

BAB V

KESIMPULAN

5.1 Kesimpulan

Kesimpulan yang diperoleh dari penelitian ini adalah sebagai berikut:

1. Pada zona limonit kadar Ni yang paling tinggi adalah 1,7%, kadar Ni moderat untuk lapisan limonit adalah 1,2%, dan untuk nilai kadar Ni yang paling rendah adalah 0,7%. Rasio S/M tinggi 11,6, rasio S/M moderat 5,05, dan rasio S/M rendah 0,1. Sedangkan sebaran kadar Ni dan sebaran kadar S/M pada zona saprolit kadar Ni yang paling tinggi adalah 3,1%, kadar Ni moderat yaitu 1,85%, Sedangkan untuk nilai kadar Ni yang paling rendah adalah 0,7%. Rasio S/M bervariasi pada daerah penelitian dengan perbandingan S/M tinggi yaitu 5,1, rasio S/M moderat yaitu 2,95 dan rasio S/M rendah yaitu 0,3.
2. Berdasarkan hasil korelasi data unsur Ni, SiO₂, dan MgO, Menghasilkan hubungan Ni yang berbanding lurus dengan MgO pada zona limonit dan berbanding terbalik pada zona saprolit serta berbanding terbalik dengan unsur SiO₂.
3. Dari hasil *overlay* terhadap sebaran kadar Ni dan sebaran rasio S/M pada zona limonit dan zona saprolit dapat disimpulkan bahwa rencana awal lokasi penambangan terdapat pada daerah bagian timur laut pada blok X PT Natural Persada Mandiri.

5.2 Saran

Saran terkait penelitian ini adalah, sebaiknya dilakukan penelitian lebih lanjut terkait pengaruh sebaran rasio S/M terhadap sebaran kadar Ni dalam penentuan lokasi penambangan.

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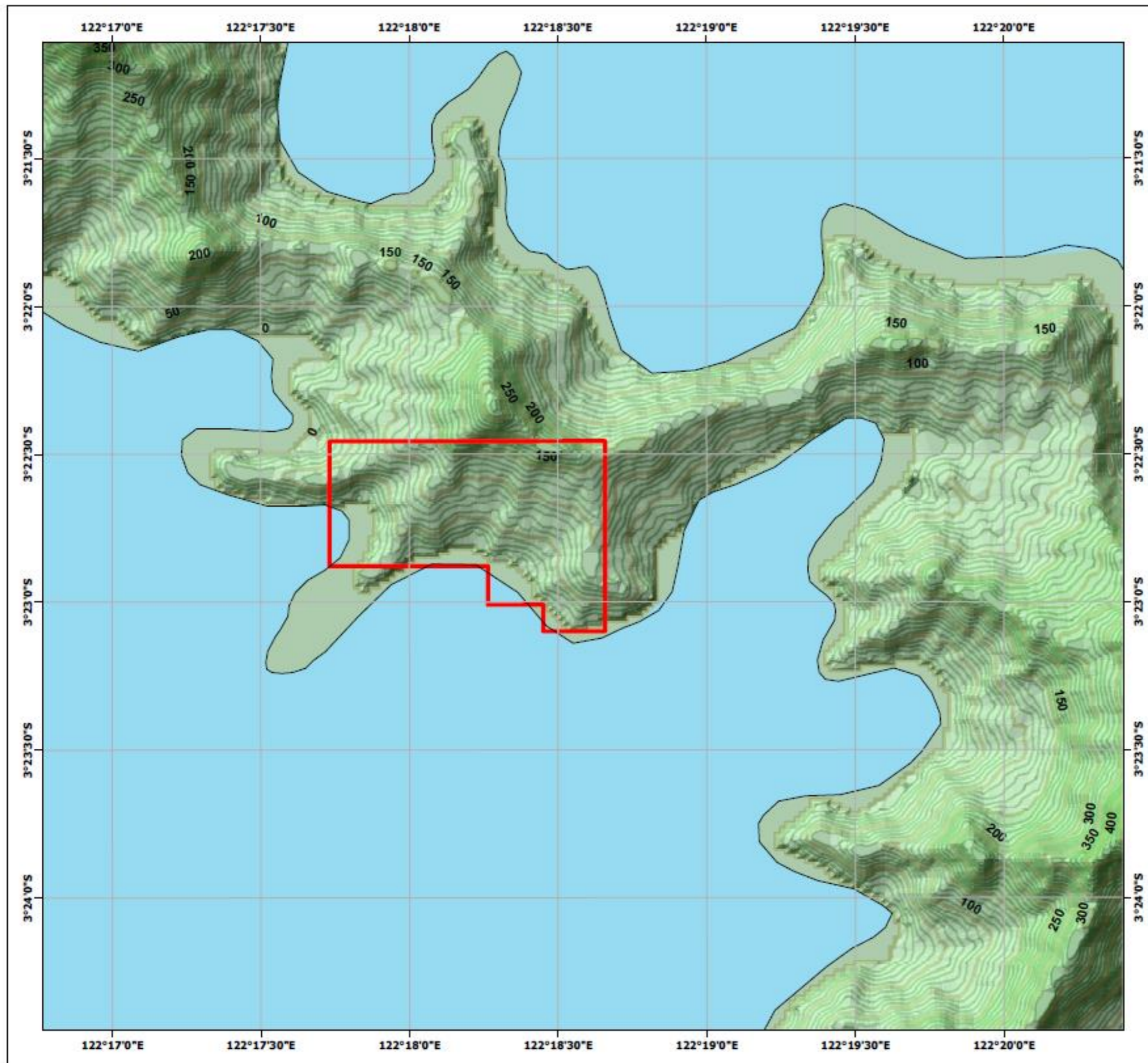
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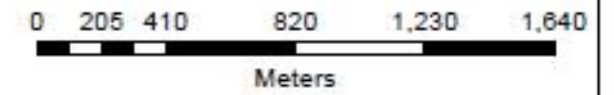
LAMPIRAN

LAMPIRAN A

PETA TUJUK LOKASI PENELITIAN



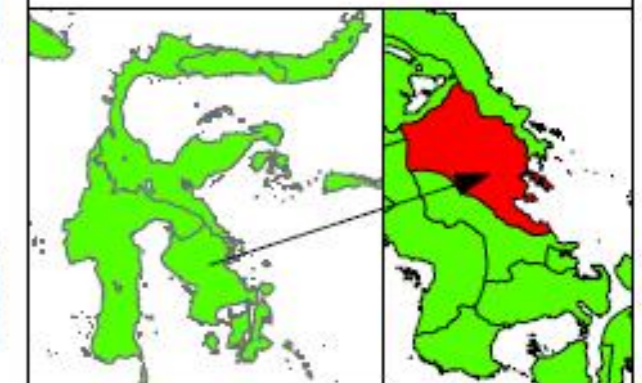
PETA LOKASI PENELITIAN



Legenda

- laut
- Indeks Kontur
- Kontur
- Batas IUP
- Daratan

Proyeksi Geografi : Lintang Bujur
 Datum Unit : Datum 1984
 Koordinat Sistem : WGS 1984 UTM Zone 51 S



PT NATURAL PERSADA MANDIRI

WATURAMBAHA, LASOLO KEPULAUAN
 KONAWA UTARA, SULAWESI TENGGARA



DEPARTEMEN TEKNIK PERTAMBANGAN
 FAKULTAS TEKNIK
 UNIVERSITAS HASANUDDIN

DIGAMBAR
 OLEH

ASTUTI AHRIANINSI
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DIPERIKSA
 OLEH

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 NIP. 19730314 200012 1001

LAMPIRAN B

DATA *ASSAY*

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_025	0.00	1.00	0.923	15.423	3.156
CBR_025	1.00	2.00	0.953	16.444	5.279
CBR_025	2.00	3.00	1.129	17.746	3.889
CBR_025	3.00	3.60	1.335	24.120	9.045
CBR_025	3.60	4.00	1.518	40.388	29.204
CBR_025	4.00	5.00	1.725	36.690	12.574
CBR_025	5.00	6.00	1.584	40.779	18.968
CBR_025	6.00	7.00	2.526	37.595	23.268
CBR_025	7.00	8.00	2.255	38.942	14.196
CBR_025	8.00	9.00	2.141	37.818	16.991
CBR_025	9.00	10.00	2.682	37.133	20.951
CBR_025	10.00	10.46	1.584	36.294	33.199
CBR_025	10.46	11.00	1.696	40.473	27.270
CBR_025	11.00	12.00	1.814	36.803	30.157
CBR_025	12.00	13.00	0.907	33.849	37.028
CBR_025	13.00	14.00	0.460	32.899	37.459
CBR_025	14.00	15.00	0.246	31.506	39.441
CBR_025	15.00	16.00	0.252	30.242	41.107
CBR_025	16.00	17.00	0.242	27.763	42.805
CBR_025	17.00	18.00	0.243	29.219	43.266
CBR_025	18.00	19.00	0.247	29.383	43.164
CBR_087	0.00	1.00	1.430	18.350	4.800
CBR_087	1.00	2.00	2.050	31.330	14.490
CBR_087	2.00	3.00	2.190	32.930	14.510
CBR_087	3.00	4.00	2.220	36.730	23.900
CBR_087	4.00	5.00	2.070	37.890	19.950
CBR_087	5.00	6.00	1.640	36.770	18.130
CBR_087	6.00	7.00	2.160	35.190	19.730
CBR_087	7.00	8.00	2.520	35.690	20.180
CBR_087	8.00	9.00	1.700	35.730	21.200
CBR_087	9.00	19.00	1.170	35.940	21.860
CBR_088	0.00	0.50	1.230	13.690	2.790
CBR_088	0.50	1.00	1.740	30.930	17.950
CBR_088	1.00	2.00	0.990	35.980	18.640
CBR_088	2.00	3.00	0.640	37.510	23.110
CBR_088	3.00	4.00	0.430	37.940	21.840
CBR_088	4.00	5.00	0.370	38.370	20.780
CBR_088	5.00	6.00	0.270	38.410	22.640
CBR_089	0.00	1.00	1.076	15.992	4.824
CBR_089	1.00	2.00	1.627	21.364	10.131
CBR_089	2.00	3.00	2.293	25.468	16.404
CBR_089	3.00	4.00	1.699	26.138	25.890
CBR_089	4.00	5.00	0.329	23.514	27.461
CBR_089	5.00	6.00	0.336	23.000	28.711
CBR_089	6.00	7.00	0.579	23.871	29.372

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_098	0.00	0.40	1.330	16.510	6.760
CBR_098	0.40	1.00	2.070	30.650	19.480
CBR_098	1.00	2.00	1.610	36.940	26.240
CBR_098	2.00	3.00	0.930	34.410	21.750
CBR_098	3.00	4.00	1.280	33.810	15.440
CBR_098	4.00	5.00	1.450	36.620	13.480
CBR_098	5.00	6.00	1.410	38.910	13.190
CBR_098	6.00	7.00	0.700	38.090	26.540
CBR_098	7.00	8.00	0.250	36.640	29.040
CBR_098	8.00	9.00	0.230	36.750	28.340
CBR_099	0.00	1.00	0.940	7.460	1.680
CBR_099	1.00	2.00	0.980	8.180	1.660
CBR_099	2.00	3.00	0.910	11.710	1.530
CBR_099	3.00	4.00	1.190	17.560	2.480
CBR_099	4.00	5.00	1.840	22.400	4.520
CBR_099	5.00	6.00	1.710	29.130	9.190
CBR_099	6.00	7.00	1.850	26.090	5.820
CBR_099	7.00	8.00	1.740	27.470	8.900
CBR_099	8.00	9.00	1.990	32.030	8.340
CBR_099	9.00	9.65	2.160	32.960	10.450
CBR_099	9.65	10.00	2.070	36.430	23.730
CBR_099	10.00	10.75	1.730	36.480	20.250
CBR_099	10.75	11.00	1.510	37.140	15.240
CBR_099	11.00	12.00	2.300	34.370	10.260
CBR_099	12.00	13.00	2.610	32.930	12.850
CBR_099	13.00	14.00	2.630	33.910	15.240
CBR_099	14.00	15.00	2.210	36.820	25.570
CBR_099	15.00	16.00	2.010	36.210	19.100
CBR_099	16.00	17.00	2.430	33.960	9.770
CBR_099	17.00	18.00	1.600	37.750	23.890
CBR_099	18.00	19.00	1.300	37.590	21.870
CBR_099	19.00	20.00	0.450	37.660	24.120
CBR_100	0.00	1.00	1.396	17.588	7.282
CBR_100	1.00	2.00	1.538	24.333	25.017
CBR_100	2.00	3.00	0.318	23.083	32.593
CBR_100	3.00	4.00	0.236	21.899	32.464
CBR_100	4.00	5.00	0.252	22.686	33.884
CBR_103	0.00	0.61	1.210	15.930	3.710
CBR_103	0.61	1.00	1.860	36.340	25.240
CBR_103	1.00	2.00	1.750	33.340	15.370
CBR_103	2.00	3.00	1.480	36.970	17.250
CBR_103	3.00	4.00	1.450	38.270	12.090
CBR_103	4.00	5.00	1.500	37.850	17.120
CBR_103	5.00	6.00	0.640	37.860	25.830
CBR_103	6.00	7.00	0.260	37.470	27.370

