ANNEX IX: APPENDIX D

EKATI PANDA GROUNDWATER QUALITY DATA

Tables

Table D-1 Groundwater Quality in the Panda Pit Westbay Multi-Level Well, Ekati Diamond Mine, Northwest Territories
Part A

Station Name		PGT-27-1	PGT-27-1	PGT-27-1	PGT-27-1	PGT-27-1	PGT-27-2	PGT-27-2	PGT-27-2	PGT-27-2	PGT-27-3	PGT-27-3	PGT-27-3	PGT-27-3	PGT-27-4	PGT-27-4	PGT-27-4	PGT-27-4	PGT-27-4	PGT-27-4
Collect Date/Time		10/7/2001	10/7/2001	3/28/2002	9/10/2002	9/30/2003	10/7/2001	3/28/2002	9/10/2002	9/30/2003	10/7/2001	3/27/2002	9/10/2002	9/30/2003	10/7/2001	3/27/2002	9/10/2002	9/10/2002	9/10/2002	9/30/2003
Sample No.		L48132-7-9933	L48132-1-9927	L61747-1-10333	L80477-1-11018	L134048-1	L48132-2-9928	L61747-2-10334	L80477-2-11017	L134048-2	L48132-3-9929	L61747-3-10335	L80477-3-11016	L134048-3	L48132-4-9930	L61747-4-10336	L80477-4-11015	L80472-1-11733	L80472-1-11237	L134048-4
Physical Tests	**Unit**																			
Field Conductivity	µS/cm	—	—	—	22,440.0	—	—	—	14,730.0	—	—	—	18,060.0	—	—	—	14,010.0	—	—	—
Field pH	pH	—	—	—	6.1	—	—	—	7.1	—	—	—	7.0	—	—	—	7.3	—	—	—
Field Temperature	°C	—	—	—	4.7	—	—	—	4.3	—	—	—	4.3	—	—	—	4.8	—	—	—
pH	pH	7.8	7.6	6.8	6.7	7.3	7.6	7.4	7.3	7.5	7.6	7.0	7.3	7.6	7.7	7.1	7.4	7.2	7.2	7.5
Total Suspended Solids	mg/L	615	13	25	5	8	14	22	24	10	21	757	101	22	37	409	74	46	46	29
Conductivity	µS/cm	13,000	14,200	—	19,800	17,800	14,500	—	13,300	14,900	10,500	—	16,500	17,000	5,160	—	13,000	13,000	13,000	13,800
Turbidity	NTU	120	2.1	10.0	1.3	3.0	4.0	4.2	0.68	2.1	5.0	210	18.0	7.9	19.0	140	3.1	3.5	3.5	13.0
Total Dissolved Solids	mg/L	7,730	8,890	—	12,200	10,800	9,310	—	8,240	9,030	6,320	—	9,700	10,500	2,900	—	7,780	7,630	7,630	8,190
Ion Balance	%	100	98.5	—	96.6	99.6	96.7	—	92.4	105	104	—	96.0	101	105	—	91.6	92.9	92.9	102
Total Hardness	mg/L	4,570	5,190	—	7,200	6,340	5,350	—	4,800	5,680	3,830	—	5,600	6,270	1,710	—	4,450	4,420	4,420	5,160
Sulphate	mg/L	169	181	—	0.38	298	174	—	218	218	163	—	376	212	70.7	—	306	338	338	197
Chloride	mg/L	4,710	5,460	—	7,790	6,560	5,770	—	5,150	5,400	3,780	—	5,860	6,360	1,720	—	4,780	4,630	4,630	4,960
Carbonate-Alkalinity $CaCO_3$	mg/L	<5	<5	—	<5	<5	<5	—	<5	<5	<5	—	<5	<5	<5	—	<5	<5	<5	<5
