,641	Lakota
13	7	1	4	NENE	996758.8703	438470.3951	3,673	Lakota
14	7	1	2	NWSW	1002098.748	434723.4041	3,672	Lakota
15	7	1	2	NENW	1003703.016	438317.4124	3,713	Lakota
16	7	1	1	NESW	1009827.637	434446.9008	3,869	Lakota
17	7	1	12	SENW	1008622.303	431329.1544	3,789	Fall River
18	7	1	9	SWSW	991210.5573	428960.1458	3,566	Fall River
19	7	1	18	SWNW	ND	ND	ND	Fall River
20	7	1	17	SWSW	986070.6362	424628.3007	3,563	Fall River
21	7	1	19	SWNW	980440.6072	421760.0599	3,569	Fall River
22	40	60	27	NWSW	ND	ND	ND	unknown
23	7	1	29	NWNW	985974.1188	416755.5806	3,590	Fall River
24	7	1	28	NWNE	993100.2648	417036.9282	3,563	Fall River
25	7	1	27	NWSE	ND	ND	ND	Fall River
26	7	1	35	SWNE	1003612.929	410375.132	3,549	Fall River
27	7	1	33	SWSE	ND	ND	ND	Lakota
28	8	2	22	NESW	ND	ND	ND	unknown
29	8	2	16	NENW	ND	ND	ND	unknown
30	7	2	31	SESE	ND	ND	ND	unknown
31	7	2	31	SWNW	ND	ND	ND	Lakota
32	7	2	30	SWSW	ND	ND	ND	Lakota
33	7	1	25	NWSE	ND	ND	ND	Fall River
34	7	2	30	NWNW	ND	ND	ND	unknown
35	7	2	19	NWSE	ND	ND	ND	Lakota
36	7	2	30	NWNE	ND	ND	ND	Lakota

POWERTECH (USA) INC.

Table 1. Locations of All Wells in the Dewey-Burdock Database (Page 2 of 9)

Well I.D.	Legal Location				SD State Plane 1983		Elevation (ft)	Aquifer
	T.	R.	Sec.	Qrt Qrt	East (ft)	North (ft)		
37	7	2	18	NWSW	1012581.749	423947.5161	3,689	unknown
38	6	1	33	NWNW	992726.8917	442289.5946	3,634	Lakota
39	6	1	29	NENE	ND	ND	ND	unknown
40	6	1	30	SWNW	981813.9304	447183.2347	3,635	Other Inyan Kara
41	6	1	31	SWNE	983783.722	442081.4368	3,611	Alluvial
42	7	1	5	SWNE	989542.8678	436481.4222	3,596	Lakota
43	6	1	34	SWSE	999521.6678	439436.2184	3,672	Lakota
44	7	2	31	NWSE	ND	ND	ND	Fall River
45	8	2	5	NWNW	ND	ND	ND	Fall River
46	7	2	31	SWNE	ND	ND	ND	Fall River
47	7	2	32	SWSW	ND	ND	ND	Fall River
48	6	1	19	SENW	ND	ND	ND	Lakota
49	6	1	32	NWNW	987330.6151	444022.8154	3,628	Fall River
50	41	60	28	SWNW	ND	ND	ND	Lakota
51	7	1	9	SENE	995810.3298	431486.9525	3,615	Lakota
52	7	2	30	NESE	ND	ND	ND	unknown
53	7	2	30	SWNE	ND	ND	ND	unknown
54	7	1	25	NWSE	ND	ND	ND	Fall River
55	7	1	36	NWNE	ND	ND	ND	Fall River
56	7	2	32	SESE	ND	ND	ND	Lakota
57	8	2	5	NESE	ND	ND	ND	Lakota
58	7	1	31	NWNE	ND	ND	ND	Fall River
59	8	2	5	NENW	ND	ND	ND	Fall River
60	7	2	33	NWSE	ND	ND	ND	unknown
61	7	1	11	NWSE	1005230.856	429987.4356	3,740	Lakota
62	7	1	25	SWSW	ND	ND	ND	unknown
63	7	1	36	NESW	ND	ND	ND	Fall River
64	8	2	9	SWNE	ND	ND	ND	unknown
65	8	2	9	NWNE	ND	ND	ND	unknown
66	8	2	8	NENW	ND	ND	ND	unknown
67	8	2	8	SENW	ND	ND	ND	unknown
68	8	2	8	NENE	ND	ND	ND	Lakota
69	7	1	25	SWSE	ND	ND	ND	Fall River
70	7	1	25	NESW	ND	ND	ND	Other Inyan Kara
71	8	2	6	NWSE	ND	ND	ND	Fall River
72	8	2	6	NWSE	ND	ND	ND	Fall River

POWERTECH (USA) INC.

Table 1. Locations of All Wells in the Dewey-Burdock Database (Page 3 of 9)

Well I.D.	Legal Location				SD State Plane 1983		Elevation (ft)	Aquifer
	T.	R.	Sec.	Qrt Qrt	East (ft)	North (ft)		
73	8	2	6	NESW	ND	ND	ND	Lakota
74	8	2	6	NESW	ND	ND	ND	Fall River
75	8	2	17	SWSW	ND	ND	ND	Fall River
76	8	2	17	SENW	ND	ND	ND	Fall River
77	8	2	17	NWNE	ND	ND	ND	Fall River
78	8	2	20	NWSE	ND	ND	ND	Fall River
79	8	2	27	NESE	ND	ND	ND	Fall River
80	8	2	35	SWNW	ND	ND	ND	Lakota
81	8	2	14	SWNW	ND	ND	ND	Lakota
82	8	2	10	SWSW	ND	ND	ND	Fall River
83	8	2	14	NESW	ND	ND	ND	Fall River
84	8	2	10	SWNW	ND	ND	ND	Fall River
85	8	2	28	NESE	ND	ND	ND	Fall River
86	8	2	6	NWSW	ND	ND	ND	Fall River
87	8	1	1	SENE	ND	ND	ND	Fall River
88	7	1	35	SESE	1005216.386	408176.9195	3,554	Fall River
89	8	1	11	NWNE	ND	ND	ND	Lakota
90	8	2	23	SENW	1033574.095	387507.8887	3,572	unknown
91	8	2	12	SENW	ND	ND	ND	Fall River
92	8	2	23	SESW	ND	ND	ND	Fall River
93	8	2	2	SWNE	ND	ND	ND	Lakota
94	7	2	34	SWSW	ND	ND	ND	Lakota
95	40	61	25	SESE	ND	ND	ND	Fall River
96	41	60	22	SWSW	980028.4941	451854.1002	3664	Lakota
98	41	60	17	SWNW	ND	ND	ND	unknown
99	41	60	17	NENE	ND	ND	ND	Lakota
100	41	60	7	NWSE	ND	ND	ND	Lakota
102	6	1	18	SWNE	ND	ND	ND	Lakota
103	41	60	10	NWNW	ND	ND	ND	Lakota
104	41	60	10	NWSW	ND	ND	ND	Lakota
105	41	60	9	SENW	ND	ND	ND	Lakota
106	6	1	18	NENE	ND	ND	ND	unknown
107	6	1	18	SWNE	ND	ND	ND	Fall River
108	6	1	18	SWNE	ND	ND	ND	Fall River
109	6	1	17	NENW	ND	ND	ND	Lakota
110	6	1	17	NENE	ND	ND	ND	Lakota

Table 1. Locations of All Wells in the Dewey-Burdock Database (Page 4 of 9)

Well I.D.	Legal Location				SD State Plane 1983		Elevation (ft)	Aquifer
	T.	R.	Sec.	Qrt Qrt	East (ft)	North (ft)		
111	6	1	17	NWNE	ND	ND	ND	Fall River
112	6	1	16	NWSE	ND	ND	ND	Fall River
113	7	2	6	NESW	1014835.904	434417.4002	3,844	unknown
114	7	2	7	SESW	1013809.661	428653.8989	3,764	Sundance/Unkpapa
115	6	1	18	SENE	986095.9548	457641.2997	3,720	Lakota
116	6	1	18	SENE	ND	ND	ND	Fall River
117	6	1	8	SWSE	ND	ND	ND	unknown
118	6	1	7	NESE	ND	ND	ND	unknown
119	6	1	8	NWNW	ND	ND	ND	unknown
120	6	1	5	NWSW	ND	ND	ND	unknown
121	5	1	31	SWSW	ND	ND	ND	Lakota
122	5	1	30	NENW	ND	ND	ND	unknown
123	42	60	21	NENW	ND	ND	ND	unknown
124	5	1	18	NWSW	ND	ND	ND	unknown
125	6	1	6	SWSW	ND	ND	ND	Fall River
126	41	60	16	SESW	ND	ND	ND	Lakota
127	41	60	7	SWNE	ND	ND	ND	Lakota
131	8	2	4	NWSE	ND	ND	ND	Fall River
132	8	2	4	NWSE	ND	ND	ND	Lakota
134	40	60	29	SWNW	ND	ND	ND	unknown
135	8	2	1	SENW	1039467.842	403141.0347	3,803	Lakota
136	8	2	5	NWNW	ND	ND	ND	unknown
137	7	2	17	SENW	ND	ND	ND	unknown
138	6	1	18	NENE	ND	ND	ND	Fall River
139	41	60	18	SESE	968658.3552	457463.919	3,729	Lakota
140	9	3	19	SWNW	ND	ND	ND	unknown
142	7	2	35	SENW	ND	ND	ND	Fall River
143	8	1	30	SWSE	ND	ND	ND	Fall River
144	9	3	21	SWNE	ND	ND	ND	unknown
145	8	2	3	SWSE	ND	ND	ND	unknown
146	9	2	21	NENW	ND	ND	ND	unknown
147	6	1	17	NESW	989277.4441	456567.2543	3,729	Lakota
200	7	2	13	NESW	ND	ND	ND	Sundance/Unkpapa
201	7	2	13	NESW	ND	ND	ND	Sundance/Unkpapa
202	7	2	13	NESW	ND	ND	ND	Sundance/Unkpapa
203	7	2	12	SWSW	ND	ND	ND	Sundance/Unkpapa

POWERTECH (USA) INC.

Table 1. Locations of All Wells in the Dewey-Burdock Database (Page 5 of 9)

Well I.D.	Legal Location				SD State Plane 1983		Elevation (ft)	Aquifer
	T.	R.	Sec.	Qrt Qrt	East (ft)	North (ft)		
204	7	2	12	NWSW	ND	ND	ND	Sundance/Unkpapa
205	7	2	12	SWNE	ND	ND	ND	Sundance/Unkpapa
206	7	2	12	SWNE	ND	ND	ND	Sundance/Unkpapa
207	7	2	12	NENE	ND	ND	ND	unknown
208	7	2	2	SWNW	ND	ND	ND	Sundance/Unkpapa
209	7	2	3	NESE	ND	ND	ND	Sundance/Unkpapa
210	7	2	2	SENW	ND	ND	ND	Sundance/Unkpapa
211	7	2	12	NENW	ND	ND	ND	Sundance/Unkpapa
212	8	3	8	NWSE	ND	ND	ND	unknown
213	7	3	20	SWSE	ND	ND	ND	Sundance/Unkpapa
214	7	3	18	SESW	ND	ND	ND	Sundance/Unkpapa
215	6	2	27	SESE	ND	ND	ND	unknown
216	6	2	22	NENE	ND	ND	ND	unknown
220	6	1	19	SENE	986271.136	452335.2311	3,680	unknown
230	7	1	26	SESE	1005735.286	412883.2797	3,514	unknown
270	6	1	19	NW SW	982506.8593	451943.3669	3,659	Other Inyan Kara
401	9	2	1	SWNW	ND	ND	ND	Madison
402	9	2	1	SWNE	ND	ND	ND	Madison
403	9	2	1	NENE	ND	ND	ND	Madison
404	9	2	1	NENE	ND	ND	ND	Madison
405	9	2	1	NENE	ND	ND	ND	Madison
406	8	2	36	NESE	ND	ND	ND	Other Inyan Kara
407	8	3	33	NWSE	ND	ND	ND	Fall River
408	8	2	36	SENE	ND	ND	ND	Fall River
409	8	2	36	SENE	ND	ND	ND	Other Inyan Kara
410	8	3	32	SENW	ND	ND	ND	Lakota
411	8	2	36	NENE	ND	ND	ND	Lakota
412	8	2	27	SWSW	ND	ND	ND	Lakota
413	8	1	30	SENW	ND	ND	ND	Sundance/Unkpapa
414	8	3	27	NWNW	ND	ND	ND	Lakota
415	8	2	27	NESE	ND	ND	ND	Lakota
416	8	3	20	NWSE	ND	ND	ND	Other Inyan Kara
417	8	3	20	NWSE	ND	ND	ND	Fall River
418	8	3	20	SENW	ND	ND	ND	Fall River
419	8	2	23	NWNW	ND	ND	ND	Other Inyan Kara
420	8	3	8	NWSE	ND	ND	ND	Other Inyan Kara

Table 1. Locations of All Wells in the Dewey-Burdock Database (Page 6 of 9)

Well I.D.	Legal Location				SD State Plane 1983		Elevation (ft)	Aquifer
	T.	R.	Sec.	Qrt Qrt	East (ft)	North (ft)		
421	8	2	8	NWNW	ND	ND	ND	Lakota
422	8	2	6	SWSE	ND	ND	ND	Lakota
423	8	2	3	SESW	ND	ND	ND	Sundance/Unkpapa
424	8	3	6	NWSE	ND	ND	ND	Sundance/Unkpapa
425	7	1	14	SENW	ND	ND	ND	Lakota
427	7	2	2	NWNW	ND	ND	ND	Sundance/Unkpapa
429	6	1	20	SENE	ND	ND	ND	Lakota
431	6	1	20	SENE	ND	ND	ND	Lakota
432	6	1	20	SENE	ND	ND	ND	Lakota
433	6	1	20	SENE	ND	ND	ND	Lakota
436	6	1	20	NWNE	990001.6275	454436.5461	3,737	Fall River
440	7	2	3	SWNE	ND	ND	ND	Sundance/Unkpapa
502	6	1	27	NWSE	ND	ND	ND	Alluvial
503	7	1	23	SESE	ND	ND	ND	Sundance/Unkpapa
504	7	1	25	SESE	ND	ND	ND	Fall River
505	7	1	26	NESW	ND	ND	ND	Lakota
506	7	2	8	SWNW	ND	ND	ND	Sundance/Unkpapa
507	7	2	19	NENW	ND	ND	ND	Lakota
508	7	2	19	SWSE	ND	ND	ND	Lakota
510	7	1	12	SESE	1011331.943	428178.1651	3,759	Lakota
601	8	2	23	NWNW	1033082.719	388749.7413	3,615	Fall River
602	8	2	23	NWNW	1033064.956	388798.1063	3,615	Lakota
603	8	2	23	NWNW	1032509.912	388763.8912	3,619	Fall River
605	7	1	10	SWSE	1000213.323	428484.0565	3,642	Other Inyan Kara
606	7	1	11	SWSW	1002111.841	428609.3226	3,668	Lakota
607	7	1	30	SWNW	980219.4441	416377.6182	3,611	Fall River
608	7	1	30	NWNW	980228.9136	416454.5538	3,610	Lakota
609	6	1	29	NWNE	990133.3233	447808.3157	3,702	Lakota
610	6	1	29	NWNE	989998.0402	447969.5677	3,704	Fall River
611	6	1	20	NWNe	990235.5648	453958.8872	3,731	Lakota
612	6	1	20	NWNE	990155.9068	454134.255	3,732	Lakota
613	6	1	20	NWNE	990523.3586	453775.7939	3,738	Fall River
614	6	1	20	NWNE	990583.8178	453770.1565	3,739	Fuson
615	6	1	20	NWNE	990570.9895	453708.8761	3,738	Lakota
616	6	1	20	SWNE	990534.0726	453142.1358	3,745	Lakota
617	6	1	20	NENW	989427.4846	453586.6258	3,723	Lakota

Table 1. Locations of All Wells in the Dewey-Burdock Database (Page 7 of 9)

Well I.D.	Legal Location				SD State Plane 1983		Elevation (ft)	Aquifer
	T.	R.	Sec.	Qrt Qrt	East (ft)	North (ft)		
618	7	1	2	SENE	1006472.742	435906.7583	3,759	unknown
619	7	1	2	NWNW	1003265.119	436729.3703	3,701	Lakota
620	6	1	35	NWNW	1002350.318	443210.0993	3,731	Lakota
621	6	1	27	NWSE	1000329.315	446398.1082	3,717	Alluvial
622	6	1	20	NENE	991174.522	454033.7715	3,747	Fall River
623	6	1	20	NENE	991068.0984	454300.3846	3,750	Lakota
625	41	60	9	SESE	978764.4747	462270.3858	3,816	Fall River
626	41	60	9	SWSE	978610.2151	462329.8362	3,826	Lakota
627	6	1	18	SWNW	983044.3999	458921.5345	3,713	unknown
628	6	1	29	SESE	991052.9337	449402.6524	3,737	Other Inyan Kara
631	6	1	23	SWSW	1002733.997	448993.2386	3,744	Fall River
632	6	1	23	SWNW	1002886.897	453010.3544	3,747	unknown
633	6	1	14	SESW	1004801.912	455118.8232	3,764	unknown
634	6	1	34	NESE	1000900.563	440168.275	3,689	unknown
635	7	1	14	NENW	1004084.632	427130.8303	3,643	Sundance/Unkpapa
636	7	1	11	NESW	1003173.25	429982.3145	3,698	unknown
637	7	1	11	NESE	1006473.976	430320.5883	3,743	unknown
638	7	1	2	NENE	1006668.16	437976.7587	3,791	Fall River
639	7	2	7	SENW	1014103.328	430722.0265	3,771	unknown
640	7	1	12	SESE	1011409.499	427965.0894	3,754	unknown
642	7	1	12	SESE	1011325.121	428042.0134	3,757	unknown
643	7	2	30	SESE	1015635.469	412200.2634	3,575	Lakota
644	7	2	30	SESE	1015632.054	412253.3734	3,575	Fall River
645	7	1	16	NENE	996079.9657	427998.3964	3,609	unknown
646	7	1	15	SWNE	999646.4859	426408.9229	3,611	Fall River
650	7	1	1	SESE	1012338.763	433014.833	3,820	Lakota
651	7	1	14	NWSE	1004407.769	424246.1432	3,600	Lakota
652	7	1	2	NWSE	1004758.754	434742.6477	3,748	Other Inyan Kara
653	7	1	22	NWNE	999078.2979	422487.0492	3,569	unknown
654	6	1	34	NWNE	1000770.962	443410.2383	3,687	Other Inyan Kara
655	6	1	34	NENE	1001852.878	443307.3946	3,719	Other Inyan Kara
656	6	1	31	SENW	982628.247	442000.9299	3,622	unknown
657	6	1	20	NWNE	ND	ND	ND	Lakota
658	7	1	15	SWNE	ND	ND	ND	Lakota
659	7	1	10	SWNE	ND	ND	ND	Fall River
660	7	1	10	SWNE	ND	ND	ND	Lakota