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_103	7.00	7.30	0.600	38.220	23.300
CBR_103	7.30	8.00	1.190	35.960	11.050
CBR_103	8.00	8.60	1.130	35.350	12.570
CBR_103	8.60	9.00	1.070	36.560	14.570
CBR_103	9.00	10.00	0.900	36.060	16.990
CBR_103	10.00	11.00	1.500	36.850	18.540
CBR_103	11.00	12.00	2.050	38.670	21.340
CBR_103	12.00	13.00	0.820	36.600	26.320
CBR_104	0.00	1.00	1.000	8.780	2.290
CBR_104	1.00	2.00	1.530	19.680	4.440
CBR_104	2.00	3.00	1.630	25.340	5.600
CBR_104	3.00	4.00	1.520	24.370	9.990
CBR_104	4.00	5.00	1.430	37.700	24.980
CBR_104	5.00	6.00	0.990	35.820	22.350
CBR_104	6.00	7.00	0.880	37.020	21.550
CBR_104	7.00	8.00	0.390	35.700	23.730
CBR_104	8.00	9.00	0.360	38.640	27.760
CBR_105	0.00	1.00	1.209	3.497	0.930
CBR_105	1.00	2.00	1.580	9.066	5.633
CBR_105	2.00	3.00	2.150	23.646	19.772
CBR_105	3.00	4.00	1.669	18.244	9.820
CBR_105	4.00	5.00	1.434	26.672	26.054
CBR_105	5.00	6.00	0.259	22.010	33.902
CBR_105	6.00	7.00	0.724	23.562	29.313
CBR_105	7.00	8.00	0.246	22.863	34.354
CBR_106	0.00	1.00	1.473	12.471	5.103
CBR_106	1.00	2.00	1.979	23.982	18.469
CBR_106	2.00	3.00	0.794	23.194	31.331
CBR_106	3.00	4.00	0.258	22.427	31.788
CBR_106	4.00	5.00	0.570	23.226	29.796
CBR_106	5.00	6.00	0.293	23.122	30.011
CBR_026	0.00	1.00	0.992	6.302	1.613
CBR_026	1.00	1.60	1.115	10.803	3.562
CBR_026	1.60	2.00	1.821	29.361	17.591
CBR_026	2.00	2.60	1.812	33.123	18.340
CBR_026	2.60	3.00	1.462	36.129	29.395
CBR_026	3.00	4.00	0.853	34.493	34.321
CBR_026	4.00	5.00	1.152	36.318	32.209
CBR_026	5.00	6.00	1.060	35.673	33.489
CBR_026	6.00	6.45	2.440	36.613	28.940
CBR_026	6.45	7.00	1.633	41.636	28.868
CBR_026	7.00	8.00	1.021	36.195	31.711
CBR_026	8.00	9.00	0.661	37.339	32.129
CBR_026	9.00	10.00	0.497	38.079	32.861
CBR_027	0.00	1.00	0.944	4.798	0.741

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_027	1.00	2.00	1.078	5.057	0.822
CBR_027	2.00	3.00	1.193	3.634	0.784
CBR_027	3.00	4.00	1.231	4.639	0.821
CBR_027	4.00	5.00	1.270	4.831	1.015
CBR_027	5.00	6.00	1.294	2.658	1.354
CBR_027	6.00	7.00	1.451	22.755	13.832
CBR_027	7.00	8.00	1.991	35.191	22.196
CBR_027	8.00	9.00	1.660	35.688	23.079
CBR_027	9.00	10.00	1.237	39.581	23.851
CBR_027	10.00	11.00	0.624	37.568	28.465
CBR_027	11.00	12.00	0.953	38.806	26.158
CBR_027	12.00	13.00	0.589	39.538	26.619
CBR_036	0.00	1.00	1.050	21.044	9.272
CBR_036	1.00	2.00	0.382	35.417	34.105
CBR_036	2.00	3.00	0.246	33.308	34.929
CBR_036	3.00	4.00	0.236	34.515	34.684
CBR_036	4.00	5.00	0.203	33.355	37.151
CBR_037	0.00	1.00	1.224	12.042	3.580
CBR_037	1.00	2.00	1.235	7.672	1.091
CBR_037	2.00	3.00	1.481	7.050	1.511
CBR_037	3.00	4.00	1.540	18.578	3.687
CBR_037	4.00	5.00	1.801	33.843	23.505
CBR_037	5.00	6.00	1.845	32.004	9.380
CBR_037	6.00	7.00	1.609	37.095	17.337
CBR_037	7.00	7.70	1.750	29.205	8.806
CBR_037	7.70	8.00	1.342	36.821	27.725
CBR_037	8.00	9.00	1.210	39.346	23.267
CBR_037	9.00	10.00	1.191	39.763	23.308
CBR_037	10.00	11.00	1.019	39.085	24.070
CBR_037	11.00	12.00	0.959	37.346	28.726
CBR_037	12.00	13.00	0.565	35.445	31.302
CBR_037	13.00	14.00	0.368	34.420	33.064
CBR_037	14.00	15.00	0.249	31.809	35.893
CBR_037	15.00	16.00	0.958	37.348	26.050
CBR_037	16.00	17.00	0.248	31.796	35.149
CBR_037	17.00	18.00	0.416	35.135	32.010
CBR_037	18.00	19.00	0.394	33.858	31.366
CBR_037	19.00	20.00	0.447	35.339	29.664
CBR_038	0.00	1.00	1.047	1.522	0.381
CBR_038	1.00	2.00	1.097	1.449	0.642
CBR_038	2.00	3.00	1.154	1.513	0.455
CBR_038	3.00	4.00	1.141	2.085	0.603
CBR_038	4.00	5.00	1.337	2.093	0.643
CBR_038	5.00	6.00	1.282	2.608	0.677
CBR_038	6.00	7.00	1.293	6.415	0.533

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_038	7.00	8.00	1.201	2.531	0.916
CBR_038	8.00	9.00	1.531	10.308	0.873
CBR_038	9.00	10.00	1.498	17.765	2.103
CBR_038	10.00	11.00	2.506	33.075	8.938
CBR_038	11.00	12.00	2.762	34.062	13.764
CBR_038	12.00	13.00	2.592	33.512	17.173
CBR_038	13.00	13.50	2.684	36.557	24.009
CBR_038	13.50	14.00	3.013	36.661	32.584
CBR_038	14.00	15.00	2.715	36.058	28.010
CBR_038	15.00	16.00	2.326	36.604	26.159
CBR_038	16.00	17.00	2.574	36.335	30.413
CBR_038	17.00	18.00	1.374	37.743	30.265
CBR_038	18.00	19.00	2.037	37.454	31.241
CBR_038	19.00	20.00	3.117	36.576	31.039
CBR_038	20.00	21.00	3.235	36.074	27.673
CBR_038	21.00	22.00	1.796	34.938	36.849
CBR_038	22.00	22.30	0.381	31.762	40.162
CBR_038	22.30	23.00	0.550	35.472	34.220
CBR_038	23.00	24.00	0.283	35.221	35.344
CBR_038	24.00	25.00	0.475	35.966	34.104
CBR_038	25.00	26.00	0.484	35.623	35.600
CBR_038	26.00	27.00	0.396	34.542	35.482
CBR_039	0.00	1.00	0.914	3.367	0.511
CBR_039	1.00	2.00	0.949	3.698	0.655
CBR_039	2.00	3.00	0.997	4.194	0.490
CBR_039	3.00	4.00	1.014	5.719	0.648
CBR_039	4.00	4.60	1.219	15.000	1.551
CBR_039	4.60	5.00	1.506	25.292	3.294
CBR_039	5.00	6.00	1.850	31.513	11.391
CBR_039	6.00	7.00	1.690	30.120	5.100
CBR_039	7.00	7.46	1.969	33.459	8.854
CBR_039	7.46	8.00	1.411	37.042	24.350
CBR_039	8.00	8.60	0.960	36.242	27.396
CBR_039	8.60	9.00	1.454	38.527	9.708
CBR_039	9.00	10.00	1.251	36.616	12.160
CBR_039	10.00	10.36	1.125	34.896	10.928
CBR_039	10.36	11.00	0.339	35.258	34.230
CBR_039	11.00	12.00	0.436	38.220	27.893
CBR_039	12.00	13.00	0.553	38.042	25.243
CBR_039	13.00	14.00	0.495	36.244	30.377
CBR_039	14.00	14.50	0.763	36.027	20.463
CBR_039	14.50	15.00	0.535	39.030	28.067
CBR_039	15.00	16.00	0.361	32.644	34.314
CBR_039	16.00	17.00	0.252	36.512	32.251
CBR_039	17.00	18.00	0.343	34.724	30.519

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_040	0.00	1.00	0.811	6.177	0.739
CBR_040	1.00	2.00	0.886	6.774	0.632
CBR_040	2.00	3.00	0.987	7.811	0.519
CBR_040	3.00	4.00	1.052	9.930	0.585
CBR_040	4.00	5.00	1.026	9.567	0.781
CBR_040	5.00	6.00	1.113	13.222	1.020
CBR_040	6.00	7.00	1.343	24.885	2.848
CBR_040	7.00	8.00	1.421	26.174	2.149
CBR_040	8.00	9.00	1.938	33.822	3.787
CBR_040	9.00	10.00	1.876	39.319	5.670
CBR_040	10.00	11.00	1.424	39.163	14.614
CBR_040	11.00	12.00	1.088	37.156	20.984
CBR_040	12.00	13.00	1.550	40.446	12.853
CBR_040	13.00	14.00	1.693	39.920	12.366
CBR_040	14.00	15.00	1.100	40.226	18.872
CBR_040	15.00	15.45	1.040	40.898	16.561
CBR_040	15.45	16.00	0.615	37.198	27.765
CBR_040	16.00	17.00	0.890	37.918	23.271
CBR_040	17.00	18.00	0.440	31.491	33.361
CBR_040	18.00	19.00	0.272	32.488	32.865
CBR_040	19.00	20.00	0.243	34.861	33.832
CBR_048	0.00	1.00	1.102	8.207	1.220
CBR_048	1.00	2.00	1.305	10.618	2.090
CBR_048	2.00	3.00	1.370	40.473	7.285
CBR_048	3.00	4.00	1.142	41.982	14.736
CBR_048	4.00	5.00	1.094	42.417	15.591
CBR_048	5.00	6.00	0.838	42.130	19.527
CBR_048	6.00	7.00	1.073	41.096	16.566
CBR_048	7.00	8.00	0.683	38.971	22.968
CBR_048	8.00	9.00	0.523	37.619	24.451
CBR_048	9.00	10.00	0.394	35.894	31.228
CBR_048	10.00	11.00	0.251	31.991	34.202
CBR_048	11.00	12.00	0.250	32.047	34.504
CBR_048	12.00	13.00	0.269	31.374	35.150
CBR_048	13.00	14.00	0.248	31.564	36.575
CBR_048	14.00	15.00	0.228	31.648	34.433
CBR_049	0.00	1.00	0.732	6.483	2.553
CBR_049	1.00	2.00	0.788	5.025	0.839
CBR_049	2.00	3.00	0.872	10.771	0.959
CBR_049	3.00	4.00	1.226	27.017	2.707
CBR_049	4.00	5.00	1.444	34.690	8.545
CBR_049	5.00	6.00	1.478	34.605	5.796
CBR_049	6.00	7.00	1.685	39.054	4.877
CBR_049	7.00	8.00	1.769	39.488	10.142
CBR_049	8.00	9.00	1.743	38.906	10.727

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_049	9.00	10.00	1.736	39.278	6.365
CBR_049	10.00	10.42	1.790	39.718	11.108
CBR_049	10.42	11.00	1.206	36.654	30.305
CBR_049	11.00	12.00	1.178	37.159	28.757
CBR_049	12.00	13.00	0.484	33.144	32.072
CBR_049	13.00	14.00	0.474	35.518	30.940
CBR_050	0.00	1.00	0.842	1.888	0.950
CBR_050	1.00	2.00	0.910	0.743	0.772
CBR_050	2.00	3.00	0.971	1.125	0.982
CBR_050	3.00	4.00	1.104	1.097	0.411
CBR_050	4.00	5.00	1.185	2.824	1.175
CBR_050	5.00	6.00	1.131	1.227	0.706
CBR_050	6.00	7.00	1.186	1.279	0.541
CBR_050	7.00	8.00	1.323	1.833	0.812
CBR_050	8.00	9.00	1.147	1.839	0.603
CBR_050	9.00	10.00	1.239	1.087	0.610
CBR_050	10.00	11.00	1.305	2.702	1.312
CBR_050	11.00	12.00	2.036	19.940	4.282
CBR_050	12.00	13.00	2.832	36.942	12.745
CBR_050	13.00	14.00	2.398	38.794	25.707
CBR_050	14.00	15.00	1.799	37.785	29.981
CBR_050	15.00	16.00	1.247	36.516	30.539
CBR_050	16.00	17.00	1.437	37.086	26.003
CBR_050	17.00	18.00	0.424	33.508	33.424
CBR_050	18.00	19.00	0.325	33.926	34.555
CBR_050	19.00	20.00	0.349	35.419	30.674
CBR_050	20.00	21.00	0.530	37.121	28.346
CBR_050	21.00	22.00	0.434	35.773	27.371
CBR_050	22.00	23.00	0.652	36.609	28.391
CBR_051	0.00	1.00	0.896	0.309	0.452
CBR_051	1.00	2.00	0.920	0.517	0.431
CBR_051	2.00	3.00	0.941	0.727	0.492
CBR_051	3.00	4.00	1.156	0.984	0.496
CBR_051	4.00	5.00	1.194	0.681	0.448
CBR_051	5.00	6.00	1.213	1.151	0.428
CBR_051	6.00	7.00	1.177	1.351	0.565
CBR_051	7.00	8.00	0.912	1.537	0.377
CBR_051	8.00	9.00	1.044	1.897	0.707
CBR_051	9.00	10.00	1.366	2.020	1.012
CBR_051	10.00	11.00	1.431	3.137	0.848
CBR_051	11.00	12.00	1.547	6.220	0.496
CBR_051	12.00	13.00	1.760	10.834	1.166
CBR_051	13.00	14.00	2.450	25.246	9.030
CBR_051	14.00	15.00	3.158	31.819	23.224
CBR_051	15.00	16.00	3.058	33.597	29.024