Hydroxide-Alkalinity $CaCO_3$	mg/L	<5	<5	—	<5	<5	<5	—	<5	<5	<5	—	<5	<5	<5	—	<5	<5	<5	<5
Bicarbonate-Alkalinity $CaCO_3$	mg/L	29	29	—	20	25	29	—	29	28	35	—	33	36	25	—	40	40	40	29
Alkalinity-Total	mg/L	24	24	—	16	20	24	—	23	23	29	—	27	30	21	—	33	33	33	24
Nitrate-N	mg/L	0.050	0.019	—	<0.006	<0.006	0.022	—	0.027	<0.006	<0.006	—	<0.006	<0.006	0.031	—	0.023	<0.006	<0.006	<0.006
Nitrite-N	mg/L	0.005	0.003	—	<0.002	<0.002	0.003	—	<0.002	<0.002	0.004	—	<0.002	<0.002	0.006	—	0.003	<0.002	<0.002	<0.002
Ammonia-N	mg/L	0.183	0.600	—	<0.005	0.611	0.588	—	<0.005	0.437	0.593	—	<0.005	0.668	0.243	—	<0.005	<0.005	<0.005	0.574
Orthophosphate	mg/L	0.005	0.017	—	0.003	0.002	0.012	—	0.002	0.001	0.011	—	0.002	0.003	0.006	—	0.001	0.003	0.003	<0.001
Total Phosphate	mg/L	0.319	0.045	0.020	0.009	0.010	0.027	0.089	0.020	0.014	0.060	0.082	0.067	0.065	0.051	0.082	0.037	0.018	0.018	0.019
Total Kjeldahl Nitrogen	mg/L	0.62	0.81	0.7	0.45	0.67	0.74	0.7	1.06	0.54	0.79	0.6	0.17	0.67	0.56	0.8	0.38	0.30	0.30	0.60
Total Silver	mg/L	0.020	<0.004	<0.0004	0.0019	0.0014	<0.004	<0.0004	<0.0004	0.0013	<0.004	<0.0004	0.0071	0.0027	<0.004	<0.0004	0.0056	<0.0004	<0.0004	0.0149
Total Aluminum	mg/L	18.6	0.3	0.21	0.54	0.38	0.7	1.22	0.18	0.62	0.5	7.82	9.02	2.80	1.1	3.09	1.69	2.13	2.13	1.58
Total Arsenic	mg/L	0.016	0.013	0.0178	0.0006	0.0004	0.014	0.0166	<0.0004	0.0004	0.010	0.0224	<0.0004	<0.0004	<0.004	0.0174	<0.0004	0.0350	0.0350	0.0015
Total Boron	mg/L	0.14	0.18	0.12	0.13	0.18	0.18	0.17	<0.02	0.18	0.17	0.14	0.14	0.15	0.11	0.12	0.14	0.13	0.13	0.15
Total Barium	mg/L	0.385	0.205	0.287	0.310	0.168	0.199	0.149	0.150	0.143	0.308	0.362	0.337	0.252	0.167	0.452	0.372	0.406	0.406	0.220
Total Beryllium	mg/L	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001
Total Bismuth	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Calcium	mg/L	1,720	1,950	1,720	2,710	2,390	2,020	1,590	1,790	2,120	1,380	1,950	2,090	2,350	625	1,550	1,630	1,620	1,620	1,900
Total Cadmium	mg/L	0.006	0.011	0.0003	0.0002	0.0007	0.009	<0.0002	0.0006	0.0002	0.003	<0.0002	<0.0002	<0.0002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006

