



ANEXO II – LEVANTAMENTO DE IRREGULARIDADE LONGITUDINAL



Levantamento com Perfilômetro Laser

Realização:	Pavesys Engenharia
Data:	05 janeiro 2017
Contratantes:	STE
Equipamento:	Perfilômetro BarraLaser
Operador:	Vinicius D'Avila
Localização:	ERS-128
Sentido:	NORTE
Faixa:	2
Trecho:	km 13.910 ate km 30.240
Distância entre Sensores (cm):	55 80 160 215

Início (km)	Fim (km)	IRI Esq	IRI Dir	IRI Médio	Latitude	Longitude	Obs
13.91	14.00	4.99	5.00	5.00	-29.58191334	-51.83963866	
14.00	14.20	4.91	4.89	4.90	-29.58055487	-51.84029758	
14.20	14.40	4.56	4.67	4.62	-29.57948624	-51.83913964	
14.40	14.60	3.59	4.06	3.82	-29.57759833	-51.83843967	
14.60	14.80	2.37	2.74	2.56	-29.57575758	-51.83864482	
14.80	15.00	4.75	3.59	4.17	-29.57397237	-51.83887286	
15.00	15.20	4.85	4.44	4.65	-29.57217392	-51.83911709	
15.20	15.40	5.03	5.14	5.08	-29.57037707	-51.83928630	
15.40	15.60	6.04	6.24	6.14	-29.56860895	-51.83899955	
15.60	15.80	5.34	5.05	5.20	-29.56686780	-51.83849497	
15.80	16.00	4.11	4.16	4.14	-29.56510390	-51.83799314	
16.00	16.20	3.25	4.77	4.01	-29.56335250	-51.83755335	km16
16.20	16.40	3.17	3.60	3.39	-29.56158067	-51.83712988	
16.40	16.60	3.37	3.68	3.52	-29.55987427	-51.83675780	
16.60	16.80	4.26	3.52	3.89	-29.55812786	-51.83634405	
16.80	17.00	4.26	4.15	4.20	-29.55639535	-51.83598264	
17.00	17.20	4.52	3.72	4.12	-29.55458518	-51.83577504	km17
17.20	17.40	2.79	3.11	2.95	-29.55272507	-51.83549682	
17.40	17.60	4.12	4.26	4.19	-29.55091141	-51.83525309	
17.60	17.80	3.26	3.01	3.13	-29.54912150	-51.83501599	
17.80	18.00	3.64	3.37	3.51	-29.54732472	-51.83478279	
18.00	18.20	2.40	4.33	3.36	-29.54552661	-51.83450246	km18
18.20	18.40	2.37	3.31	2.84	-29.54378836	-51.83385134	
18.40	18.60	4.28	3.82	4.05	-29.54212603	-51.83305836	
18.60	18.80	4.29	5.15	4.72	-29.54045843	-51.83226493	
18.80	19.00	4.07	4.62	4.35	-29.53878842	-51.83147040	
19.00	19.20	4.04	4.89	4.46	-29.53712552	-51.83067996	
19.20	19.40	4.26	4.23	4.24	-29.53545062	-51.82989265	
19.40	19.60	3.45	4.43	3.94	-29.53375842	-51.82917484	
19.60	19.80	2.45	3.30	2.88	-29.53199027	-51.82951167	
19.80	20.00	2.77	3.77	3.27	-29.53038206	-51.82878539	
20.00	20.20	2.63	2.73	2.68	-29.52891314	-51.82749767	km20
20.20	20.40	3.00	4.15	3.58	-29.52745125	-51.82621260	
20.40	20.60	3.17	3.82	3.49	-29.52625603	-51.82469979	
20.60	20.80	3.48	3.17	3.33	-29.52510832	-51.82310855	
20.80	21.00	3.14	3.63	3.39	-29.52389997	-51.82160203	OAE's (Início Final)
21.00	21.20	2.63	3.29	2.96	-29.52236808	-51.82053130	
21.20	21.40	3.34	3.61	3.47	-29.52077271	-51.81955808	
21.40	21.60	2.87	3.93	3.40	-29.51931035	-51.81837458	
21.60	21.80	3.91	3.64	3.77	-29.51763953	-51.81768849	
21.80	22.00	2.61	3.12	2.87	-29.51585795	-51.81739678	



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Levantamento com Perfilômetro Laser

