

**TRABAJO ESPECIAL DE GRADO**

**ESTUDIO DEL PROCESO EROSIVO PRESENTADO EN LA COSTA  
DE PLAYA EL YAQUE, ISLA DE MARGARITA,  
EDO. NUEVA ESPARTA**

Presentado ante la Ilustre  
Universidad Central de Venezuela

Por los Brs. :

Lavado V., Fabio J.

Matos T., Mario J.

Para optar al Título de

Ingeniero Civil

*TOMO II*

Caracas, abril 2007

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### ESTUDIO DEL PROCESO EROSIVO PRESENTADO EN LA COSTA DE PLAYA EL YAQUE, ISLA DE MARGARITA, EDO. NUEVA ESPARTA

TUTOR ACADÉMICO: Prof. Roberto Savelli Ciatteo

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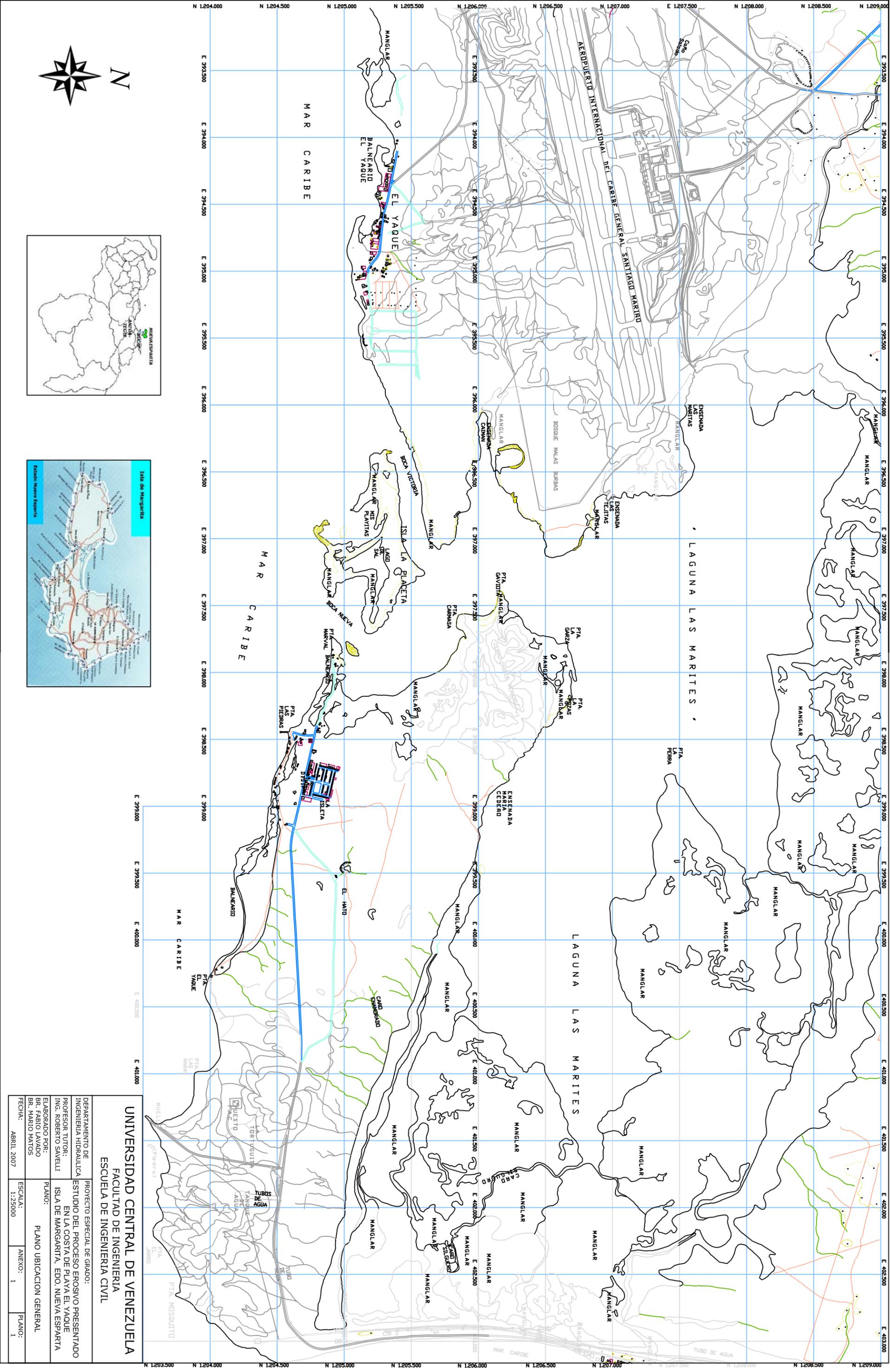
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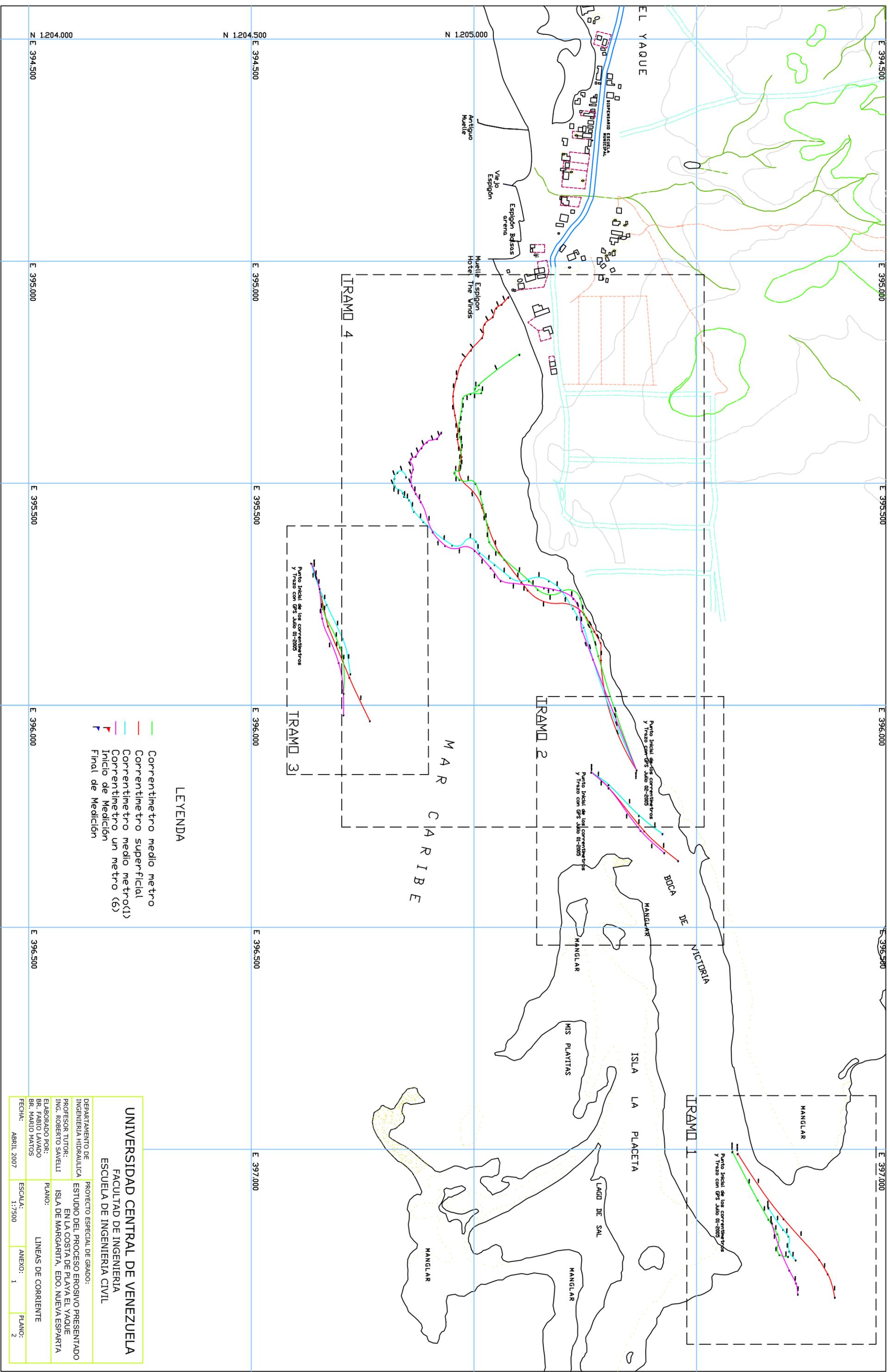
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PROFESOR TUTOR: ING. ROBERTO SAVELLI	ELABORADO POR: BR. FABIO LAVADO BR. MARIO MATOS	PLANO:	PLANO UBICACION GENERAL
FECHA: ABRIL 2007	ESCALA: 1:25000	ANEJO: 1	PLANO: 1



- LEYENDA**
- Correntimetro medio metro
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  - Correntimetro medio metro (1)
  - Correntimetro un metro (6)
  - ▲ Inicio de Medición
  - ▼ Final de Medición