Table 1. Locations of All Wells in the Dewey-Burdock Database (Page 8 of 9)

Well I.D.	Legal Location				SD State Plane 1983		Elevation (ft)	Aquifer
	T.	R.	Sec.	Qrt Qrt	East (ft)	North (ft)		
661	7	1	12	NENW	ND	ND	ND	Lakota
662	7	1	11	SESW	ND	ND	ND	unknown
663	7	1	10	SWSE	ND	ND	ND	Lakota
664	7	1	10	SWSE	ND	ND	ND	Fall River
665	7	1	10	SESE	ND	ND	ND	Fall River
666	7	1	10	SESE	ND	ND	ND	Lakota
668	7	1	15	NWNE	999428.155	427450.3155	3,622	Other Inyan Kara
669	7	1	15	NWNE	ND	ND	ND	Lakota
670	7	1	15	NWNE	ND	ND	ND	Fuson
671	7	1	15	NWNE	ND	ND	ND	Fall River
672	7	1	15	NWNE	ND	ND	ND	Fall River
673	7	1	15	NWNE	ND	ND	ND	Fuson
674	7	1	15	NWNE	ND	ND	ND	Lakota
675	7	2	31	SESE	1015340.264	406352.2188	3,492	Alluvial
676	6	1	34	SESW	999245.0312	439891.6372	3,662	Alluvial
677	7	1	4	SWSW	991925.5409	434077.2303	3,562	Alluvial
678	7	1	9	SWNE	994921.194	431925.7016	3,595	Alluvial
679	6	1	27	NWSE	1000693.36	446245.4324	3,715	Alluvial
680	7	1	11	NESW	1003476.59	429969.0789	3,688	Lakota
681	6	1	32	NWNE	988728.3431	443725.3264	3,624	Fall River
682	7	1	11	SENW	1003535.474	431259.5932	3,720	Lakota
683	6	1	29	NESW	988607.893	446108.0187	3,669	Fall River
684	7	1	11	NESW	1003586.926	429745.8227	3,691	Lakota
685	6	1	32	NWNE	989085.4868	443415.4025	3,626	Fall River
686	7	1	11	NESW	1003365.421	429751.8227	3,694	Lakota
687	6	1	32	NENW	988476.4049	443730.5899	3,626	Fall River
688	7	1	11	NESW	1003425.818	429974.4313	3,687	Fall River
689	6	1	32	NENW	988715.0026	443789.1861	3,626	Lakota
690	7	1	11	NESW	1003512.176	429971.0682	3,700	Sundance/Unkpapa
691	6	1	32	NENW	988764.8084	443706.8807	3,626	Fall River
692	7	1	11	NESW	1003466.908	429999.5069	3,701	Lakota
693	6	1	32	NENW	988727.3316	443667.2062	3,626	Sundance/Unkpapa
694	7	1	15	NWNW	997116.0514	426836.0704	3,600	Fall River
695	6	1	32	SESE	990783.4225	439312.5055	3,594	Fall River
696	7	1	15	NWNW	997086.1856	426946.4439	3,602	Lakota
697	6	1	32	SESE	990748.4216	439347.3562	3,594	Lakota

Table 1. Locations of All Wells in the Dewey-Burdock Database (Page 9 of 9)

Well I.D.	Legal Location				SD State Plane 1983		Elevation (ft)	Aquifer
	T.	R.	Sec.	Qrt Qrt	East (ft)	North (ft)		
698	7	1	2	SENW	1004307.778	435651.0652	3,739	Fall River
703	7	1	1	SWSE	1010020.507	434334.3457	3,877	Sundance/Unkpapa
704	7	1	5	SWNE	989364.5045	436647.6682	3,599	Sundance/Unkpapa
2020	7	1	17	NWSW	986286.6643	424857.9008	3,565	unknown
3002	7	2	31	SESE	ND	ND	ND	unknown
3026	7	1	1	SESE	1012037.43	432833.2349	3,822	Lakota
4002	6	1	30	NWSW	981812.8541	446932.2402	3,621	Other Inyan Kara
5002	41	60	28	SWSW	ND	ND	ND	Other Inyan Kara
7002	7	1	23	NWNW	1001731.47	421930.808	3,571	Lakota
8002	7	1	23	SWSE	1004651.515	418556.4148	3,550	Lakota
8003	7	1	23	SWSE	1004520.892	418530.8085	3,543	Other Inyan Kara
8802	7	1	35	SESE	1005923.05	407436.6955	3,554	Fall River
8803	7	1	35	SESE	1005445.181	407730.2169	3,552	unknown

Figure 1. All Wells in the Dewey-Burdock Database.

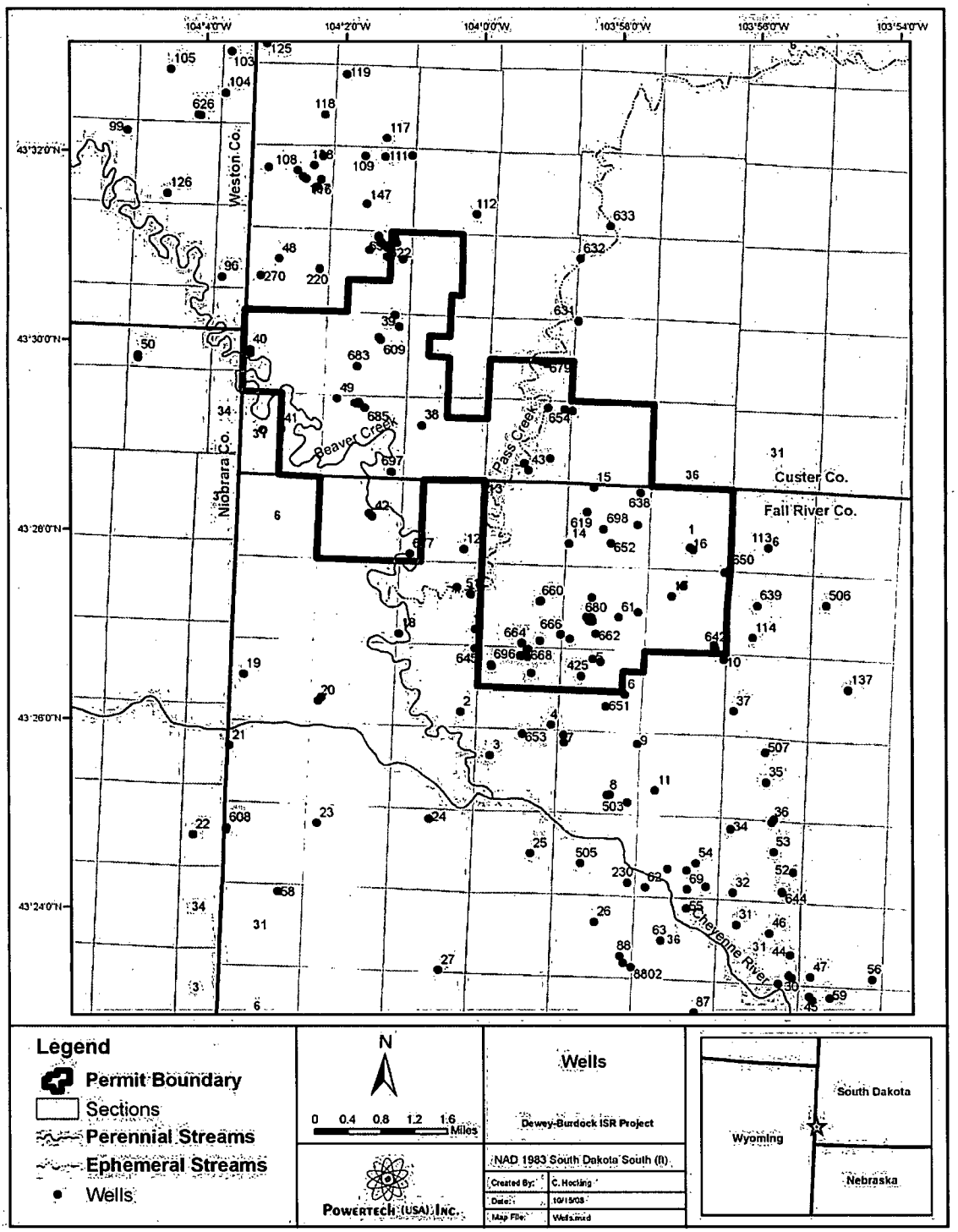


Table 2. All Abandoned Wells Near the Dewey-Burdock Uranium ISR Project (Page 1 of 2)

Well I.D	Construction Information					Aquifer	Located in Field	Data Origin
	Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
5	850	UNK	UNK	5	leaky	Lakota	yes	TVA EIS Report
6	UNK	UNK	UNK	12	little rust	unknown	yes	GPS
15	495	UNK	UNK	4	not good	Lakota	yes	TVA EIS Report
40	UNK	UNK	UNK	UNK	UNK	Inyan Kara	yes	GPS
41	UNK	UNK	UNK	6	UNK	Alluvial	yes	TVA EIS Report
43	350	UNK	UNK	4	cant see under tent	Lakota	yes	TVA EIS Report
44	130	UNK	UNK	UNK	UNK	Fall River	no	TVA Data
88	320	UNK	UNK	UNK	UNK	Fall River	yes	TVA EIS Report
113	UNK	UNK	UNK	UNK	windmill	unknown	yes	GPS
502	46	UNK	UNK	UNK	UNK	Alluvial	no	TVA EIS Report
606	UNK	UNK	UNK	UNK	not good	Lakota	yes	TVA EIS Report
621	500	UNK	UNK	UNK	unknown	Alluvial	yes	TVA EIS Report
632	UNK	UNK	UNK	UNK	unknown	unknown	yes	GPS
634	UNK	UNK	UNK	UNK	no	unknown	yes	GPS
636	UNK	UNK	UNK	7	slightly rusty	unknown	yes	GPS
638	180	UNK	UNK	2	little rusty	Fall River	yes	TVA EIS Report
639	UNK	UNK	UNK	UNK	none visible	unknown	yes	GPS
640	UNK	UNK	UNK	1	good	unknown	yes	GPS
642	UNK	UNK	UNK	5	open bad	unknown	yes	GPS
645	UNK	UNK	UNK	UNK	hand pump	unknown	yes	GPS
651	UNK	UNK	UNK	2	moderate	Lakota	yes	TVA EIS Report
652	280	UNK	UNK	UNK	UNK	Inyan Kara	yes	GPS

Table 2. All Abandoned Wells Near the Dewey-Burdock Uranium ISR Project (Page 2 of 2)

Well I.D	Construction Information					Aquifer	Located in Field	Data Origin
	Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
653	UNK	UNK	UNK	UNK	UNK	unknown	yes	GPS
654	UNK	UNK	UNK	8	UNK	Inyan Kara	yes	GPS
655	UNK	UNK	UNK	12	UNK	Inyan Kara	yes	GPS
659	UNK	UNK	UNK	UNK	UNK	Fall River	no	TVA Data
660	UNK	UNK	UNK	UNK	UNK	Lakota	no	TVA Data

Figure 2. Abandoned Wells in the Dewey-Burdock Database.

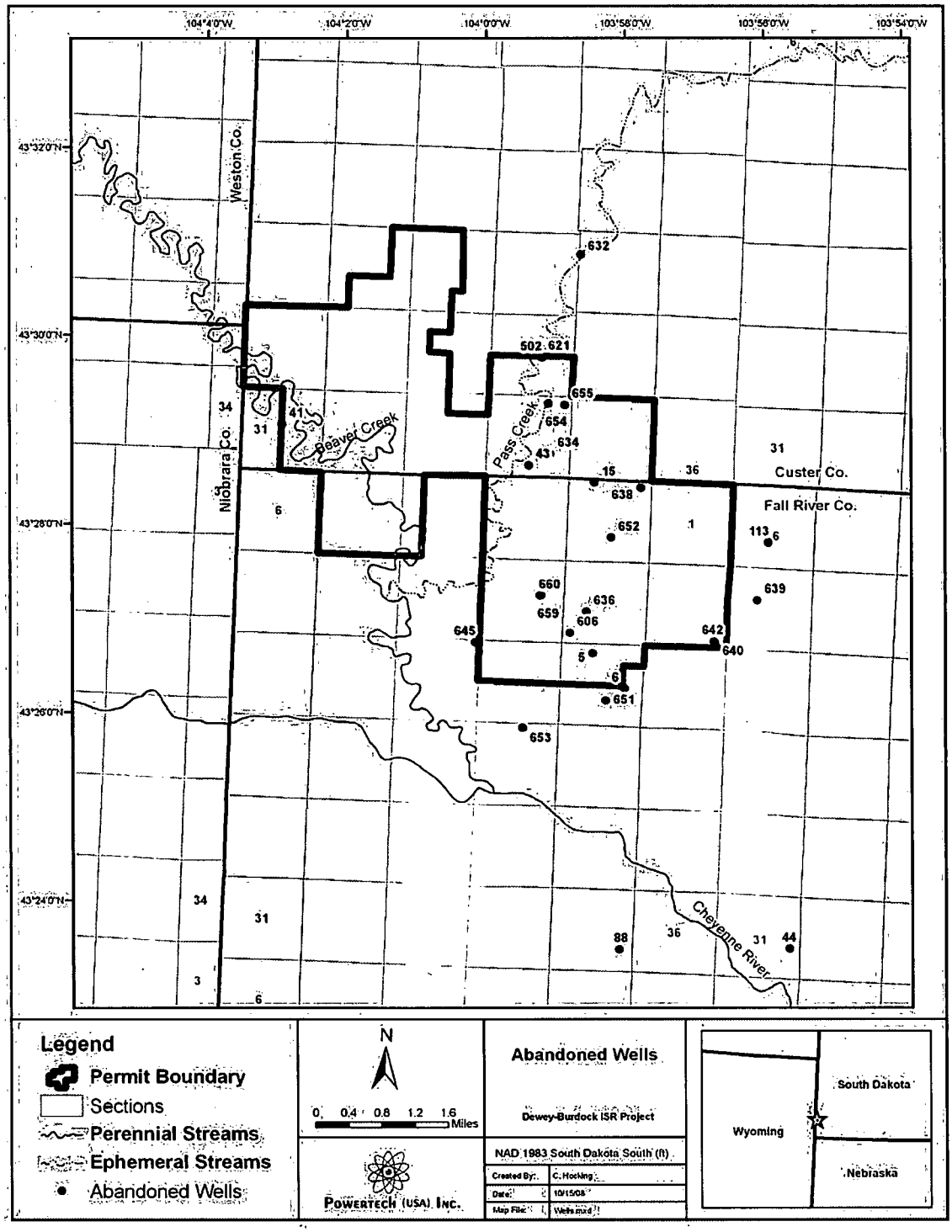


Table 3. Wells Noted in Data Sources but Not Located in Field (Page 1 of 9)

Well I.D	Construction Information					Aquifer	Use Type	Data Origin
	Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
3	2400	UNK	UNK	4	UNK	Lakota	UNK	TVA EIS Report
9	90	UNK	UNK	6	UNK	Fall River	UNK	TVA EIS Report
10	200	UNK	UNK	UNK	UNK	Lakota	UNK	TVA EIS Report
11	2480	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	TVA EIS Report
19	740	UNK	UNK	UNK	UNK	Fall River	other	TVA EIS Report
22	UNK	UNK	UNK	UNK	UNK	unknown	other	TVA Data
25	350	UNK	UNK	UNK	UNK	Fall River	stock	TVA EIS Report
27	600	UNK	UNK	UNK	UNK	Lakota	other	TVA EIS Report
28	UNK	UNK	UNK	UNK	UNK	unknown	other	TVA Data
29	UNK	UNK	UNK	UNK	UNK	unknown	other	TVA Data
30	UNK	UNK	UNK	UNK	UNK	unknown	other	TVA Data
31	104	UNK	UNK	UNK	UNK	Lakota	other	TVA EIS Report
32	90	UNK	UNK	UNK	UNK	Lakota	other	TVA EIS Report
33	96	UNK	UNK	UNK	UNK	Fall River	other	TVA EIS Report
34	UNK	UNK	UNK	UNK	UNK	unknown	other	TVA Data
35	148	UNK	UNK	UNK	UNK	Lakota	UNK	TVA EIS Report
36	330	UNK	UNK	UNK	UNK	Lakota	UNK	TVA EIS Report
39	UNK	UNK	UNK	50	UNK	unknown	other	TVA Data
44	130	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
45	190	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
46	UNK	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data

Table 3. Wells Noted in Data Sources but Not Located in Field (Page 2 of 9)

Well I.D	Construction Information					Aquifer	Use Type	Data Origin
	Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
47	90	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
48	725	UNK	UNK	3	UNK	Lakota	stock	TVA Data
50	609	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data
52	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
53	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
54	90	UNK	UNK	UNK	UNK	Fall River	stock	TVA EIS Report
55	92	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
56	300	UNK	UNK	UNK	UNK	Lakota	domestic	TVA Data
57	270	UNK	UNK	UNK	UNK	Lakota	garden	TVA Data
58	UNK	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
59	118	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
60	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
62	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
63	100	UNK	UNK	UNK	UNK	Fall River	stock	TVA EIS Report
64	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
65	UNK	UNK	UNK	UNK	UNK	unknown	UNK	TVA Data
66	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
67	UNK	UNK	UNK	UNK	UNK	unknown	UNK	TVA Data
68	230	UNK	UNK	UNK	UNK	Lakota	domestic	TVA Data
69	130	UNK	UNK	UNK	UNK	Fall River	stock	TVA EIS Report
70	375	UNK	UNK	UNK	UNK	Inyan Kara	stock	TVA EIS Report