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Distância entre Sensores (cm):	55 80 160 215

Início (km)	Fim (km)	IRI Esq	IRI Dir	IRI Médio	Latitude	Longitude	Obs
22.00	22.20	2.51	2.98	2.75	-29,51409449	-51,81709229	km22
22.20	22.40	2.65	2.03	2.34	-29,51231943	-51,81678198	
22.40	22.60	2.13	2.88	2.50	-29,51053123	-51,81646099	
22.60	22.80	2.33	2.92	2.62	-29,50875910	-51,81621201	
22.80	23.00	3.13	2.97	3.05	-29,50697239	-51,81650299	
23.00	23.20	3.20	4.54	3.87	-29,50522979	-51,81707145	
23.20	23.40	4.64	5.17	4.90	-29,50347273	-51,81763209	
23.40	23.60	3.40	2.88	3.14	-29,50170824	-51,81804859	
23.60	23.80	2.78	3.83	3.31	-29,50006371	-51,81724809	OAE's (Início Final)
23.80	24.00	2.39	3.46	2.93	-29,49844439	-51,81625519	
24.00	24.20	4.65	4.89	4.77	-29,49660403	-51,81659185	
24.20	24.40	4.03	2.95	3.49	-29,49507060	-51,81699777	
24.40	24.60	2.91	4.56	3.73	-29,49324265	-51,81748273	
24.60	24.80	2.30	3.85	3.08	-29,49144892	-51,81796193	
24.80	25.00	2.29	2.37	2.33	-29,48967725	-51,81838467	
25.00	25.20	3.35	3.94	3.65	-29,48788360	-51,81860476	
25.20	25.40	3.95	4.36	4.16	-29,48613647	-51,81856284	
25.40	25.60	3.45	4.18	3.81	-29,48433117	-51,81845783	
25.60	25.80	3.96	4.35	4.16	-29,48251841	-51,81833188	
25.80	26.00	4.43	5.12	4.77	-29,48070795	-51,81825397	
26.00	26.20	4.59	4.51	4.55	-29,47900425	-51,81817381	km26
26.20	26.40	4.26	4.95	4.60	-29,47713406	-51,81807284	
26.40	26.60	5.05	4.13	4.59	-29,47537688	-51,81798641	
26.60	26.80	3.98	3.26	3.62	-29,47358404	-51,81771976	
26.80	27.00	4.05	3.68	3.87	-29,47182473	-51,81682750	
27.00	27.20	3.43	3.63	3.53	-29,47019300	-51,81592134	
27.20	27.40	1.96	2.41	2.19	-29,46857759	-51,81502575	
27.40	27.60	2.33	2.50	2.42	-29,46699282	-51,81409481	
27.60	27.80	2.53	3.87	3.20	-29,46527568	-51,81355758	
27.80	28.00	2.85	3.21	3.03	-29,46355767	-51,81353637	OAE's (Início Final)
28.00	28.20	3.97	2.79	3.38	-29,46170792	-51,81384963	km28
28.20	28.40	2.75	4.47	3.61	-29,45998812	-51,81318923	
28.40	28.60	1.99	2.94	2.47	-29,45825520	-51,81263589	
28.60	28.80	1.78	2.96	2.37	-29,45647940	-51,81275378	
28.80	29.00	2.94	2.86	2.90	-29,45465181	-51,81301061	
29.00	29.20	2.88	3.30	3.09	-29,45288331	-51,81324067	
29.20	29.40	2.17	1.89	2.03	-29,45111477	-51,81348036	
29.40	29.60	2.33	2.34	2.34	-29,44934016	-51,81368733	
29.60	29.80	2.86	2.79	2.82	-29,44752408	-51,81394189	
29.80	30.00	3.17	3.18	3.17	-29,44570812	-51,81417473	
30.00	30.20	4.72	2.99	3.85	-29,44391486	-51,81441023	km30



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Levantamento com Perfilômetro Laser

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Equipamento:	Perfilômetro BarraLaser
Operador:	Vinicius D'Ávila
Localização:	ERS-128
Sentido:	NORTE
Faixa:	2
Trecho:	km 13.910 ate km 30.240
Distância entre Sensores (cm):	55 80 160 215

Início (km)	Fim (km)	IRI Esq	IRI Dir	IRI Médio	Latitude	Longitude	Obs
30,20	30,24	4,32	4,91	4,61	-29,44209793	-51,81464252	