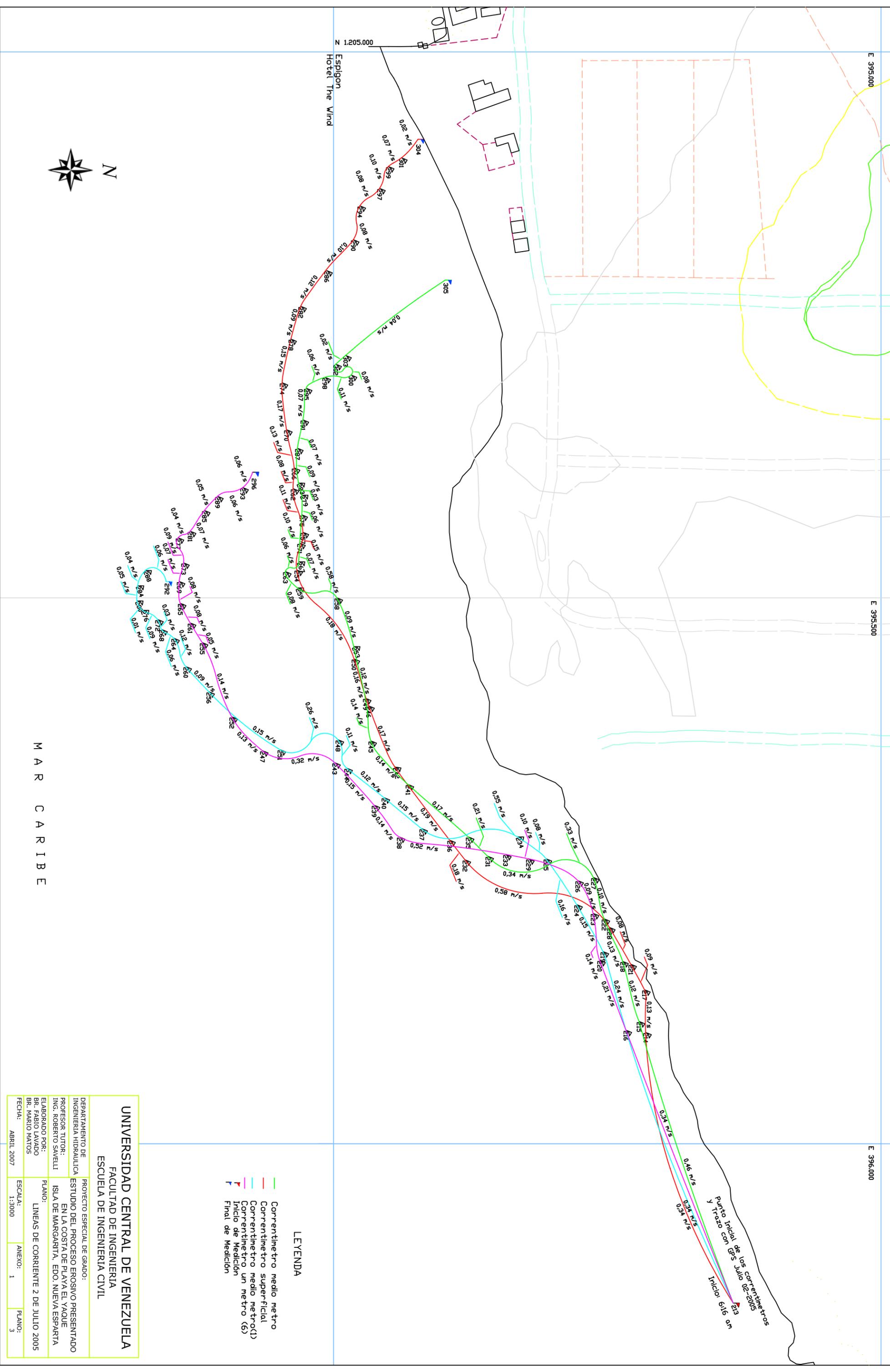
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 ING. ROBERTO SANVELLI  
 ISLA DE MARGARITA, EDO. NUEVA ESPARTA

ELABORADO POR:  
 BR. FABIO LAVADO  
 BR. MARIO MATOS

PLANO:  
 LINEAS DE CORRIENTE

FECHA: ABRIL 2007  
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 ANEXO: 1  
 PLANO: 2



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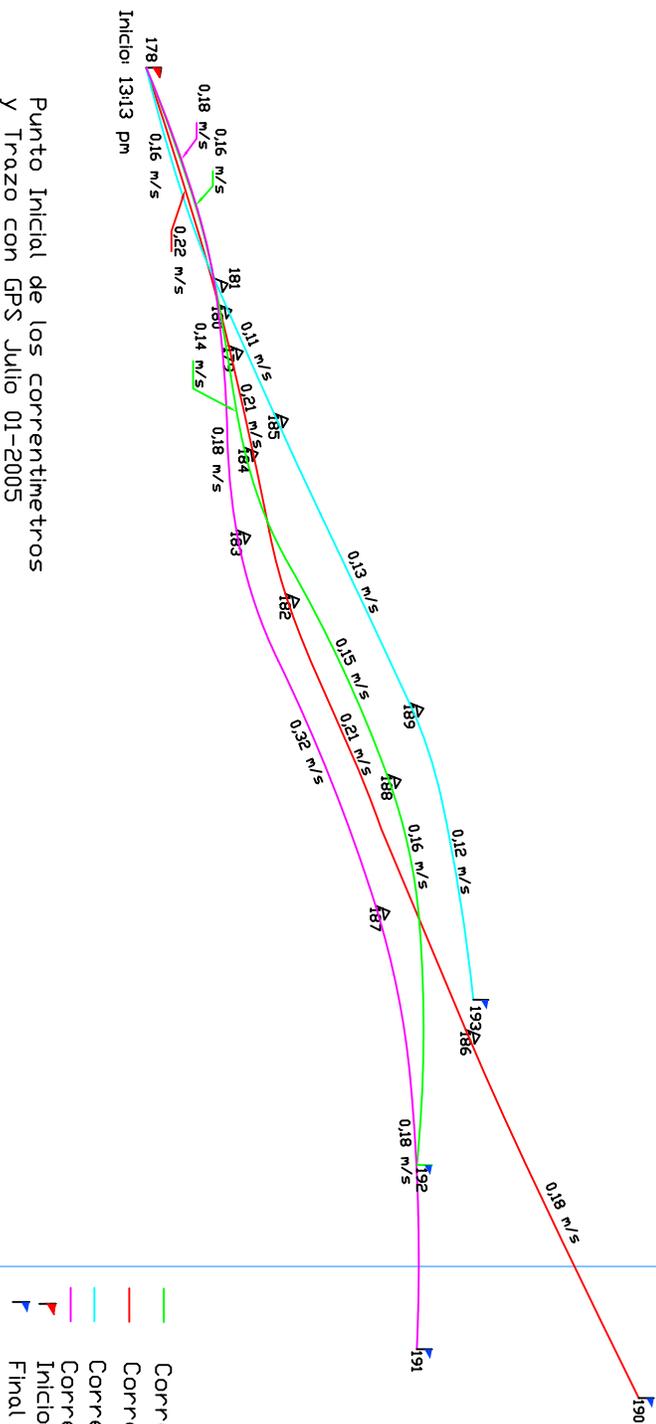
LEYENDA

- Correntimetro medio metro
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- Correntimetro un metro (6)
- Inicio de Medicion
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FECHA: ABRIL 2007	ESCALA: 1:3000 ANEXO: 1 PLANO: 3

M A R C A R I B E



Punto Inicial de los correntímetros  
y Trazo con GPS Julio 01-2005



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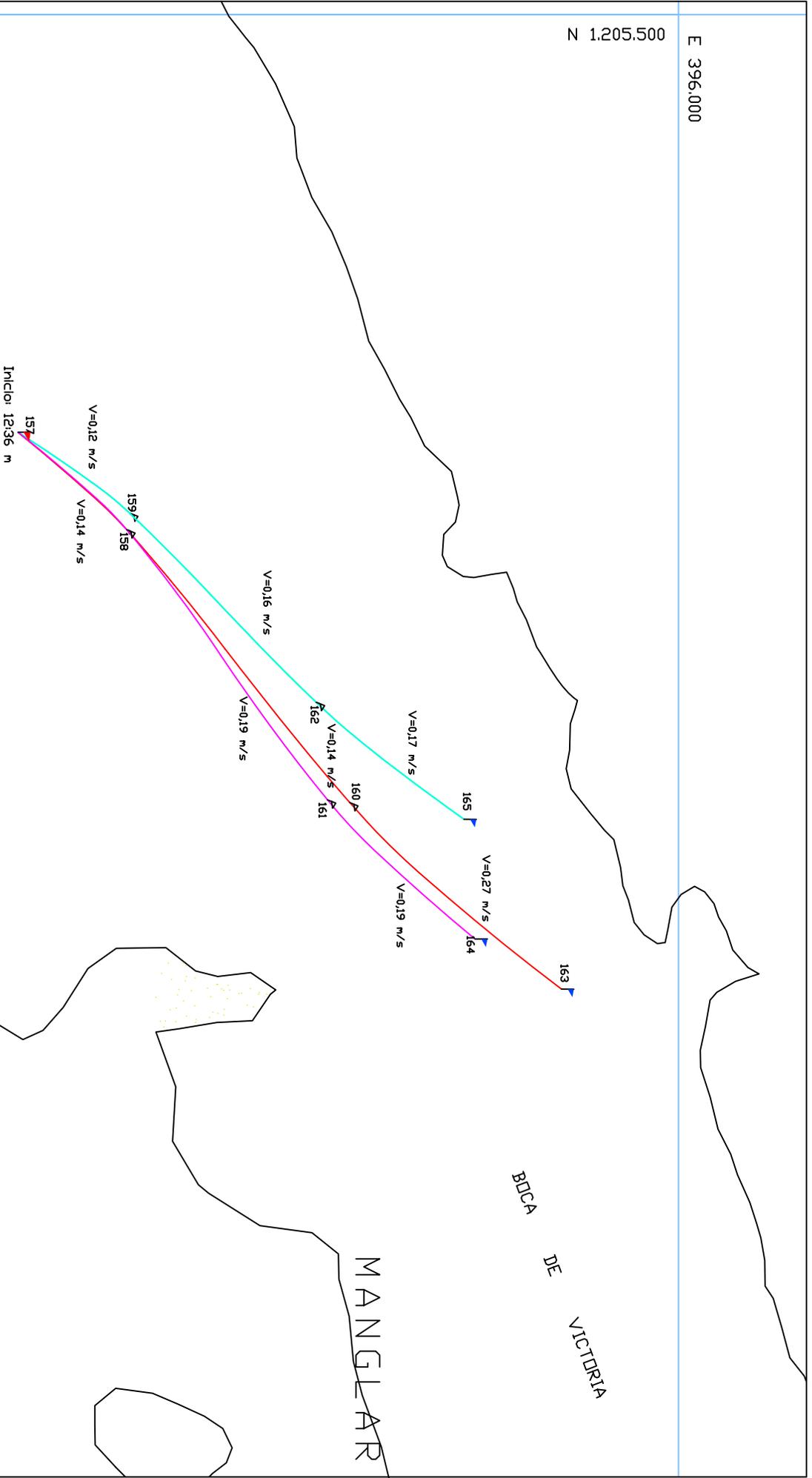
M A R C A R I B E