Table 3. Wells Noted in Data Sources but Not Located in Field (Page 3 of 9)

Well I.D	Construction Information					Aquifer	Use Type	Data Origin
	Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
71	UNK	UNK	UNK	UNK	UNK	Fall River	domestic	TVA Data
72	212	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
73	560	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data
74	305	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
75	430	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
76	420	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
77	400	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
78	410	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
79	337	UNK	UNK	UNK	UNK	Fall River	domestic	TVA Data
80	650	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data
81	440	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data
82	200	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
83	270	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
84	155	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
85	415	UNK	UNK	UNK	UNK	Fall River	domestic	TVA Data
86	360	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
87	92	UNK	UNK	UNK	UNK	Fall River	abandoned	TVA EIS Report
89	860	UNK	UNK	UNK	UNK	Lakota	UNK	TVA Data
91	150	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
92	298	UNK	UNK	UNK	UNK	Fall River	domestic	USGS
93	200	UNK	UNK	UNK	UNK	Lakota	domestic	TVA Data
94	UNK	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data

Table 3. Wells Noted in Data Sources but Not Located in Field (Page 4 of 9)

Well I.D	Construction Information					Aquifer	Use Type	Data Origin
	Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
95	860	UNK	UNK	UNK	UNK	Fall River	UNK	TVA Data
98	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
99	420	UNK	UNK	UNK	UNK	Lakota	domestic	TVA Data
100	530	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data
102	267	UNK	UNK	UNK	UNK	Lakota	domestic	TVA Data
103	350	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data
104	UNK	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data
105	UNK	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data
106	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
107	90	UNK	UNK	UNK	UNK	Fall River	domestic	TVA Data
108	90	UNK	UNK	UNK	UNK	Fall River	domestic	TVA Data
109	220	UNK	UNK	UNK	UNK	Lakota	domestic	TVA Data
110	240	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data
111	100	UNK	UNK	UNK	UNK	Fall River	other	TVA Data
112	120	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
116	UNK	UNK	UNK	UNK	UNK	Fall River	UNK	TVA Data
117	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
118	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
119	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
120	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
121	430	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data
122	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data

Table 3. Wells Noted in Data Sources but Not Located in Field (Page 5 of 9)

Well I.D	Construction Information					Aquifer	Use Type	Data Origin
	Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
123	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
124	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
125	132	UNK	UNK	UNK	UNK	Fall River	stock	USGS
126	UNK	UNK	UNK	UNK	UNK	Lakota	domestic	TVA Data
127	UNK	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data
131	110	UNK	UNK	UNK	UNK	Fall River	stock	TVA Data
132	300	UNK	UNK	UNK	UNK	Lakota	stock	TVA Data
134	860	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
136	UNK	UNK	UNK	UNK	UNK	unknown	domestic	TVA Data
137	UNK	UNK	UNK	UNK	UNK	unknown	stock	TVA Data
138	100	UNK	UNK	UNK	UNK	Fall River	domestic	TVA Data
140	UNK	UNK	UNK	UNK	UNK	unknown	domestic	TVA Data
142	280	UNK	UNK	UNK	UNK	Fall River	domestic	TVA Data
143	1640	UNK	UNK	UNK	UNK	Fall River	domestic	TVA Data
144	UNK	UNK	UNK	UNK	UNK	unknown	UNK	TVA Data
145	UNK	UNK	UNK	UNK	UNK	unknown	UNK	TVA Data
146	UNK	UNK	UNK	UNK	UNK	unknown	UNK	TVA Data
200	108	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	domestic	TVA Data
201	110	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	stock	TVA Data
202	200	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	stock	TVA Data

Table 3. Wells Noted in Data Sources but Not Located in Field (Page 6 of 9)

Well I.D	Construction Information					Aquifer	Use Type	Data Origin
	Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
203	200	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	domestic	TVA Data
204	170	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	TVA Data
205	108	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	TVA Data
206	200	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	domestic	TVA Data
207	UNK	UNK	UNK	UNK	UNK	unknown	domestic	TVA Data
208	179	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	stock	TVA Data
209	220	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	USGS
210	125	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	stock	TVA Data
211	170	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	stock	USGS
212	UNK	UNK	UNK	UNK	UNK	unknown	UNK	TVA Data
213	UNK	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	TVA Data
214	UNK	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	TVA Data
215	UNK	UNK	UNK	UNK	UNK	unknown	UNK	TVA Data
216	UNK	UNK	UNK	UNK	UNK	unknown	UNK	TVA Data
401	UNK	UNK	UNK	UNK	UNK	Madison	UNK	USGS

Table 3. Wells Noted in Data Sources but Not Located in Field (Page 7 of 9)

Well I.D	Construction Information					Aquifer	Use Type	Data Origin
	Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
402	2983	UNK	UNK	UNK	UNK	Madison	UNK	USGS
403	2980	UNK	UNK	UNK	UNK	Madison	UNK	USGS
404	2944	UNK	UNK	UNK	UNK	Madison	UNK	USGS
405	UNK	UNK	UNK	UNK	UNK	Madison	UNK	USGS
406	300	UNK	UNK	UNK	UNK	Inyan Kara	UNK	USGS
407	200	UNK	UNK	UNK	UNK	Fall River	UNK	USGS
408	340	UNK	UNK	UNK	UNK	Fall River	UNK	USGS
409	320	UNK	UNK	UNK	UNK	Inyan Kara	UNK	USGS
410	182	UNK	UNK	UNK	UNK	Lakota	UNK	USGS
411	320	UNK	UNK	UNK	UNK	Lakota	UNK	USGS
412	400	UNK	UNK	UNK	UNK	Lakota	UNK	USGS
413	1627	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	USGS
414	500	UNK	UNK	UNK	UNK	Lakota	UNK	USGS
415	410	UNK	UNK	UNK	UNK	Lakota	UNK	USGS
416	400	UNK	UNK	UNK	UNK	Inyan Kara	UNK	USGS
417	160	UNK	UNK	UNK	UNK	Fall River	UNK	USGS
418	160	UNK	UNK	UNK	UNK	Fall River	UNK	USGS
419	630	UNK	UNK	UNK	UNK	Inyan Kara	UNK	USGS

Table 3. Wells Noted in Data Sources but Not Located in Field (Page 8 of 9)

Well I.D	Construction Information					Aquifer	Use Type	Data Origin
	Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
420	500	UNK	UNK	UNK	UNK	Inyan Kara	UNK	USGS
421	245	UNK	UNK	UNK	UNK	Lakota	UNK	USGS
422	360	UNK	UNK	UNK	UNK	Lakota	UNK	USGS
423	380	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	USGS
424	240	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	USGS
425	237	UNK	UNK	UNK	UNK	Lakota	UNK	USGS
427	145	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	USGS
429	800	UNK	UNK	UNK	UNK	Lakota	UNK	USGS
431	815	UNK	UNK	UNK	UNK	Lakota	UNK	USGS
432	800	UNK	UNK	UNK	UNK	Lakota	UNK	USGS
433	835	UNK	UNK	UNK	UNK	Lakota	UNK	USGS
440	247	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	USGS
502	46	UNK	UNK	UNK	UNK	Alluvial	UNK	TVA EIS Report
503	1470	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	TVA EIS Report
504	450	UNK	UNK	UNK	UNK	Fall River	UNK	TVA EIS Report
505	260	UNK	UNK	UNK	UNK	Lakota	UNK	TVA EIS Report
506	470	UNK	UNK	UNK	UNK	Sundance/ Unkpapa	UNK	TVA EIS Report

Table 3. Wells Noted in Data Sources but Not Located in Field (Page 9 of 9)

Well I.D	Construction Information					Aquifer	Use Type	Data Origin
	Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
507	145	UNK	UNK	UNK	UNK	Lakota	UNK	TVA EIS Report
508	255	UNK	UNK	UNK	UNK	Lakota	UNK	TVA EIS Report
657	UNK	UNK	UNK	UNK	UNK	Lakota	monitor	TVA EIS Report
658	545	UNK	UNK	UNK	UNK	Lakota	monitor	TVA Data
659	UNK	UNK	UNK	UNK	UNK	Fall River	monitor	TVA Data
660	UNK	UNK	UNK	UNK	UNK	Lakota	monitor	TVA Data
661	UNK	UNK	UNK	UNK	UNK	Lakota	monitor	TVA Data
662	UNK	UNK	UNK	UNK	UNK	unknown	monitor	TVA Data
663	550	UNK	UNK	UNK	UNK	Lakota	monitor	TVA Data
664	360	UNK	UNK	UNK	UNK	Fall River	monitor	TVA Data
665	252	UNK	UNK	UNK	UNK	Fall River	monitor	TVA Data
666	441	UNK	UNK	UNK	UNK	Lakota	monitor	TVA Data
669	550	UNK	UNK	UNK	UNK	Lakota	monitor	TVA Data
670	395	UNK	UNK	UNK	UNK	Fuson	monitor	TVA Data
671	350	UNK	UNK	UNK	UNK	Fall River	monitor	TVA Data
672	376	UNK	UNK	UNK	UNK	Fall River	monitor	TVA Data
673	440	UNK	UNK	UNK	UNK	Fuson	monitor	TVA Data
674	570	UNK	UNK	UNK	UNK	Lakota	monitor	TVA Data
3002	UNK	UNK	UNK	UNK	UNK	unknown	UNK	TVA Data
5002	UNK	UNK	UNK	UNK	UNK	Inyan Kara	UNK	TVA Data

Figure 3. Nonverified Wells
(Wells That Were Not Located at the Site. These Wells May or May Not Still Exist).

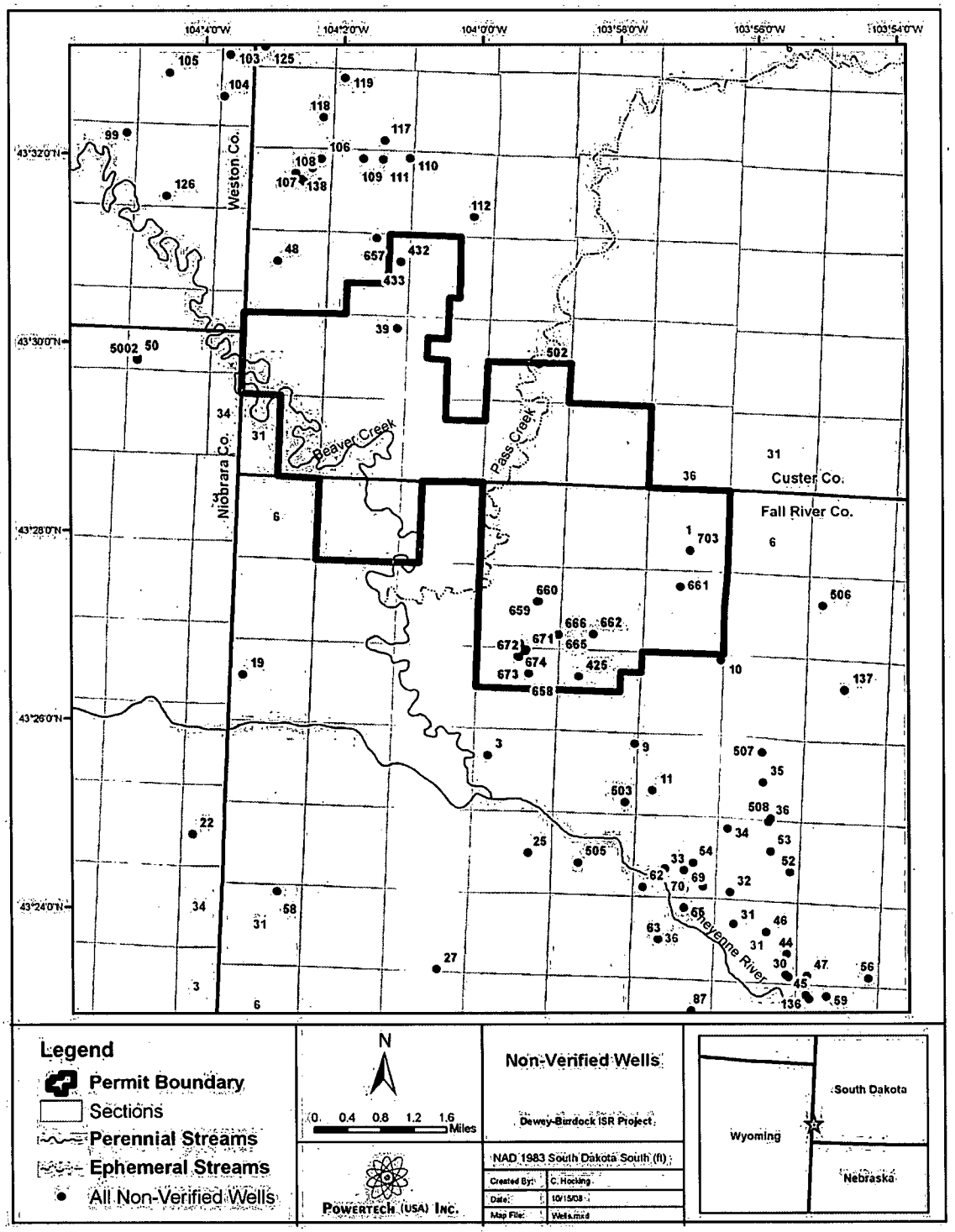


Figure 4. Wells That Were Field Located and Active (Not Abandoned).

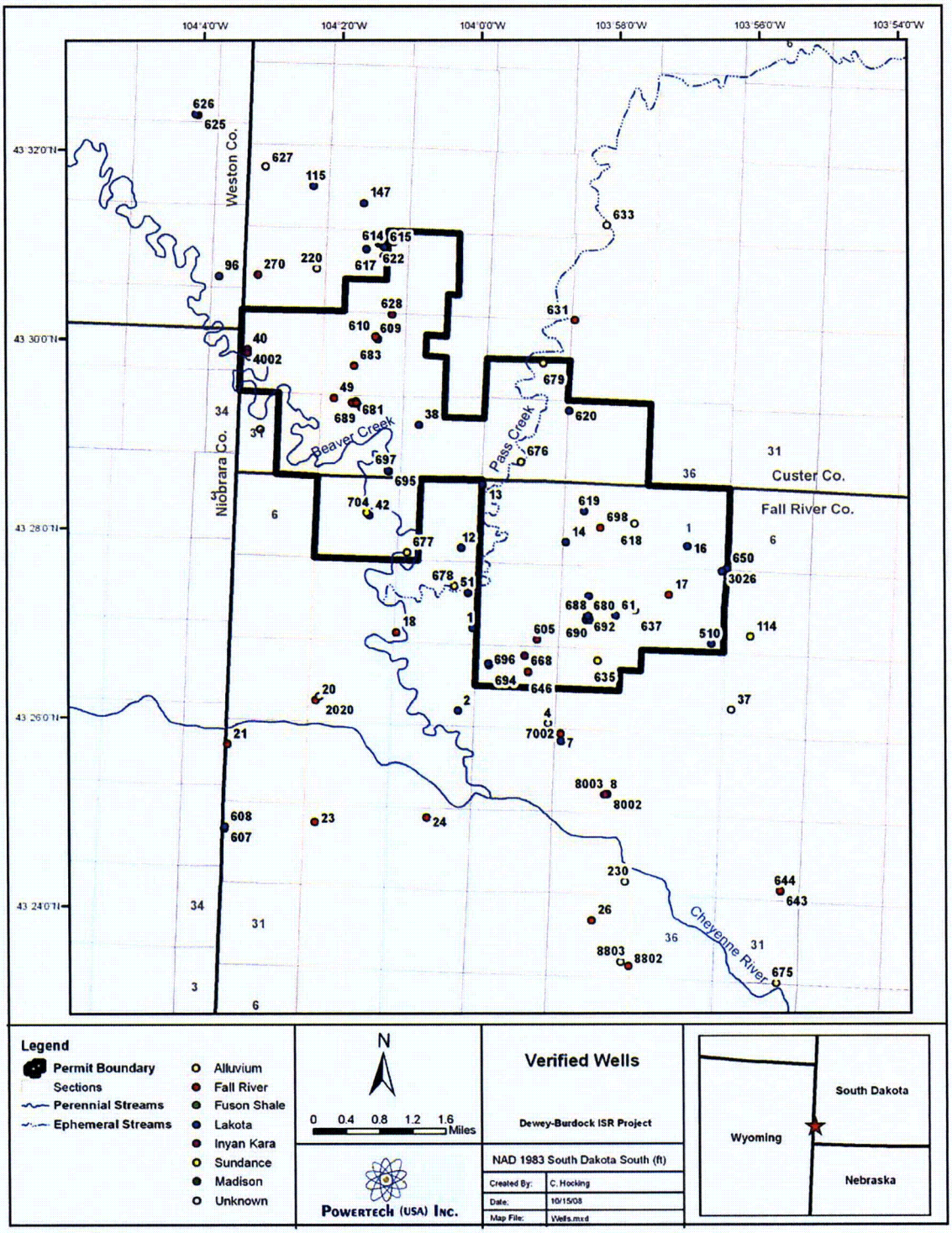


Table 4. Known Alluvial Wells at the Dewey-Burdock Uranium ISR Project

Well I.D.	Name Other	Construction Information						Use Type	Water-Quality Sampling Frequency	Data Origin
		Date Drilled	Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
675	Alluvial on Cheyenne River at Marietta	9/25/07	14.4	4	14	2	new pvc	monitor	Quarterly	Well Completion Report
676	Alluvial on Pass Creek at old Spencer Ranch	9/26/07	22.5	12	22	2	new pvc	monitor	Quarterly	Well Completion Report
677	Alluvial on Beaver Creek near Putnam	9/25/07	14.5	4	14	2	new pvc	monitor	Quarterly	Well Completion Report
678	Alluvial on Pass Creek downstream of Dewey Rd	9/25/07	14.5	4	14	2	new pvc	monitor	Quarterly	Well Completion Report
679	Alluvial on Pass Creek at Doran Ranch	9/26/07	39	29	39	2	new pvc	monitor	Quarterly	Well Completion Report

Figure 5. Alluvial Wells Near the Dewey-Burdock Site.