Table D-1 Groundwater Quality in the Panda Pit Westbay Multi-Level Well, Ekati Diamond Mine, Northwest Territories
Part A

Station Name		PGT-27-1	PGT-27-1	PGT-27-1	PGT-27-1	PGT-27-1	PGT-27-2	PGT-27-2	PGT-27-2	PGT-27-2	PGT-27-3	PGT-27-3	PGT-27-3	PGT-27-3	PGT-27-4	PGT-27-4	PGT-27-4	PGT-27-4	PGT-27-4	PGT-27-4
Collect Date/Time		10/7/2001	10/7/2001	3/28/2002	9/10/2002	9/30/2003	10/7/2001	3/28/2002	9/10/2002	9/30/2003	10/7/2001	3/27/2002	9/10/2002	9/30/2003	10/7/2001	3/27/2002	9/10/2002	9/10/2002	9/10/2002	9/30/2003
Sample No.		L48132-7-9933	L48132-1-9927	L61747-1-10333	L80477-1-11018	L134048-1	L48132-2-9928	L61747-2-10334	L80477-2-11017	L134048-2	L48132-3-9929	L61747-3-10335	L80477-3-11016	L134048-3	L48132-4-9930	L61747-4-10336	L80477-4-11015	L80472-1-11733	L80472-1-11237	L134048-4
Physical Tests	**Unit**																			
Total Cobalt	mg/L	0.009	<0.002	0.0010	<0.0002	<0.0002	<0.002	0.0009	<0.0002	0.0004	<0.002	0.0024	0.0024	0.0008	<0.002	0.0019	0.0013	0.0003	0.0003	0.0019
Total Chromium	mg/L	0.047	0.011	0.0324	0.0266	0.0039	0.014	0.0131	<0.0008	0.0126	0.015	0.0183	0.0399	0.0423	0.012	0.0213	0.0238	0.0072	0.0072	0.0960
Total Copper	mg/L	0.12	0.02	0.023	0.037	0.010	0.02	0.024	0.017	0.012	0.01	0.033	0.089	0.010	0.02	0.032	0.093	0.027	0.027	0.025
Total Iron	mg/L	12.7	0.220	1.81	1.54	0.323	0.261	0.791	0.152	0.422	0.366	3.75	4.50	1.73	0.527	1.89	1.05	1.15	1.15	1.76
Total Mercury	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Potassium	mg/L	9.73	12.5	15.9	18.1	13.4	12.3	12.6	13.2	15.5	12.3	14.8	13.6	17.1	13.6	17.5	16.1	16.5	16.5	15.5
Total Lithium	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Magnesium	mg/L	66.6	78.7	72.7	106	90.0	75.4	72.3	80.6	93.2	92.7	92.9	93.8	97.3	36.3	91.3	91.7	90.5	90.5	101
Total Manganese	mg/L	0.195	0.073	0.109	0.111	0.079	0.061	0.083	0.077	0.083	0.123	0.182	0.185	0.131	0.032	0.188	0.171	0.201	0.201	0.135
Total Molybdenum	mg/L	0.147	0.152	0.139	0.0637	0.0226	0.173	0.0060	0.0026	0.0048	0.035	0.0043	0.0064	0.0061	0.076	0.0117	0.0068	0.0048	0.0048	0.0750
Total Sodium	mg/L	1,040	1,190	1,010	1,570	1,470	1,240	899	978	1,170	873	1,120	1,250	1,410	417	879	934	913	913	999
Total Nickel	mg/L	0.020	<0.002	0.0203	<0.0002	<0.0002	<0.002	0.0078	<0.0002	0.0075	<0.002	<0.0002	<0.0002	0.0091	0.004	0.0094	<0.0002	<0.0002	<0.0002	0.0524
Total Phosphorus	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Lead	mg/L	0.013	0.006	0.0048	0.0011	0.0003	0.006	0.0073	0.0012	0.0004	0.004	0.0014	0.0022	0.0006	0.002	0.0016	0.0011	0.0008	0.0008	0.0024