- LEYENDA**
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  - Correntímetro un metro (6)
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PROFESOR TUTOR: ING. ROBERTO SAVELLI	PLANO:	LINEAS DE CORRIENTE 1 DE JULIO DE 2005 (MAR)	
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Punto Inicial de los correntímetros  
y Trazo con GPS Julio 01-2005

- LEYENDA**
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  - Correntímetro superficial
  - Correntímetro medio metro(1)
  - Correntímetro un metro (6)
  - ▲ Inicio de Medición
  - ▲ Final de Medición

BOCA DE VICTORIA

MANGLAR

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PROFESOR TUTOR: ING. ROBERTO SAVELLI	PLANO:	LINEAS DE CORRIENTE 1 DE JULIO DE 2005 (ENTRADA BOCA VICTORIA)	
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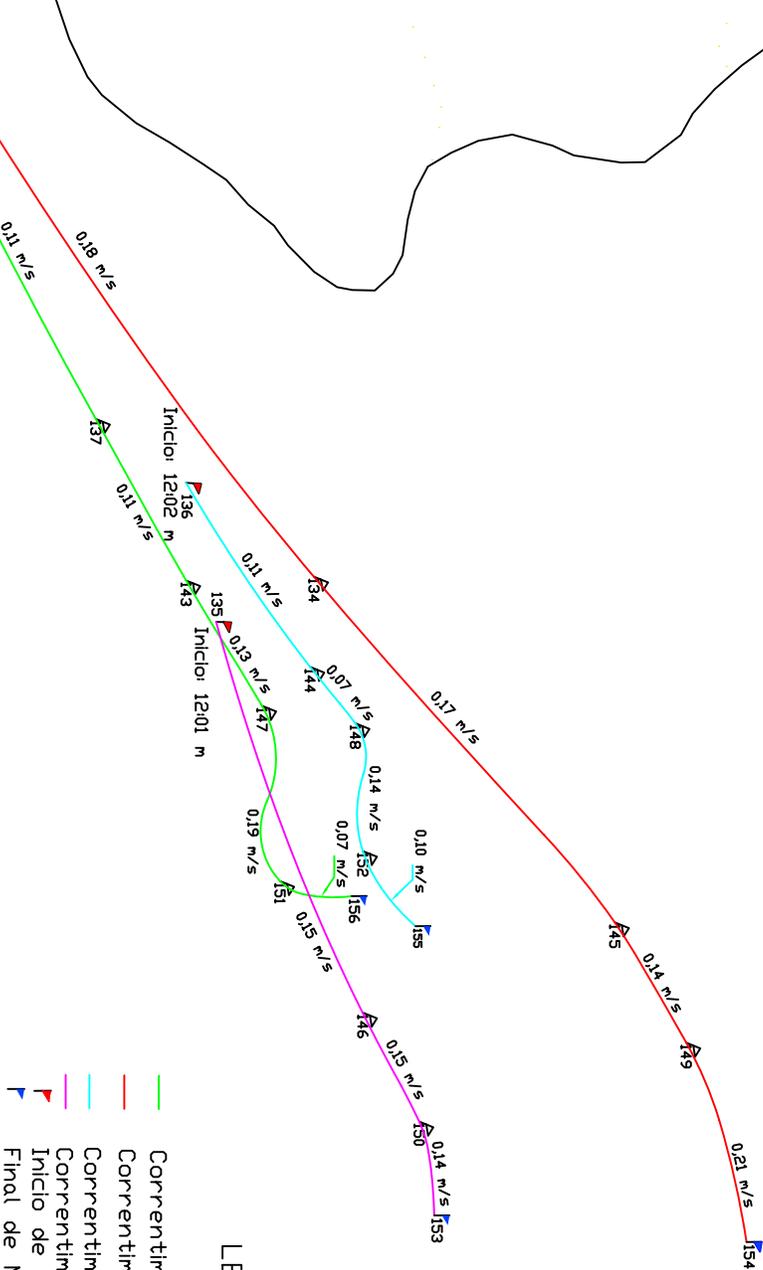


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Punto Inicial de los correntímetros  
y Trazo con GPS Julio 01-2005

BOCA DE VICTORIA

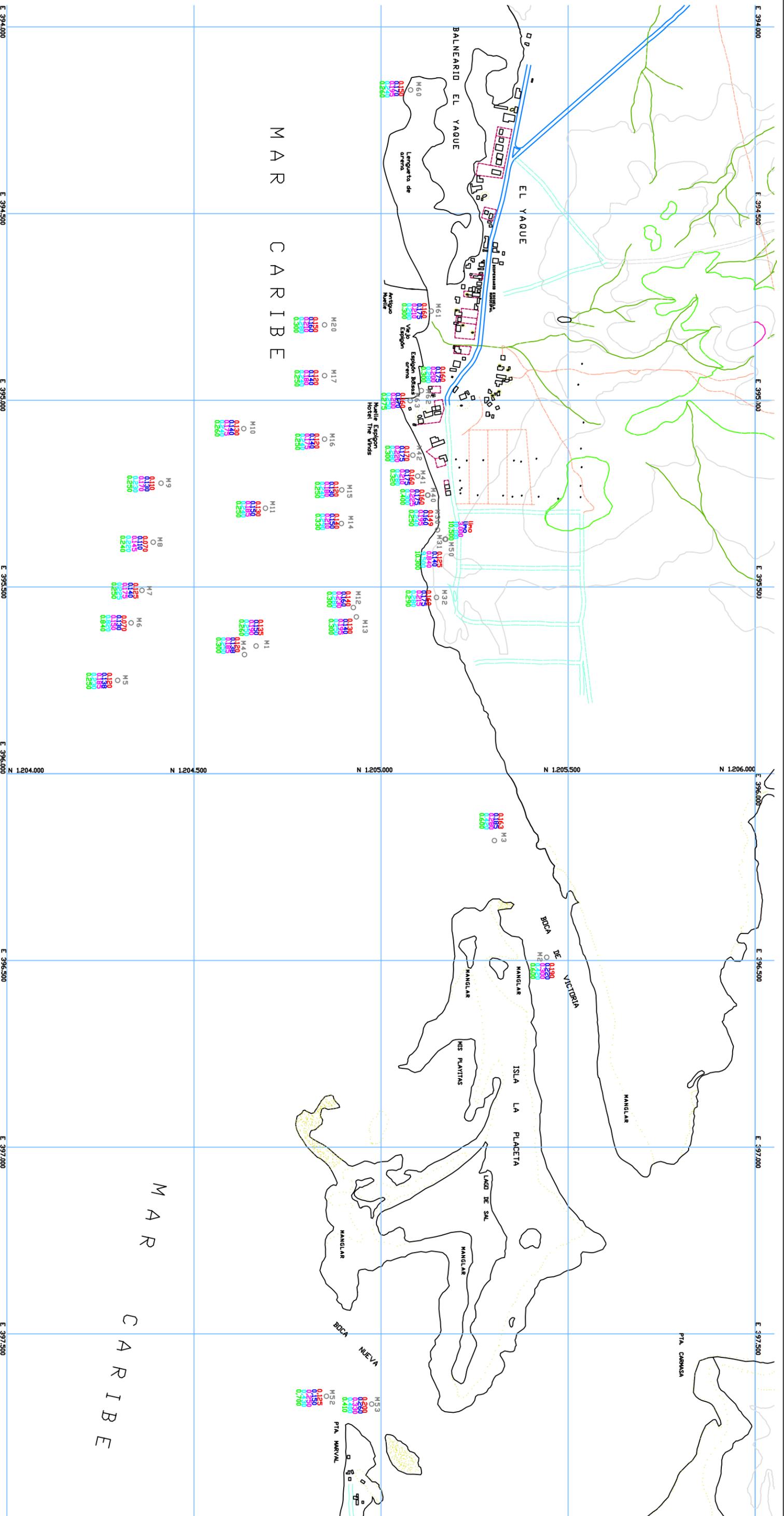


### LEYENDA

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- Correntímetro superficial
- Correntímetro un metro (1)
- Correntímetro un metro (6)
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- ▼ Final de Medición

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Nomenclatura Granulometría	
D10	
D16	
D50	
D84	
D90	

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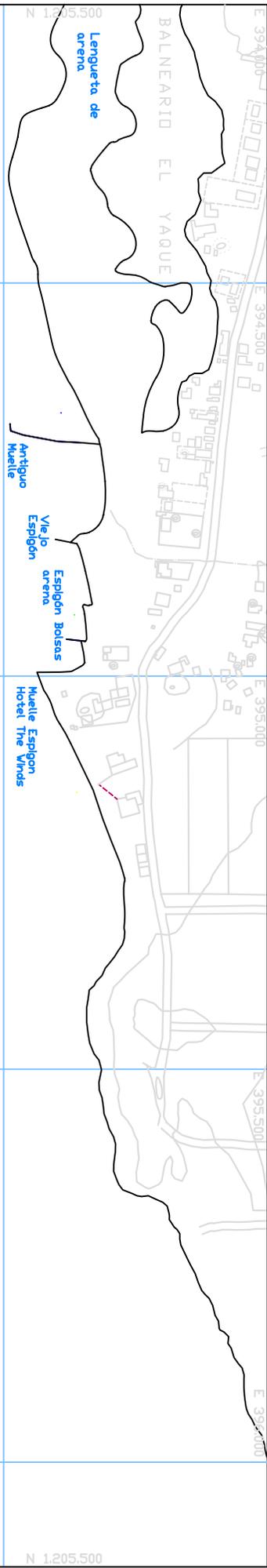
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ELABORADO POR:  
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 BR. MARIO MATOS