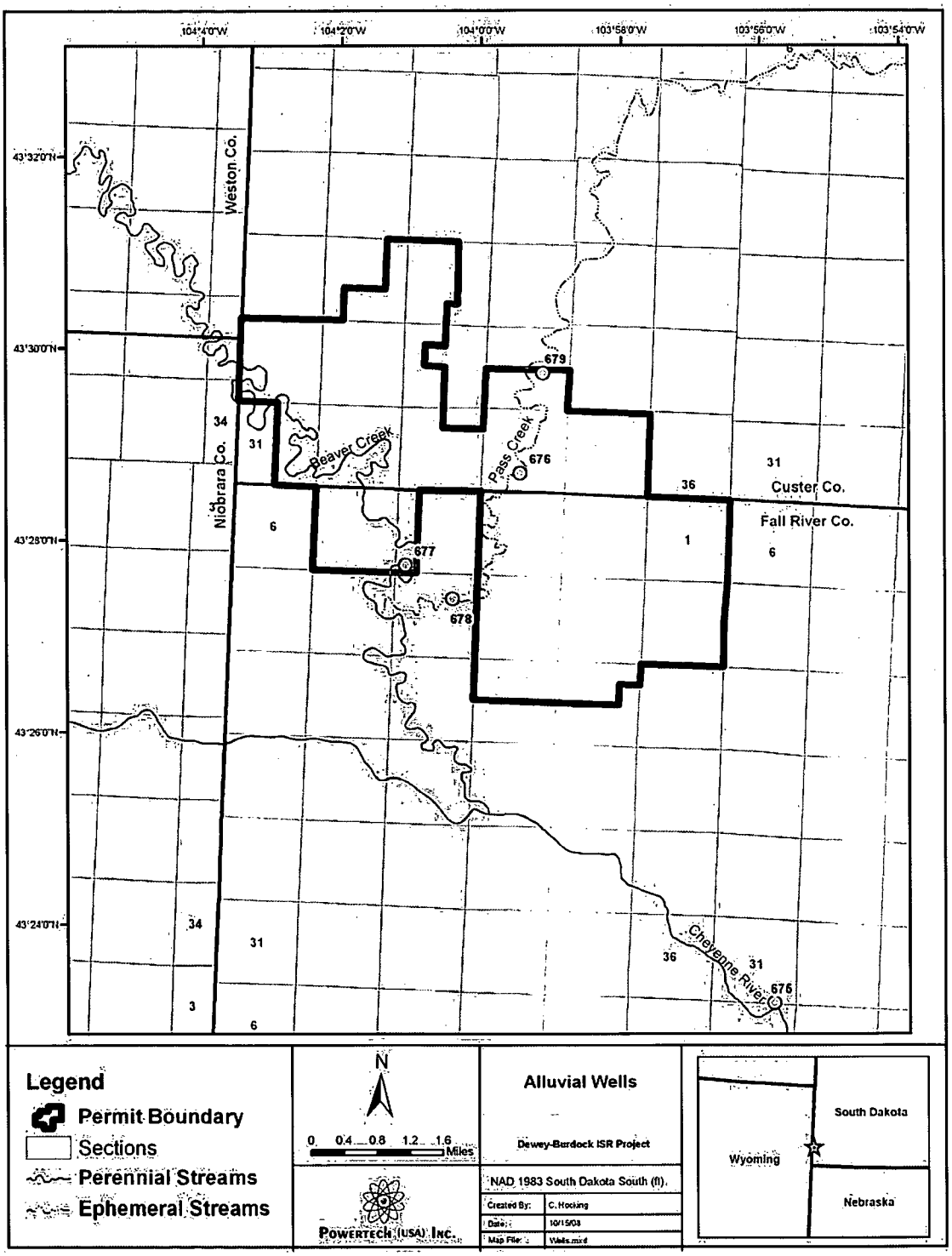


Table 5. Known Fall River Aquifer Wells at the Dewey-Burdock Uranium ISR Project

Well I.D.	Name Other	Date Drilled	Construction Information					Use Type	Flowing Artesian	Water-Quality Sampling Frequency	Data Origin
			Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)				
7	D-27	UNK	200	UNK	UNK	6	UNK	domestic	UNK	quarterly	TVA EIS Report
8	D-29	UNK	240	UNK	UNK	6	UNK	domestic	yes	quarterly	TVA Data
17	D-13	UNK	156	UNK	UNK	3	little rusty	stock	no	none	Well Completion Report
18	D-10	UNK	527	UNK	UNK	4	UNK	domestic	yes	quarterly	TVA EIS Report
20	D-21	UNK	530	UNK	UNK	UNK	UNK	domestic	UNK	none	TVA EIS Report
21	D-23	UNK	910	UNK	UNK	UNK	UNK	stock	UNK	none	TVA EIS Report
23	D-40	UNK	600	UNK	UNK	UNK	UNK	stock	no	none	TVA EIS Report
24	D-39	UNK	600	UNK	UNK	UNK	UNK	stock	yes	none	TVA EIS Report
26	D-42	UNK	350	UNK	UNK	UNK	UNK	other	no	none	TVA EIS Report
49		UNK	600	UNK	UNK	4	good	stock	yes	water level	TVA Data
436	DPZ-3 FR, 6S 1E20AB2	UNK	590	UNK	UNK	UNK	UNK	monitor	no	none	USGS
601	BPZ 14 FR	6/7/1978	UNK	UNK	UNK	1	okay	monitor	UNK	none	Well Completion Report
603	8S 2E23BBA	UNK	UNK	UNK	UNK	6	UNK	UNK	UNK	none	USGS
607	BPZ 18 FR	UNK	UNK	UNK	UNK	1	okay	monitor	no	water level	TVA Data
610	BPZ 20 FR	6/27/1978	680	630	672	1	good cond capped	monitor	no	water level	Well Completion Report
613	DPZ 1 FR, 6S1E20AD6	8/14/1981	580	504	580	4	okay	monitor	no	water level	Well Completion Report
622	DPZ 4 FR, 6S 1E20AA	8/17/1981	520	503	580	4	okay	monitor	no	monthly	Well Completion Report
625	BPZ 22 FR	UNK	630	UNK	UNK	1	okay	monitor	no	none	TVA Data
631		02/98	80	30	80	5	steel	stock	no	quarterly	Well Completion Report
644	BPZ 16 FR	6/7/1978	UNK	UNK	UNK	1	okay	monitor	no	none	Well Completion Report
646	BPZ-9 FR	UNK	UNK	UNK	UNK	UNK	UNK	monitor	yes	none	GPS
681	DB07-32-3C	1/27/2008	600	585	600	6	new PVC	pump test well	yes	monthly	Well Completion Report
683	DB07-29-7	3/4/2008	650	635	650	4	new	monitor	no	once	Well Completion Report
685	DB07-32-4C	2/4/2008	595	580	595	4	new PVC	monitor	yes	once	Well Completion Report
687	DB07-32-5	2/6/2008	608	590	605	4	new PVC	monitor	yes	once	Well Completion Report
688	DB08-11-17	4/1/2008	255	245	255	6	UNK	monitor	no	monthly	Well Completion Report
691	DB07-32-9C	3/10/2008	505	490	505	6	new pvc	monitor	yes	once	Well Completion Report
694	DB08-15-02	3/22/2008	392	377	392	6	new pvc	monitor	yes	monthly	Well Completion Report
695	DB08-32-13	3/20/2008	508	493	508	6	new pvc	monitor	yes	monthly	Well Completion Report
698	DB08-02-01	3/25/2008	205	180	205	6	new pvc	monitor	no	monthly	Well Completion Report
8802	D-44, 88B	UNK	320	UNK	UNK	UNK	UNK	stock	UNK	none	TVA EIS Report

Figure 6. Fall River Wells Near the Dewey-Burdock Site.

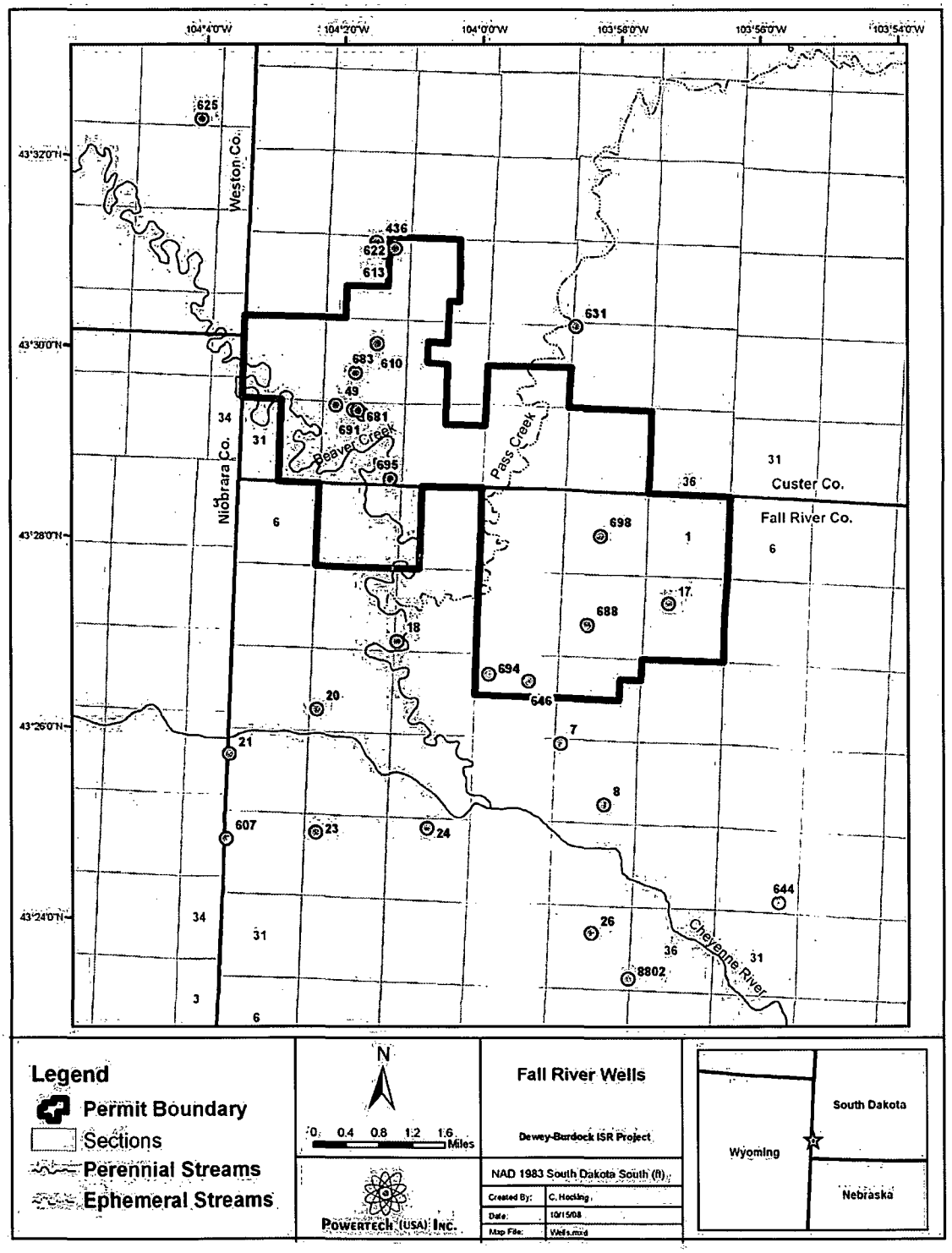


Table 6. Known Fuson Wells at the Dewey-Burdock Uranium ISR Project

Well I.D.	Name Other	Date Drilled	Construction Information					Use Type	Flowing Artesian	Data Origin
			Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)			
614	DPZ 1 FU, 6S1E20AD2	9/14/81	620	609	620	4	okay	monitor	no	Well Completion Report

Figure 7. Fuson Wells Near the Dewey-Burdock Site.

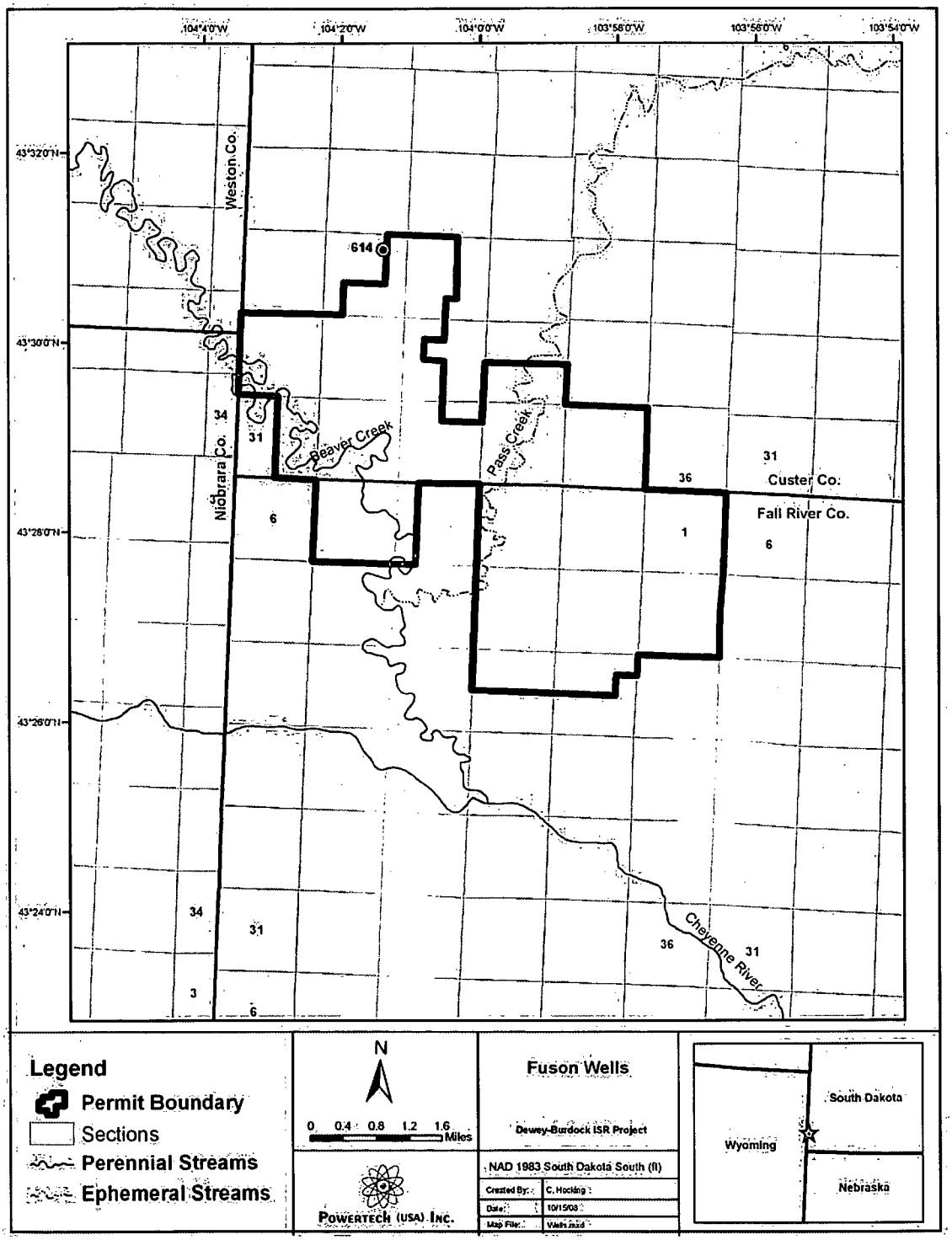


Table 7. Known Lakota Aquifer Wells at the Dewey-Burdock Uranium ISR Project (Page 1 of 2)

Well I.D.	Name Other	Date Drilled	Construction Information					Use Type	Flowing Artesian	Water-Quality Sampling Frequency	Data Origin
			Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)				
1	D-11	UNK	600	UNK	UNK	4	really rusty	stock	yes	none	TVA EIS Report
2	D-20	11/17/1981	650	566	650	5	UNK	domestic	yes	quarterly	Well Completion Report
12	D-7	UNK	805	UNK	UNK	5	okay ltl rusty	stock	yes	water level	TVA EIS Report
13	D-6	10/22/1980	625	580	625	5	UNK	domestic	no	quarterly	Well Completion Report
14	D-5	UNK	470	UNK	UNK	4	fairly rusty	unknown	no	none	TVA EIS Report
16	D-1	UNK	330	UNK	UNK	5	UNK	domestic	no	quarterly	TVA EIS Report
38	B-4	11/12/1949	494	UNK	UNK	4	slightly rusty	stock	yes	water level	Well Completion Report
42	D-8	UNK	600	UNK	UNK	5	UNK	domestic	yes	quarterly	TVA EIS Report
51	D-9	UNK	550	UNK	UNK	10	UNK	other	yes	none	TVA EIS Report
61	D-12	UNK	525	UNK	UNK	5	UNK	stock	no	none	TVA EIS Report
96		UNK	560	UNK	UNK	5	UNK	domestic	yes	none	TVA Data
115		10/18/1984	UNK	UNK	UNK	UNK	okay	domestic	yes	none	Well Completion Report
135		UNK	360	UNK	UNK	UNK	UNK	domestic	no	none	TVA Data
139		UNK	620	UNK	UNK	UNK	UNK	stock	yes	none	TVA Data
147	DPZ -8 LAK, 6S 1E17CAC	UNK	750	UNK	UNK	1	okay	monitor	no	none	USGS
510	D-14, 7S 1E12DD	6/12/1988	540	300	520	5	PVC	stock	yes	none	Well Completion Report
602	BPZ 14 LAK	6/29/1978	UNK	UNK	UNK	1	okay	monitor	UNK	none	Well Completion Report
608	BPZ 18 LAK	UNK	UNK	UNK	UNK	1	okay	monitor	UNK	water level	TVA Data
609	BPZ 20 LAK, 6S 1E29ABDC	6/26/1978	1000	903	966	4	good capped	monitor	no	water level	Well Completion Report
611	Dewey TVA Pump Well	10/17/1981	815	695	800	UNK	UNK	pump test well	no	none	Well Completion Report
612	DPZ 2 LK, 6S 1E20AB	UNK	UNK	UNK	UNK	4	okay	monitor	no	none	USGS
615	DPZ 1 LK	8/13/1981	800	712	800	4	okay	monitor	no	monthly	Well Completion Report
616	DPZ 5 LK	2/9/1982	795	735	835	4	okay	monitor	no	none	Well Completion Report
617	DPZ 6 LK, 6S 1E20AC	9/15/1981	810	715	810	4	okay	monitor	no	none	Well Completion Report
619	D-4, Daniels West 1, MET	UNK	280	UNK	UNK	4	ok ltl rust	stock	no	quarterly	TVA EIS Report
620	Spencer Mine Well	UNK	UNK	UNK	UNK	UNK	good	stock	no	none	GPS
623	DPZ 4 L, 6S 1E20AA(2)	8/17/1981	765	714	780	4	okay	monitor	no	none	Well Completion Report
626	BPZ 22 LAK	UNK	640	UNK	UNK	4	UNK	UNK	no	none	TVA Data
643	BPZ 16 LAK	6/7/1978	UNK	UNK	UNK	1	okay	monitor	UNK	none	Well Completion Report
650	Daniels Bennet Canyon	UNK	UNK	UNK	UNK	4	rusty	stock	no	quarterly	GPS
680	DB07-11-11C	12/19/2007	436	426	436	6	new PVC	pump test well	no	monthly	Well Completion Report