Total Antimony	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Selenium	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Silicon	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Tin	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Strontium	mg/L	34.6	38.5	49.1	60.4	48.4	41.0	37.4	31.8	35.7	23.0	54.1	45.3	45.5	11.8	38.2	33.0	40.5	40.5	31.4
Total Titanium	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Thallium	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Uranium	mg/L	0.010	0.014	0.0018	0.0012	0.0013	0.011	0.0012	0.0003	0.0005	0.007	0.0007	0.0006	0.0006	0.006	0.0020	0.0007	0.0008	0.0008	0.0031
Total Vanadium	mg/L	0.066	0.008	0.0210	<0.0002	<0.0002	0.014	0.0252	0.0130	0.0021	0.007	0.0493	0.0130	0.0047	0.004	0.0381	<0.0002	0.0771	0.0771	0.0043
Total Zinc	mg/L	2.58	0.09	0.128	0.087	1.82	0.16	0.093	0.094	0.325	0.13	0.064	0.073	0.243	0.08	0.080	0.079	0.127	0.127	3.63
Dissolved Silver	mg/L	—	<0.002	<0.0002	0.016	<0.0002	<0.002	<0.0002	0.017	<0.0002	<0.002	<0.0002	0.013	<0.0002	<0.002	<0.0002	0.016	0.022	0.022	<0.0002
Dissolved Aluminum	mg/L	—	<0.1	<0.01	<0.1	<0.01	0.1	0.01	<0.1	<0.01	<0.1	0.69	<0.1	<0.01	<0.1	0.47	<0.1	<0.1	<0.1	<0.01
Dissolved Arsenic	mg/L	—	0.022	0.0009	0.019	0.0004	0.020	0.0007	<0.004	<0.0004	0.013	0.0004	0.007	<0.0004	<0.004	<0.0004	<0.004	<0.004	<0.004	0.0009
Dissolved Boron	mg/L	—	0.16	0.127	<0.02	0.190	0.15	0.183	<0.02	0.177	0.19	0.147	<0.02	0.158	0.09	0.132	<0.02	<0.02	<0.02	0.134
Dissolved Barium	mg/L	—	0.200	0.284	0.298	0.158	0.199	0.137	0.119	0.123	0.562	0.310	0.227	0.203	0.148	0.423	0.349	0.389	0.389	0.201
Dissolved Beryllium	mg/L	—	<0.005	<0.0005	<0.005	<0.0005	<0.005	<0.0005	<0.005	<0.0005	<0.005	<0.0005	<0.005	<0.0005	<0.005	<0.0005	<0.005	<0.005	<0.005	<0.0005
Dissolved Bismuth	mg/L	—	0.0011	<0.00005	<0.0005	0.00081	0.0012	<0.00005	<0.0005	0.00059	<0.0005	<0.00005	<0.0005	0.00048	<0.0005	<0.00005	<0.0005	<0.0005	<0.0005	0.00032
Dissolved Calcium	mg/L	—	1,810	1,710	2,710	2,400	1,830	1,590	1,710	2,020	1,330	1,960	2,090	2,280	574	1,520	1,630	1,620	1,620	1,800
Dissolved Cadmium	mg/L	—	0.007	0.0002	<0.001	<0.0001	0.006	<0.0001	<0.001	<0.0001	0.003	<0.0001	<0.001	<0.0001	<0.001	<0.0001	<0.001	0.001	0.001	0.0001
Dissolved Cobalt	mg/L	—	<0.001	0.0002	<0.001	0.0001	<0.001	0.0001	<0.001	<0.0001	<0.001	0.0002	<0.001	<0.0001	<0.001	0.0002	<0.001	<0.001	<0.001	0.0001
Dissolved Chromium	mg/L	—	<0.004	0.0044	0.018	0.0022	0.005	0.0067	<0.004	0.0019	0.006	0.0048	<0.004	0.0016	<0.004	0.0054	<0.004	<0.004	<0.004	0.0027