PLANO:  
 MUESTRAS DE SEDIMENTOS

FECHA: ABRIL 2007    ESCALA: 1:10000    ANEXO: 1    PLANO: 7

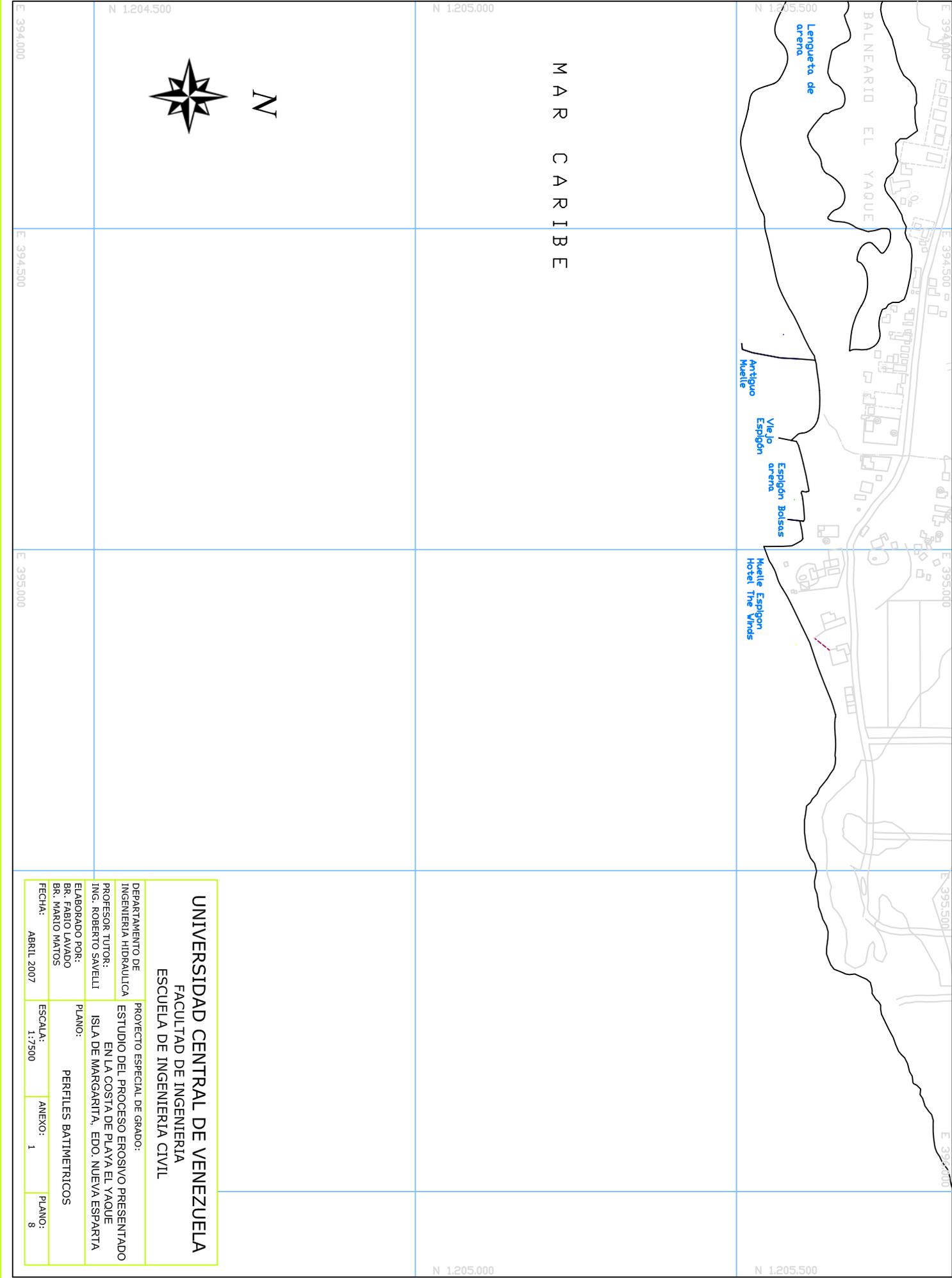


MAR CARIBE

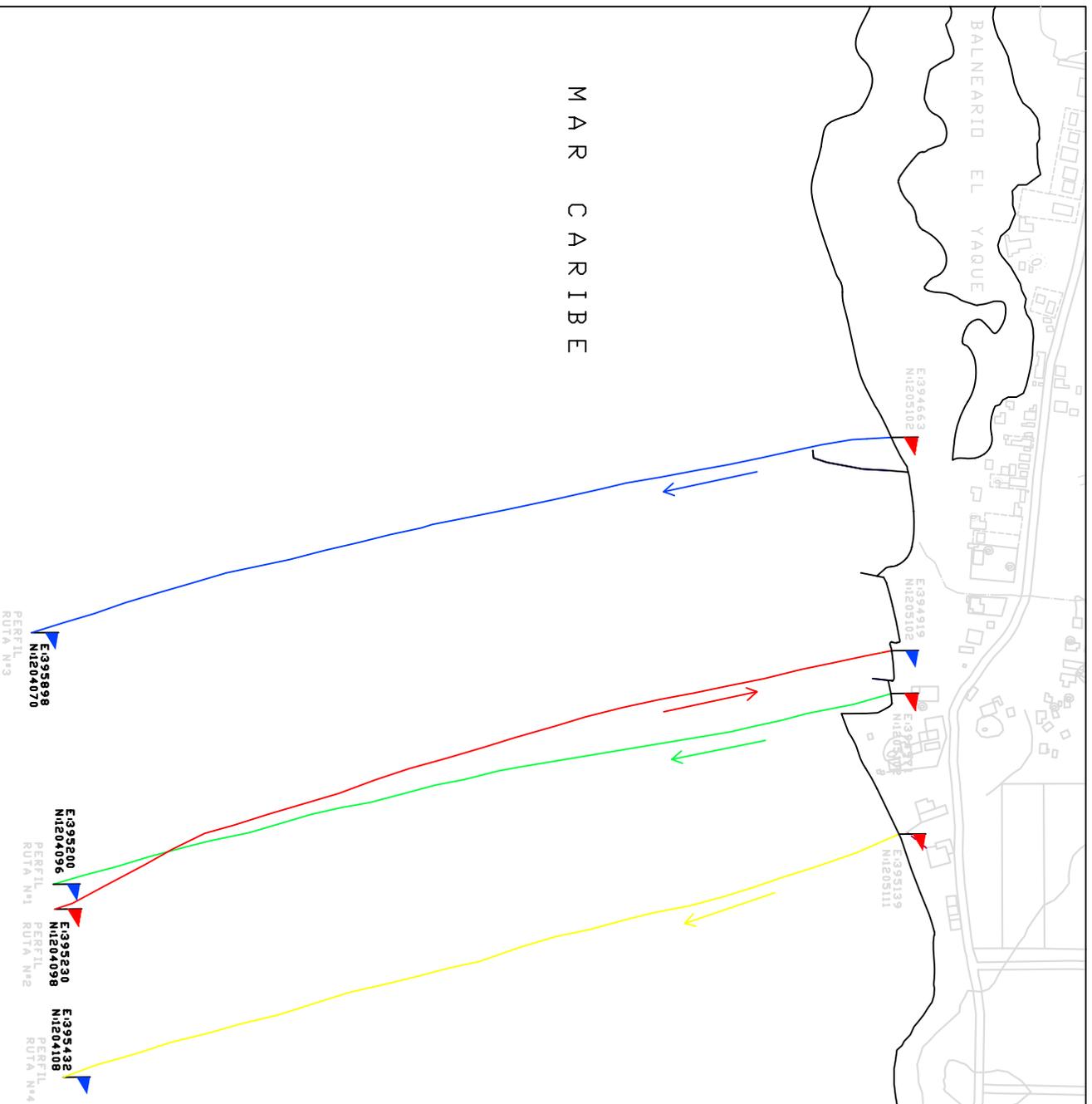


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FECHA: ABRIL 2007	ESCALA: 1:7500
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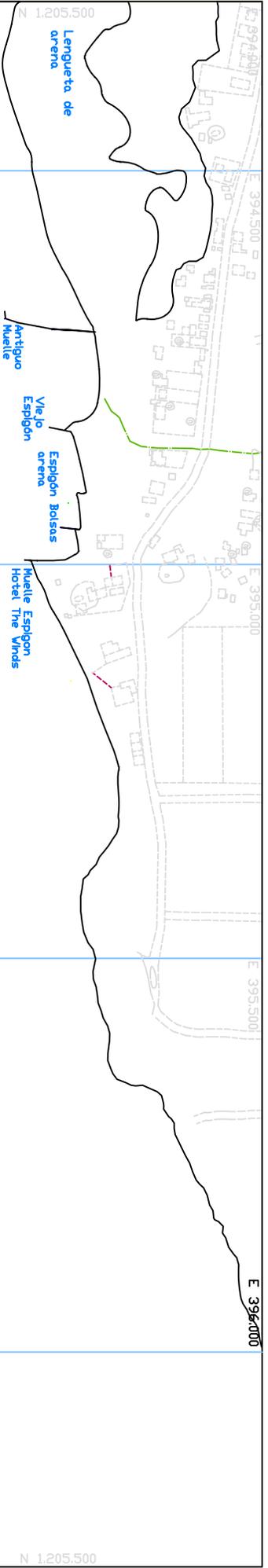