Levantamento com Perfilômetro Laser

Realização:	Pavesys Engenharia
Data:	05 janeiro 2017
Contratantes:	STE
Equipamento:	Perfilômetro CiberLaser
Operador:	Vinicius D'Avila
Localização:	ERS128
Sentido:	SUL
Faixa:	1
Trecho:	km 30.240 ate km 13.910
Distância entre Sensores (cm):	55 80 160 215

Início (km)	Fim (km)	IRI Esq	IRI Dir	IRI Médio	Latitude	Longitude	Obs
13,91	14,00	4,26	3,32	3,79	-29,58033221	-51,83982775	
14,00	14,20	3,78	4,41	4,09	-29,57906725	-51,83855950	
14,20	14,40	3,51	4,07	3,79	-29,57735029	-51,83844938	
14,40	14,60	2,35	3,12	2,74	-29,57556059	-51,83869716	
14,60	14,80	2,25	2,23	2,24	-29,57377317	-51,83895468	
14,80	15,00	4,28	4,03	4,16	-29,57199388	-51,83919961	km15
15,00	15,20	4,90	4,23	4,57	-29,57018900	-51,83929108	
15,20	15,40	3,48	3,53	3,50	-29,56840532	-51,83891914	
15,40	15,60	4,27	6,08	5,17	-29,56664118	-51,83841058	
15,60	15,80	4,33	6,09	5,21	-29,56489584	-51,83793693	
15,80	16,00	4,47	4,95	4,71	-29,56312215	-51,83750967	
16,00	16,20	4,20	4,77	4,48	-29,56131899	-51,83706785	
16,20	16,40	4,02	5,91	4,96	-29,55954218	-51,83664044	
16,40	16,60	3,83	3,80	3,82	-29,55779198	-51,83620668	
16,60	16,80	3,92	4,40	4,16	-29,55601906	-51,83586334	
16,80	17,00	4,15	4,44	4,29	-29,55426618	-51,83563694	km17
17,00	17,20	3,00	2,93	2,96	-29,55244969	-51,83539088	
17,20	17,40	2,11	1,55	1,83	-29,55069109	-51,83518106	
17,40	17,60	4,64	4,47	4,55	-29,54889052	-51,83495381	
17,60	17,80	4,57	5,18	4,87	-29,54709202	-51,83473362	
17,80	18,00	2,66	2,50	2,58	-29,54531658	-51,83442595	
18,00	18,20	2,43	2,94	2,69	-29,54359997	-51,83374258	
18,20	18,40	2,56	2,70	2,63	-29,54193516	-51,83295196	
18,40	18,60	3,19	3,37	3,28	-29,54027277	-51,83217077	
18,60	18,80	5,00	4,85	4,93	-29,53860764	-51,83138618	
18,80	19,00	4,42	3,96	4,19	-29,53693677	-51,83059030	
19,00	19,20	5,06	5,19	5,12	-29,53526802	-51,82979313	km19
19,20	19,40	4,48	3,95	4,21	-29,53357962	-51,82922694	
19,40	19,60	3,45	3,39	3,42	-29,53179143	-51,82953207	
19,60	19,80	3,05	3,10	3,08	-29,53022079	-51,82856064	
19,80	20,00	2,63	3,54	3,09	-29,52874539	-51,82730907	
20,00	20,20	2,19	2,26	2,22	-29,52730831	-51,82600455	
20,20	20,40	2,56	2,78	2,67	-29,52614824	-51,82445888	
20,40	20,60	3,71	3,92	3,82	-29,52500361	-51,82287153	
20,60	20,80	3,79	3,39	3,59	-29,52373295	-51,82143938	
20,80	21,00	3,64	3,68	3,66	-29,52216466	-51,82038585	OAE's (Início Final)
21,00	21,20	2,50	3,46	2,98	-29,52059998	-51,81939790	
21,20	21,40	3,23	2,92	3,07	-29,51913763	-51,81817241	
21,40	21,60	4,07	3,77	3,92	-29,51740084	-51,81766071	
21,60	21,80	3,27	3,38	3,32	-29,51562068	-51,81733743	
21,80	22,00	2,85	2,70	2,77	-29,51386531	-51,81702457	