Table D-1 Groundwater Quality in the Panda Pit Westbay Multi-Level Well, Ekati Diamond Mine, Northwest Territories
Part A

Station Name		PGT-27-1	PGT-27-1	PGT-27-1	PGT-27-1	PGT-27-1	PGT-27-2	PGT-27-2	PGT-27-2	PGT-27-2	PGT-27-3	PGT-27-3	PGT-27-3	PGT-27-3	PGT-27-4	PGT-27-4	PGT-27-4	PGT-27-4	PGT-27-4	PGT-27-4
Collect Date/Time		10/7/2001	10/7/2001	3/28/2002	9/10/2002	9/30/2003	10/7/2001	3/28/2002	9/10/2002	9/30/2003	10/7/2001	3/27/2002	9/10/2002	9/30/2003	10/7/2001	3/27/2002	9/10/2002	9/10/2002	9/10/2002	9/30/2003
Sample No.		L48132-7 -9933	L48132-1 -9927	L61747-1 -10333	L80477-1 -11018	L134048-1	L48132-2 -9928	L61747-2 -10334	L80477-2 -11017	L134048-2	L48132-3 -9929	L61747-3 -10335	L80477-3 -11016	L134048-3	L48132-4- 9930	L61747-4- 10336	L80477-4- 11015	L80472-1- 11733	L80472-1- 11237	L134048-4
Physical Tests	**Unit**																			
Dissolved Copper	mg/L	—	<0.006	0.0185	0.021	0.0038	<0.006	0.0160	0.014	0.0029	<0.006	0.0191	0.015	0.0032	<0.006	0.0170	0.012	0.012	0.012	0.0026
Dissolved Iron	mg/L	—	0.013	1.44	1.17	0.130	0.013	0.159	0.123	0.070	0.012	0.410	0.022	0.011	0.015	0.569	0.101	0.124	0.124	0.696
Dissolved Mercury	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dissolved Potassium	mg/L	—	17.0	14.2	21.2	18.0	17.1	9.9	13.5	14.6	15.1	13.8	17.1	17.3	17.0	17.6	18.2	17.9	17.9	16.0
Dissolved Lithium	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dissolved Magnesium	mg/L	—	79.9	71.8	100	83.2	80.4	70.3	72.6	82.3	89.4	89.3	89.7	87.7	35.0	87.3	85.8	85.6	85.6	93.8
Dissolved Manganese	mg/L	—	0.076	0.106	0.105	0.081	0.075	0.074	0.071	0.081	0.128	0.144	0.130	0.113	0.029	0.170	0.164	0.159	0.159	0.121
Dissolved Molybdenum	mg/L	—	0.154	0.123	0.057	0.0227	0.172	0.0049	0.003	0.0025	0.034	0.0029	0.002	0.0024	0.074	0.0085	0.003	0.012	0.012	0.0633
Dissolved Sodium	mg/L	—	1,100	1,020	1,010	1,510	1,150	920	1,030	1,230	830	1,170	1,370	1,410	598	904	987	991	991	1,140
Dissolved Nickel	mg/L	—	<0.001	0.0026	<0.001	<0.0001	<0.001	0.0033	0.016	0.0070	<0.001	<0.0001	<0.001	0.0083	<0.001	0.0016	<0.001	<0.001	<0.001	0.0115
Dissolved Phosphorus	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dissolved Lead	mg/L	—	<0.001	0.0002	0.002	<0.0001	<0.001	0.0004	0.001	<0.0001	<0.001	0.0004	0.001	<0.0001	<0.001	0.0018	<0.001	0.015	0.015	<0.0001
Dissolved Antimony	mg/L	—	<0.008	0.0016	0.004	0.0008	<0.008	<0.0008	<0.004	0.0004	<0.008	<0.0008	<0.004	0.0007	<0.008	<0.0008	<0.004	0.003	0.003	0.0009
Dissolved Selenium	mg/L	—	<0.0004	<0.0004	0.122	<0.0004	<0.0004	<0.0004	0.055	<0.0004	<0.0004	<0.0004	0.072	<0.0004	<0.0004	<0.0004	0.043	0.049	0.049	<0.0004
Dissolved Silica	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dissolved Tin	mg/L	—	<0.002	<0.0002	<0.002	0.0003	<0.002	<0.0002	<0.002	<0.0002	<0.002	0.0003	<0.002	<0.0002	<0.002	0.0005	<0.002	<0.002	<0.002	0.0002
Dissolved Strontium	mg/L	—	38.0	42.6	61.6	50.3	40.5	32.6	28.1	35.3	22.4	47.9	40.3	45.6	11.3	34.3	28.6	31.5	31.5	33.4
Dissolved Titanium	mg/L	—	<0.003	<0.0003	<0.003	0.0026	<0.003	<0.0003	<0.003	0.0024	<0.003	0.0181	<0.003	0.0033	<0.003	0.0127	<0.003	<0.003	<0.003	0.0024
Dissolved Thallium	mg/L	—	0.0082	<0.00005	<0.0005	0.00027	0.0053	<0.00005	<0.0005	0.00009	0.0015	<0.00005	0.0005	0.00005	<0.0005	<0.00005	<0.0005	0.0035	0.0035	<0.00005
Dissolved Uranium	mg/L	—	0.014	0.0015	0.001	0.0014	0.0117	0.0011	<0.001	0.0003	0.008	0.0005	<0.001	0.0003	0.007	0.0017	<0.001	<0.001	<0.001	0.0012
Dissolved Vanadium	mg/L	—	0.021	0.0247	0.035	<0.0001	0.0091	0.0289	0.022	<0.0001	<0.001	0.0383	0.025	<0.0001	<0.001	0.0364	0.021	0.016	0.016	<0.0001
Dissolved Zinc	mg/L	—	0.12	0.019	0.05	0.951	0.119	0.020	0.12	0.003	0.10	0.081	<0.02	0.002	0.04	0.108	0.03	0.05	0.05	1.56