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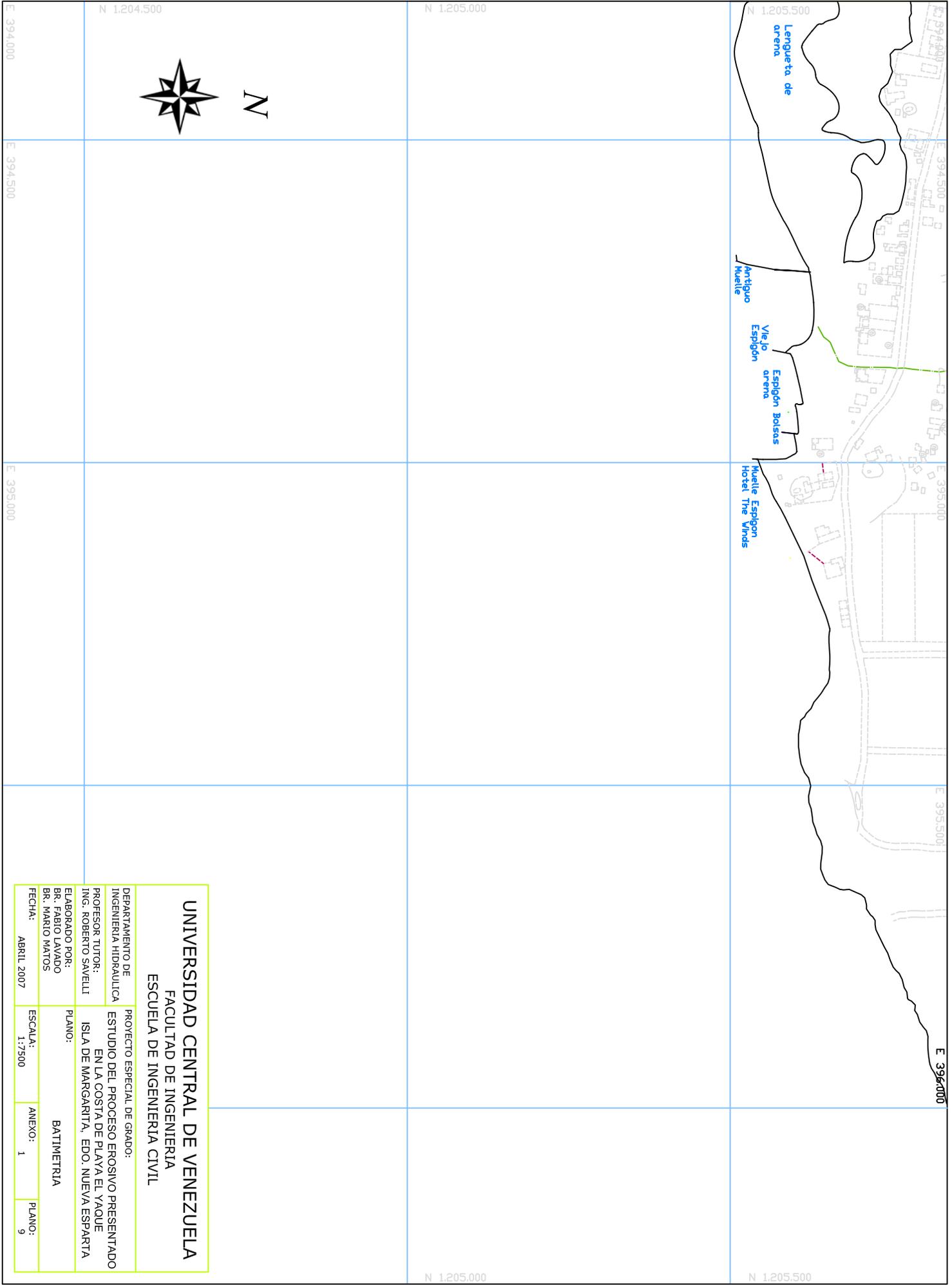
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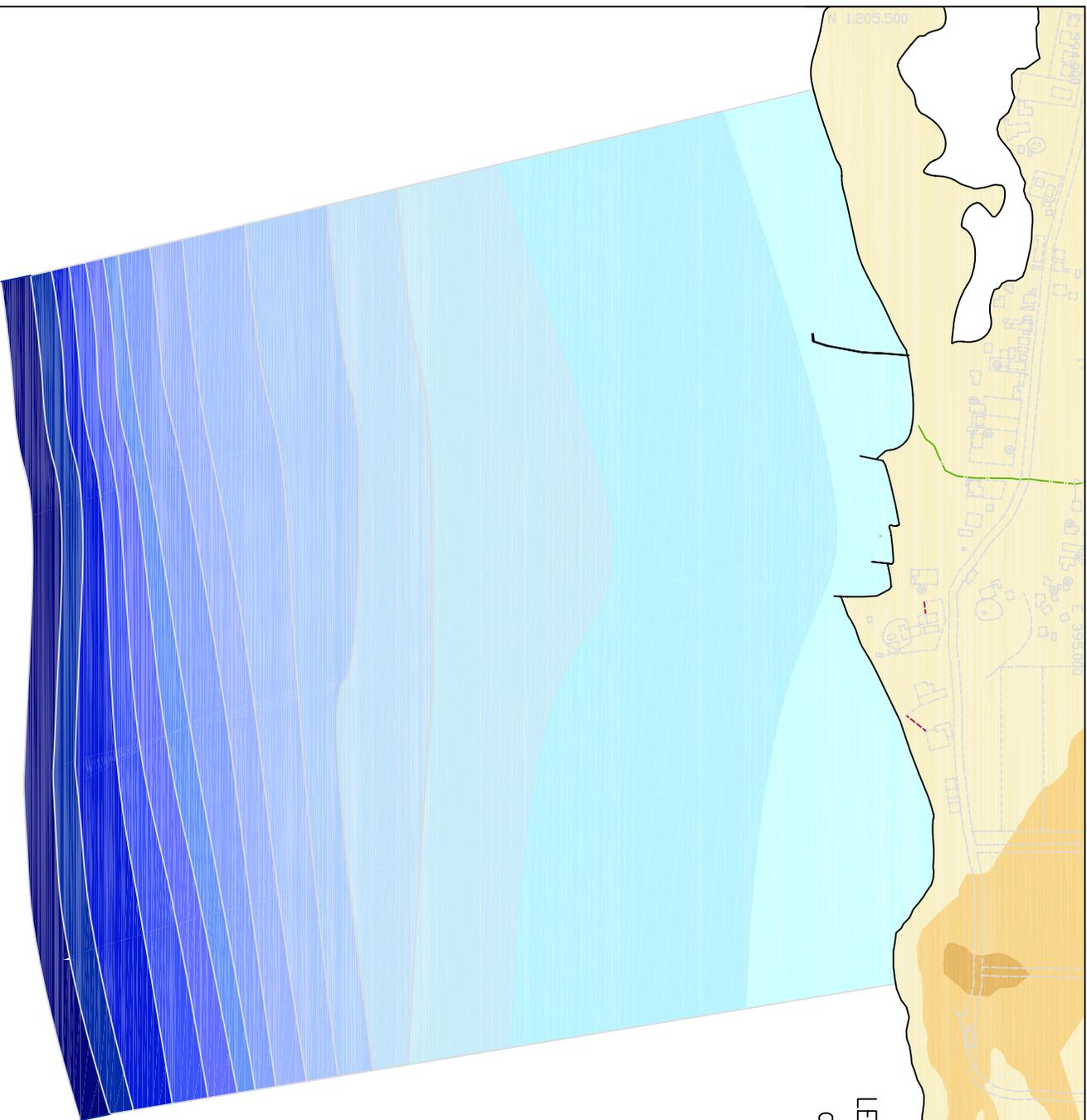
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FECHA: ABRIL 2007	BATIMETRIA
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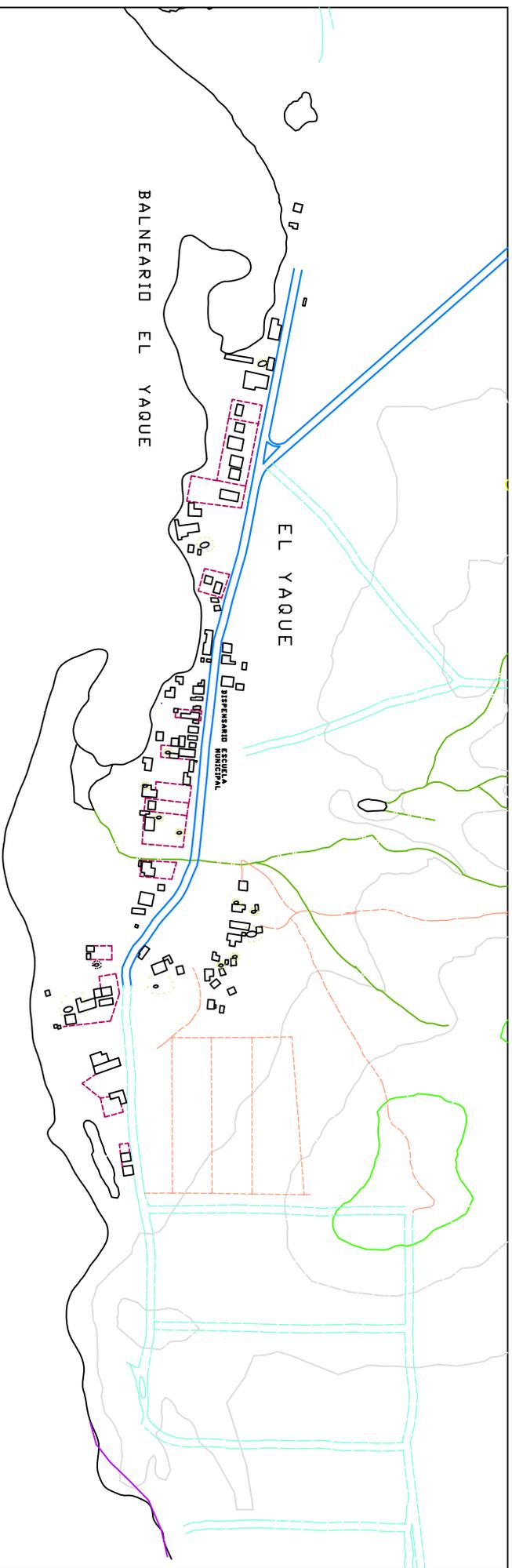


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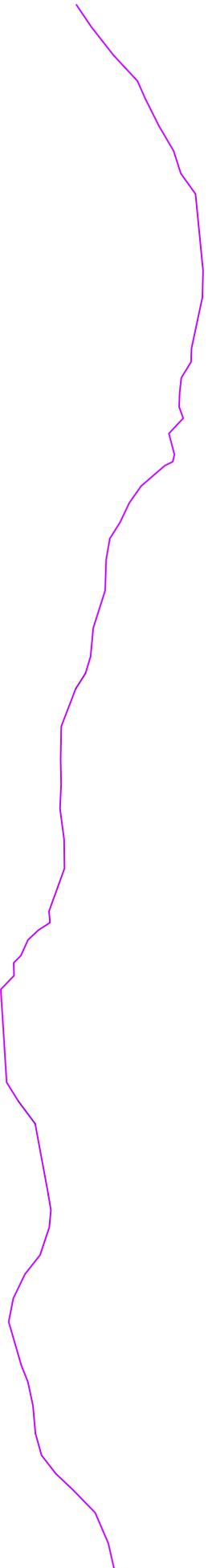
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FECHA: ABRIL 2007	ESCALA: 1:7500 ANEXO: 1 PLANO: 9