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_051	16.00	17.00	3.050	34.283	28.359
CBR_051	17.00	18.00	0.335	32.394	36.475
CBR_051	18.00	19.00	0.750	33.739	34.991
CBR_051	19.00	20.00	1.440	33.870	34.684
CBR_052	0.00	1.00	1.150	33.482	22.008
CBR_052	1.00	2.00	0.824	37.652	20.143
CBR_052	2.00	3.00	0.751	38.273	20.592
CBR_052	3.00	4.00	0.555	38.328	18.803
CBR_052	4.00	5.00	0.282	36.706	30.575
CBR_052	5.00	6.00	0.225	34.531	35.972
CBR_052	6.00	7.00	0.209	35.147	36.669
CBR_052	7.00	8.00	0.252	34.565	34.679
CBR_052	8.00	9.00	0.583	37.624	29.212
CBR_052	9.00	10.00	0.494	35.745	31.258
CBR_052	10.00	11.00	0.716	38.119	25.387
CBR_101	0.00	1.00	1.250	7.790	1.390
CBR_101	1.00	2.00	1.590	7.520	1.620
CBR_101	2.00	3.00	1.710	25.650	13.640
CBR_101	3.00	4.00	1.280	40.190	27.250
CBR_101	4.00	5.00	0.680	36.870	26.210
CBR_101	5.00	6.00	0.440	37.180	28.290
CBR_101	6.00	6.40	0.590	35.230	26.390
CBR_101	6.40	7.00	0.390	20.900	10.810
CBR_101	7.00	8.00	0.320	35.880	26.540
CBR_101	8.00	9.00	0.250	35.980	27.490
CBR_101	9.00	10.00	0.240	34.360	30.950
CBR_102	0.00	0.50	1.000	16.810	2.990
CBR_102	0.50	1.00	1.150	21.270	5.670
CBR_102	1.00	1.50	1.120	33.480	20.320
CBR_102	1.50	2.00	1.440	33.010	11.880
CBR_102	2.00	3.00	1.340	35.600	14.150
CBR_102	3.00	4.00	1.670	38.570	8.880
CBR_102	4.00	5.00	1.440	37.900	11.620
CBR_102	5.00	6.00	1.450	39.230	15.730
CBR_102	6.00	7.00	1.040	39.220	15.990
CBR_102	7.00	7.60	0.690	37.240	26.100
CBR_102	7.60	8.00	1.410	40.700	24.040
CBR_102	8.00	9.00	1.650	38.020	13.380
CBR_102	9.00	10.00	1.840	37.620	11.060
CBR_102	10.00	11.00	1.700	38.400	12.680
CBR_102	11.00	12.00	1.260	37.860	13.680
CBR_102	12.00	12.30	1.390	38.410	17.080
CBR_102	12.30	13.00	0.950	36.440	21.940
CBR_102	13.00	14.00	1.590	38.910	11.040
CBR_102	14.00	15.00	1.730	38.860	10.780

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_102	15.00	16.00	1.330	38.980	13.010
CBR_102	16.00	16.70	1.050	40.050	11.150
CBR_102	16.70	17.00	0.370	36.500	26.330
CBR_102	17.00	18.00	0.340	37.130	27.030
CBR_102	18.00	18.40	0.970	38.370	17.490
CBR_102	18.40	19.00	0.610	36.050	19.920
CBR_102	19.00	20.00	1.250	36.410	13.520
CBR_102	20.00	21.00	1.210	38.300	12.780
CBR_102	21.00	22.00	0.780	35.880	18.410
CBR_102	22.00	23.00	1.020	37.230	19.330
CBR_102	23.00	24.00	0.710	39.630	15.090
CBR_102	24.00	25.00	0.270	36.790	26.610
CBR_102	25.00	26.00	0.250	36.630	25.800
CBR_102	26.00	27.00	0.240	36.610	26.640
CBR_107	0.00	1.00	1.169	2.194	1.126
CBR_107	1.00	2.00	1.270	3.660	1.190
CBR_107	2.00	3.00	1.090	3.830	1.270
CBR_107	3.00	4.00	1.070	3.530	1.070
CBR_107	4.00	5.00	1.370	4.490	1.860
CBR_107	5.00	6.00	1.760	23.060	15.980
CBR_107	6.00	7.00	1.540	20.650	14.650
CBR_107	7.00	8.00	1.640	31.140	20.070
CBR_107	8.00	9.00	1.820	31.270	15.710
CBR_107	9.00	10.00	2.020	35.530	12.280
CBR_107	10.00	11.00	1.500	37.090	23.490
CBR_107	11.00	12.00	0.920	38.210	25.850
CBR_107	12.00	12.45	2.460	36.330	22.110
CBR_107	12.45	13.00	2.870	34.080	12.090
CBR_107	13.00	14.00	2.690	33.360	10.450
CBR_107	14.00	15.00	2.580	34.230	11.370
CBR_107	15.00	16.00	2.620	33.750	10.580
CBR_107	16.00	17.00	2.510	35.120	12.080
CBR_107	17.00	18.00	1.840	39.690	26.780
CBR_107	18.00	19.00	2.080	37.120	16.430
CBR_107	19.00	20.00	1.950	37.520	14.870
CBR_107	20.00	21.00	1.880	35.640	15.750
CBR_107	21.00	22.00	0.630	36.050	29.210
CBR_107	22.00	23.00	0.220	35.340	28.980
CBR_107	23.00	24.00	0.230	34.760	30.610
CBR_108	0.00	1.00	1.180	6.000	1.410
CBR_108	1.00	2.00	1.450	11.980	3.920
CBR_108	2.00	2.50	1.530	14.680	3.730
CBR_108	2.50	3.00	1.970	31.620	15.680
CBR_108	3.00	3.70	1.820	33.340	17.920
CBR_108	3.70	4.00	1.760	34.880	18.770

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_108	4.00	5.00	1.740	34.680	18.090
CBR_108	5.00	6.00	2.130	35.110	20.760
CBR_108	6.00	7.00	2.080	35.140	18.080
CBR_108	7.00	8.00	2.000	35.680	20.550
CBR_108	8.00	9.00	2.530	32.700	17.830
CBR_108	9.00	10.00	2.260	36.250	21.410
CBR_108	10.00	11.00	1.740	35.710	22.580
CBR_108	11.00	12.00	1.210	35.370	21.110
CBR_108	12.00	13.00	1.140	36.550	22.690
CBR_108	13.00	14.00	0.420	36.690	22.020
CBR_109	0.00	1.00	1.080	6.060	2.360
CBR_109	1.00	2.00	1.170	6.750	1.610
CBR_109	2.00	3.00	1.200	13.570	2.330
CBR_109	3.00	4.00	1.030	14.750	2.060
CBR_109	4.00	5.00	0.850	17.480	2.160
CBR_109	5.00	6.00	1.050	17.360	2.070
CBR_109	6.00	7.00	1.520	21.860	5.070
CBR_109	7.00	8.00	1.700	36.670	22.280
CBR_109	8.00	9.00	1.740	36.390	22.420
CBR_109	9.00	9.63	0.960	33.970	21.840
CBR_109	9.63	10.00	2.650	31.000	9.930
CBR_109	10.00	11.00	1.930	32.580	14.970
CBR_109	11.00	12.00	0.740	34.390	23.780
CBR_109	12.00	13.00	1.190	35.510	22.910
CBR_109	13.00	14.00	1.710	35.560	20.180
CBR_109	14.00	15.00	1.310	34.290	20.570
CBR_110	0.00	1.00	1.120	8.060	1.480
CBR_110	1.00	2.00	1.330	9.880	1.440
CBR_110	2.00	2.45	1.740	12.010	2.440
CBR_110	2.45	3.00	2.250	21.930	6.060
CBR_110	3.00	4.00	1.950	18.480	3.790
CBR_110	4.00	5.00	1.750	25.990	10.870
CBR_110	5.00	6.00	1.660	34.900	18.750
CBR_110	6.00	7.00	0.960	34.450	22.210
CBR_110	7.00	8.00	1.360	35.570	18.860
CBR_111	0.00	1.00	0.870	10.020	1.690
CBR_111	1.00	2.00	1.010	14.330	1.830
CBR_111	2.00	3.00	1.210	15.440	2.090
CBR_111	3.00	4.00	1.440	30.190	3.270
CBR_111	4.00	5.00	1.690	36.360	4.370
CBR_111	5.00	6.00	1.380	36.120	24.080
CBR_111	6.00	7.00	0.610	36.530	24.900
CBR_111	7.00	8.00	0.250	36.780	25.010
CBR_111	8.00	9.00	0.240	36.570	25.660
CBR_112	0.00	1.00	0.941	18.034	8.179

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_112	1.00	2.00	1.035	26.650	14.152
CBR_112	2.00	3.00	0.595	24.778	21.791
CBR_112	3.00	4.00	0.353	25.112	25.220
CBR_112	4.00	5.00	0.415	24.258	26.208
CBR_113	0.00	1.00	1.250	3.350	1.310
CBR_113	1.00	2.00	1.370	3.250	1.450
CBR_113	2.00	3.00	1.370	3.400	1.500
CBR_113	3.00	4.00	1.180	3.780	2.010
CBR_113	4.00	5.00	1.010	2.860	1.140
CBR_113	5.00	6.00	1.140	4.610	1.560
CBR_113	6.00	7.00	1.160	5.180	1.110
CBR_113	7.00	8.00	1.290	4.250	1.160
CBR_113	8.00	9.00	1.380	5.220	1.550
CBR_113	9.00	10.00	1.470	11.060	1.930
CBR_113	10.00	11.00	1.430	16.530	3.960
CBR_113	11.00	12.00	1.660	7.870	2.740
CBR_113	12.00	13.00	1.700	8.860	1.590
CBR_113	13.00	14.00	1.890	7.440	1.580
CBR_113	14.00	15.00	1.890	13.110	2.790
CBR_113	15.00	16.00	1.790	17.910	6.090
CBR_113	16.00	17.00	1.971	30.295	15.182
CBR_113	17.00	18.00	1.600	33.900	20.520
CBR_113	18.00	19.00	1.080	34.470	22.990
CBR_113	19.00	20.00	0.760	36.380	27.430
CBR_113	20.00	21.00	0.910	36.780	25.500
CBR_114	0.00	1.00	1.100	3.250	1.150
CBR_114	1.00	2.00	1.180	3.040	1.300
CBR_114	2.00	3.00	1.140	3.950	2.310
CBR_114	3.00	4.00	1.830	7.510	3.820
CBR_114	4.00	5.00	3.280	36.040	21.680
CBR_114	5.00	6.00	2.690	34.500	19.810
CBR_114	6.00	6.40	2.600	35.130	20.180
CBR_114	6.40	7.00	1.400	35.440	22.440
CBR_114	7.00	8.00	1.030	35.270	23.390
CBR_114	8.00	9.00	2.140	35.050	19.880
CBR_114	9.00	10.00	1.400	33.850	21.400
CBR_115	0.00	1.00	0.770	4.730	1.280
CBR_115	1.00	2.00	0.820	3.760	1.350
CBR_115	2.00	3.00	0.920	3.590	1.150
CBR_115	3.00	4.00	1.060	4.080	1.440
CBR_115	4.00	5.00	1.040	5.070	1.290
CBR_115	5.00	6.00	1.140	5.940	1.280
CBR_115	6.00	7.00	1.050	7.760	1.450
CBR_115	7.00	8.00	1.090	11.350	1.380
CBR_115	8.00	9.00	1.470	15.940	2.610

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_115	9.00	10.00	2.070	34.930	10.230
CBR_115	10.00	11.00	1.530	36.210	16.570
CBR_115	11.00	12.00	1.740	37.530	15.320
CBR_115	12.00	13.00	1.160	35.440	7.160
CBR_115	13.00	14.00	0.920	37.830	22.390
CBR_115	14.00	15.00	0.230	36.460	28.230
CBR_115	15.00	16.00	0.230	34.790	27.020
CBR_115	16.00	17.00	0.220	35.350	25.840
CBR_116	0.00	1.00	0.740	9.960	1.650
CBR_116	1.00	2.00	0.780	7.730	1.800
CBR_116	2.00	3.00	1.090	13.200	2.600
CBR_116	3.00	4.00	1.520	29.640	5.220
CBR_116	4.00	5.00	1.390	35.990	20.140
CBR_116	5.00	6.00	0.650	37.250	25.480
CBR_116	6.00	7.00	0.260	37.230	28.850
CBR_116	7.00	8.00	0.260	36.720	29.870
CBR_116	8.00	9.00	0.230	36.630	29.660
CBR_116	9.00	10.00	0.240	36.050	29.570
CBR_116	10.00	11.00	0.230	36.760	30.540
CBR_116	11.00	12.00	0.230	36.190	31.300
CBR_117	0.00	1.00	0.730	5.850	1.610
CBR_117	1.00	2.00	0.800	5.500	1.520
CBR_117	2.00	3.00	0.810	16.030	6.630
CBR_117	3.00	4.00	0.720	37.340	25.830
CBR_117	4.00	4.45	0.510	37.210	25.100
CBR_117	4.45	5.00	1.030	34.420	16.730
CBR_117	5.00	6.00	0.600	36.910	21.980
CBR_117	6.00	7.00	0.560	36.820	21.090
CBR_117	7.00	8.00	0.400	37.670	23.780
CBR_117	8.00	8.60	0.380	37.070	24.950
CBR_117	8.60	9.00	1.080	37.750	9.660
CBR_117	9.00	10.00	0.850	38.460	24.100
CBR_117	10.00	11.00	0.740	38.800	18.640
CBR_117	11.00	11.60	1.010	39.700	12.480
CBR_117	11.60	12.00	0.820	38.710	22.370
CBR_117	12.00	13.00	0.970	39.740	16.450
CBR_117	13.00	14.00	0.430	38.050	27.000
CBR_117	14.00	15.00	0.310	37.170	24.800
CBR_117	15.00	16.00	0.240	37.590	26.020
CBR_118	0.00	1.00	0.840	3.030	1.230
CBR_118	1.00	2.00	0.940	3.380	1.500
CBR_118	2.00	3.00	1.110	3.190	1.460
CBR_118	3.00	4.00	1.140	3.050	1.280
CBR_118	4.00	5.00	1.230	3.620	1.700
CBR_118	5.00	6.00	1.010	2.710	1.150