Table 7. Known Lakota Aquifer Wells at the Dewey-Burdock Uranium ISR Project (Page 2 of 2)

Well I.D.	Name Other	Date Drilled	Construction Information					Use Type	Flowing Artesian	Water-Quality Sampling Frequency	Data Origin
			Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)				
682	DB07-11-2	2/21/2008	460	450	460	4	new PVC	monitor	no	once	Well Completion Report
684	DB07-11-14C	2/13/2008	423	413	423	4	new pvc	monitor	no	once	Well Completion Report
686	DB07-11-15	2/24/2008	428	418	428	4	new PVC	monitor	no	once	Well Completion Report
689	DB07-32-10,	3/11/2008	730	715	730	6	UNK	monitor	yes	monthly	Well Completion Report
692	DB08-11-19	4/16/2008	327	325	335	6	new pvc	monitor	no	once	Well Completion Report
696	DB08-15-03	3/21/2008	587	572	587	6	new pvc	monitor	yes	monthly	Well Completion Report
697	DB08-32-12	3/18/2008	682	667	682	6	new pvc	monitor	yes	monthly	Well Completion Report
3026	DB08-01-06	3/26/2008	196	166	196	6	new	monitor	no	monthly	Well Completion Report
7002	D-26, 7S	UNK	500	UNK	UNK	6	poor	stock	yes	quarterly	TVA EIS Report
8002	D-28, 8S	UNK	500	UNK	UNK	6	poor	stock	yes	water level	TVA EIS Report

Figure 8. Lakota Wells Near the Dewey-Burdock Site.

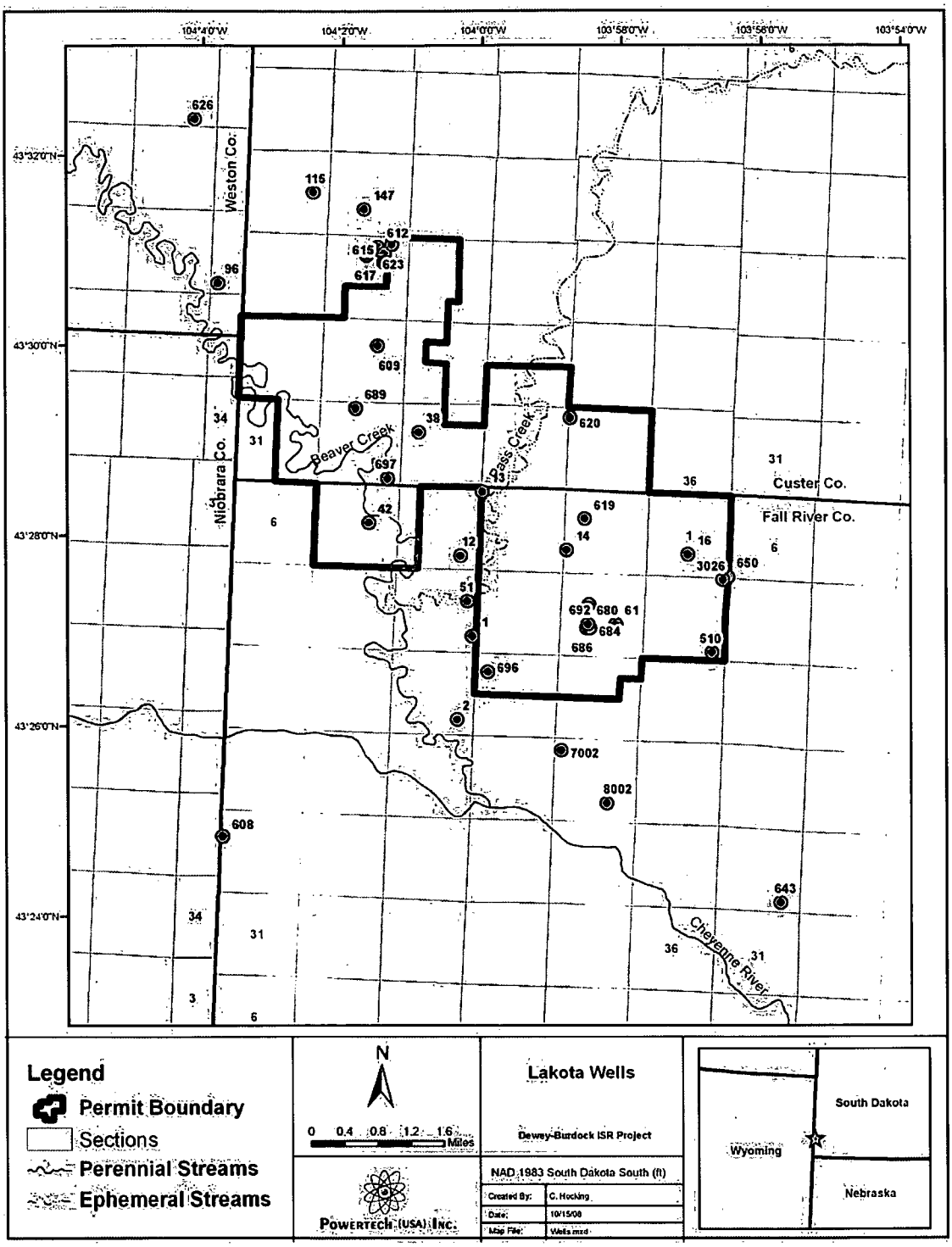


Table 8. Known Inyan Kara Aquifer Wells at the Dewey-Burdock Uranium ISR Project

Well I.D.	Name Other	Date Drilled	Construction Information					Use Type	Flowing Artesian	Water-Quality Sampling Frequency	Data Origin
			Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)				
40	40S, 6S 1E30CBB	UNK	680	UNK	UNK	6	UNK	none	yes	none	USGS
270		UNK	UNK	UNK	UNK	0	UNK	stock	yes	none	GPS
605		UNK	UNK	UNK	UNK	1	okay	monitor	UNK	none	GPS
628		UNK	UNK	UNK	UNK	UNK	UNK	stock	no	quarterly	GPS
668	TVA Burdock Test Well	1/31/1977	574	280	555	12	UNK	pump test well	yes	water level	Well Completion Report
4002	40	UNK	UNK	UNK	UNK	6	UNK	domestic	yes	quarterly	TVA Data

Figure 9. Wells Completed in the Inyan Kara Aquifer. These Wells Include Those Screened in Either the Fall River or Lakota Formations or Both.

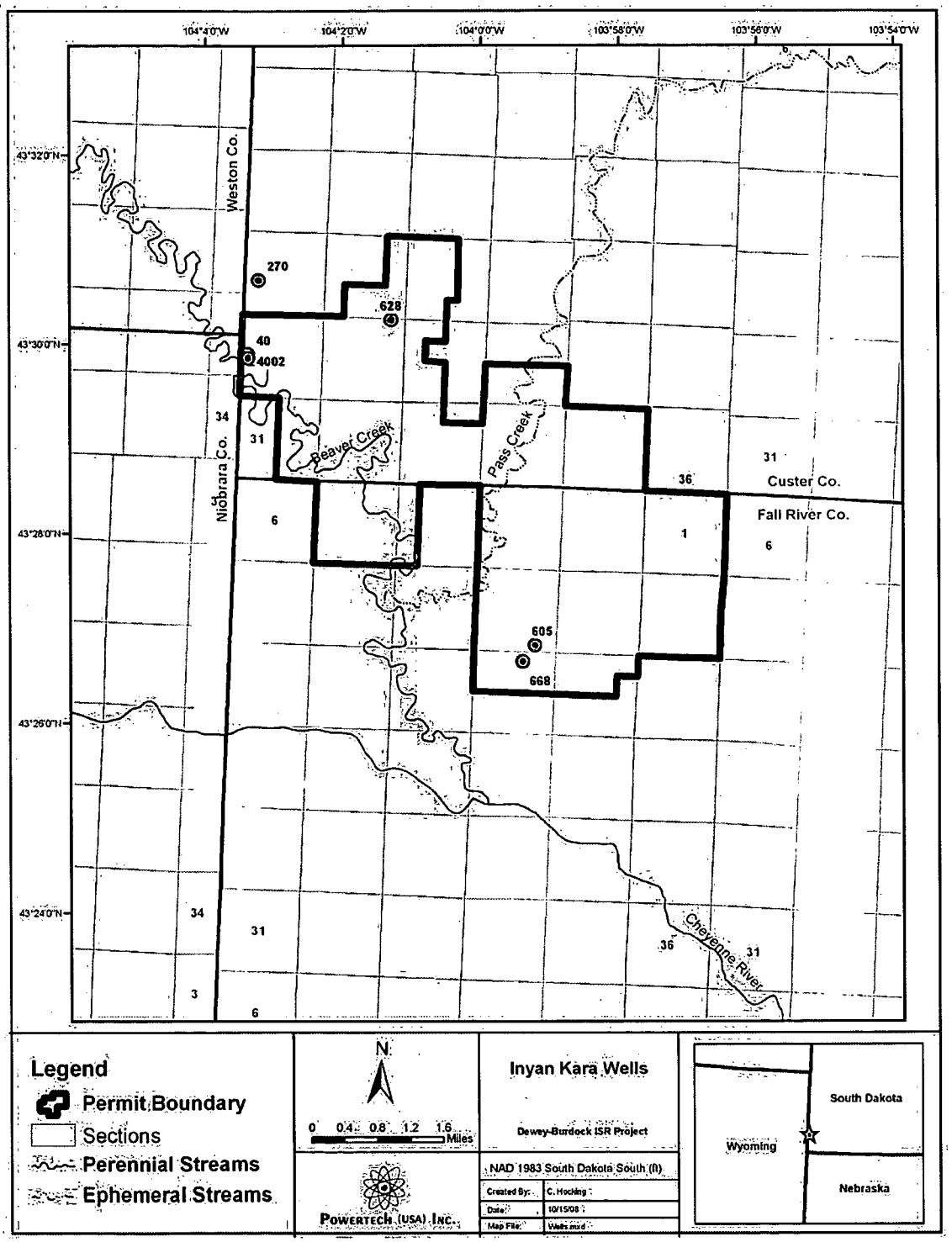


Table 9. Known Sundance or Unkpapa Aquifer Wells at the Dewey-Burdock Uranium ISR Project

Well I.D.	Name Other	Date Drilled	Construction Information					Use Type	Flowing Artesian	Water-Quality Sampling Frequency	Data Origin
			Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)				
635	7S 1E14BAAC	UNK	880	666	780	6	leaky	stock	yes	quarterly	well completion report
114	E-2	UNK	365	UNK	UNK	UNK	UNK	stock	no	none	TVA EIS Report
690	DB08-11-18	4/15/2008	623	621	631	6	new pvc	monitor	yes	once	well completion report
704	DB08-05-01	4/29/2008	955	915	955	6	new	other	yes	none	well completion report
693	DB07-32-11	3/8/2008	910	910	930	6	new pvc	monitor	yes	once	well completion report
703	DB08-01-07	4/18/2008	525	475	525	6	new	other	no	none	well completion report

Figure 10. Sundance and Unkpapa Aquifers Near the Dewey-Burdock Site.

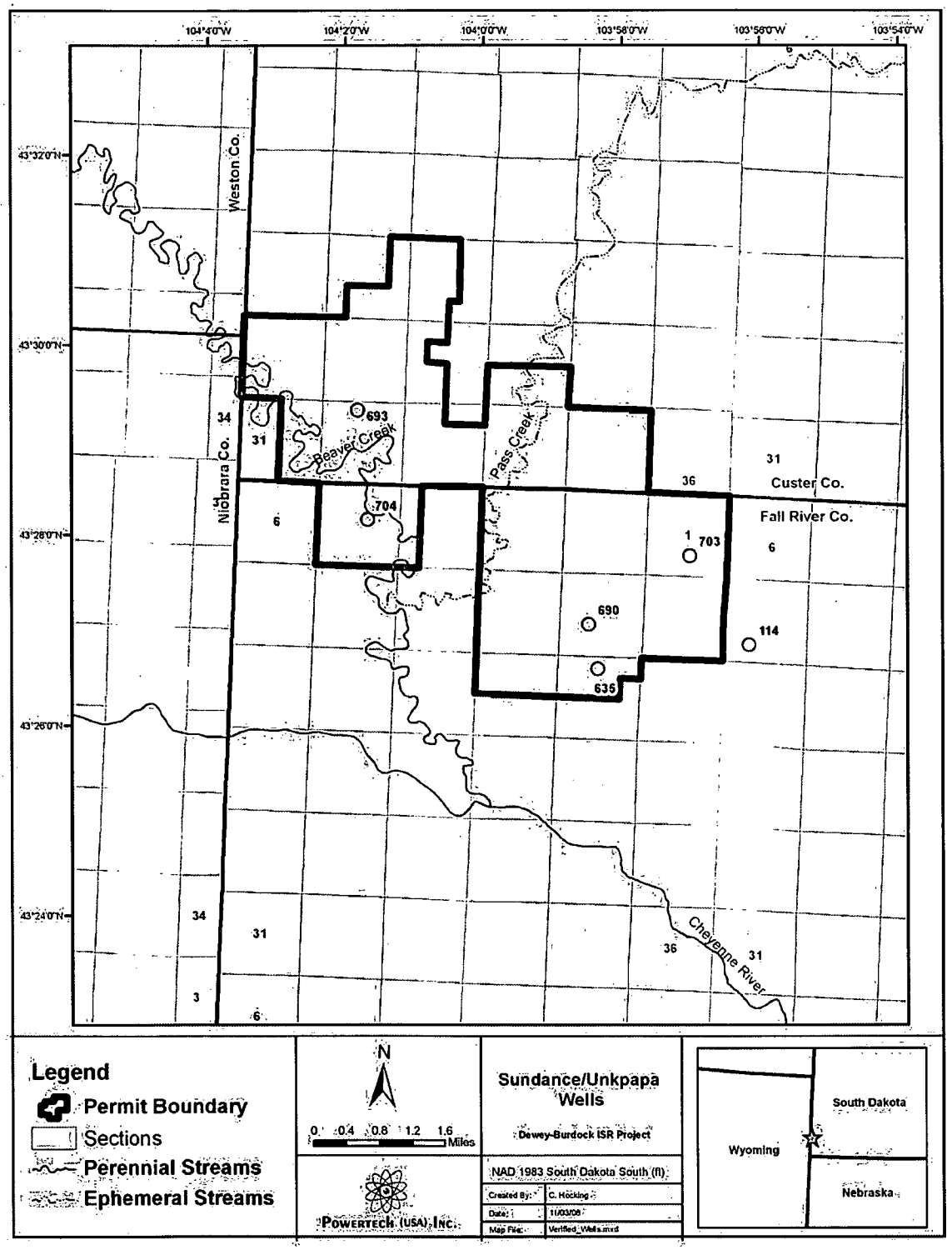
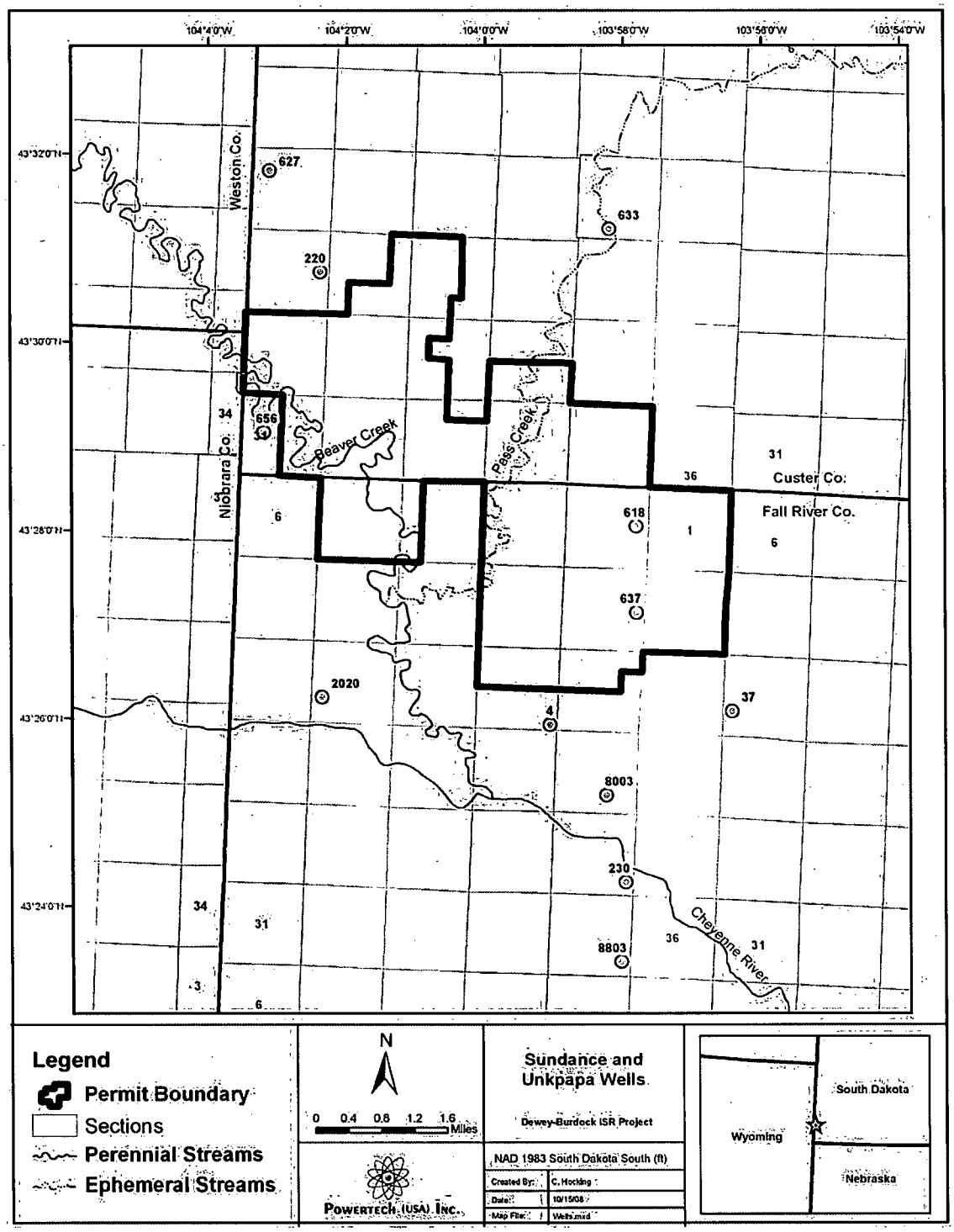