Note: Data plotted derived from Excel spreadsheet supplied by Ekati titled “Panda Westbay Sampling well.xls.”

No. = number; mg/L = milligrams per litre; % = percent; µS/cm = microsiemens per centimetre; pH = potential of hydrogen, provides measure of the acidity or alkalinity of a solution on a scale of 0 to 14; °C = degrees Celsius; NTU = nephelometric turbidity units; $CaCO_3$ = calcium carbonate; < = less than; — = data not available.

Table D-1 Groundwater Quality in the Panda Pit Westbay Multi-Level Well, Ekati Diamond Mine, Northwest Territories
Part B

Station Name		PGT-27-5	PGT-27-5	PGT-27-5	PGT-27-5	PGT-27-5	PGT-27-5	PGT-27-6	PGT-27-6	PGT-27-6	PGT-27-7	PGT-27-7	PGT-27-FB	PGT-27-FB	PGT-27-TB	PGT-27-TB
Collect Date/Time		3/27/2002	3/27/2002	9/9/2002	9/9/2002	9/30/2003	9/30/2003	10/7/2001	3/27/2002	9/9/2002	3/26/2002	9/9/2002	9/10/2002	9/30/2003	9/10/2002	9/30/2003
Sample No.		L61747-8 -10340	L61747-5 -10337	L80477-5 -11240	ID11013	L134048-6	L134048-5	L48132-6 -9932	L61747-6 -10338	L80477-6 -11012	L61747-7 -10339	L80477-7 -11014	L80472-2 -11238	L134048-7	L80472-3 -11239	L134048-8
Physical Test	**Unit**															
Field Conductivity	µS/cm	—	—	—	19,120.0	—	—	—	—	4,159.0	—	1,400.0	—	—	—	—
Field pH	pH	—	—	—	7.2	—	—	—	—	6.9	—	7.4	—	—	—	—
Field Temperature	°C	—	—	—	3.8	—	—	—	—	4.1	—	7.4	—	—	—	—
pH	pH	7.2	7.2	7.3	—	7.8	7.8	7.5	7.1	7.5	7.6	7.7	5.6	6.0	5.5	5.8
Total Suspended Solids	mg/L	38	125	172	—	3	8	10	98	58	336	36	<3	<3	<3	<3
Conductivity	µS/cm	—	—	17,600	—	2,270	2,290	4,170	—	4,030	—	1,510	3.8	1.2	2.5	1.1
Turbidity	NTU	5.6	32.0	13.8	—	1.1	1.8	3.3	46.0	13.0	95.0	3.4	<0.1	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	—	—	11,200	—	1,780	1,580	2,220	—	2,380	—	1,010	4	<1	4	<1
Ion Balance	%	—	—	94.3	—	90.9	108	98.2	—	91.3	—	93.3	Low EC	Low TDS	Low EC	Low TDS
Total Hardness	mg/L	—	—	6,370	—	1,110	1,120	1,350	—	1,370	—	617	<1	<1	<1	<1
Sulphate	mg/L	—	—	322	—	827	614	75.5	—	318	—	359	0.21	<0.05	0.21	<0.05
Chloride	mg/L	—	—	6,910	—	211	217	1,330	—	1,180	—	144	<1	<1	<1	<1
Carbonate-Alkalinity $CaCO_3$	mg/L	—	—	<5	—	<5	<5	<5	—	<5	—	<5	<5	<5	<5	<5
Hydroxide-Alkalinity $CaCO_3$	mg/L	—	—	<5	—	<5	<5	<5	—	<5	—	<5	<5	<5	<5	<5
Bicarbonate-Alkalinity $CaCO_3$	mg/L	—	—	37	—	168	167	56	—	74	—	125	7	<5	7	<5
Alkalinity-Total	mg/L	—	—	30	—	138	137	46	—	60	—	102	6	<5	6	<5
Nitrate-N	mg/L	—	—	0.022	—	39.0	39.5	<0.006	—	15.6	—	35.2	<0.006	<0.006	<0.006	<0.006
Nitrite-N	mg/L	—	—	<0.002	—	0.069	0.070	<0.002	—	0.361	—	2.13	<0.002	<0.002	<0.002	<0.002
Ammonia-N	mg/L	—	—	<0.005	—	1.09	1.13	0.827	—	0.908	0.690	3.65	<0.005	<0.005	0.005	<0.005
Orthophosphate	mg/L	—	—	0.003	—	<0.001	<0.001	0.004	—	<0.001	—	0.002	<0.001	<0.001	<0.001	<0.001
Total Phosphate	mg/L	0.024	0.058	0.098	—	0.023	0.014	0.017	0.094	0.067	0.076	0.366	0.005	<0.001	<0.001	<0.001
Total Kjeldahl Nitrogen	mg/L	0.8	0.8	0.63	—	0.55	<0.05	1.21	1.5	3.69	1.00	1.62	<0.05	<0.05	<0.05	<0.05
Total Silver	mg/L	<0.0004	<0.0004	0.0030	—	0.0008	<0.0004	<0.004	<0.0004	0.0031	<0.0004	0.0135	<0.0004	<0.0004	<0.0004	<0.0004
Total Aluminum	mg/L	0.92	0.86	4.35	—	0.39	0.02	0.2	2.43	7.15	0.83	38.9	<0.02	<0.02	<0.02	<0.02
Total Arsenic	mg/L	0.0312	0.0342	0.0004	—	0.0030	0.0012	0.005	0.0302	0.0017	0.0287	0.0197	<0.0004	<0.0004	<0.0004	<0.0004
Total Boron	mg/L	0.11	0.12	0.13	—	0.09	0.07	0.06	0.10	0.06	0.03	0.09	<0.02	<0.02	<0.02	<0.02
Total Barium	mg/L	0.579	0.647	0.399	—	0.0551	0.0546	0.454	1.88	0.334	0.790	0.579	<0.0002	<0.0002	<0.0002	<0.0002
Total Beryllium	mg/L	<0.001	<0.001	<0.001	—	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001
Total Bismuth	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Calcium	mg/L	2,550	2,870	2,370	—	311	313	450	2,750	446	445	170	<0.05	<0.5	<0.05	<0.5
Total Cadmium	mg/L	<0.0002	<0.0002	<0.0002	—	0.0004	<0.0002	<0.002	<0.0002	0.0006	0.0004	0.0003	<0.0002	<0.0002	<0.0002	<0.0002

Table D-1 Groundwater Quality in the Panda Pit Westbay Multi-Level Well, Ekati Diamond Mine, Northwest Territories
Part B