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_118	6.00	7.00	0.770	4.140	2.300
CBR_118	7.00	8.00	1.390	3.830	1.230
CBR_118	8.00	9.00	1.260	10.550	1.640
CBR_118	9.00	10.00	1.510	16.600	2.530
CBR_118	10.00	11.00	1.610	20.910	7.720
CBR_118	11.00	12.00	2.040	22.260	4.410
CBR_118	12.00	13.00	1.740	23.610	6.320
CBR_118	13.00	14.00	0.310	37.340	30.800
CBR_118	14.00	15.00	0.220	35.360	28.080
CBR_118	15.00	16.00	0.230	36.830	30.250
CBR_119	0.00	1.00	0.750	3.350	1.750
CBR_119	1.00	2.00	0.830	2.560	1.200
CBR_119	2.00	3.00	0.920	2.680	1.260
CBR_119	3.00	4.00	1.020	3.620	2.540
CBR_119	4.00	5.00	0.960	3.460	2.260
CBR_119	5.00	6.00	1.070	2.790	1.340
CBR_119	6.00	7.00	1.190	3.030	1.400
CBR_119	7.00	8.00	1.220	2.860	1.560
CBR_119	8.00	9.00	1.260	2.890	1.350
CBR_119	9.00	10.00	1.250	3.000	1.300
CBR_119	10.00	11.00	1.970	15.730	4.550
CBR_119	11.00	12.00	2.700	24.320	11.730
CBR_119	12.00	13.00	2.280	14.790	6.520
CBR_119	13.00	14.00	1.680	6.670	2.620
CBR_119	14.00	14.50	2.170	19.290	9.360
CBR_119	14.50	15.00	2.780	32.020	14.540
CBR_119	15.00	16.00	2.850	31.650	14.180
CBR_119	16.00	17.00	2.470	33.180	18.980
CBR_119	17.00	18.00	1.730	29.040	16.400
CBR_119	18.00	19.00	1.400	36.470	21.690
CBR_119	19.00	20.00	0.260	35.380	26.760
CBR_119	20.00	21.00	0.250	34.280	23.180
CBR_120	0.00	1.00	0.880	3.400	1.640
CBR_120	1.00	2.00	1.030	2.660	1.230
CBR_120	2.00	3.00	1.190	2.640	1.160
CBR_120	3.00	4.00	1.240	3.650	1.790
CBR_120	4.00	5.00	1.210	3.390	1.670
CBR_120	5.00	6.00	1.130	3.160	1.540
CBR_120	6.00	7.00	1.120	2.760	1.240
CBR_120	7.00	8.00	1.350	3.480	1.920
CBR_120	8.00	9.00	1.220	3.010	1.310
CBR_120	9.00	10.00	1.100	3.540	1.790
CBR_120	10.00	11.00	1.120	3.890	2.020
CBR_120	11.00	12.00	1.270	4.200	1.520
CBR_120	12.00	13.00	1.730	13.830	3.240

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_120	13.00	14.00	2.570	20.600	6.790
CBR_120	14.00	15.00	2.190	18.300	4.850
CBR_120	15.00	16.00	2.100	16.340	4.670
CBR_120	16.00	17.00	2.330	25.210	11.820
CBR_120	17.00	18.00	0.560	34.900	24.820
CBR_120	18.00	19.00	1.710	34.580	23.540
CBR_120	19.00	20.00	1.150	31.380	21.700
CBR_120	20.00	21.00	1.380	35.430	25.920
CBR_120	21.00	22.00	0.270	34.770	29.190
CBR_121	0.00	1.00	0.980	3.270	1.420
CBR_121	1.00	2.00	1.050	3.320	1.480
CBR_121	2.00	3.00	0.970	3.090	1.350
CBR_121	3.00	4.00	0.960	2.790	1.360
CBR_121	4.00	5.00	1.060	2.890	1.230
CBR_121	5.00	6.00	1.040	3.020	1.380
CBR_121	6.00	7.00	1.280	3.180	1.360
CBR_121	7.00	8.00	1.400	3.660	1.660
CBR_121	8.00	9.00	1.530	3.460	1.390
CBR_121	9.00	10.00	1.620	6.860	1.570
CBR_121	10.00	11.00	1.740	9.320	1.450
CBR_121	11.00	12.00	1.760	15.860	1.570
CBR_121	12.00	13.00	1.920	17.490	3.300
CBR_121	13.00	13.50	2.290	14.970	2.560
CBR_121	13.50	14.00	3.270	31.500	16.430
CBR_121	14.00	15.00	3.110	34.130	17.570
CBR_121	15.00	16.00	2.640	35.280	22.520
CBR_121	16.00	17.00	1.970	35.440	23.680
CBR_121	17.00	18.00	2.350	35.960	23.640
CBR_121	18.00	19.00	1.980	36.410	22.900
CBR_121	19.00	20.00	1.780	33.120	19.160
CBR_121	20.00	21.00	1.140	33.550	22.380
CBR_121	21.00	22.00	0.980	34.130	21.500
CBR_122	0.00	1.00	1.110	3.490	1.200
CBR_122	1.00	2.00	1.240	3.230	1.200
CBR_122	2.00	3.00	1.210	3.500	1.300
CBR_122	3.00	4.00	1.510	4.520	1.900
CBR_122	4.00	5.00	1.300	4.310	1.670
CBR_122	5.00	6.00	1.170	5.050	1.320
CBR_122	6.00	7.00	1.130	8.150	1.390
CBR_122	7.00	8.00	1.220	12.280	1.890
CBR_122	8.00	9.00	1.040	12.870	2.120
CBR_122	9.00	10.00	1.180	15.310	1.890
CBR_122	10.00	11.00	1.580	22.200	4.320
CBR_122	11.00	12.00	1.750	29.840	8.980
CBR_122	12.00	13.00	0.580	36.160	25.170

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_122	13.00	13.65	1.220	35.540	19.210
CBR_122	13.65	14.00	1.010	36.410	22.110
CBR_122	14.00	15.00	1.460	35.250	9.650
CBR_122	15.00	16.00	1.320	33.930	8.710
CBR_122	16.00	17.00	1.430	35.330	13.490
CBR_122	17.00	18.00	0.990	34.720	13.130
CBR_122	18.00	19.00	0.450	36.270	23.550
CBR_122	19.00	20.00	0.290	35.640	26.030
CBR_122	20.00	21.00	0.320	37.140	25.290
CBR_126	0.00	1.00	0.810	9.310	2.150
CBR_126	1.00	2.00	0.950	12.680	3.980
CBR_126	2.00	3.00	1.220	31.180	7.650
CBR_126	3.00	4.00	1.150	35.090	8.370
CBR_126	4.00	5.00	1.200	34.920	10.480
CBR_126	5.00	5.50	0.480	36.540	23.730
CBR_126	5.50	6.00	0.760	33.540	18.470
CBR_126	6.00	7.00	0.580	36.750	25.010
CBR_126	7.00	8.00	0.630	38.840	27.170
CBR_126	8.00	9.00	0.270	38.920	27.970
CBR_126	9.00	10.00	0.240	36.330	30.250
CBR_126	10.00	11.00	0.300	31.420	33.350
CBR_126	11.00	12.00	0.300	32.200	34.710
CBR_127	0.00	1.00	0.770	7.620	1.490
CBR_127	1.00	2.00	0.770	6.920	1.540
CBR_127	2.00	3.00	0.780	9.510	1.910
CBR_127	3.00	4.00	1.230	28.070	4.710
CBR_127	4.00	5.00	1.470	31.950	5.560
CBR_127	5.00	6.00	1.540	34.400	7.150
CBR_127	6.00	6.60	1.790	32.490	10.820
CBR_127	6.60	7.00	1.030	35.920	22.220
CBR_127	7.00	8.00	1.690	37.030	11.040
CBR_127	8.00	9.00	1.440	37.810	10.100
CBR_127	9.00	10.00	1.300	36.680	12.480
CBR_127	10.00	11.00	1.100	37.300	15.350
CBR_127	11.00	12.00	1.080	36.320	12.810
CBR_127	12.00	13.00	1.000	38.410	12.030
CBR_127	13.00	14.00	1.110	37.680	9.110
CBR_127	14.00	15.00	0.990	38.980	9.790
CBR_127	15.00	15.40	0.980	39.050	18.530
CBR_127	15.40	16.00	0.740	37.940	23.560
CBR_127	16.00	17.00	0.490	38.630	27.550
CBR_127	17.00	18.00	0.810	38.670	21.210
CBR_127	18.00	18.70	0.780	38.650	21.850
CBR_127	18.70	19.00	0.470	36.100	25.750
CBR_127	19.00	19.50	1.020	35.400	15.990

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_127	19.50	20.00	0.860	35.370	23.930
CBR_127	20.00	21.00	0.790	36.150	25.170
CBR_127	21.00	22.00	0.420	35.350	26.360
CBR_127	22.00	23.00	0.260	36.030	27.480
CBR_128	0.00	1.00	1.050	3.230	1.270
CBR_128	1.00	2.00	1.090	2.560	1.220
CBR_128	2.00	3.00	1.210	2.460	1.110
CBR_128	3.00	4.00	1.340	2.560	1.140
CBR_128	4.00	5.00	1.420	2.680	1.090
CBR_128	5.00	6.00	1.280	2.530	1.060
CBR_128	6.00	7.00	1.380	2.570	1.070
CBR_128	7.00	8.00	1.410	2.830	1.160
CBR_128	8.00	9.00	1.290	2.820	1.320
CBR_128	9.00	10.00	1.270	2.740	1.220
CBR_128	10.00	11.00	1.210	3.900	1.280
CBR_128	11.00	12.00	1.290	5.710	1.490
CBR_128	12.00	13.00	2.190	17.330	4.170
CBR_128	13.00	13.30	2.050	23.970	6.690
CBR_128	13.30	14.00	0.350	35.270	27.250
CBR_128	14.00	15.00	0.230	34.700	27.460
CBR_128	15.00	15.40	0.620	35.490	27.040
CBR_128	15.40	16.00	2.540	32.970	14.120
CBR_128	16.00	17.00	2.630	32.010	12.490
CBR_128	17.00	18.00	2.590	32.560	17.150
CBR_128	18.00	19.00	2.890	35.380	19.260
CBR_128	19.00	20.00	2.590	35.550	18.550
CBR_128	20.00	21.00	2.600	36.050	22.090
CBR_128	21.00	22.00	2.080	36.720	24.270
CBR_128	22.00	23.00	1.920	35.920	23.400
CBR_128	23.00	24.00	1.900	36.450	20.720
CBR_128	24.00	25.00	2.230	36.140	21.360
CBR_128	25.00	25.30	1.000	38.280	24.230
CBR_128	25.30	25.70	2.170	37.060	22.860
CBR_128	25.70	26.00	2.360	38.350	18.190
CBR_128	26.00	26.55	2.250	37.500	24.540
CBR_128	26.55	27.00	1.880	36.890	25.500
CBR_128	27.00	28.00	2.430	35.360	23.990
CBR_128	28.00	29.00	2.960	31.430	20.700
CBR_128	29.00	30.00	2.560	34.030	22.000
CBR_128	30.00	31.00	2.220	36.000	23.440
CBR_128	31.00	32.00	0.520	35.860	23.670
CBR_128	32.00	33.00	0.480	37.590	25.050
CBR_128	33.00	34.00	0.380	37.040	26.820
CBR_128	34.00	35.00	0.310	36.860	25.920
CBR_129	0.00	1.00	0.950	3.380	1.280

ID	FR (m)	TO (m)	NI (%)	SiO ₂ (%)	MgO (%)
CBR_129	1.00	2.00	0.870	2.920	1.300
CBR_129	2.00	3.00	1.010	2.930	1.120
CBR_129	3.00	4.00	1.170	3.240	1.210
CBR_129	4.00	5.00	1.030	3.000	1.250
CBR_129	5.00	6.00	1.040	2.880	1.250
CBR_129	6.00	7.00	0.910	3.930	1.380
CBR_129	7.00	8.00	1.410	5.090	2.830
CBR_129	8.00	9.00	1.610	3.630	1.510
CBR_129	9.00	10.00	1.460	4.760	1.500
CBR_129	10.00	11.00	1.490	4.060	1.580
CBR_129	11.00	12.00	1.100	5.170	1.290
CBR_129	12.00	13.00	1.230	6.560	1.190
CBR_129	13.00	14.00	1.330	7.030	1.480
CBR_129	14.00	15.00	1.450	8.720	1.760
CBR_129	15.00	16.00	1.690	13.130	1.970
CBR_129	16.00	17.00	2.640	25.490	10.460
CBR_129	17.00	18.00	2.580	30.250	15.020
CBR_129	18.00	19.00	2.880	32.200	18.050
CBR_129	19.00	20.00	2.470	35.310	17.920
CBR_129	20.00	21.00	1.590	35.980	22.470
CBR_129	21.00	21.40	2.270	35.090	20.330
CBR_129	21.40	22.00	0.570	34.760	27.620
CBR_129	22.00	23.00	0.310	35.160	29.920
CBR_129	23.00	24.00	0.310	34.930	29.770
CBR_129	24.00	25.00	0.260	35.730	29.710
CBR_129	25.00	26.00	0.320	36.330	26.720
CBR_132	0.00	1.00	0.750	7.030	1.560
CBR_132	1.00	2.00	0.830	7.780	1.850
CBR_132	2.00	3.00	0.870	7.770	1.790
CBR_132	3.00	4.00	0.880	8.700	1.440
CBR_132	4.00	5.00	0.840	10.030	1.390
CBR_132	5.00	6.00	1.250	20.570	3.380
CBR_132	6.00	7.00	1.750	31.210	4.280
CBR_132	7.00	8.00	1.900	32.070	5.310
CBR_132	8.00	9.00	1.260	31.870	14.030
CBR_132	9.00	9.70	1.060	33.810	18.350
CBR_132	9.70	10.00	1.790	31.910	8.330
CBR_132	10.00	11.00	1.890	29.700	5.760
CBR_132	11.00	12.00	1.830	27.730	6.280
CBR_132	12.00	13.00	2.150	31.100	10.140
CBR_132	13.00	14.00	1.690	36.220	22.260
CBR_132	14.00	15.00	1.680	36.790	17.100
CBR_132	15.00	16.00	0.760	36.000	22.760
CBR_132	16.00	17.00	1.680	36.890	19.250
CBR_132	17.00	18.00	0.250	35.120	25.740