Levantamento com Perfilômetro Laser

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Data:	05 janeiro 2017
Contratantes:	STE
Equipamento:	Perfilômetro CiberLaser
Operador:	Vinicius D'Avila
Localização:	ERS128
Sentido:	SUL
Faixa:	1
Trecho:	km 30.240 ate km 13.910
Distância entre Sensores (cm):	55 80 160 215

Início (km)	Fim (km)	IRI Esq	IRI Dir	IRI Médio	Latitude	Longitude	Obs
22,00	22,20	2,01	1,78	1,90	-29,51207957	-51,81670294	
22,20	22,40	2,37	2,41	2,39	-29,51028751	-51,81636810	
22,40	22,60	2,63	2,95	2,79	-29,50852467	-51,81619144	
22,60	22,80	3,07	3,78	3,43	-29,50673624	-51,81660103	
22,80	23,00	3,11	3,64	3,37	-29,50497645	-51,81716442	km23
23,00	23,20	2,98	4,02	3,50	-29,50323681	-51,81772754	
23,20	23,40	4,53	3,89	4,21	-29,50149015	-51,81797538	
23,40	23,60	2,75	3,40	3,07	-29,49990940	-51,81700881	
23,60	23,80	5,10	2,31	3,70	-29,49826587	-51,81627107	OAE's (Início Final)
23,80	24,00	2,32	2,72	2,52	-29,49648684	-51,81669045	
24,00	24,20	3,06	3,95	3,51	-29,49470547	-51,81715604	
24,20	24,40	3,80	3,65	3,73	-29,49295157	-51,81760052	
24,40	24,60	2,83	4,33	3,58	-29,49119141	-51,81805155	
24,60	24,80	2,74	3,81	3,27	-29,48939750	-51,81843630	
24,80	25,00	2,71	3,45	3,08	-29,48746948	-51,81853186	km25
25,00	25,20	3,01	3,77	3,39	-29,48572450	-51,81846160	
25,20	25,40	3,83	3,95	3,89	-29,48390282	-51,81835033	
25,40	25,60	4,36	3,94	4,15	-29,48217326	-51,81828314	
25,60	25,80	2,68	3,54	3,11	-29,48019946	-51,81814199	
25,80	26,00	2,89	3,36	3,12	-29,47843835	-51,81800755	
26,00	26,20	3,56	3,37	3,46	-29,47664268	-51,81795088	
26,20	26,40	3,12	2,49	2,81	-29,47489840	-51,81792359	
26,40	26,60	4,81	3,36	4,08	-29,47322742	-51,81754838	
26,60	26,80	3,51	3,63	3,57	-29,47163622	-51,81672244	
26,80	27,00	3,72	2,25	2,99	-29,46998675	-51,81582400	km27
27,00	27,20	2,90	2,95	2,93	-29,46838347	-51,81490803	
27,20	27,40	1,88	2,17	2,03	-29,46675446	-51,81398461	
27,40	27,60	3,14	2,33	2,74	-29,46492777	-51,81352971	
27,60	27,80	3,06	4,03	3,54	-29,46318547	-51,81367043	
27,80	28,00	3,04	3,89	3,46	-29,46138749	-51,81383665	OAE's (Início Final)
28,00	28,20	3,20	2,96	3,08	-29,45976335	-51,81301820	
28,20	28,40	2,53	1,26	1,89	-29,45797862	-51,81262228	
28,40	28,60	1,79	1,48	1,63	-29,45619232	-51,81281285	
28,60	28,80	1,69	2,82	2,26	-29,45439778	-51,81304808	
28,80	29,00	3,36	3,64	3,50	-29,45259055	-51,81330223	km29
29,00	29,20	2,66	5,30	3,98	-29,45077626	-51,81353677	
29,20	29,40	2,42	4,26	3,34	-29,44897597	-51,81378117	
29,40	29,60	3,34	3,17	3,26	-29,44722418	-51,81398706	
29,60	29,80	2,71	3,22	2,97	-29,44540833	-51,81421991	
29,80	30,00	3,77	3,73	3,75	-29,44355971	-51,81444611	
30,00	30,20	3,66	5,02	4,34	-29,44183085	-51,81468027	



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Operador:	Vinicius D'Avila
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Trecho:	km 30.240 ate km 13.910
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Início (km)	Fim (km)	IRI Esq	IRI Dir	IRI Médio	Latitude	Longitude	Obs
30,20	30,24	4,92	5,48	5,20	-29,44177206	-51,81622461	