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C A R I B E

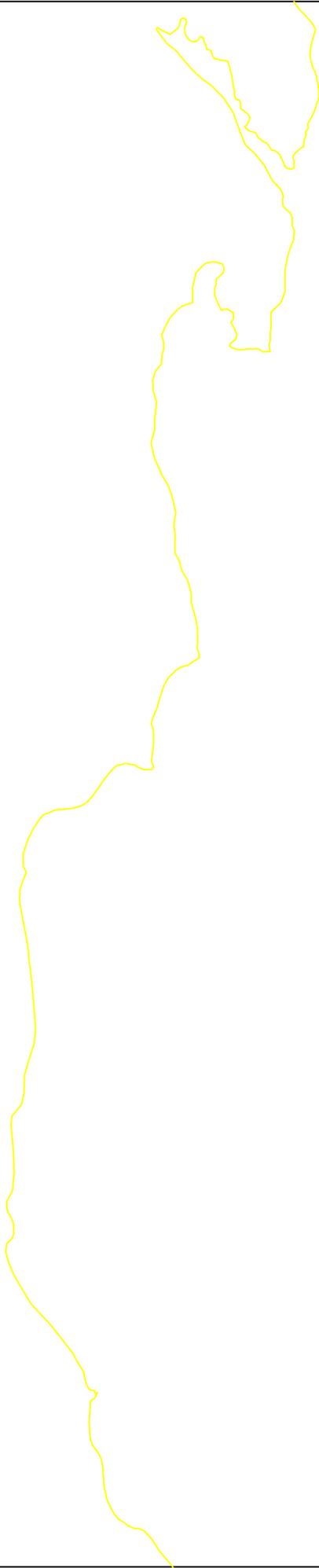
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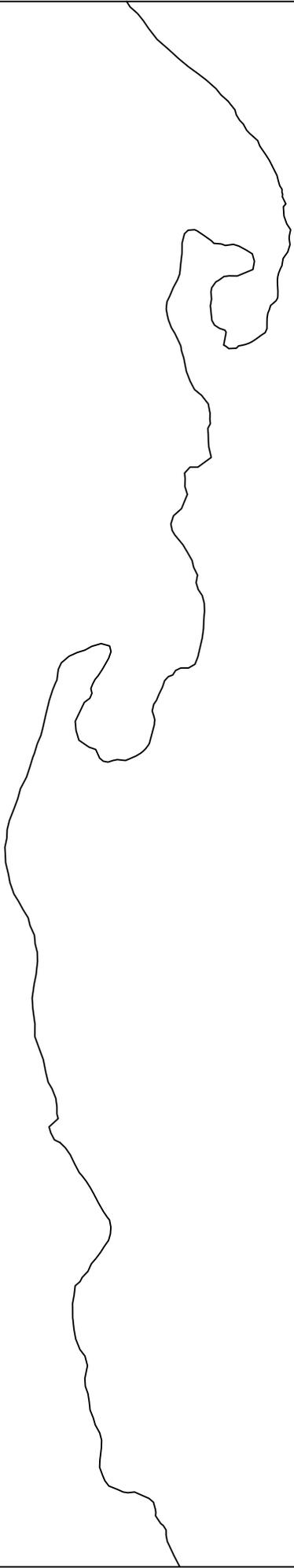
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FECHA: ABRIL 2007	ESCALA: 1:7500 ANEXO: 1 PLANO: 11



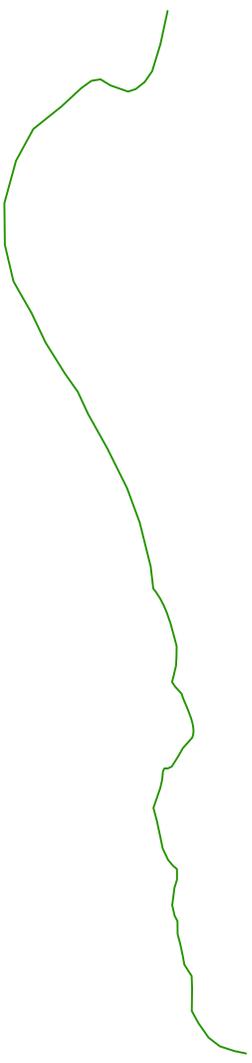
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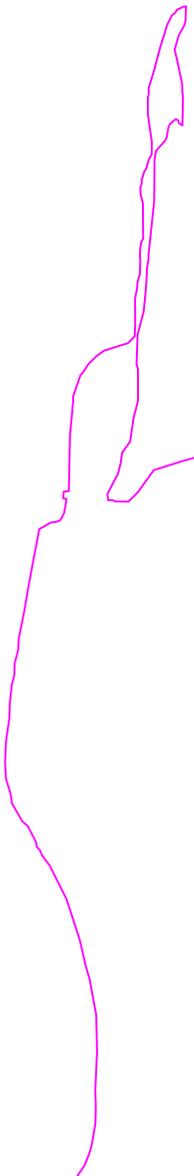
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ELABORADO POR: BR. FABIO LAVADO BR. MARIO MATOS	PLANO: LINEA DE COSTA 1986		
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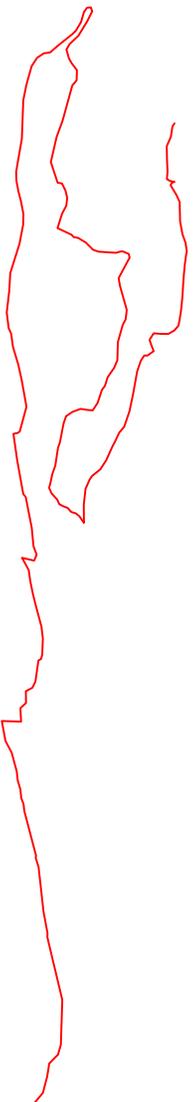
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DEPARTAMENTO DE INGENIERIA HIDRAULICA	PROYECTO ESPECIAL DE GRADO:		
PROFESOR TUTOR: ING. ROBERTO SAVELLI	ESTUDIO DEL PROCESO EROSIVO PRESENTADO EN LA COSTA DE PLAYA EL YAQUE ISLA DE MARGARITA, EDO. NUEVA ESPARTA		
ELABORADO POR: BR. FABIO LAVADO BR. MARIO MATOS	PLANO: LINEA DE COSTA 1996		
FECHA: ABRIL 2007	ESCALA: 1:7500	ANEXO: 1	PLANO: 14



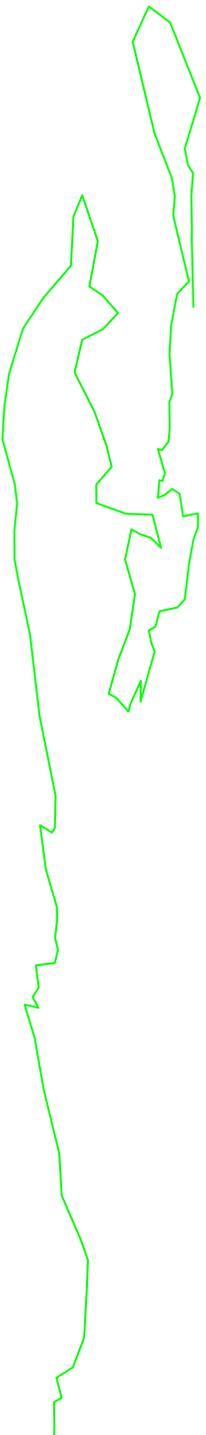
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DEPARTAMENTO DE INGENIERIA HIDRAULICA	PROYECTO ESPECIAL DE GRADO:		
PROFESOR TUTOR: ING. ROBERTO SAVELLI	ESTUDIO DEL PROCESO EROSIVO PRESENTADO EN LA COSTA DE PLAYA EL YAQUE ISLA DE MARGARITA, EDO. NUEVA ESPARTA		
ELABORADO POR: BR. FABIO LAVADO BR. MARIO MATOS	PLANO: LINEA DE COSTA 2000		
FECHA: ABRIL 2007	ESCALA: 1:7500	ANEXO: 1	PLANO: 15



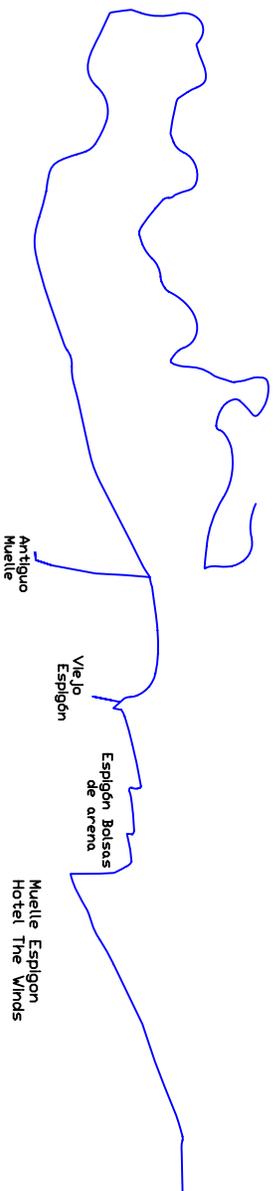
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DEPARTAMENTO DE INGENIERIA HIDRAULICA	PROYECTO ESPECIAL DE GRADO:		
PROFESOR TUTOR: ING. ROBERTO SAVELLI	ESTUDIO DEL PROCESO EROSIVO PRESENTADO EN LA COSTA DE PLAYA EL YAQUE ISLA DE MARGARITA, EDO. NUEVA ESPARTA		
ELABORADO POR: BR. FABIO LAVADO BR. MARIO MATOS	PLANO: LINEA DE COSTA 2003		
FECHA: ABRIL 2007	ESCALA: 1:7500	ANEXO: 1	PLANO: 16



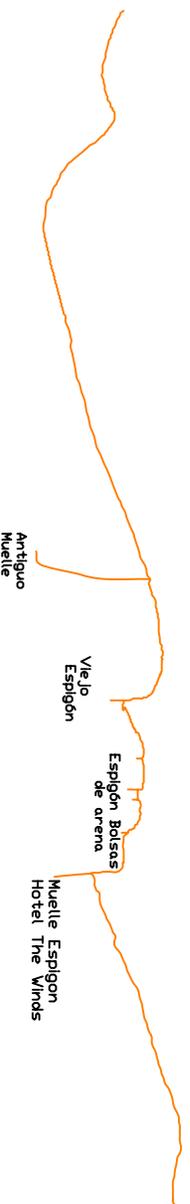
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**ESCUELA DE INGENIERIA CIVIL**