LAMPIRAN C

DATA *COLLAR*

HID	X	Y	Z	DEPTH
CBR_025	9.626.789,999	421855,76	50,546	19,00
CBR_087	9.626.746,65	421.759,53	54,33	19,00
CBR_088	9.626.739,81	421.807,36	50,83	6,00
CBR_089	9.626.750,67	421.851,76	40,73	7,00
CBR_098	9.626.788,96	421.754,24	50,24	9,00
CBR_099	9.626.791,17	421.810,93	56,32	20,00
CBR_100	9.626.807,90	421.909,04	51,54	5,00
CBR_103	9.626.840,13	421.762,36	33,75	13,00
CBR_104	9.626.838,59	421.799,12	39,07	9,00
CBR_105	9.626.842,41	421.863,77	50,92	8,00
CBR_106	9.626.840,35	421.905,06	58,10	6,00
CBR_026	9.626.812,75	421.950,26	50,69	10,00
CBR_027	9.626.792,69	422.068,53	43,06	13,00
CBR_036	9.626.892,72	421.858,46	35,56	5,00
CBR_037	9.626.892,36	421.956,36	49,93	19,00
CBR_038	9.626.892,72	422.058,54	72,85	27,00
CBR_039	9.626.894,91	422.161,72	76,56	18,00
CBR_040	9.626.892,52	422.251,28	77,98	20,00
CBR_048	9.626.995,67	421.857,12	23,74	15,00
CBR_049	9.626.988,86	421.950,41	40,72	14,00
CBR_050	9.626.996,76	422.076,36	75,24	23,00
CBR_051	9.626.989,46	422.154,69	97,61	20,00
CBR_052	9.626.992,05	422.264,33	110,36	11,00
CBR_101	9.626.795,86	422.001,78	37,91	10,00
CBR_102	9.626.797,81	422.101,98	42,92	27,00
CBR_107	9.626.839,24	421.956,31	56,11	24,00
CBR_108	9.626.847,66	422.016,30	59,21	14,00
CBR_109	9.626.849,87	422.058,99	62,08	15,00
CBR_110	9.626.847,95	422.113,02	60,04	8,00
CBR_111	9.626.846,71	422.209,22	66,08	9,00
CBR_112	9.626.890,24	421.902,36	43,98	5,00
CBR_113	9.626.885,63	422.012,89	68,99	21,00
CBR_114	9.626.896,73	422.109,13	77,01	10,00
CBR_115	9.626.897,54	422.218,22	80,05	17,00
CBR_116	9.626.945,53	421.912,92	35,41	12,00
CBR_117	9.626.935,80	421.958,91	47,67	16,00
CBR_118	9.626.958,04	421.999,89	57,04	16,00
CBR_119	9.626.940,67	422.055,19	71,25	21,00
CBR_120	9.626.939,88	422.098,07	81,89	22,00
CBR_121	9.626.943,33	422.154,84	93,21	22,00
CBR_122	9.626.942,75	422.208,05	93,50	21,00
CBR_126	9.626.985,67	421.914,22	35,02	12,00
CBR_127	9.627.001,80	422.006,01	54,48	23,00
CBR_128	9.626.984,67	422.112,69	85,51	35,00
CBR_129	9.626.990,33	422.205,55	106,03	26,00
CBR_132	9.626.845,49	422.154,12	62,02	18,00

LAMPIRAN D
DATA *SERVEY*

HID	DEPTH	DIP	AZ
CBR_025	19,00	-90	0
CBR_087	19,00	-90	0
CBR_088	6,00	-90	0
CBR_089	7,00	-90	0
CBR_098	9,00	-90	0
CBR_099	20,00	-90	0
CBR_100	5,00	-90	0
CBR_103	13,00	-90	0
CBR_104	9,00	-90	0
CBR_105	8,00	-90	0
CBR_106	6,00	-90	0
CBR_026	10,00	-90	0
CBR_027	13,00	-90	0
CBR_036	5,00	-90	0
CBR_037	19,00	-90	0
CBR_038	27,00	-90	0
CBR_039	18,00	-90	0
CBR_040	20,00	-90	0
CBR_048	15,00	-90	0
CBR_049	14,00	-90	0
CBR_050	23,00	-90	0
CBR_051	20,00	-90	0
CBR_052	11,00	-90	0
CBR_101	10,00	-90	0
CBR_102	27,00	-90	0
CBR_107	24,00	-90	0
CBR_108	14,00	-90	0
CBR_109	15,00	-90	0
CBR_110	8,00	-90	0
CBR_111	9,00	-90	0
CBR_112	5,00	-90	0
CBR_113	21,00	-90	0
CBR_114	10,00	-90	0
CBR_115	17,00	-90	0
CBR_116	12,00	-90	0
CBR_117	16,00	-90	0
CBR_118	16,00	-90	0
CBR_119	21,00	-90	0
CBR_120	22,00	-90	0
CBR_121	22,00	-90	0
CBR_122	21,00	-90	0
CBR_126	12,00	-90	0
CBR_127	23,00	-90	0

LAMPIRAN E
DATA GEOLOGI

HID	FR (m)	TO (m)	LIT
CBR_025	0,00	1,00	LIM
CBR_025	1,00	2,00	LIM
CBR_025	2,00	3,00	LIM
CBR_025	3,00	3,60	LIM
CBR_025	3,60	4,00	SAP
CBR_025	4,00	5,00	SAP
CBR_025	5,00	6,00	SAP
CBR_025	6,00	7,00	SAP
CBR_025	7,00	8,00	SAP
CBR_025	8,00	9,00	SAP
CBR_025	9,00	10,00	SAP
CBR_025	10,00	10,46	SAP
CBR_025	10,46	11,00	SAP
CBR_025	11,00	12,00	SAP
CBR_025	12,00	13,00	SAP
CBR_025	13,00	14,00	SAP
CBR_025	14,00	15,00	BRK
CBR_025	15,00	16,00	BRK
CBR_025	16,00	17,00	BRK
CBR_025	17,00	18,00	BRK
CBR_025	18,00	19,00	BRK
CBR_087	0,00	1,00	LIM
CBR_087	1,00	2,00	SAP
CBR_087	2,00	3,00	SAP
CBR_087	3,00	4,00	SAP
CBR_087	4,00	5,00	SAP
CBR_087	5,00	6,00	SAP
CBR_087	6,00	7,00	SAP
CBR_087	7,00	8,00	BRK
CBR_087	8,00	9,00	BRK
CBR_087	9,00	19,00	BRK
CBR_088	0,00	0,50	LIM
CBR_088	0,50	1,00	SAP
CBR_088	1,00	2,00	SAP
CBR_088	2,00	3,00	BRK
CBR_088	3,00	4,00	BRK
CBR_088	4,00	5,00	BRK
CBR_088	5,00	6,00	BRK
CBR_089	0,00	1,00	LIM
CBR_089	1,00	2,00	SAP
CBR_089	2,00	3,00	SAP
CBR_089	3,00	4,00	BRK
CBR_089	4,00	5,00	BRK
CBR_089	5,00	6,00	BRK
CBR_089	6,00	7,00	BRK
CBR_098	0,00	0,40	LIM

HID	FR (m)	TO (m)	LIT
CBR_098	0,40	1,00	SAP
CBR_098	1,00	2,00	SAP
CBR_098	2,00	3,00	SAP
CBR_098	3,00	4,00	SAP
CBR_098	4,00	5,00	SAP
CBR_098	5,00	6,00	SAP
CBR_098	6,00	7,00	BRK
CBR_098	7,00	8,00	BRK
CBR_098	8,00	9,00	BRK
CBR_099	0,00	1,00	LIM
CBR_099	1,00	2,00	LIM
CBR_099	2,00	3,00	LIM
CBR_099	3,00	4,00	LIM
CBR_099	4,00	5,00	SAP
CBR_099	5,00	6,00	SAP
CBR_099	6,00	7,00	SAP
CBR_099	7,00	8,00	SAP
CBR_099	8,00	9,00	SAP
CBR_099	9,00	9,65	SAP
CBR_099	9,65	10,00	SAP
CBR_099	10,00	10,75	SAP
CBR_099	10,75	11,00	SAP
CBR_099	11,00	12,00	SAP
CBR_099	12,00	13,00	SAP
CBR_099	13,00	14,00	SAP
CBR_099	14,00	15,00	SAP
CBR_099	15,00	16,00	SAP
CBR_099	16,00	17,00	SAP
CBR_099	17,00	18,00	SAP
CBR_099	18,00	19,00	BRK
CBR_099	19,00	20,00	BRK
CBR_100	0,00	1,00	LIM
CBR_100	1,00	2,00	SAP
CBR_100	2,00	3,00	BRK
CBR_100	3,00	4,00	BRK
CBR_100	4,00	5,00	BRK
CBR_103	0,00	0,61	LIM
CBR_103	0,61	1,00	SAP
CBR_103	1,00	2,00	SAP
CBR_103	2,00	3,00	SAP
CBR_103	3,00	4,00	SAP
CBR_103	4,00	5,00	SAP
CBR_103	5,00	6,00	SAP
CBR_103	6,00	7,00	SAP
CBR_103	7,00	7,30	SAP
CBR_103	7,30	8,00	SAP

HID	FR (m)	TO (m)	LIT
CBR_103	8,00	8,60	SAP
CBR_103	8,60	9,00	SAP
CBR_103	9,00	10,00	SAP
CBR_103	10,00	11,00	BRK
CBR_103	11,00	12,00	BRK
CBR_103	12,00	13,00	BRK
CBR_104	0,00	1,00	LIM
CBR_104	1,00	2,00	LIM
CBR_104	2,00	3,00	SAP
CBR_104	3,00	4,00	SAP
CBR_104	4,00	5,00	BRK
CBR_104	5,00	6,00	BRK
CBR_104	6,00	7,00	BRK
CBR_104	7,00	8,00	BRK
CBR_104	8,00	9,00	BRK
CBR_105	0,00	1,00	LIM
CBR_105	1,00	2,00	LIM
CBR_105	2,00	3,00	SAP
CBR_105	3,00	4,00	SAP
CBR_105	4,00	5,00	BRK
CBR_105	5,00	6,00	BRK
CBR_105	6,00	7,00	BRK
CBR_105	7,00	8,00	BRK
CBR_106	0,00	1,00	LIM
CBR_106	1,00	2,00	SAP
CBR_106	2,00	3,00	BRK
CBR_106	3,00	4,00	BRK
CBR_106	4,00	5,00	BRK
CBR_106	5,00	6,00	BRK
CBR_026	0,00	1,00	LIM
CBR_026	1,00	1,60	LIM
CBR_026	1,60	2,00	SAP
CBR_026	2,00	2,60	SAP
CBR_026	2,60	3,00	SAP
CBR_026	3,00	4,00	SAP
CBR_026	4,00	5,00	SAP
CBR_026	5,00	6,00	SAP
CBR_026	6,00	6,45	SAP
CBR_026	6,45	7,00	SAP
CBR_026	7,00	8,00	BRK
CBR_026	8,00	9,00	BRK
CBR_026	9,00	10,00	BRK
CBR_027	0,00	1,00	LIM
CBR_027	1,00	2,00	LIM
CBR_027	2,00	3,00	LIM
CBR_027	3,00	4,00	LIM

HID	FR (m)	TO (m)	LIT
CBR_027	4,00	5,00	LIM
CBR_027	5,00	6,00	LIM
CBR_027	6,00	7,00	SAP
CBR_027	7,00	8,00	SAP
CBR_027	8,00	9,00	SAP
CBR_027	9,00	10,00	SAP
CBR_027	10,00	11,00	BRK
CBR_027	11,00	12,00	BRK
CBR_027	12,00	13,00	BRK
CBR_036	0,00	1,00	SAP
CBR_036	1,00	2,00	BRK
CBR_036	2,00	3,00	BRK
CBR_036	3,00	4,00	BRK
CBR_036	4,00	5,00	BRK
CBR_037	0,00	1,00	LIM
CBR_037	1,00	2,00	LIM
CBR_037	2,00	3,00	LIM
CBR_037	3,00	4,00	LIM
CBR_037	4,00	5,00	SAP
CBR_037	5,00	6,00	SAP
CBR_037	6,00	7,00	SAP
CBR_037	7,00	7,70	SAP
CBR_037	7,70	8,00	SAP
CBR_037	8,00	9,00	SAP
CBR_037	9,00	10,00	SAP
CBR_037	10,00	11,00	BRK
CBR_037	11,00	12,00	BRK
CBR_037	12,00	13,00	BRK
CBR_037	13,00	14,00	BRK
CBR_037	14,00	15,00	BRK
CBR_037	15,00	16,00	BRK
CBR_037	16,00	17,00	BRK
CBR_037	17,00	18,00	BRK
CBR_037	18,00	19,00	BRK
CBR_037	19,00	20,00	BRK
CBR_038	0,00	1,00	LIM
CBR_038	1,00	2,00	LIM
CBR_038	2,00	3,00	LIM
CBR_038	3,00	4,00	LIM
CBR_038	4,00	5,00	LIM
CBR_038	5,00	6,00	LIM
CBR_038	6,00	7,00	LIM
CBR_038	7,00	8,00	LIM
CBR_038	8,00	9,00	LIM
CBR_038	9,00	10,00	LIM
CBR_038	10,00	11,00	SAP