Station Name		PGT-27-5	PGT-27-5	PGT-27-5	PGT-27-5	PGT-27-5	PGT-27-5	PGT-27-6	PGT-27-6	PGT-27-6	PGT-27-7	PGT-27-7	PGT-27-FB	PGT-27-FB	PGT-27-TB	PGT-27-TB
Collect Date/Time		3/27/2002	3/27/2002	9/9/2002	9/9/2002	9/30/2003	9/30/2003	10/7/2001	3/27/2002	9/9/2002	3/26/2002	9/9/2002	9/10/2002	9/30/2003	9/10/2002	9/30/2003
Sample No.		L61747-8 -10340	L61747-5 -10337	L80477-5 -11240	ID11013	L134048-6	L134048-5	L48132-6 -9932	L61747-6 -10338	L80477-6 -11012	L61747-7 -10339	L80477-7 -11014	L80472-2 -11238	L134048-7	L80472-3 -11239	L134048-8
Physical Test	**Unit**															
Total Cobalt	mg/L	0.0006	0.0013	0.0005	—	0.0033	0.0025	<0.002	0.0005	0.0022	0.0008	0.0148	<0.0002	<0.0002	<0.0002	<0.0002
Total Chromium	mg/L	0.0198	0.0478	0.0141	—	0.0390	0.0013	0.010	0.0127	0.0244	0.0380	0.0724	<0.0008	<0.0008	<0.0008	<0.0008
Total Copper	mg/L	0.026	0.041	0.127	—	0.008	0.002	0.02	0.020	0.061	0.012	0.055	<0.001	<0.001	<0.001	<0.001
Total Iron	mg/L	0.658	0.915	1.78	—	0.417	0.044	0.371	2.83	3.23	0.759	24.4	<0.005	<0.005	<0.005	<0.005
Total Mercury	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Potassium	mg/L	15.3	19.1	19.1	—	20.7	21.0	11.5	17.1	18.5	9.2	21.3	<0.01	<0.1	0.01	<0.1
Total Lithium	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Magnesium	mg/L	117	133	109	—	80.1	81.7	55.2	173	62.4	79.9	46.7	<0.01	<0.1	<0.01	<0.1
Total Manganese	mg/L	0.285	0.328	0.244	—	0.873	0.876	0.401	0.987	0.363	0.174	0.463	<0.001	<0.001	<0.001	<0.001
Total Molybdenum	mg/L	0.0065	0.0103	0.0041	—	0.143	0.123	0.341	0.0042	0.246	0.133	0.0803	<0.0001	0.0002	<0.0001	<0.0001
Total Sodium	mg/L	1410	1610	1450	—	78	79	274	1280	245	232	46.6	<0.1	<1	<0.1	<1
Total Nickel	mg/L	0.0014	0.0169	<0.0002	—	0.0440	0.0245	<0.002	<0.0002	0.0076	0.0037	0.0587	<0.0002	<0.0002	<0.0002	<0.0002
Total Phosphorus	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Lead	mg/L	0.0004	0.0007	0.0009	—	0.0006	<0.0001	0.003	0.0004	0.0014	0.0003	0.0050	<0.0001	<0.0001	<0.0001	<0.0001
Total Antimony	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Selenium	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Silicon	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Tin	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Strontium	mg/L	74.5	83.5	45.0	—	3.20	3.28	7.36	68.0	8.36	7.49	1.63	<0.0002	<0.0002	<0.0002	<0.0002
Total Titanium	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Thallium	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total Uranium	mg/L	0.0009	0.0011	0.0005	—	0.0069	0.0062	0.003	0.0002	0.0095	0.0007	0.0496	<0.0001	<0.0001	<0.0001	<0.0001
Total Vanadium	mg/L	0.0540	0.0548	0.0040	—	0.0112	0.0039	<0.002	<0.001	0.0070	0.0303	0.0705	<0.0002	0.0002	<0.0002	0.0002
Total Zinc	mg/L	0.197	0.085	0.030	—	0.135	0.068	0.23	0.038	0.041	0.041	0.152	<0.004	<0.004	<0.004	<0.004
Dissolved Silver	mg/L	<0.0002	0.0002	0.015	—	<0.0002	<0.0002	0.021	<0.0002	—	<0.0002	<0.0002	—	—	—	—
Dissolved Aluminum	mg/L	<0.01	0.09	<0.1	—	<0.01	<0.01	<0.1	0.15	—	<0.01	0.03	—	—	—	—
Dissolved Arsenic	mg/L	<0.0004	0.0005	0.010	—	<0.0004	<0.0004	<0.004	0.0005	—	0.0191	0.0021	—	—	—	—
Dissolved Boron	mg/L	0.127	0.135	<0.02	—	0.068	0.070	0.11	0.097	—	0.032	0.072	—	—	—	—
Dissolved Barium	mg/L	0.603	0.617	0.375	—	0.0486	0.0497	0.459	1.55	—	0.758	0.0508	—	—	—	—
Dissolved Beryllium	mg/L	<0.0005	<0.0005	<0.005	—	<0.0005	<0.0005	<0.005	<0.0005	—	<0.0005	<0.0005	—	—	—	—
Dissolved Bismuth	mg/L	<0.00005	<0.00005	<0.0005	—	<0.00005	0.00006	0.0016	<0.00005	—	<0.00005	<0.00005	—	—	—	—
Dissolved Calcium	mg/L	2,790	2,770	2,230	—	320	318	437	2510	373	407	160	—	—	—	—
Dissolved Cadmium	mg/L	<0.0001	<0.0001	<0.001	—	0.0002	0.0002	<0.001	0.0001	—	0.0004	0.0003	—	—	—	—
Dissolved Cobalt	mg/L	<0.0001	0.0003	<0.001	—	0.0024	0.0024	<0.001	0.0003	—	0.0002	0.0007	—	—	—	—

Table D-1 Groundwater Quality in the Panda Pit Westbay Multi-Level Well, Ekati Diamond Mine, Northwest Territories
Part B

