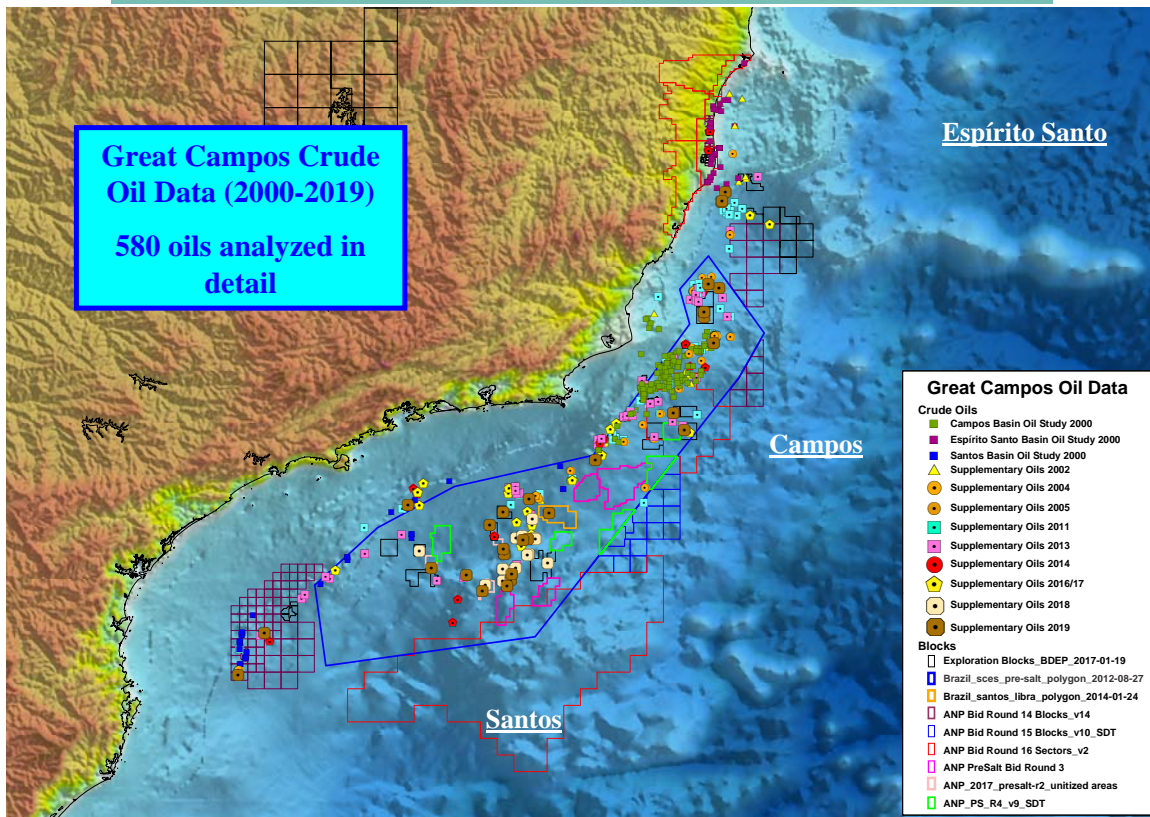




REGIONAL GEOCHEMICAL EVALUATION OF CRUDE OILS FROM THE GREATER CAMPOS BASIN, SOUTHEAST BRAZIL

2015-2017 SUPPLEMENTARY DATA



A New Study from

GEOCHEMICAL SOLUTIONS INTERNATIONAL, INC.

2018-2019

Proposal

Executive Summary

GEOCHEMICAL SOLUTIONS INTERNATIONAL INC. (GSI) is performing a study of supplementary crude oils to complement previous, basin-specific oil studies conducted in the Campos, Santos and Espírito Santo sub-basins. The study objective is to provide a consistent and objective analysis of the petroleum systems active in this region and will include approximately fifty (50) fluids from forty-two (42) wells located in the Great Campos Basin. These new oil data will also be integrated within the multi-disciplinary **MARIMBA** (Margins of the Atlantic Region, Integrated Multi-Disciplinary Basin Analysis) project conducted jointly with Dickson International Geosciences (www.digsgeo.com).