DEPARTAMENTO DE INGENIERIA HIDRAULICA	PROYECTO ESPECIAL DE GRADO:		
PROFESOR TUTOR: ING. ROBERTO SAVELLI	ESTUDIO DEL PROCESO EROSIVO PRESENTADO EN LA COSTA DE PLAYA EL YAQUE ISLA DE MARGARITA, EDO. NUEVA ESPARTA		
ELABORADO POR: BR. FABIO LAVADO BR. MARIO MATOS	PLANO: LINEA DE COSTA 2004		
FECHA: ABRIL 2007	ESCALA: 1:7500	ANEXO: 1	PLANO: 17



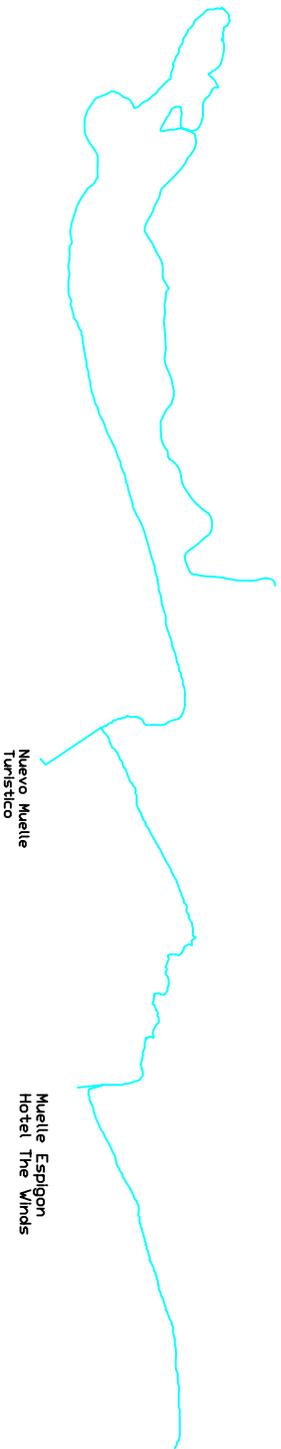
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PROFESOR TUTOR: ING. ROBERTO SAVELLI	ESTUDIO DEL PROCESO EROSIVO PRESENTADO EN LA COSTA DE PLAYA EL YAQUE ISLA DE MARGARITA, EDO. NUEVA ESPARTA		
ELABORADO POR: BR. FABIO LAVADO BR. MARIO MATOS	PLANO: LINEA DE COSTA 2005		
FECHA: ABRIL 2007	ESCALA: 1:7500	ANEXO: 1	PLANO: 18



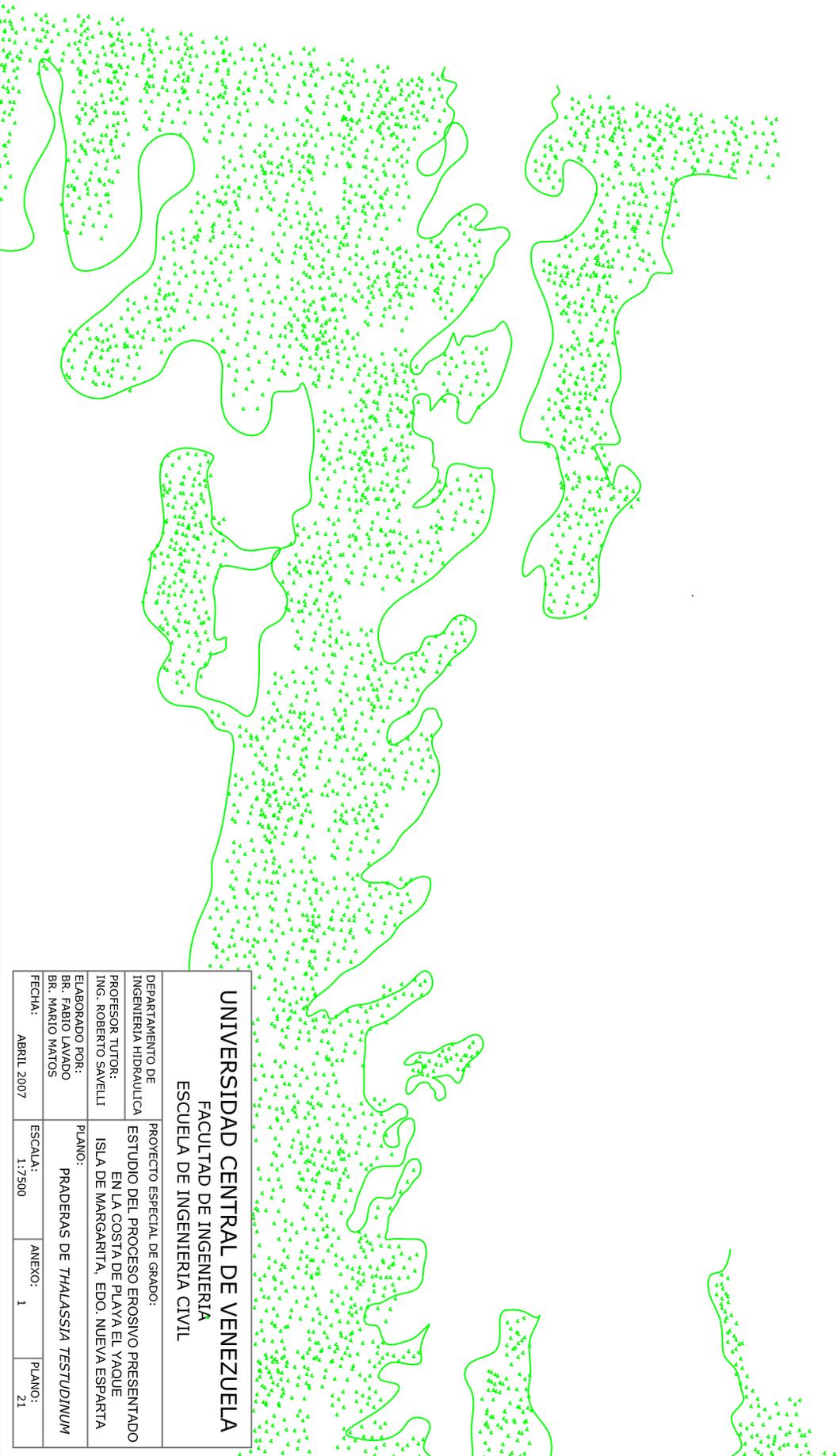
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DEPARTAMENTO DE INGENIERIA HIDRAULICA	PROYECTO ESPECIAL DE GRADO:
PROFESOR TUTOR: ING. ROBERTO SAVELLI	ESTUDIO DEL PROCESO EROSIVO PRESENTADO EN LA COSTA DE PLAYA EL YAQUE ISLA DE MARGARITA, EDO. NUEVA ESPARTA
ELABORADO POR: BR. FABIO LAVADO BR. MARIO MATOS	PLANO: LINEA DE COSTA TORMENTA EMILLY JULIO 2005
FECHA: ABRIL 2007	ESCALA: 1:7500 ANEXO: 1 PLANO: 19



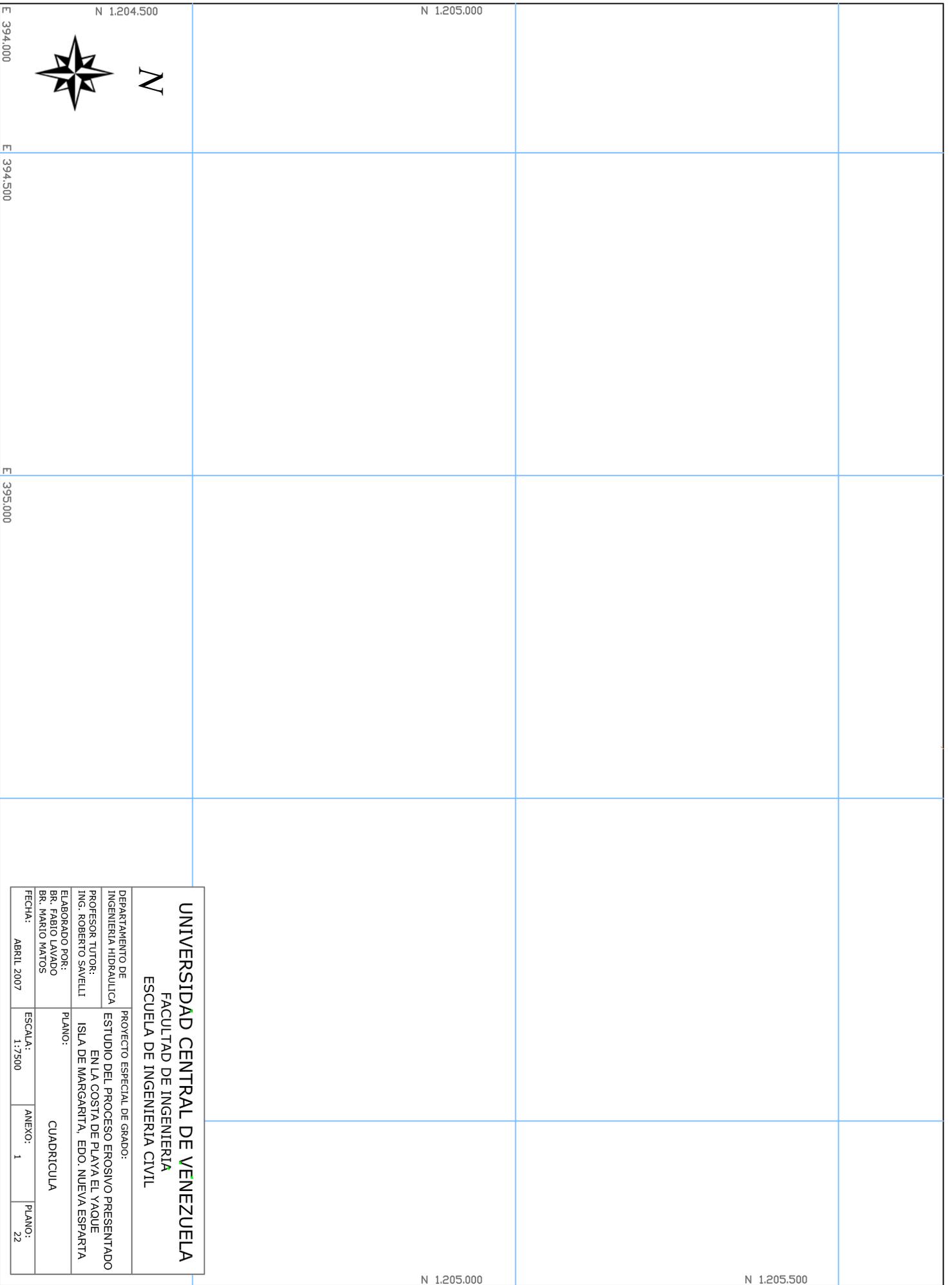
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**ESCUELA DE INGENIERIA CIVIL**