Table 10. Wells With Unknown Aquifer of Complete at the Dewey-Burdock Uranium ISR Project

Well I.D.	Name Other	Date Drilled	Construction Information					Use Type	Flowing Artesian	Water-Quality Sampling Frequency	Data Origin
			Depth (ft)	Depth to Top Screen (ft)	Depth to Bottom Screen (ft)	Casing Diameter (in)	Casing Condition (Surface Observation)				
4	D-19	UNK	2264	UNK	UNK	3	rusty leaky	stock	yes	once	TVA EIS Report
37		UNK	UNK	UNK	UNK	1	okay windmill	stock	no	none	TVA EIS Report
90		UNK	UNK	UNK	UNK	UNK	UNK	stock	UNK	none	GPS
220		UNK	UNK	UNK	UNK	UNK	UNK	stock	yes	none	GPS
230		UNK	UNK	UNK	UNK	UNK	UNK	stock	UNK	none	GPS
618		UNK	UNK	UNK	UNK	UNK	UNK	stock	no	none	GPS
627		UNK	UNK	UNK	UNK	UNK	UNK	UNK	UNK	none	GPS
633	Pass Creek Well 2	UNK	UNK	UNK	UNK	2	okay	stock	no	none	GPS
637	BPZ-5	UNK	UNK	UNK	UNK	2	okay	monitor	no	none	TVA
656		UNK	UNK	UNK	UNK	UNK	UNK	stock	yes	none	GPS
2020	21N	UNK	UNK	UNK	UNK	UNK	UNK	stock	yes	none	GPS
8803	88C	UNK	UNK	UNK	UNK	UNK	UNK	stock	yes	none	GPS

Figure 11. Wells Completed Within an Unknown Aquifer Near the Dewey-Burdock Site.



POWERTECH (USA) INC.

APPENDIX 3.4-B

WELL COMPLETION REPORTS

POWERTECH WELL COMPLETION REPORTS
(2007–2008)

DB-GW675

Location Marietta

Construction Details

Total Depth	14.4'
Screen Inverval	4.4 – 14.4'
Sand pack	3 – 14.4'
Bentonite	1 – 3'
Cement	0 – 1'

Distance from surface to top of casing 2.5'

Water Level ~9' below surface

Lithology

0 – 4 ft	fine to med grain sand, tan color, mostly quartz and feldspar, some dark minerals (5%)
4 – 9 ft	poorly sorted, coarse sand, few small pebbles
9 – 12.5 ft	poorly sorted, coarse sand, mostly quartz and feldspar with dark minerals (10%), some pebbles, wet
12.5 -14.4 ft	dark gray, fissile shale

DB-GW677

Location south of Putnam house

Construction Details

Total Depth	14.5'
Screen Inverval	4.5 – 14.5'
Sand pack	3 – 14.5'
Bentonite	1 – 3'
Cement	0 – 1'

Water Level ~9' below surface

Lithology

0 – 4 ft	med tan, sandy silt
4 – 6 ft	sandy silt
6 – 7.5 ft	cobbles in silty sand, poorly sorted
7.5 – 9 ft	tan, silty sand
9 – 12.5 ft	wet, tan, very fine grained sand
12.5 -14.5 ft	dark gray, fissile shale (Belle Fourche Fm)

DB-GW678

Location along Pass Creek west of Burdock

Construction Details

Total Depth	14.5'
Screen Inverval	4.5 – 14.5'
Sand pack	3 – 14.5'
Bentonite	1 – 3'
Cement	0 – 1'

Water Level ~8' below surface

Lithology

0 – 9 ft	very fine grained, red, silty sand
9 – 14 ft	dominantly vfg silty sand with 1" beds of med to coarse sand (did not penetrate shale)

4/14-08

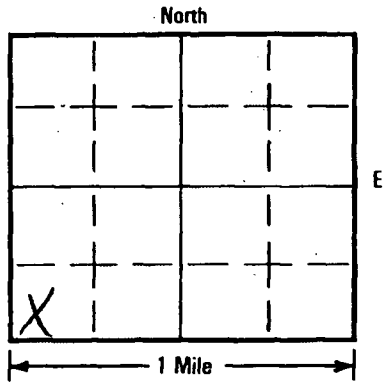
SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location SW ¼ SW ¼ Sec 1 Twp 75 Rg 1E

County Fall River

Please mark well location with an "X"



Well Completion Date 4-18-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 723

Hot Springs S.D 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Fall River	0	100
Fuson	100	150
Lakota	150	305
Minnelusa	305	410
Unk Papa	410	525

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? 200 ft. from Septic Tank (identify source).

PROPOSED USE:

☒ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING: Mud & Rotary

CASING DATA: ☒ Steel ☐ Plastic ☐ Other

If other describe

WEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
18 LB/FT	6 IN	0 FT	475 FT	8¾ IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
Cmt	82	15.3 lb./gal	0 ft.	475 ft.
		lb./gal	ft.	ft.

Describe grouting procedure Pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3 IN Length 50 FEET

Material PVC

Slot Size .020 Set From 475 Feet to 525 Feet

Other information Slt K Packer

WAS A PACKER OR SEAL USED? ☑ YES ☐ NO

If so, what material? 6" X 3" K Packer

Describe packer(s) and location? Packer set at 465'

DISINFECTION: Was well disinfected upon completion?

YES, How:

X NO, Why Not? NA

Laboratory sent to for water quality analysis

Rispic

STATIC WATER LEVEL 110 Feet

If flowing: closed in pressure PSI

GPM flow through inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced Flowrate GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Air lift at 410

☐ Bailed

☐ Other

Pumping Level Below Land Surface

ft. After Hrs. pumped GPM

ft. After Hrs. pumped GPM

If pump installed, pump rate GPM

RECEIVED MAY 20 2008 WATER RIGHTS PROGRAM

REMARKS DEWEY Burdock

8-1-7

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm Davis Drilling Inc

Signature of License Representative: Steve Davis

Signature of Well Owner or Equitable Property Holder:

Date: 5/5/08

5-20-08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NE ¼ NW ¼ Sec 32 Twp 6S Rg 1E

County CUSTER

Please mark well location with an "X"

North

W E

1 Mile

Well Completion Date 1-27-08

Well Owner: Powertech

Business Name: Powertech USA Inc

Address: P.O Box 723 Hot Springs S.D 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek Shale	0	470'
Fall River Sandstone	470'	585'

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? _____ ft. from NONE Present (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: Mud Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe _____

WEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 21 LB/FT	6 IN	0 FT	585 FT	8¾ IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
CMIT	96	15.2 lb./gal	585 ft	0 ft
		lb./gal	ft	ft

Describe grouting procedure pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3 IN Length 15 FEET

Material PVC

Slot Size .020 Set From 600 Feet to 585 Feet

Other information Set K Packer

WAS A PACKER OR SEAL USED? ☒ YES ☐ NO

If so, what material? 6" K Packer

Describe packer(s) and location? Packer 575'

DISINFECTION: Was well disinfected upon completion?

_____ YES, How: _____

✓ NO, Why Not? NA

Laboratory sent to for water quality analysis

Respec

STATIC WATER LEVEL 0 Feet

If flowing: closed in pressure 6.1 PSI

GPM flow 10 through 2 inch pipe

Controlled by ☒ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? YES

WELL TEST DATA:

☐ Pumped Describe: Air lift at 575'

☐ Bailed

☒ Other

Pumping Level Below Land Surface

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate _____ GPM

REMARKS Dewey Burdock T7S R32E 3C

RECEIVED
FEB 22 2008
WATER RIGHTS PROGRAM

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm Davis Drilling Inc

Signature of License Representative: Steve Davis

Signature of Well Owner or Equitable Property Holder: PowerTech

Date: 2/12/08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location [illegible] ¼ [illegible] ¼ Sec [illegible] Twp 6S Rg 1E

County NE SW 11

Fall River

North

W E

X

1 Mile

Please mark well location with an "X"

Well Completion Date

2-24-08

Well Owner: Power Tech.

Business Name: Power Tech USA Inc

Address: P.O. Box 723

Hot Springs S.D 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek Shale	0	120
~~[illegible]~~ Fall River SS	120	255
Fuson Shale	255	315
Lakota Sand Stone	315	428

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? _____ ft. from NONE Present (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes

☐ Irrigation ☐ Industrial ☐ Institutional ☑ Monitoring well

METHOD OF DRILLING:

Mud Rotary

CASING DATA: ☐ Steel ☑ Plastic ☐ Other

If other describe _____

WEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
5[illegible]17 LB/FT	4 IN	0 FT	418 FT	6 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
CMT	70	15.2 lb./gal	0 ft.	418 ft.
		lb./gal	ft.	ft.

Describe grouting procedure Pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 2 IN Length 10 FEET

Material PVC

Slot Size .020 Set From 418 Feet to 428 Feet

Other information Set K Packer

WAS A PACKER OR SEAL USED? ☑ YES ☐ NO

If so, what material? 4" K Packer

Describe packer(s) and location? Packer 408'

DISINFECTION: Was well disinfected upon completion?

_____ YES, How: _____

X NO, Why Not? NA

Laboratory sent to for water quality analysis.

Respec

STATIC WATER LEVEL 32.6 Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Hotel at 425'

☐ Bailed

☑ Other

Pumping Level Below Land Surface

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate _____ GPM

REMARKS Dewey Burdock 7-11-15

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm DAVIS Drilling Inc

Signature of License Representative: Stan Davis

Signature of Well Owner or Equitable Property Holder: [signature] Power Tech

Date: 3/5/08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NE ¼ SW ¼ Sec 11 Twp 70S Rg 1E

County Fall River

Please mark well location with an "X"

North

W X E

1 Mile

Well Completion Date 2-13-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 723

Hot Springs SD 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek shale	0	102'
Fall River sandstone	102'	232'
Fuson shale	232'	300'
Dakota sandstone	300'	423'

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from NONE Present (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes

☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: Mud Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
R17 LB/FT	4 IN	0 FT	413 FT	6¼ IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
CMT	66	152 lb./gal	0 ft.	413 ft.
		lb./gal	ft.	ft.

Describe grouting procedure pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 2 IN Length 10 FEET

Material PVC

Slot Size .020 Set From 423 Feet to 413 Feet

Other information [illegible] Packer

WAS A PACKER OR SEAL USED? ☒ YES ☐ NO

If so, what material? 4" K Packer

Describe packer(s) and location? Packer 403

DISINFECTION: Was well disinfected upon completion?

____ YES, How: ____

Laboratory sent to for water quality analysis: ✓ NO, Why Not? NA

Below

STATIC WATER LEVEL 28.8 Feet

If flowing: closed in pressure ____ PSI

GPM flow ____ through ____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Air lift [illegible] 400

☐ Bailed

☒ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped ____ GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS Dewey [illegible]

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm Davis Drilling Inc

Signature of License Representative: [illegible]

Signature of Well Owner or Equitable Property Holder: [illegible] Power Tech

Date: 2/27/08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location SE ¼ NW ¼ Sec 11 Twp 15 Rg 1E

County Fall River

Please mark well location with an "X"

North

W X E

1 Mile

Well Completion Date

2-21-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 773

Hot Springs SD 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Shale over Shale		

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? _____ ft. from None present (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes

☐ Irrigation ☐ Industrial ☐ Institutional ☑ Monitoring well

METHOD OF DRILLING:

Mud Rotary

CASING DATA: ☐ Steel ☑ Plastic ☐ Other

If other describe _____

WEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
17 LB/FT	4 IN	0 FT	450 FT	6 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
CMT	67	15.4 lb./gal	0 ft	450 ft
		lb./gal	ft	ft

Describe grouting procedure Pump

SCREEN: ☐ Perforated pipe ☑ Manufactured

Diameter 2 IN Length 10 FEET

Material PVC

Slot Size .020 Set From 440 Feet to 450 Feet

Other information Int. & Packer

WAS A PACKER OR SEAL USED? ☑ YES ☐ NO

If so, what material? 4" K Packer

Describe packer(s) and location? Packer 440'

DISINFECTION: Was well disinfected upon completion?

_____ YES, How: _____

X NO, Why Not? N/A

Laboratory sent to for water quality analysis

Rispan

STATIC WATER LEVEL 54.2 Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Hole at 435'

☐ Bailed

☑ Other

Pumping Level Below Land Surface

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate _____ GPM

REMARKS Dewey Burdick 7-11-2

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm Davis Drilling Inc

Signature of License Representative: Steve Davis

Signature of Well Owner or Equitable Property Holder: Power Tech

Date: 3/5/08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NW ¼ NW ¼ Sec 5 Twp 7S Rg 1E

County Fall River

Please mark well location with an "X"

North

W E

1 Mile

Well Completion Date 4-29-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 723

Hot Springs S.D. 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek	0	455
Fall River	455	600
Fuson	600	655
Lakota	655	735
Morrison	735	890
UNK PAPA	890	955

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? _____ ft. from None Present (identify source).

PROPOSED USE:

☒ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes

☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING:

Mud & Rotary

CASING DATA: ☒ Steel ☐ Plastic ☐ Other

If other describe _____

PEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
14 LB/FT	6 IN	0 FT	915 FT	8 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
Cmt	205	13.3 lb./gal	0 ft.	915 ft.
		lb./gal	ft.	ft.

Describe grouting procedure Mtg Cementing

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3" IN Length 40 FEET

Material PVC

Slot Size .020 Set From 915 Feet to 955 Feet

Other information Sil K Packer

WAS A PACKER OR SEAL USED? ☒ YES ☐ NO

If so, what material? 3" x 6" K Packer

Describe packer(s) and location? Packer Set 905

DISINFECTION: Was well disinfected upon completion?

_____ YES, How: _____

✓ NO, Why Not? NA

Laboratory sent to for water quality analysis

Respec

STATIC WATER LEVEL 0 Feet

If flowing: closed in pressure 42 PSI

GPM flow ½ through 2 inch pipe

Controlled by ☒ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Air lift at 900'

☐ Bailed

☐ Other

Pumping Level Below Land Surface

_____ ft. _____ hrs. pumped _____ GPM

_____ ft. _____ hrs. pumped _____ GPM

If pump installed, pump rate _____ GPM

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RECEIVED MAY 20 2008 WATER RIGHTS PROGRAM

REMARKS Dewey Burdock

6-5-1

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm David Drilling Inc

Signature of License Representative: Steve Davis

Signature of Well Owner or Equitable Property Holder:

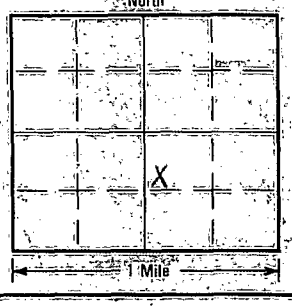
Date: 5/5/08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NW ¼ SE ¼ Sec 29 Twp 65 Rg 1E
County

Please mark well location with an "X"



Well Completion Date
3-4-08

LOCATION:
Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from NONE PRESENT (identify source).

PROPOSED USE:
☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING:
Mud Rotary

CASING DATA: ☐ Steel ☑ Plastic ☐ Other
If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 17 LB/FT	4 IN	0 FT	635 FT	6 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
CMT	77	15.2 lb./gal	0 ft.	635 ft.
		lb./gal	ft.	ft.