HID	FR (m)	TO (m)	LIT
CBR_038	11,00	12,00	SAP
CBR_038	12,00	13,00	SAP
CBR_038	13,00	13,50	SAP
CBR_038	13,50	14,00	SAP
CBR_038	14,00	15,00	SAP
CBR_038	15,00	16,00	SAP
CBR_038	16,00	17,00	SAP
CBR_038	17,00	18,00	SAP
CBR_038	18,00	19,00	SAP
CBR_038	19,00	20,00	SAP
CBR_038	20,00	21,00	SAP
CBR_038	21,00	22,00	SAP
CBR_038	22,00	22,30	BRK
CBR_038	22,30	23,00	BRK
CBR_038	23,00	24,00	BRK
CBR_038	24,00	25,00	BRK
CBR_038	25,00	26,00	BRK
CBR_038	26,00	27,00	BRK
CBR_039	0,00	1,00	LIM
CBR_039	1,00	2,00	LIM
CBR_039	2,00	3,00	LIM
CBR_039	3,00	4,00	LIM
CBR_039	4,00	4,60	LIM
CBR_039	4,60	5,00	SAP
CBR_039	5,00	6,00	SAP
CBR_039	6,00	7,00	SAP
CBR_039	7,00	7,46	SAP
CBR_039	7,46	8,00	SAP
CBR_039	8,00	8,60	SAP
CBR_039	8,60	9,00	SAP
CBR_039	9,00	10,00	SAP
CBR_039	10,00	10,36	SAP
CBR_039	10,36	11,00	BRK
CBR_039	11,00	12,00	BRK
CBR_039	12,00	13,00	BRK
CBR_039	13,00	14,00	BRK
CBR_039	14,00	14,50	BRK
CBR_039	14,50	15,00	BRK
CBR_039	15,00	16,00	BRK
CBR_039	16,00	17,00	BRK
CBR_039	17,00	18,00	BRK
CBR_040	0,00	1,00	LIM
CBR_040	1,00	2,00	LIM
CBR_040	2,00	3,00	LIM
CBR_040	3,00	4,00	LIM
CBR_040	4,00	5,00	LIM

HID	FR (m)	TO (m)	LIT
CBR_040	5,00	6,00	LIM
CBR_040	6,00	7,00	LIM
CBR_040	7,00	8,00	LIM
CBR_040	8,00	9,00	SAP
CBR_040	9,00	10,00	SAP
CBR_040	10,00	11,00	SAP
CBR_040	11,00	12,00	SAP
CBR_040	12,00	13,00	SAP
CBR_040	13,00	14,00	SAP
CBR_040	14,00	15,00	SAP
CBR_040	15,00	15,45	SAP
CBR_040	15,45	16,00	BRK
CBR_040	16,00	17,00	BRK
CBR_040	17,00	18,00	BRK
CBR_040	18,00	19,00	BRK
CBR_040	19,00	20,00	BRK
CBR_048	0,00	1,00	LIM
CBR_048	1,00	2,00	LIM
CBR_048	2,00	3,00	SAP
CBR_048	3,00	4,00	SAP
CBR_048	4,00	5,00	SAP
CBR_048	5,00	6,00	SAP
CBR_048	6,00	7,00	SAP
CBR_048	7,00	8,00	SAP
CBR_048	8,00	9,00	SAP
CBR_048	9,00	10,00	BRK
CBR_048	10,00	11,00	BRK
CBR_048	11,00	12,00	BRK
CBR_048	12,00	13,00	BRK
CBR_048	13,00	14,00	BRK
CBR_048	14,00	15,00	BRK
CBR_049	0,00	1,00	LIM
CBR_049	1,00	2,00	LIM
CBR_049	2,00	3,00	LIM
CBR_049	3,00	4,00	SAP
CBR_049	4,00	5,00	SAP
CBR_049	5,00	6,00	SAP
CBR_049	6,00	7,00	SAP
CBR_049	7,00	8,00	SAP
CBR_049	8,00	9,00	SAP
CBR_049	9,00	10,00	SAP
CBR_049	10,00	10,42	SAP
CBR_049	10,42	11,00	BRK
CBR_049	11,00	12,00	BRK
CBR_049	12,00	13,00	BRK
CBR_049	13,00	14,00	BRK

HID	FR (m)	TO (m)	LIT
CBR_050	0,00	1,00	LIM
CBR_050	1,00	2,00	LIM
CBR_050	2,00	3,00	LIM
CBR_050	3,00	4,00	LIM
CBR_050	4,00	5,00	LIM
CBR_050	5,00	6,00	LIM
CBR_050	6,00	7,00	LIM
CBR_050	7,00	8,00	LIM
CBR_050	8,00	9,00	LIM
CBR_050	9,00	10,00	LIM
CBR_050	10,00	11,00	LIM
CBR_050	11,00	12,00	SAP
CBR_050	12,00	13,00	SAP
CBR_050	13,00	14,00	SAP
CBR_050	14,00	15,00	SAP
CBR_050	15,00	16,00	SAP
CBR_050	16,00	17,00	SAP
CBR_050	17,00	18,00	BRK
CBR_050	18,00	19,00	BRK
CBR_050	19,00	20,00	BRK
CBR_050	20,00	21,00	BRK
CBR_050	21,00	22,00	BRK
CBR_050	22,00	23,00	BRK
CBR_051	0,00	1,00	LIM
CBR_051	1,00	2,00	LIM
CBR_051	2,00	3,00	LIM
CBR_051	3,00	4,00	LIM
CBR_051	4,00	5,00	LIM
CBR_051	5,00	6,00	LIM
CBR_051	6,00	7,00	LIM
CBR_051	7,00	8,00	LIM
CBR_051	8,00	9,00	LIM
CBR_051	9,00	10,00	LIM
CBR_051	10,00	11,00	LIM
CBR_051	11,00	12,00	LIM
CBR_051	12,00	13,00	LIM
CBR_051	13,00	14,00	SAP
CBR_051	14,00	15,00	SAP
CBR_051	15,00	16,00	SAP
CBR_051	16,00	17,00	SAP
CBR_051	17,00	18,00	BRK
CBR_051	18,00	19,00	BRK
CBR_051	19,00	20,00	BRK
CBR_052	0,00	1,00	SAP
CBR_052	1,00	2,00	SAP
CBR_052	2,00	3,00	SAP

HID	FR (m)	TO (m)	LIT
CBR_052	3,00	4,00	SAP
CBR_052	4,00	5,00	BRK
CBR_052	5,00	6,00	BRK
CBR_052	6,00	7,00	BRK
CBR_052	7,00	8,00	BRK
CBR_052	8,00	9,00	BRK
CBR_052	9,00	10,00	BRK
CBR_052	10,00	11,00	BRK
CBR_101	0,00	1,00	LIM
CBR_101	1,00	2,00	LIM
CBR_101	2,00	3,00	SAP
CBR_101	3,00	4,00	SAP
CBR_101	4,00	5,00	SAP
CBR_101	5,00	6,00	SAP
CBR_101	6,00	6,40	SAP
CBR_101	6,40	7,00	BRK
CBR_101	7,00	8,00	BRK
CBR_101	8,00	9,00	BRK
CBR_101	9,00	10,00	BRK
CBR_102	0,00	0,50	LIM
CBR_102	0,50	1,00	LIM
CBR_102	1,00	1,50	SAP
CBR_102	1,50	2,00	SAP
CBR_102	2,00	3,00	SAP
CBR_102	3,00	4,00	SAP
CBR_102	4,00	5,00	SAP
CBR_102	5,00	6,00	SAP
CBR_102	6,00	7,00	SAP
CBR_102	7,00	7,60	SAP
CBR_102	7,60	8,00	SAP
CBR_102	8,00	9,00	SAP
CBR_102	9,00	10,00	SAP
CBR_102	10,00	11,00	SAP
CBR_102	11,00	12,00	SAP
CBR_102	12,00	12,30	SAP
CBR_102	12,30	13,00	SAP
CBR_102	13,00	14,00	SAP
CBR_102	14,00	15,00	SAP
CBR_102	15,00	16,00	SAP
CBR_102	16,00	16,70	SAP
CBR_102	16,70	17,00	SAP
CBR_102	17,00	18,00	SAP
CBR_102	18,00	18,40	SAP
CBR_102	18,40	19,00	SAP
CBR_102	19,00	20,00	SAP
CBR_102	20,00	21,00	SAP

HID	FR (m)	TO (m)	LIT
CBR_102	21,00	22,00	SAP
CBR_102	22,00	23,00	SAP
CBR_102	23,00	24,00	SAP
CBR_102	24,00	25,00	BRK
CBR_102	25,00	26,00	BRK
CBR_102	26,00	27,00	BRK
CBR_107	0,00	1,00	LIM
CBR_107	1,00	2,00	LIM
CBR_107	2,00	3,00	LIM
CBR_107	3,00	4,00	LIM
CBR_107	4,00	5,00	LIM
CBR_107	5,00	6,00	SAP
CBR_107	6,00	7,00	SAP
CBR_107	7,00	8,00	SAP
CBR_107	8,00	9,00	SAP
CBR_107	9,00	10,00	SAP
CBR_107	10,00	11,00	SAP
CBR_107	11,00	12,00	SAP
CBR_107	12,00	12,45	SAP
CBR_107	12,45	13,00	SAP
CBR_107	13,00	14,00	SAP
CBR_107	14,00	15,00	SAP
CBR_107	15,00	16,00	SAP
CBR_107	16,00	17,00	SAP
CBR_107	17,00	18,00	SAP
CBR_107	18,00	19,00	SAP
CBR_107	19,00	20,00	SAP
CBR_107	20,00	21,00	SAP
CBR_107	21,00	22,00	BRK
CBR_107	22,00	23,00	BRK
CBR_107	23,00	24,00	BRK
CBR_108	0,00	1,00	LIM
CBR_108	1,00	2,00	LIM
CBR_108	2,00	2,50	LIM
CBR_108	2,50	3,00	SAP
CBR_108	3,00	3,70	SAP
CBR_108	3,70	4,00	SAP
CBR_108	4,00	5,00	SAP
CBR_108	5,00	6,00	SAP
CBR_108	6,00	7,00	SAP
CBR_108	7,00	8,00	SAP
CBR_108	8,00	9,00	SAP
CBR_108	9,00	10,00	SAP
CBR_108	10,00	11,00	BRK
CBR_108	11,00	12,00	BRK
CBR_108	12,00	13,00	BRK

HID	FR (m)	TO (m)	LIT
CBR_108	13,00	14,00	BRK
CBR_109	0,00	1,00	LIM
CBR_109	1,00	2,00	LIM
CBR_109	2,00	3,00	LIM
CBR_109	3,00	4,00	LIM
CBR_109	4,00	5,00	LIM
CBR_109	5,00	6,00	LIM
CBR_109	6,00	7,00	LIM
CBR_109	7,00	8,00	SAP
CBR_109	8,00	9,00	SAP
CBR_109	9,00	9,63	SAP
CBR_109	9,63	10,00	SAP
CBR_109	10,00	11,00	SAP
CBR_109	11,00	12,00	BRK
CBR_109	12,00	13,00	BRK
CBR_109	13,00	14,00	BRK
CBR_109	14,00	15,00	BRK
CBR_110	0,00	1,00	LIM
CBR_110	1,00	2,00	LIM
CBR_110	2,00	2,45	LIM
CBR_110	2,45	3,00	LIM
CBR_110	3,00	4,00	LIM
CBR_110	4,00	5,00	SAP
CBR_110	5,00	6,00	BRK
CBR_110	6,00	7,00	BRK
CBR_110	7,00	8,00	BRK
CBR_111	0,00	1,00	LIM
CBR_111	1,00	2,00	LIM
CBR_111	2,00	3,00	LIM
CBR_111	3,00	4,00	LIM
CBR_111	4,00	5,00	LIM
CBR_111	5,00	6,00	BRK
CBR_111	6,00	7,00	BRK
CBR_111	7,00	8,00	BRK
CBR_111	8,00	9,00	BRK
CBR_112	0,00	1,00	LIM
CBR_112	1,00	2,00	SAP
CBR_112	2,00	3,00	BRK
CBR_112	3,00	4,00	BRK
CBR_112	4,00	5,00	BRK
CBR_113	0,00	1,00	LIM
CBR_113	1,00	2,00	LIM
CBR_113	2,00	3,00	LIM
CBR_113	3,00	4,00	LIM
CBR_113	4,00	5,00	LIM
CBR_113	5,00	6,00	LIM