POCO	ALT_NAME	OPERATOR	Basin	Field	State	LATITUDE	LONGITUDE	DATUM	TD (m)	Water (m)	CADASTRO
1-APL-1-ESS	1APL1ESS	Anadarko	Campos		ES	-21.647169	-39.886071	SIRGAS2000	6025	1418	34281023052
1-APL-2DA-ESS		Anadarko	Campos		ES	-21.578880	-39.886199	SIRGAS2000	5046	1496	34281024409
1-BP-8D-RJS	BENEDITO	BP Energy	Campos		RJ	-23.096587	-40.347477	SIRGAS2000	5413	2417	74281026952
1-SHEL-11-ESS	1SHELL11ESS	Shell Brasil	Campos	OSTRA	ES	-21.220470	-39.658721	SIRGAS2000	3087	1884	34281020177
1-SHEL-9-ESS	1SHELL9ESS	Shell Brasil	Campos	ARGONAUTA	ES	-21.157432	-39.823660	SIRGAS2000	3220	1647	34281019935
3-REPF-17-RJS	3-REPF-17-RJS	Statoil Brasil	Campos		RJ	-23.349810	-40.180561	SIRGAS2000			74281028609
6-BRSA-1250-RJS		Petrobras	Campos	ALBACORA LESTE	RJ	-22.040124	-39.741536	SIRGAS2000	4610	1668	74281027651
1-BRSA-650D-ESS		Petrobras	Espirito Santo		ES	-19.777078	-39.565907	SIRGAS2000	5030	60	34271023222
4-BRSA-406A-ESS		Petrobras	Espirito Santo		ES	-19.925480	-39.620602	SIRGAS2000	4000	871	34271021738
6-BRSA-486-ESS		Petrobras	Espirito Santo		ES	-19.908548	-39.617479	SIRGAS2000	4662.8	788	34271022244
1-BRSA-1063-SPS	1SPS98	Petrobras	Santos		SP	-25.175742	-44.168932	SIRGAS2000	7104	1873	86316026483
1-BRSA-1146-RJS		Petrobras	Santos	ATAPU	RJ	-24.975520	-42.438423	SIRGAS2000	5582	2266	74316026742
1-BRSA-369A-RJS		Petrobras	Santos	LULA	RJ	-25.482284	-42.827537	SIRGAS2000	5957	2126	74316021508
1-BRSA-658-SPS		Petrobras	Santos	BA ÜNA	SP	-26.412330	-46.496435	SIRGAS2000	2322	276	86316023264
1-BRSA-905-RJS		Petrobras	Santos		RJ	-23.803045	-41.518590	SIRGAS2000	4528.5	469	74316025280
1-BRSA-925A-RJS		Petrobras	Santos		RJ	-24.593384	-42.908509	SIRGAS2000	6434	1747	74316025596
1-BRSA-976-RJS	1RJS691A	Petrobras	Santos	SaPIA	RJ	-25.223426	-42.523767	SIRGAS2000	5271	2131	74316025704
1-SHEL-26-RJS		Shell Brasil	Santos		RJ	-24.783938	-43.108810	SIRGAS2000	5631.5	1947	74316025798
3-BRSA-1032-RJS	3RJS697	Petrobras	Santos	BERBIG	RJ	-24.986159	-42.713516	SIRGAS2000	6051	2150	74316025961
3-BRSA-1064-RJS	3RJS700	Petrobras	Santos	BaZIOS	RJ	-24.695151	-42.467436	SIRGAS2000	5989	2032	74316026527
3-BRSA-1101-SPS		Petrobras	Santos	LAPA	SP	-25.537881	-43.460282	SIRGAS2000	5576	2151	86316026427
3-BRSA-1181D-RJS	3RJS715D	Petrobras	Santos	SURURU	RJ	-24.944910	-42.620316	SIRGAS2000	6672	2130	74316027068
3-BRSA-1183-RJS		Petrobras	Santos		RJ	-25.352857	-42.238675	SIRGAS2000	5768	2251	74316027151
3-BRSA-1201-RJS		Petrobras	Santos	S ePIA	RJ	-25.241710	-42.544236	SIRGAS2000	5935	2133	74316027253