Describe grouting procedure DUMP

SCREEN: ☐ Perforated pipe ☒ Manufactured
Diameter 2 IN Length 15 FEET
Material PVC
Slot Size .020 Set From 150 Feet to 635 Feet
Other information Slit K Packer

WAS A PACKER OR SEAL USED? ☑ YES ☐ NO
If so, what material? 4" K Packer
Describe packer(s) and location? Packer 675'

DISINFECTION: Was well disinfected upon completion?
YES, How: ____
X NO, Why Not? N/A
Laboratory sent to for water quality analysis
RESPEC

Well Owner: Power Tech
Business Name: Power Tech USA INC
Address: P.O. Box 723
Hot Springs SD 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek Shale	0	530
Fall River S.S	530	650

STATIC WATER LEVEL 81.9 Feet
If flowing: closed in pressure ____ PSI
GPM flow ____ through ____ inch pipe
Controlled by ☐ Valve ☐ Reducers ☐ Other ____
Reduced Flowrate ____ GPM
Can well be completely shut-in? Yes

WELL TEST DATA:
☐ Pumped Describe: Hydrill at 620
☐ Bailed
☑ Other
Pumping Level Below Land Surface
____ ft. After ____ Hrs. pumped ____ GPM
____ ft. After ____ Hrs. pumped ____ GPM
If pump installed, pump rate ____ GPM

REMARKS
DEWEY Bundock 7-29-7

This well was drilled under license # 745
And this report is true and accurate.
Drilling firm Davis Drilling INC
Signature of License Representative: Stan Davis
Signature of Well Owner or Equitable Property Holder: Power Tech
Date: 3/19/07

07-11-116

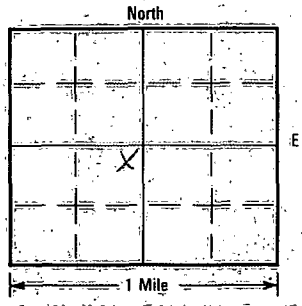
SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location SW ¼ NW ¼ Sec 11 Twp 75 Rg 1E

County Fall River

Please mark well location with an "X"



Well Completion Date

12-19-07

Well Owner: ~~Fuhrer~~ ~~Refinery~~ Powertech

Business Name: Powertech USA Inc

Address: P.O. Box 723

Hot Springs S.D 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek Sh	0'	122'
Fall River SS	122'	250'
Fuson Sh	250'	317'
Lakota SS	317'	436'

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from NONE Present (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING:

Mud Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 21 LB/FT	6 IN	0 FT	426 FT	8¾ IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
CMT	95.5	15.1 lb./gal	426 ft	0 ft
		lb./gal	ft	ft

Describe grouting procedure Pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 4½ IN Length 10 FEET

Material PVC

Slot Size .025 Set From 436 Feet to 426 Feet

Other information Set With K Packer

WAS A PACKER OR SEAL USED? ☑ YES ☐ NO

If so, what material? 6" K Packer

Describe packer(s) and location? Packer 406'

DISINFECTION: Was well disinfected upon completion?

YES, How: ____

X NO, Why Not? N/A

Laboratory sent to for water quality analysis: Rapid

STATIC WATER LEVEL 21 Feet

If flowing: closed in pressure NA PSI

GPM flow ____ through ____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? YES

WELL TEST DATA:

☐ Pumped Describe: Airlift at 385
☐ Bailed
☑ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped 240 cubic Feet GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS Well DD-07-11-116

lithology attached.

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm Davis Drilling Inc

Signature of License Representative: Stan Davis

Signature of Well Owner or Equitable Property Holder: Powertech (USA) Inc

Date 12-31-07

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NE ¼ NW ¼ Sec 32 Twp 65 Rg 1E

County Custer

Please mark well location with an "X"

North

W E

1 Mile

Well Completion Date 2-6-08

Well Owner: Powertech

Business Name: Powertech USA Inc

Address: P.O. Box 723 Hot Springs S.D. 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek Shale	0	420'
Fall River Sandstone	420'	605'

LOCATION:
Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from None Present (identify source).

PROPOSED USE:
☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☑ Monitoring well

METHOD OF DRILLING: Mud Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 17 LB/FT	4 IN	0 FT	590 FT	6 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
CMT	60	15.8 lb./gal	590 ft.	0 ft.
		lb./gal	ft.	ft.

Describe grouting procedure Mud

SCREEN: ☐ Perforated pipe ☑ Manufactured

Diameter 2 IN Length 15 FEET

Material PVC

Slot Size .020 Set From 605 Feet to 590 Feet

Other information Sand Pack

WAS A PACKER OR SEAL USED? ☑ YES ☐ NO

If so, what material? 4" K Packer

Describe packer(s) and location? Packer 580'

DISINFECTION: Was well disinfected upon completion?
____ YES, How: ____
X NO, Why Not? N/A

Laboratory sent to for water quality analysis
Rapids

STATIC WATER LEVEL ____ Feet

If flowing: closed in pressure 3 PSI

GPM flow 5 through 2 inch pipe

Controlled by ☑ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:
☐ Pumped Describe: Hydrofrac 580'
☐ Bailed
☑ Other

Pumping Level Below Land Surface
____ ft. After ____ Hrs. pumped ____ GPM
____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS: Dewey Burdick 7-32-5

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm Davis Drilling Inc

Signature of License Representative: [signature]

Signature of Well Owner or Equitable Property Holder: [signature] Powertech

Date: 2/27/08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NE ¼ NW ¼ Sec 32 Twp 65 Rg 1E

County Custer

Please mark well location with an "X"

North

W E

1 Mile

Well Completion Date 3-11-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 723

Hot Springs S.D. 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Shell Creek Shale	0	475
Fall River S.S.	475	620
Fuson Shale	620	665
Lakota S.S.	665	715

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from None Found (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: Mud & Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 17 LB/FT	6 IN	0 FT	715 FT	8¾ IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
CMT	86	15.2 lb./gal	0 ft	715 ft
		lb./gal	ft	ft

Describe grouting procedure Pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3 IN Length 15 FEET

Material PVC

Slot Size .020 Set From 730 Feet to 715 Feet

Other information Cut & Packer

WAS A PACKER OR SEAL USED? ☐ YES ☒ NO

If so, what material? 6" Packer

Describe packer(s) and location? Packer S.I. at 705

DISINFECTION: Was well disinfected upon completion?

YES, How:

Laboratory sent to for water quality analysis. NO, Why Not? NA

Price

STATIC WATER LEVEL 0 Feet

If flowing: closed in pressure 23.5 PSI

GPM flow 45 through 2 inch pipe

Controlled by ☒ Valve ☐ Reducers ☐ Other

Reduced Flowrate ____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Bailed at 700

☐ Bailed

☒ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped ____ GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS

Dewey Burdick

7-32-10

This well was drilled under license # 745

And this report is true and accurate:

Drilling firm Davis Drilling Inc

Signature of License Representative: Steve Davis

Signature of Well Owner or Equitable Property Holder: Power Tech

Date: 3/18/08

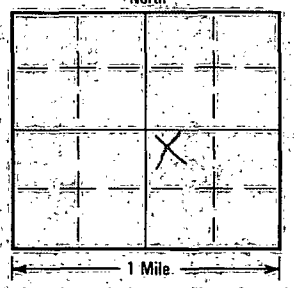
SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NW ¼ SE ¼ Sec 1 Twp 75 Rg 1E

County Fall River

Please mark well location with an "X"



North

W E

X

1 Mile

Well Completion Date 3-26-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 723

Hot Springs S.D. 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Fall River	0	55
Fusow	55	80
Lakota	80	166

LOCATION:
Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from NONE Present (identify source).

PROPOSED USE:
☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: Mud & Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR21 LB/FT	6 IN	0 FT	166 FT	8¼ IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
CMT	34	15.2 lb./gal	0 ft.	166 ft.
		lb./gal	ft.	ft.

Describe grouting procedure: Pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3 IN Length 30 FEET

Material PVC

Slot Size .020 Set From 166 Feet to 196 Feet

Other information: Set K Packer

WAS A PACKER OR SEAL USED? ☒ YES ☐ NO

If so, what material? 6" x 3" K Packer

Describe packer(s) and location? Packer set at 156

DISINFECTION: Was well disinfected upon completion?

____ YES, How: ____

X NO, Why Not? NA

Laboratory sent to for water quality analysis: Respec

STATIC WATER LEVEL 138 Feet

If flowing: closed in pressure ____ PSI

GPM flow ____ through ____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Airlift at 150

☐ Bailed

☐ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped ____ GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS Dewey Burdock

8-1-6

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm: David Drilling

Signature of License Representative: Stan Davis

Signature of Well Owner or Equitable Property Holder: [signature]

Date: 4/22/08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location SW ¼ NE ¼ Sec 2 Twp 7S Rg 1E

County Fall River

Please mark well location with an "X"

North

W. X E

1 Mile

Well Completion Date 3-25-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 773

Hot Springs SD 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Shell Creek Shale	0	75
Fall River Sd	75	205

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from NONE Present (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes

☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: Mud & Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 21 LB/FT	6 IN	0 FT	180 FT	8 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
Cmt	35	15.6 lb./gal	0 ft	180 ft
		lb./gal	ft	ft

Describe grouting procedure pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3 IN Length 25 FEET

Material PVC

Slot Size .020 Set From 180 Feet to 205 Feet

Other information Set K Packer

WAS A PACKER OR SEAL USED? ☒ YES ☐ NO

If so, what material? 6" x 3" K Packer

Describe packer(s) and location? Packer Set at 170'

DISINFECTION: Was well disinfected upon completion?

YES, How: ____

X NO, Why Not? NA

Laboratory sent to for water quality analysis

Resnes

STATIC WATER LEVEL 34.36 Feet

If flowing: closed in pressure ____ PSI

GPM flow ____ through ____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? Y

WELL TEST DATA:

☐ Pumped Describe: Airlift at 1hrs

☐ Bailed

☐ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped ____ GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS Dewey Burdick

8-2-1

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm: Davis Drilling

Signature of License Representative: Stan Davis

Signature of Well Owner or Equitable Property Holder: [signature]

Date: 4/22/08

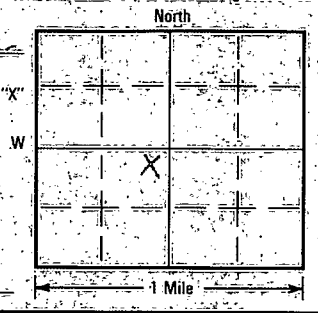
SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NE ¼ SW ¼ Sec 11 Twp 65 Rg 1E

County: Fall River

Please mark well location with an "X"



Well Completion Date: 4-1-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 723

Hot Springs, SD 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek	0	128
Fall River	128	255

LOCATION:
Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from NONE PRESENT (identify source).

PROPOSED USE:
☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: MUD & Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 17 LB/FT	6 IN	0 FT	245 FT	8 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
CMT	45	15.2 lb./gal	0 ft	245 ft
		lb./gal	ft	ft

Describe grouting procedure: Pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3 IN Length 10 FEET

Material PVC

Slot Size .020 Set From 245 Feet to 255 Feet

Other information: Sol K Packer

WAS A PACKER OR SEAL USED? ☒ YES ☐ NO

If so, what material? 6 L3 K Packer

Describe packer(s) and location? Packer set at 235

DISINFECTION: Was well disinfected upon completion?
____ YES, How: ____
X NO, Why Not? NA

Laboratory sent to for water quality analysis: Reeder

STATIC WATER LEVEL 39 Feet

If flowing: closed in pressure ____ PSI

GPM flow ____ through ____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Air lift at 230'

☐ Bailed

☐ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped ____ GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS Dewey Burdick 8-11-17

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm: Davis Drilling

Signature of License Representative: Stan Davis

Signature of Well Owner or Equitable Property Holder: [signature]

Date: 4/22/08

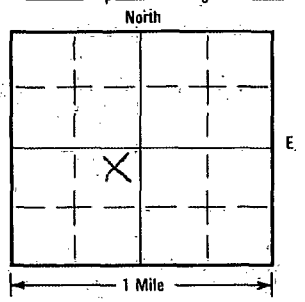
SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NE ¼ SW ¼ Sec 11 Twp 65 Rg 1E

County Fall River

Please mark well location with an "X"



Well Completion Date

4-15-08

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? _____ ft. from NONE Prior (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING:

Mud + Rotary

CASING DATA: ☒ Steel ☐ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
18 LB/FT	6 IN	0 FT	621 FT	8 1/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
Cem	104	15.2 lb./gal	0 ft.	121 ft.
		lb./gal	ft.	ft.

Describe grouting procedure Pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3 IN Length 10 FEET

Material PVC

Slot Size .020 Set From 121 Feet to 631 Feet

Other information [illegible]

WAS A PACKER OR SEAL USED? ☑ YES ☐ NO

If so, what material? Cement [illegible]

Describe packer(s) and location? [illegible]

DISINFECTION: Was well disinfected upon completion?

YES, How: _____

NO, Why Not? NA

Laboratory sent to for water quality analysis

Well Owner: [illegible]

Business Name: [illegible]

Address: [illegible] 723

[illegible]

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek	0	115
Fall River	115	245
Fuson	245	310
Lakota	310	455
Morrison	455	560
UNKPAPA	560	621

STATIC WATER LEVEL 0 Feet

If flowing: closed in pressure 1 PSI

GPM flow ¼ through 2 inch pipe

Controlled by ☒ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: [illegible]

☐ Bailed

☐ Other

Pumping Level Below Land Surface

_____ ft. After _____ Hrs. pumped _____ GPM

_____ ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate _____ GPM

REMARKS DEWEY Burdock

8-11-18

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm [illegible] Drilling

Signature of License Representative: [illegible]

Signature of Well Owner or Equitable Property Holder: [illegible]

Date: 5/5/08

4-14-08

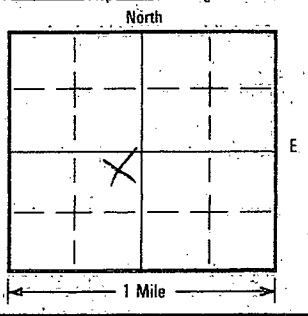
SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NE ¼ SW ¼ Sec 11 Twp 6S Rg 1E

County Fall River

Please mark well location with an "X"



Well Completion Date 4-16-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 723

Hot Springs S.D 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek	0	125
Fall River	125	250
Fuson	250	325
Lakota	325	335

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from NONE Present (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: mud & Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 17 LB/FT	6 IN	0 FT	325 FT	8 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
cmt	58	15.2 lb./gal	0 ft	325 ft
		lb./gal	ft	ft

Describe grouting procedure pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3 IN Length 10 FEET

Material PVC

Slot Size .020 Set From 325 Feet to 335 Feet

Other information SET K Packer

WAS A PACKER OR SEAL USED? ☒ YES ☐ NO

If so, what material? 6" X 3" K Packer

Describe packer(s) and location? Packer Set AT 315

DISINFECTION: Was well disinfected upon completion?

____ YES, How: ____

X NO, Why Not? NA

Laboratory sent to for water quality analysis

Respec

STATIC WATER LEVEL 39.6 Feet

If flowing: closed in pressure ____ PSI

GPM flow ____ through ____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Airlift AT 310

☐ Bailed

☐ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped ____ GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS DEWEY Burdock

8-11-19

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm Davis Drilling

Signature of License Representative: Steve Davis

Signature of Well Owner or Equitable Property Holder:

Date: 5/10/08

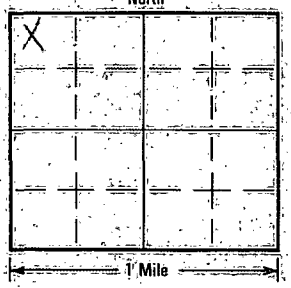
SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NW ¼ NW ¼ Sec 15 Twp 7S Rg 1E

County Fall River

Please mark well location with an "X"



North

X

W E

1 Mile

Well Completion Date 3-21-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 723

Hot Springs SD 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek Shale	0	295
Fall River S.S	295	425
Fuson Shale	425	475
Lakota	475	587

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from None Present (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes

☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: Mud & Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 17 LB/FT	6 IN	0 FT	572 FT	8¾ IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
Cmt	86	15.1 lb./gal	0 ft	572 ft
		lb./gal	ft	ft

Describe grouting procedure pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3 IN Length 15 FEET

Material PVC

Slot Size .020 Set From 572 Feet to 587 Feet

Other information Set K Packer

WAS A PACKER OR SEAL USED? ☒ YES ☐ NO

If so, what material? 6" X 4" K Packer 4" X 3" bell

Describe packer(s) and location? Packer set at 562'

DISINFECTION: Was well disinfected upon completion?

____ YES, How: ____

X NO, Why Not? NA

Laboratory sent to for water quality analysis

Respec

STATIC WATER LEVEL 0 Feet

If flowing: closed in pressure 15 PSI

GPM flow 60 through 2 inch pipe

Controlled by ☒ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Airlift at 560

☒ Bailed

☐ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped ____ GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS Dewey Burdock

8-15-2

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm Davis Drilling

Signature of License Representative: [signature]

Signature of Well Owner or Equitable Property Holder: [signature]

Date: 4-1-08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NW ¼ NW ¼ Sec 15 Twp 7S Rg 1E

County Fall River

Please mark well location with an "X"

North

W E

1 Mile

Well Completion Date 3-22-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 723

Hot Springs S.D. 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek Shale	0	295
Fall River S.C	295	392

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from None Present (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes

☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: Mud + Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 17 LB/FT	6 IN	0 FT	377 FT	8 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
Cmt	59	15.2 lb./gal	0 ft	377 ft
		lb./gal	ft	ft

Describe grouting procedure Pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3 IN Length 15 FEET

Material PVC

Slot Size .020 Set From 377 Feet to 392 Feet

Other information Slot & Packer

WAS A PACKER OR SEAL USED? ☒ YES ☐ NO

If so, what material? 6" x 4" N Packer 4" x 3' Bell

Describe packer(s) and location? Packer Set at 367'

DISINFECTION: Was well disinfected upon completion?