HID	FR (m)	TO (m)	LIT
CBR_113	6,00	7,00	LIM
CBR_113	7,00	8,00	LIM
CBR_113	8,00	9,00	LIM
CBR_113	9,00	10,00	LIM
CBR_113	10,00	11,00	LIM
CBR_113	11,00	12,00	LIM
CBR_113	12,00	13,00	LIM
CBR_113	13,00	14,00	LIM
CBR_113	14,00	15,00	LIM
CBR_113	15,00	16,00	LIM
CBR_113	16,00	17,00	SAP
CBR_113	17,00	18,00	SAP
CBR_113	18,00	19,00	BRK
CBR_113	19,00	20,00	BRK
CBR_113	20,00	21,00	BRK
CBR_114	0,00	1,00	LIM
CBR_114	1,00	2,00	LIM
CBR_114	2,00	3,00	LIM
CBR_114	3,00	4,00	LIM
CBR_114	4,00	5,00	SAP
CBR_114	5,00	6,00	SAP
CBR_114	6,00	6,40	SAP
CBR_114	6,40	7,00	BRK
CBR_114	7,00	8,00	BRK
CBR_114	8,00	9,00	BRK
CBR_114	9,00	10,00	BRK
CBR_115	0,00	1,00	LIM
CBR_115	1,00	2,00	LIM
CBR_115	2,00	3,00	LIM
CBR_115	3,00	4,00	LIM
CBR_115	4,00	5,00	LIM
CBR_115	5,00	6,00	LIM
CBR_115	6,00	7,00	LIM
CBR_115	7,00	8,00	LIM
CBR_115	8,00	9,00	LIM
CBR_115	9,00	10,00	SAP
CBR_115	10,00	11,00	SAP
CBR_115	11,00	12,00	SAP
CBR_115	12,00	13,00	SAP
CBR_115	13,00	14,00	SAP
CBR_115	14,00	15,00	BRK
CBR_115	15,00	16,00	BRK
CBR_115	16,00	17,00	BRK
CBR_116	0,00	1,00	LIM
CBR_116	1,00	2,00	LIM
CBR_116	2,00	3,00	LIM

HID	FR (m)	TO (m)	LIT
CBR_116	3,00	4,00	LIM
CBR_116	4,00	5,00	SAP
CBR_116	5,00	6,00	BRK
CBR_116	6,00	7,00	BRK
CBR_116	7,00	8,00	BRK
CBR_116	8,00	9,00	BRK
CBR_116	9,00	10,00	BRK
CBR_116	10,00	11,00	BRK
CBR_116	11,00	12,00	BRK
CBR_117	0,00	1,00	LIM
CBR_117	1,00	2,00	LIM
CBR_117	2,00	3,00	LIM
CBR_117	3,00	4,00	SAP
CBR_117	4,00	4,45	SAP
CBR_117	4,45	5,00	SAP
CBR_117	5,00	6,00	SAP
CBR_117	6,00	7,00	SAP
CBR_117	7,00	8,00	SAP
CBR_117	8,00	8,60	SAP
CBR_117	8,60	9,00	SAP
CBR_117	9,00	10,00	SAP
CBR_117	10,00	11,00	SAP
CBR_117	11,00	11,60	SAP
CBR_117	11,60	12,00	SAP
CBR_117	12,00	13,00	SAP
CBR_117	13,00	14,00	BRK
CBR_117	14,00	15,00	BRK
CBR_117	15,00	16,00	BRK
CBR_118	0,00	1,00	LIM
CBR_118	1,00	2,00	LIM
CBR_118	2,00	3,00	LIM
CBR_118	3,00	4,00	LIM
CBR_118	4,00	5,00	LIM
CBR_118	5,00	6,00	LIM
CBR_118	6,00	7,00	LIM
CBR_118	7,00	8,00	LIM
CBR_118	8,00	9,00	LIM
CBR_118	9,00	10,00	LIM
CBR_118	10,00	11,00	SAP
CBR_118	11,00	12,00	SAP
CBR_118	12,00	13,00	SAP
CBR_118	13,00	14,00	BRK
CBR_118	14,00	15,00	BRK
CBR_118	15,00	16,00	BRK
CBR_119	0,00	1,00	LIM
CBR_119	1,00	2,00	LIM

HID	FR (m)	TO (m)	LIT
CBR_119	2,00	3,00	LIM
CBR_119	3,00	4,00	LIM
CBR_119	4,00	5,00	LIM
CBR_119	5,00	6,00	LIM
CBR_119	6,00	7,00	LIM
CBR_119	7,00	8,00	LIM
CBR_119	8,00	9,00	LIM
CBR_119	9,00	10,00	LIM
CBR_119	10,00	11,00	LIM
CBR_119	11,00	12,00	LIM
CBR_119	12,00	13,00	LIM
CBR_119	13,00	14,00	LIM
CBR_119	14,00	14,50	LIM
CBR_119	14,50	15,00	SAP
CBR_119	15,00	16,00	SAP
CBR_119	16,00	17,00	SAP
CBR_119	17,00	18,00	SAP
CBR_119	18,00	19,00	BRK
CBR_119	19,00	20,00	BRK
CBR_119	20,00	21,00	BRK
CBR_120	0,00	1,00	LIM
CBR_120	1,00	2,00	LIM
CBR_120	2,00	3,00	LIM
CBR_120	3,00	4,00	LIM
CBR_120	4,00	5,00	LIM
CBR_120	5,00	6,00	LIM
CBR_120	6,00	7,00	LIM
CBR_120	7,00	8,00	LIM
CBR_120	8,00	9,00	LIM
CBR_120	9,00	10,00	LIM
CBR_120	10,00	11,00	LIM
CBR_120	11,00	12,00	LIM
CBR_120	12,00	13,00	LIM
CBR_120	13,00	14,00	LIM
CBR_120	14,00	15,00	LIM
CBR_120	15,00	16,00	LIM
CBR_120	16,00	17,00	SAP
CBR_120	17,00	18,00	BRK
CBR_120	18,00	19,00	BRK
CBR_120	19,00	20,00	BRK
CBR_120	20,00	21,00	BRK
CBR_120	21,00	22,00	BRK
CBR_121	0,00	1,00	LIM
CBR_121	1,00	2,00	LIM
CBR_121	2,00	3,00	LIM
CBR_121	3,00	4,00	LIM

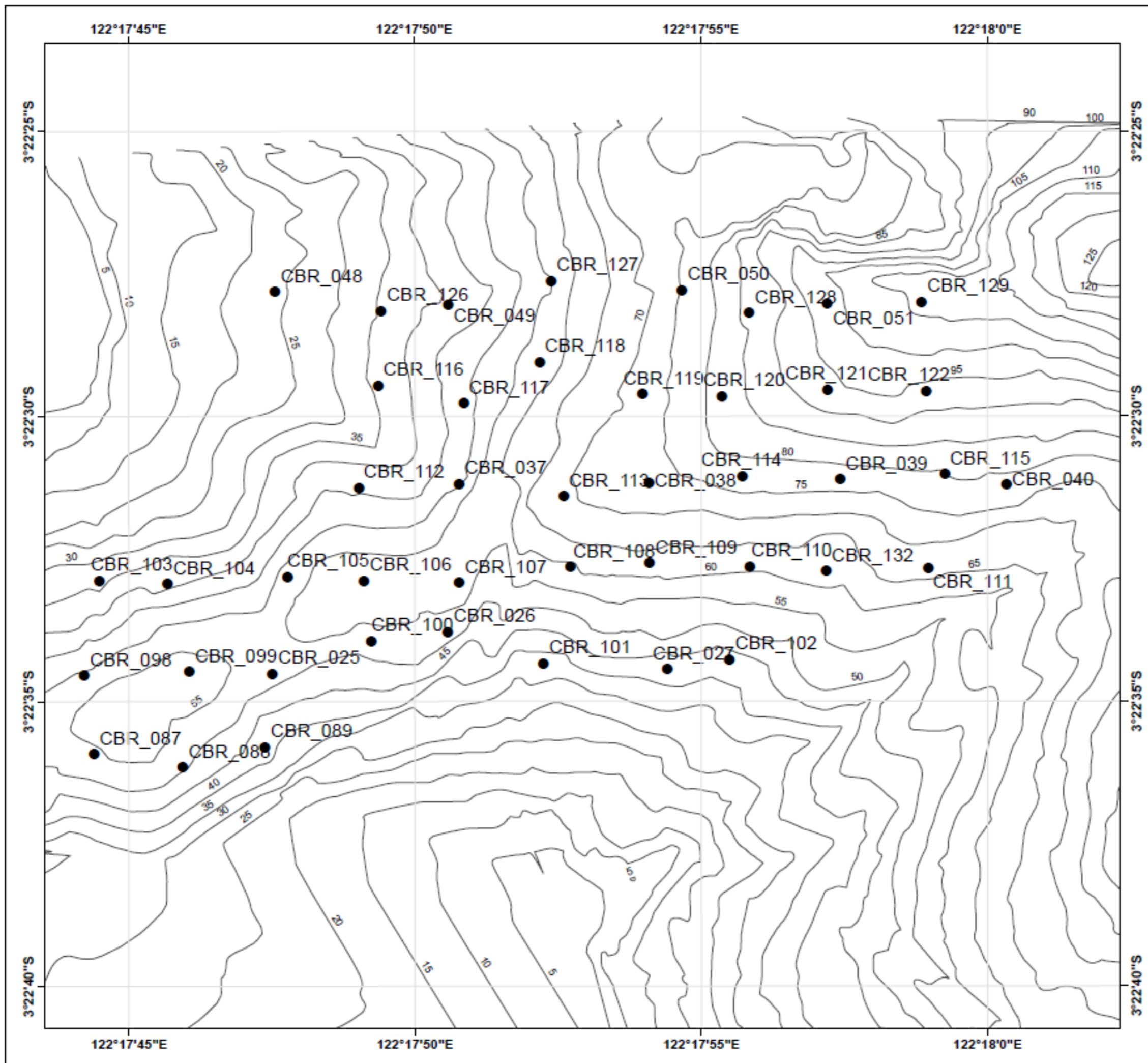
HID	FR (m)	TO (m)	LIT
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CBR_121	5,00	6,00	LIM
CBR_121	6,00	7,00	LIM
CBR_121	7,00	8,00	LIM
CBR_121	8,00	9,00	LIM
CBR_121	9,00	10,00	LIM
CBR_121	10,00	11,00	LIM
CBR_121	11,00	12,00	LIM
CBR_121	12,00	13,00	LIM
CBR_121	13,00	13,50	LIM
CBR_121	13,50	14,00	SAP
CBR_121	14,00	15,00	SAP
CBR_121	15,00	16,00	SAP
CBR_121	16,00	17,00	SAP
CBR_121	17,00	18,00	SAP
CBR_121	18,00	19,00	SAP
CBR_121	19,00	20,00	SAP
CBR_121	20,00	21,00	BRK
CBR_121	21,00	22,00	BRK
CBR_122	0,00	1,00	LIM
CBR_122	1,00	2,00	LIM
CBR_122	2,00	3,00	LIM
CBR_122	3,00	4,00	LIM
CBR_122	4,00	5,00	LIM
CBR_122	5,00	6,00	LIM
CBR_122	6,00	7,00	LIM
CBR_122	7,00	8,00	LIM
CBR_122	8,00	9,00	LIM
CBR_122	9,00	10,00	LIM
CBR_122	10,00	11,00	LIM
CBR_122	11,00	12,00	SAP
CBR_122	12,00	13,00	SAP
CBR_122	13,00	13,65	SAP
CBR_122	13,65	14,00	SAP
CBR_122	14,00	15,00	SAP
CBR_122	15,00	16,00	SAP
CBR_122	16,00	17,00	SAP
CBR_122	17,00	18,00	SAP
CBR_122	18,00	19,00	BRK
CBR_122	19,00	20,00	BRK
CBR_122	20,00	21,00	BRK
CBR_126	0,00	1,00	LIM
CBR_126	1,00	2,00	LIM
CBR_126	2,00	3,00	SAP
CBR_126	3,00	4,00	SAP
CBR_126	4,00	5,00	SAP

HID	FR (m)	TO (m)	LIT
CBR_126	5,00	5,50	SAP
CBR_126	5,50	6,00	SAP
CBR_126	6,00	7,00	SAP
CBR_126	7,00	8,00	SAP
CBR_126	8,00	9,00	BRK
CBR_126	9,00	10,00	BRK
CBR_126	10,00	11,00	BRK
CBR_126	11,00	12,00	BRK
CBR_127	0,00	1,00	LIM
CBR_127	1,00	2,00	LIM
CBR_127	2,00	3,00	LIM
CBR_127	3,00	4,00	SAP
CBR_127	4,00	5,00	SAP
CBR_127	5,00	6,00	SAP
CBR_127	6,00	6,60	SAP
CBR_127	6,60	7,00	SAP
CBR_127	7,00	8,00	SAP
CBR_127	8,00	9,00	SAP
CBR_127	9,00	10,00	SAP
CBR_127	10,00	11,00	SAP
CBR_127	11,00	12,00	SAP
CBR_127	12,00	13,00	SAP
CBR_127	13,00	14,00	SAP
CBR_127	14,00	15,00	SAP
CBR_127	15,00	15,40	SAP
CBR_127	15,40	16,00	SAP
CBR_127	16,00	17,00	SAP
CBR_127	17,00	18,00	SAP
CBR_127	18,00	18,70	SAP
CBR_127	18,70	19,00	SAP
CBR_127	19,00	19,50	SAP
CBR_127	19,50	20,00	BRK
CBR_127	20,00	21,00	BRK
CBR_127	21,00	22,00	BRK
CBR_127	22,00	23,00	BRK
CBR_128	0,00	1,00	LIM
CBR_128	1,00	2,00	LIM
CBR_128	2,00	3,00	LIM
CBR_128	3,00	4,00	LIM
CBR_128	4,00	5,00	LIM
CBR_128	5,00	6,00	LIM
CBR_128	6,00	7,00	LIM
CBR_128	7,00	8,00	LIM
CBR_128	8,00	9,00	LIM
CBR_128	9,00	10,00	LIM
CBR_128	10,00	11,00	LIM