3-BRSA-1255-RJS	3RJS731	Petrobras	Santos		RJ	-24.608384	-42.214583	SIRGAS2000	5736	1963	74316027726
3-BRSA-1290-SPS	3SPS105	Statoil Brasil O	Santos		SP	-25.426190	-43.987224	SIRGAS2000			86316027979
3-BRSA-342-RJS		Petrobras	Santos	TAMBUAT ü	RJ	-24.400926	-42.518272	SIRGAS2000	4045	1567	74316021288
3-BRSA-398-SPS		Petrobras	Santos	MEXILH ãO	SP	-24.481790	-44.338522	SIRGAS2000	4302	349	86316021654
3-BRSA-788-SPS	3SPS69	Petrobras	Santos	SAPINH Oa	SP	-25.687526	-43.175321	SIRGAS2000	5203	2118	86316024369
3-BRSA-821-RJS	3-RJS-674	Petrobras	Santos	LULA	RJ	-25.439654	-42.720324	SIRGAS2000	5226	2111	74316024690
3-BRSA-830-RJS		Petrobras	Santos	LULA	RJ	-25.220948	-42.889051	SIRGAS2000	5276.3	2213	74316024782
3-BRSA-839A-RJS	3RJS675	Petrobras	Santos	LULA	RJ	-25.140427	-42.903618	SIRGAS2000	5302	2247	74316024829
3-BRSA-854-RJS		Petrobras	Santos	LULA	RJ	-25.632924	-42.916705	SIRGAS2000	5462	2154	74316024910
3-BRSA-865A-RJS	3RJS677A	Petrobras	Santos	LULA	RJ	-25.450630	-42.916733	SIRGAS2000	5498	2139	74316025056
3-BRSA-883-RJS		Petrobras	Santos	LULA	RJ	-25.616196	-42.793067	SIRGAS2000	5180	2166	74316025137
3-BRSA-891-RJS	3RJS682	Petrobras	Santos	SURURU	RJ	-25.001887	-42.536770	SIRGAS2000	2761	2279	74316025182
4-BRSA-1047-RJS	4RJS698	Petrobras	Santos	SUL DE LULA	RJ	-25.702964	-42.847410	SIRGAS2000	5355	2182	74316026581
4-BRSA-307-SCS		Petrobras	Santos		SC	-27.038292	-46.893492	SIRGAS2000	5303	203	82316021078
9-BRSA-1212-RJS		Petrobras	Santos	SURURU	RJ	-25.014958	-42.608289	SIRGAS2000	5890	2295	74316027331
9-BRSA-1284-RJS	9RJS730	Petrobras	Santos		RJ	-24.996371	-42.421353	SIRGAS2000			74316027881
9-BRSA-808-RJS		Petrobras	Santos	LULA	RJ	-25.526854	-42.777350	SIRGAS2000	5001	2135	74316024562
9-BRSA-928-SPS		Petrobras	Santos	SAPINHO ü	SP	-25.773051	-43.218466	SIRGAS2000	5374.6	2118	86316025404

Samples will be characterized for physical properties, gross composition, and stable carbon and deuterium isotopes and by quantitative whole oil gas chromatography (GC) and gas chromatography/mass spectrometry (GC/MS). Results will be incorporated within the previously established geochemical and geological framework through the use of multivariate statistical analyses. Deliverables will include a brief synthesis of interpreted results provided on an associated montage. All geochemical data will be provided in digital format in a database contained on CD that includes a proprietary data browser to facilitate access.

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