____ YES. How: ____

☒ NO. Why Not? NA

Laboratory sent to for water quality analysis

None

STATIC WATER LEVEL 0 Feet

If flowing: closed in pressure 7 PSI

GPM flow 2 through 2 inch pipe

Controlled by ☒ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Air lift at 360'

☐ Bailed

☐ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped ____ GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS Dewey Burdock

8-15-3

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm Davis Drilling

Signature of License Representative: Steve Davis

Signature of Well Owner or Equitable Property Holder: [signature]

Date: 4-1-08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NW ¼ NE ¼ Sec 32 Twp 6S Rg 1E

County Custer

Please mark well location with an "X"

North

W E

X

1 Mile

Well Completion Date 2-4-08

Well Owner: Powertech

Business Name: Powertech USA Inc

Address: P.O. Box 723

Hot Springs S.D. 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek shale	0	473'
Fall River sandstone	473'	595'

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from NONE Preset (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes

☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: Mud Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 17 LB/FT	4 IN	595 FT	580 FT	6¾ IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
CMT	77	15.2 lb./gal	0 ft	530 ft
		lb./gal	ft	ft

Describe grouting procedure pump

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 2 IN Length 15 FEET

Material PVC

Slot Size .020 Set From 595 Feet to 580 Feet

Other information Set K Packer

WAS A PACKER OR SEAL USED? ☑ YES ☐ NO

If so, what material? 4" K Packer

Describe packer(s) and location? Packer 570'

DISINFECTION: Was well disinfected upon completion?

____ YES, How: ____

X NO, Why Not? NA

Laboratory sent to for water quality analysis: Reliance

STATIC WATER LEVEL 0 Feet

If flowing: closed in pressure 6 PSI

GPM flow 15 through 2 inch pipe

Controlled by ☑ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Air lift in 570'

☐ Bailed

☐ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped ____ GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS Dewey Burdock 32-4C

This well was drilled under license # 745

And this report is true and accurate:

Drilling firm Davis Drilling Inc

Signature of License Representative: Stan Davis

Signature of Well Owner or Equitable Property Holder: [signature] PowerTech

Date: 2/27/08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location WE ¼ NW ¼ Sec 32 Twp 65 Rg 16

County Custer

Please mark well location with an "X"

North

W E

1 Mile

Well Completion Date 3-10-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 773

Hot Springs SD 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek Shale	0	475
Fall River SL	475	565

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from None Present (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☑ Monitoring well

METHOD OF DRILLING: Mud Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 17 LB/FT	6 IN	0 FT	490 FT	8 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
Cmt	107	15.7 lb./gal	0 ft.	490 ft.
		lb./gal	ft.	ft.

Describe grouting procedure: Pump

SCREEN: ☐ Perforated pipe ☑ Manufactured

Diameter 3 IN Length 15 FEET

Material PVC

Slot Size .020 Set From 490 Feet to 565 Feet

Other information: Set to Packer

WAS A PACKER OR SEAL USED? ☑ YES ☐ NO

If so, what material? 6" Rx Packer

Describe packer(s) and location? Packer set at 480'

DISINFECTION: Was well disinfected upon completion?

____ YES, How: ____

Laboratory sent to for water quality analysis: Pump

☒ NO, Why Not? N.A.

STATIC WATER LEVEL 0 Feet

If flowing: closed in pressure 6.5 PSI

GPM flow 6 through 2 inch pipe

Controlled by ☑ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Airlift at 475

☐ Bailed

☐ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped ____ GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS

Dewey Burdock

8-32-96

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm: Davis Drilling Inc

Signature of License Representative: [signature]

Signature of Well Owner or Equitable Property Holder: Power Tech

Date: 3/18/08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location NE ¼ NW ¼ Sec 32 Twp 6S Rg 1E

County Custer

Please mark well location with an "X"

North

W E

1 Mile

Well Completion Date 3-8-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 723

Hot Springs, S.D. 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek Shale	0	475
Fall River S.S	475	620
Fuson Shale	620	670
Lakota S.S	670	765
Morrison Shale	765	865
UNKPAPA S.S	865	910

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from None Present (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes

☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: Mud Rotary

CASING DATA: ☒ Steel ☒ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
18 LB/FT	6 IN	0 FT	910 FT	8 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
CMT	719	15.7 lb./gal	0 ft	910 ft
		lb./gal	ft	ft

Describe grouting procedure Pump M+S cement

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3 IN. Length 20 FEET

Material PVC

Slot Size .020 Set From 910 Feet to 930 Feet

Other information Set to Packer

WAS A PACKER OR SEAL USED? ☒ YES ☐ NO

If so, what material? 6" K Packer

Describe packer(s) and location? Packer set 890'

DISINFECTION: Was well disinfected upon completion?

____ YES, How: ____

X NO, Why Not? NA

Laboratory sent to for water quality analysis: Kespre

STATIC WATER LEVEL 0 Feet

If flowing: closed in pressure 55 PSI

GPM flow 2 through 2 inch pipe

Controlled by ☒ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Drill at 885'

☐ Bailed

☒ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped ____ GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS

Dewey Burdock 8-32-11

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm Davis Drilling Inc

Signature of License Representative: [signature]

Signature of Well Owner or Equitable Property Holder: [signature] PowerTech

Date: 3/18/08

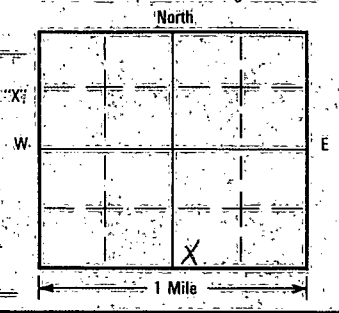
SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location SW ¼ SE ¼ Sec 32 Twp 65 Rg 1E

County Custer

Please mark well location with an "X"



Well Completion Date 3-18-08

Well Owner: Power Tech

Business Name: Power Tech USA Inc

Address: P.O. Box 723

Hot Springs, S.D. 57749

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Skull Creek Shale	0	415
~~Fuson~~ Fall River	415	550
Fuson Shale	550	635
Lakota S.C.	635	682

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from None Present (identify source).

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: Mud & Bolt

CASING DATA: ☐ Steel ☑ Plastic ☐ Other

If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 17 LB/FT	6 IN	0 FT	667 FT	8 3/4 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
Gwk	117	13 lb./gal	0 ft	667 ft
		lb./gal	ft	ft

Describe grouting procedure: Pump, Bad Mix Cellophane

SCREEN: ☐ Perforated pipe ☒ Manufactured

Diameter 3 IN Length 15 FEET

Material PVC

Slot Size .020 Set From 667 Feet to 682 Feet

Other information: Set to Packer

WAS A PACKER OR SEAL USED? ☑ YES ☐ NO

If so, what material? 6 X 4 K Packer 4 13 bell

Describe packer(s) and location? Packer set at 657

DISINFECTION: Was well disinfected upon completion?

____ YES, How: ____

X NO, Why Not? NA

Laboratory sent to for water quality analysis: Rocky

STATIC WATER LEVEL 0 Feet

If flowing: closed in pressure 40 PSI

GPM flow 30 through 2 inch pipe

Controlled by ☑ Valve ☐ Reducers ☐ Other ____

Reduced Flowrate ____ GPM

Can well be completely shut in? Yes

WELL TEST DATA:

☐ Pumped Describe: Air lift at 650'

☐ Bailed

☐ Other

Pumping Level Below Land Surface

____ ft. After ____ Hrs. pumped ____ GPM

____ ft. After ____ Hrs. pumped ____ GPM

If pump installed, pump rate ____ GPM

REMARKS Dewey Burdock 8-32-12

This well was drilled under license # 745

And this report is true and accurate.

Drilling firm Davis Drilling Inc

Signature of License Representative: [signature]

Signature of Well Owner or Equitable Property Holder: [signature]

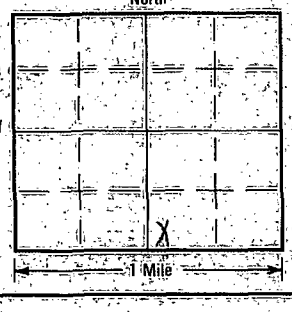
Date: 4-1-08

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

Location SW ¼ SE ¼ Sec 32 Twp 65 Rg 1E
County Custer

Please mark well location with an "X"



Well Completion Date
3-20-09

Well Owner: Power Tech
Business Name: Power Tech USA Inc
Address: P.O. Box 773
Hot Springs SD 57747

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
Shell Creek Sh.	0	415
Fall River S.S.	415	508

LOCATION:
Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? ____ ft. from Home Pasture (identify source).

PROPOSED USE:
☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING:
Mud & Rotary

CASING DATA: ☐ Steel ☒ Plastic ☐ Other
If other describe ____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
SDR 17 LB/FT	6 IN	0 FT	493 FT	8¾ IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
Cmt	106.4	15.4 lb./gal	0 ft	493 ft
		lb./gal	ft	ft

Describe grouting procedure Dump

SCREEN: ☐ Perforated pipe ☒ Manufactured
Diameter 3 IN Length 15 FEET
Material PVC
Slot Size .020 Set From 493 Feet to 508 Feet
Other information S.L. & Packer

WAS A PACKER OR SEAL USED? ☒ YES ☐ NO
If so, what material? 6" x 4" H-Packer 4" x 3" Bell
Describe packer(s) and location? Packer S.L. at 493'

DISINFECTION: Was well disinfected upon completion?
YES, How: ____
Laboratory sent to for water quality analysis ☒ NO, Why Not? N/A
Repair

STATIC WATER LEVEL 17 Feet
If flowing: closed in pressure 13 PSI
GPM flow 3 through 2 inch pipe
Controlled by ☒ Valve ☐ Reducers ☐ Other ____
Reduced Flowrate / GPM
Can well be completely shut in? Yes

WELL TEST DATA:
☐ Pumped Describe: Airlift at 400'
☐ Bailed
☐ Other
Pumping Level Below Land Surface
____ ft. After ____ Hrs. pumped ____ GPM
____ ft. After ____ Hrs. pumped ____ GPM
If pump installed, pump rate ____ GPM

REMARKS
Dewey Bunkel
8-32-13

This well was drilled under license # 7415
And this report is true and accurate.
Drilling firm Dakota Drilling
Signature of License Representative: Steve Dakota
Signature of Well Owner or Equitable Property Holder: [signature]
Date: 4-1-08

SOUTH DAKOTA STATE WELL LOGS
NEAR DEWEY-BURDOCK

6-1-20

NOTICE OF WELL CONSTRUCTION

Test Hole

Custer

) WELL CONSTRUCTION

Location of well: SE 1/4 NE 1/4 Section 20 Township 6S Range 1E

Well owner Tennessee Valley Authority (Name) (Address)

Date well drilling completed 8-13-81 Purpose of well Observation (domestic, irrigation, municipal, industrial, other)

WELL LOG

Layers, top to top in feet	Description of layer
0-435	Blk sh
435-505	Intbd gy clst, ss
505-525	Lt tn & brn ss
525-550	IB gy clst-ss
550-590	IB rd brn & gy sltst & clst
590-600	Rd & brn ss
600-620	IB gy-gn & rd-brn sltst & clst
620-645	Gy-wht sltst
645-685	IB gy-wht sltst & pk sltst
685-695	Pk & brn ss w/gy clst
695-800	Brn, orng, tn, pk, rd & yw ss

Attach sheet if more space is needed

Depth to top of water producing aquifer 712 ft.

Depth to static water level 39.7 ft.

Name of producing aquifer (if known) Lakota

Total depth of drill hole 800 ft.

Depth to bottom of casing 712 ft.

Casing information: In the space below show kind, size, weight, lengths per diameter, etc., for production casing and surface casing, if used.

4" blk Iron 10#/ft

Screen information: In the space below show length of screen below bottom of casing, diameter and kind of screen or casing perforations.

open hole 712-800

If a flowing well, flow of completed well NA G.P.M.

Silver King Mines, Inc.

Name of Drilling Contractor

(2) PUMP INSTALLATION

Company name and size of pump _____ HP _____

Type of pump _____ Capacity of installed pump _____ G.P.M.

Depth of pump placement _____ ft., Date of pump installation _____

(3) WATER SURFACE MEASURING TUBE

* On some wells an air-tight water surface measuring tube is required: See Section 46.40B of Chapter 46:4, MINIMUM WELL CONSTRUCTION STANDARDS.
* Show exact vertical length of water surface measuring tube, when installed _____ ft., tube diameter _____ tube material _____.

Name of Pump Installation Contractor

DEC 1 1981
DIVISION OF
WATER RIGHTS
Pierre, SD

NOTICE OF WELL CONSTRUCTION

~~Fall River~~

Custer

(1) WELL CONSTRUCTION

Location of well: NW 1/4 NE 1/4 Section 20 Township 6S Range 1E

Well owner Tennessee Valley Authority (Name) (Address)

Date well drilling completed 8-18-81 Purpose of well Observation (domestic, irrigation, municipal, industrial, other)

WELL LOG

Layers, top to top in feet	Description of layer
0-430	Blk sh
430-495	lB gy clst & ss
495-520	ln & brn ss
520-530	Gy & brn-gy clst
530-545	Rd-brn & tn ss
545-565	Rd-ppl clst
565-590	Pk, tn & brn ss

Attach sheet if more space is needed

Depth to top of water producing aquifer 505 ft.

Depth to static water level 21.0 ft.

Name of producing aquifer (if known) Fall River

Total depth of drill hole 590 ft.

Depth to bottom of casing 505 ft.

Casing information: In the space below show kind, size, weight, lengths per diameter, etc., for production casing and surface casing, if used.

4" blk iron 10#/ft

Screen information: In the space below show length of screen below bottom of casing, diameter and kind of screen or casing perforations.

open hole 505-590

If a flowing well, flow of completed well NA G.P.M.

Silver King Mines, Inc.

Name of Drilling Contractor

(2) PUMP INSTALLATION

Company name and size of pump _____ HP _____

Type of pump _____ Capacity of installed pump _____ G.P.M.

Depth of pump placement _____ ft., Date of pump installation _____

(3) WATER SURFACE MEASURING TUBE

On some wells an air-tight water surface measuring tube is required: See Section 46.408 of Chapter 46.4, MINIMUM WELL CONSTRUCTION STANDARDS.

Show exact vertical length of water surface measuring tube, when installed _____ ft., tube diameter _____ tube material _____.

Name of Pump Installation Contractor

DEC 1981
DIVISION OF
WATER RIGHTS
Pierre, SD

6-1-20

NOTICE OF WELL CONSTRUCTION

~~Fall River~~ Custer

(1) WELL CONSTRUCTION

Location of well: SE 1/4 NE 1/4 Section 20 Township 6S Range 1E

Well owner: Tennessee Valley Authority (Name) (Address)

Date well drilling completed: 10-17-81 Purpose of well: Test (domestic, irrigation, municipal, industrial, other)

WELL LOG

Layers, top to top in feet	Description of layer
0-440	Dk brn-gy shale
440-500	Gy & brn mudstone
500-520	Lt red sandstone
520-565	Dk brn & gy-gn mdst
565-600	Red sandstone
600-625	Dk brn mdst-sltst
625-645	Dk brn mdst
645-690	Gy & brn mdst w/int'd rd sltst
690-725	Red ss w/orng cht
725-755	Red sltst
755-800	Red ss w/wht, orng & gy chert pbl cgl

Attach sheet if more space is needed

Depth to top of water producing aquifer: 694 ft

Depth to static water level: 34.2 ft

Name of producing aquifer (if known): Lakota

Total depth of drill hole: 815 ft

Depth to bottom of casing: 694 ft

Casing information: In the space below show kind, size, weight, length per diameter, etc., for production casing and surface casing, if used.

0-25' 20" steel
0-695 10 3/4" steel
730-755 8 5/8" steel

Screen information: In the space below show length of screen below bottom of casing, diameter and kind of screen or casing perforations.

695-730 8 5/8" Johnson Well
755-800 .030 Screen slot galvanized

If a flowing well, flow of completed well: NA G.P.M.

Forward Drilling Company
Name of Drilling Contractor

(2) PUMP INSTALLATION

Company name and size of pump: Pioneer 6" HP 50

Type of pump: Submersible Capacity of installed pump: 325 G.P.M.

Depth of pump placement: 525 ft., Date of pump installation: 12-2-81

(3) WATER SURFACE MEASURING TUBE

On some wells an air-tight water surface measuring tube is required: See Section 46.408 of Chapter 46.4, MINIMUM WELL CONSTRUCTION STANDARDS.

Show exact vertical length of water surface measuring tube, when installed: 525 ft., tube diameter: 3/4"

tube material: poly

Great West Pump, Inc.
Name of Pump Installation Contractor

DEC 1981
DIVISION OF
WATER RIGHTS
Pierre, SD

6-1-20

NOTICE OF WELL CONSTRUCTION

~~Fall River~~ Custer

(1) WELL CONSTRUCTION

Location of well: SW 1/4 NE 1/4 Section 20 Township 6S Range 1E

Well owner Tennessee Valley Authority (Name) (Address)

Date well drilling completed 9-15-81 Purpose of well Observation (domestic, irrigation, municipal, industrial, other)

WELL LOG

Layers, top to top in feet	Description of layer
0-450	Blk sh
450-520	lB gy clst & ss
520-555	Rd-brn & gy clst w/gy ss
555-570	Rd & brn ss
570-625	lB gy sltst & gy, gn & rd clst
625-655	Gy ss
655-740	lB gy slst w/gy-gn & brn clst
740-810	Tn, yw & rd-brn ss

Attach sheet if more space is needed

Depth to top of water producing aquifer 715 ft.

Depth to static water level 21.4 ft.

Name of producing aquifer (if known) Lakota

Total depth of drill hole 810 ft.

Depth to bottom of casing 715 ft.

Casing information: In the space below show kind, size, weight, lengths per diameter, etc., for production casing and surface casing, if used.

4" blk iron 10#/ft

Screen information: In the space below show length of screen below bottom of casing, diameter and kind of screen or casing perforations.

open hole 715-810

If a flowing well, flow of completed well NA G.P.M.

Silver King Mines, Inc.

Name of Drilling Contractor

(2) PUMP INSTALLATION

Company name and size of pump _____ HP _____

Type of pump _____ Capacity of installed pump _____ G.P.M.

Depth of pump placement _____ ft., Date of pump installation _____

(3) WATER SURFACE MEASURING TUBE

On some wells an air-tight water surface measuring tube is required: See Section 46.408 of Chapter 46.4, MINIMUM WELL CONSTRUCTION STANDARDS.

Show exact vertical length of water surface measuring tube, when installed _____ ft., tube diameter _____

tube material _____

Name of Pump Installation Contractor

DEC 1981
SION OF
RIGHTS