HID	FR (m)	TO (m)	LIT
CBR_128	11,00	12,00	LIM
CBR_128	12,00	13,00	LIM
CBR_128	13,00	13,30	LIM
CBR_128	13,30	14,00	SAP
CBR_128	14,00	15,00	SAP
CBR_128	15,00	15,40	SAP
CBR_128	15,40	16,00	SAP
CBR_128	16,00	17,00	SAP
CBR_128	17,00	18,00	SAP
CBR_128	18,00	19,00	SAP
CBR_128	19,00	20,00	SAP
CBR_128	20,00	21,00	SAP
CBR_128	21,00	22,00	SAP
CBR_128	22,00	23,00	SAP
CBR_128	23,00	24,00	SAP
CBR_128	24,00	25,00	SAP
CBR_128	25,00	25,30	SAP
CBR_128	25,30	25,70	SAP
CBR_128	25,70	26,00	SAP
CBR_128	26,00	26,55	SAP
CBR_128	26,55	27,00	SAP
CBR_128	27,00	28,00	SAP
CBR_128	28,00	29,00	SAP
CBR_128	29,00	30,00	SAP
CBR_128	30,00	31,00	SAP
CBR_128	31,00	32,00	BRK
CBR_128	32,00	33,00	BRK
CBR_128	33,00	34,00	BRK
CBR_128	34,00	35,00	BRK
CBR_129	0,00	1,00	LIM
CBR_129	1,00	2,00	LIM
CBR_129	2,00	3,00	LIM
CBR_129	3,00	4,00	LIM
CBR_129	4,00	5,00	LIM
CBR_129	5,00	6,00	LIM
CBR_129	6,00	7,00	LIM
CBR_129	7,00	8,00	LIM
CBR_129	8,00	9,00	LIM
CBR_129	9,00	10,00	LIM
CBR_129	10,00	11,00	LIM
CBR_129	11,00	12,00	LIM
CBR_129	12,00	13,00	LIM
CBR_129	13,00	14,00	LIM
CBR_129	14,00	15,00	LIM
CBR_129	15,00	16,00	LIM
CBR_129	16,00	17,00	SAP

HID	FR (m)	TO (m)	LIT
CBR_129	17,00	18,00	SAP
CBR_129	18,00	19,00	SAP
CBR_129	19,00	20,00	SAP
CBR_129	20,00	21,00	SAP
CBR_129	21,00	21,40	SAP
CBR_129	21,40	22,00	BRK
CBR_129	22,00	23,00	BRK
CBR_129	23,00	24,00	BRK
CBR_129	24,00	25,00	BRK
CBR_129	25,00	26,00	BRK
CBR_132	0,00	1,00	LIM
CBR_132	1,00	2,00	LIM
CBR_132	2,00	3,00	LIM
CBR_132	3,00	4,00	LIM
CBR_132	4,00	5,00	LIM
CBR_132	5,00	6,00	LIM
CBR_132	6,00	7,00	SAP
CBR_132	7,00	8,00	SAP
CBR_132	8,00	9,00	SAP
CBR_132	9,00	9,70	SAP
CBR_132	9,70	10,00	SAP
CBR_132	10,00	11,00	SAP
CBR_132	11,00	12,00	SAP
CBR_132	12,00	13,00	SAP
CBR_132	13,00	14,00	SAP
CBR_132	14,00	15,00	SAP
CBR_132	15,00	16,00	BRK
CBR_132	16,00	17,00	BRK
CBR_132	17,00	18,00	BRK

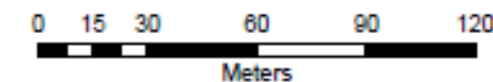
LAMPIRAN F
PETA TOPOGRAFI



PETA TOPOGRAFI



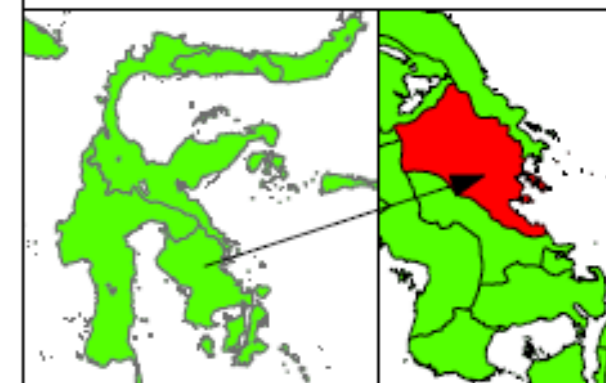
SKALA



Legenda

- Titik bor
- kontur

Proyeksi Geografi : Lintang Bujur
 Datum Unit : Datum 1984
 Koordinat Sistem : WGS 1984 UTM Zone 51 S



PT NATURAL PERSADA MANDIRI

WATURAMBAHA, LASOLO KEPULAUAN
 KONAWE UTARA, SULAWESI TENGGARA



DEPARTEMEN TEKNIK PERTAMBANGAN
 FAKULTAS TEKNIK
 UNIVERSITAS HASANUDDIN

DIGAMBAR
 OLEH

ASTUTI AHRIANINSI
 NIM. D111181003

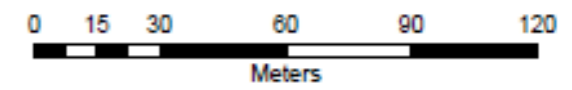
DIPERIKSA
 OLEH

ASRAN ILYAS, ST. MT. Ph.D
 NIP. 19730314 200012 1001

LAMPIRAN G

**PETA SEBARAN KADAR Ni DAN KADAR S/M
ZONA LIMONIT**

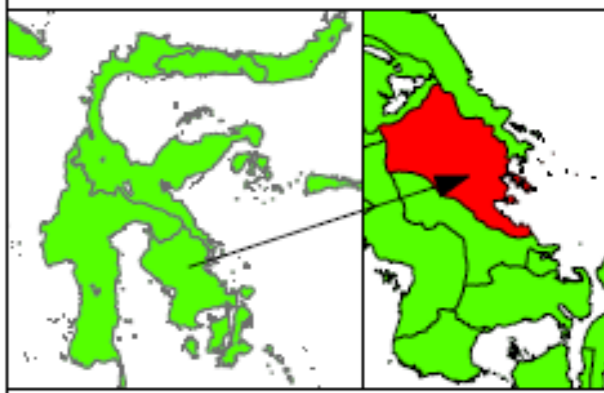
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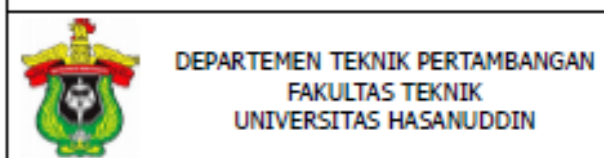
Legenda

●	Titik bor	Rasio S/M	Kadar Ni
—	kontur	0.1 - 2.1	0.7 - 0.9
1	lokasi awal limonit	2.1 - 3.6	0.9 - 1.1
2	0.1 - 2.1	3.6 - 5.1	1.1 - 1.3
3	2.1 - 3.6	5.1 - 6.6	1.3 - 1.5
4	3.6 - 5.1	6.6 - 9.1	1.5 - 1.7
5	5.1 - 6.6	9.1 - 11.6	
6	6.6 - 9.1		
7	9.1 - 11.6		

Proyeksi Geografi : Lintang Bujur
 Datum Unit : Datum 1984
 Koordinat Sistem : WGS 1984 UTM Zone 51 S

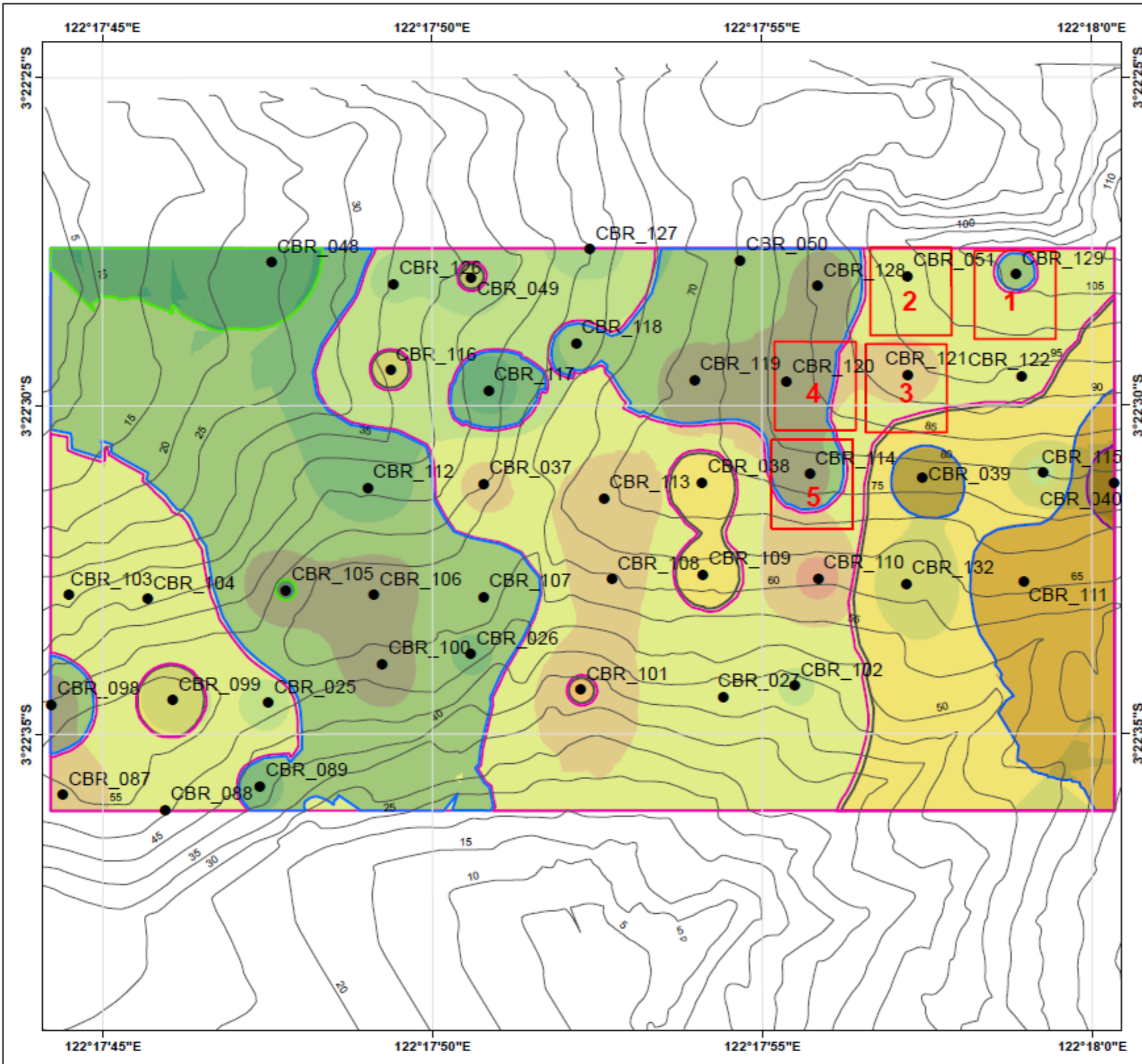


PT NATURAL PERSADA MANDIRI
 WATURAMBAHA, LASOLO KEPULAUAN
 KONAWE UTARA, SULAWESI TENGGARA



DIGAMBAR OLEH: **ASTUTI AHRIANINSI**
 NIM. D111181003

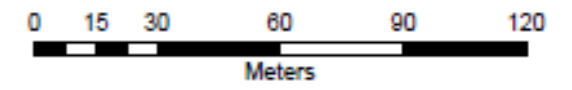
DIPERIKSA OLEH: **ASRAN ILYAS, ST. MT. Ph.D**
 NIR. 19730314 200012 1001



LAMPIRAN H

**PETA SEBARAN KADAR Ni DAN KADAR S/M
ZONA SAPROLIT**

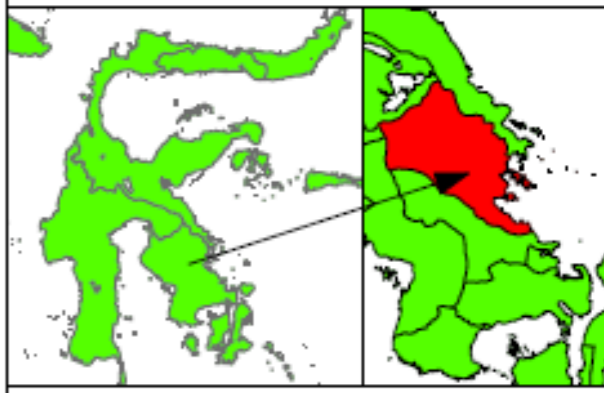
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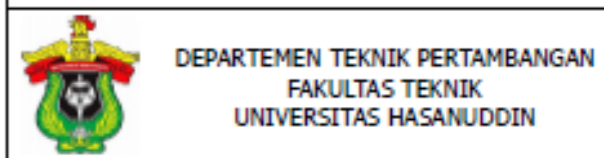
Legenda

●	Titik bor	Rasio S/M	Kadar Ni
—	kontur	0.9 - 1.6	0.7 - 1.1
▭	lokasi awal saprolit	1.6 - 2.3	1.1 - 1.5
▭	0.9-1.6	2.3 - 3.0	1.5 - 1.9
▭	1.6-2.3	3.0 - 3.7	1.9 - 2.3
▭	2.3-3.0	3.7 - 4.4	2.3 - 2.7
▭	3.0-3.7	4.4 - 5.1	2.7 - 3.1
▭	3.7-4.4		
▭	4.4-5.1		

Proyeksi Geografi : Lintang Bujur
 Datum Unit : Datum 1984
 Koordinat Sistem : WGS 1984 UTM Zone 51 S



PT NATURAL PERSADA MANDIRI
 WATURAMBAHA, LASOLO KEPULAUAN
 KONAWE UTARA, SULAWESI TENGGARA



DIGAMBAR OLEH: **ASTUTI AHRIANINSI**
 NIM. D111181003

DIPERIKSA OLEH: **ASRAN ILYAS, ST. MT. Ph.D**
 NIP. 19730314 200012 1001