Station Name		PGT-27-5	PGT-27-5	PGT-27-5	PGT-27-5	PGT-27-5	PGT-27-5	PGT-27-6	PGT-27-6	PGT-27-6	PGT-27-7	PGT-27-7	PGT-27-FB	PGT-27-FB	PGT-27-TB	PGT-27-TB
Collect Date/Time		3/27/2002	3/27/2002	9/9/2002	9/9/2002	9/30/2003	9/30/2003	10/7/2001	3/27/2002	9/9/2002	3/26/2002	9/9/2002	9/10/2002	9/30/2003	9/10/2002	9/30/2003
Sample No.		L61747-8 -10340	L61747-5 -10337	L80477-5 -11240	ID11013	L134048-6	L134048-5	L48132-6 -9932	L61747-6 -10338	L80477-6 -11012	L61747-7 -10339	L80477-7 -11014	L80472-2 -11238	L134048-7	L80472-3 -11239	L134048-8
Physical Test	**Unit**															
Dissolved Chromium	mg/L	0.0051	0.0061	0.023	—	0.0004	0.0005	<0.004	0.0089	—	0.0035	<0.0004	—	—	—	—
Dissolved Copper	mg/L	0.0217	0.0267	0.018	—	0.0015	0.0029	<0.006	0.0210	—	0.0036	0.0015	—	—	—	—
Dissolved Iron	mg/L	0.021	0.254	0.099	—	<0.005	<0.005	0.261	1.74	0.137	0.027	0.122	—	—	—	—
Dissolved Mercury	mg/L	—	—		—	—	—	—	—	—	—	—	—	—	—	—
Dissolved Potassium	mg/L	18.9	19.0	19.7	—	21.6	23.6	15.5	15.5	21.9	10.4	22.9	—	—	—	—
Dissolved Lithium	mg/L	—	—		—	—	—	—	—	—	—	—	—	—	—	—
Dissolved Magnesium	mg/L	126	126	96.5	—	78.0	76.9	57.5	156	64.7	72.0	44.5	—	—	—	—
Dissolved Manganese	mg/L	0.302	0.305	0.220	—	0.910	0.888	0.428	0.900	0.327	0.154	0.228	—	—	—	—
Dissolved Molybdenum	mg/L	0.0048	0.0044	0.003	—	0.131	0.128	0.345	0.0032	—	0.179	0.0777	—	—	—	—
Dissolved Sodium	mg/L	1,610	1,620	1,480	—	81.2	86.0	400	1,240	214	225	44.9	—	—	—	—
Dissolved Nickel	mg/L	<0.0001	<0.0001	0.005	—	0.0234	0.0245	<0.001	<0.0001	—	0.0025	0.0129	—	—	—	—
Dissolved Phosphorus	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dissolved Lead	mg/L	<0.0001	0.0001	<0.001	—	<0.0001	<0.0001	<0.001	0.0002	—	<0.0001	<0.0001	—	—	—	—
Dissolved Antimony	mg/L	<0.0008	<0.0008	<0.004	—	0.0011	0.0010	<0.008	<0.0008	—	<0.0008	0.0018	—	—	—	—
Dissolved Selenium	mg/L	<0.0004	<0.0004	0.075	—	<0.0004	0.0009	<0.0004	<0.0004	—	<0.0004	0.0030	—	—	—	—
Dissolved Silica	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dissolved Tin	mg/L	<0.0002	0.0004	<0.002	—	<0.0002	<0.0002	<0.002	0.0004	—	<0.0002	<0.0002	—	—	—	—
Dissolved Strontium	mg/L	75.5	74.9	44.2	—	2.89	3.06	6.75	61.2	—	6.37	1.82	—	—	—	—
Dissolved Titanium	mg/L	<0.0003	0.0044	<0.003	—	0.0021	0.0020	<0.003	0.0095	—	<0.0003	0.0007	—	—	—	—
Dissolved Thallium	mg/L	<0.00005	0.00018	<0.0005	—	<0.00005	<0.00005	<0.0005	<0.00005	—	<0.00005	<0.00005	—	—	—	—
Dissolved Uranium	mg/L	0.0009	0.0009	<0.001	—	0.0076	0.0073	0.003	0.0001	—	0.0005	0.0322	—	—	—	—
Dissolved Vanadium	mg/L	0.008	0.0463	0.032	—	0.0078	0.0069	<0.001	<0.001	—	0.0261	0.0020	—	—	—	—
Dissolved Zinc	mg/L	0.030	0.021	0.05	—	0.062	0.151	0.03	0.049	—	0.005	0.174	—	—	—	—

Note: Data plotted derived from Excel spreadsheet supplied by Ekati titled “Panda Westbay Sampling well.xls.”

No. = number; mg/L = milligrams per litre; % = percent; µS/cm = microsiemens per centimetre; °C = degrees Celsius; pH = potential of hydrogen, provides measure of the acidity or alkalinity of a solution on a scale of 0 to 14; NTU = nephelometric turbidity units; $CaCO_3$ = calcium carbonate; < = less than; — = data not available; TDS = total dissolved solids; EC = electrical conductivity.