DEPARTAMENTO DE INGENIERIA HIDRAULICA	PROYECTO ESPECIAL DE GRADO:
PROFESOR TUTOR: ING. ROBERTO SAVELLI	ESTUDIO DEL PROCESO EROSIVO PRESENTADO EN LA COSTA DE PLAYA EL YAQUE ISLA DE MARGARITA, EDO. NUEVA ESPARTA
ELABORADO POR: BR. FABIO LAVADO BR. MARIO MATOS	PLANO: LINEA DE COSTA 2006
FECHA: ABRIL 2007	ESCALA: 1:7500 ANEXO: 1 PLANO: 20



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PROFESOR TUTOR: ING. ROBERTO SAVELLI	ESTUDIO DEL PROCESO EROSIVO PRESENTADO EN LA COSTA DE PLAYA EL YAQUE ISLA DE MARGARITA, EDO. NUEVA ESPARTA		
ELABORADO POR: BR. FABIO LAVADO BR. MARIO MATOS	PLANO: PRADERAS DE THALASSIA TESTUDINUM		
FECHA: ABRIL 2007	ESCALA: 1:7500	ANEJO: 1	PLANO: 21



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N 1.204.500



E 394.000

E 394.500

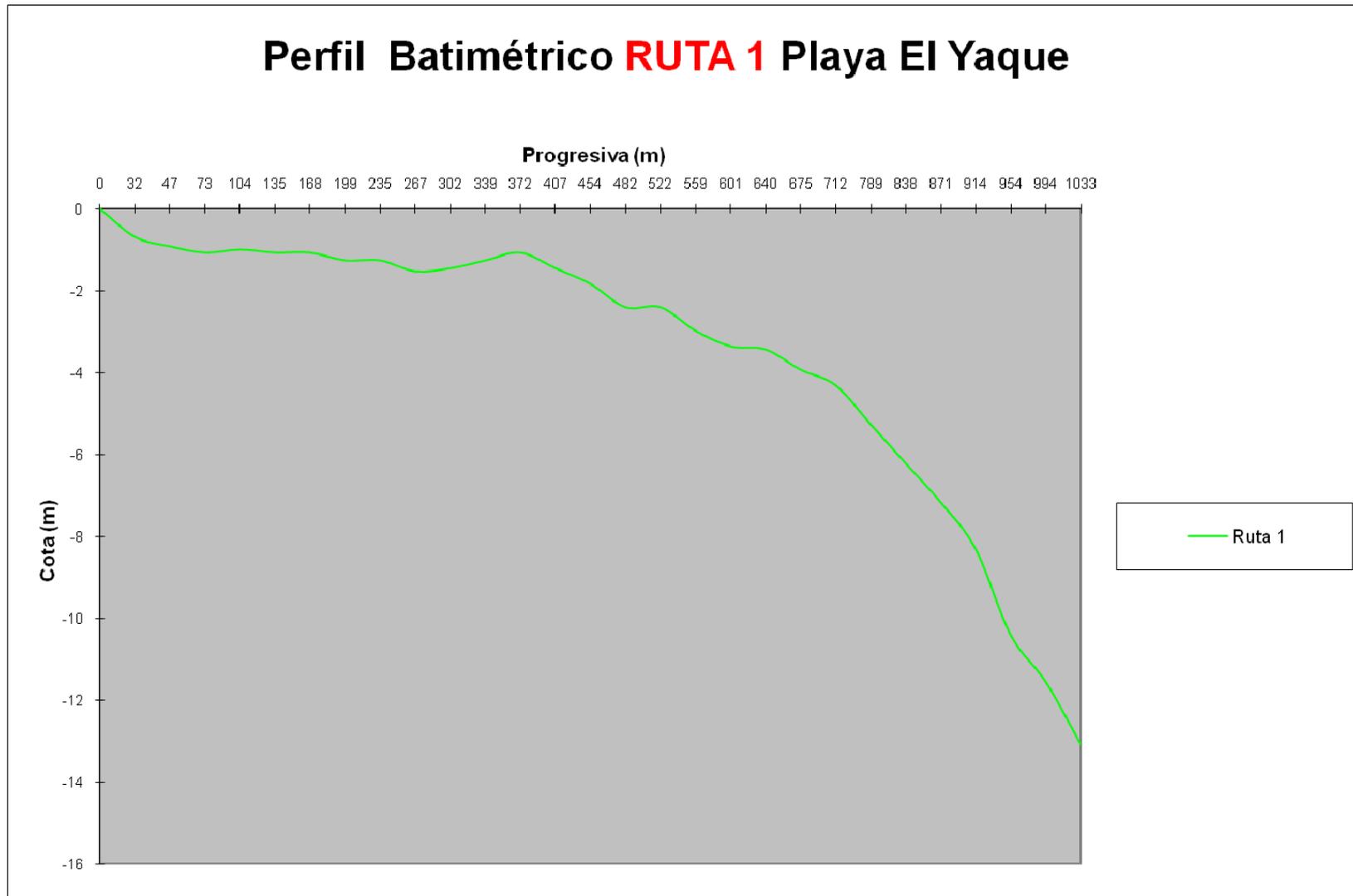
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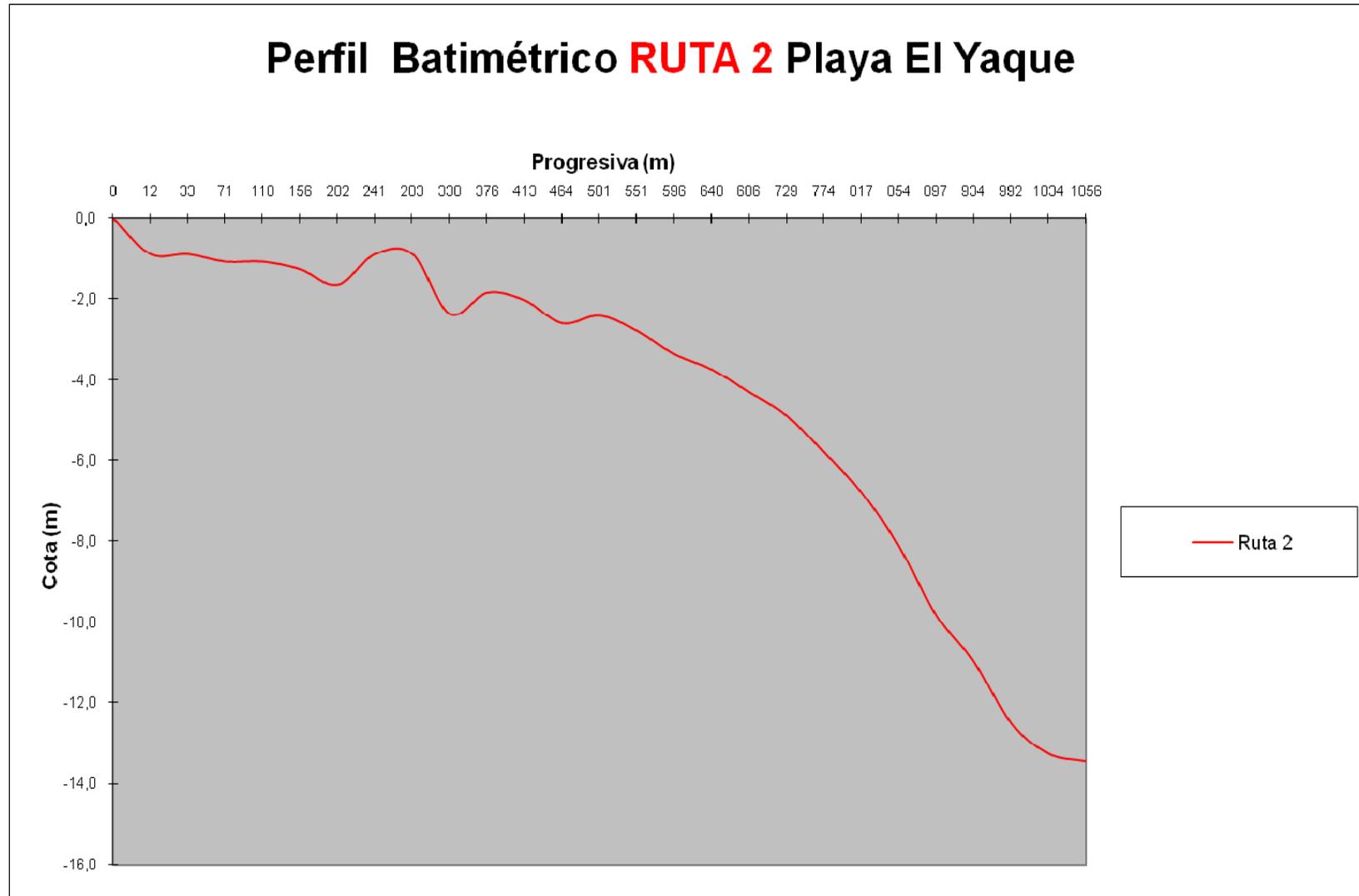
<b>UNIVERSIDAD CENTRAL DE VENEZUELA</b>			
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<b>ESCUELA DE INGENIERIA CIVIL</b>			
DEPARTAMENTO DE INGENIERIA HIDRAULICA	PROYECTO ESPECIAL DE GRADO:		
PROFESOR TUTOR: ING. ROBERTO SAVELLI	ESTUDIO DEL PROCESO EROSIVO PRESENTADO EN LA COSTA DE PLAYA EL YAQUE EN LA ISLA DE MARGARITA, EDO. NUEVA ESPARTA		
ELABORADO POR: BR. FABIO LAVADO BR. MARIO MATOS	PLANO:  CUADRICULA	ANEXO: 1	PLANO: 22
FECHA: ABRIL 2007	ESCALA: 1:7500		

**ANEXO (2).** Representación gráfica de Perfil #1 en playa El Yaque



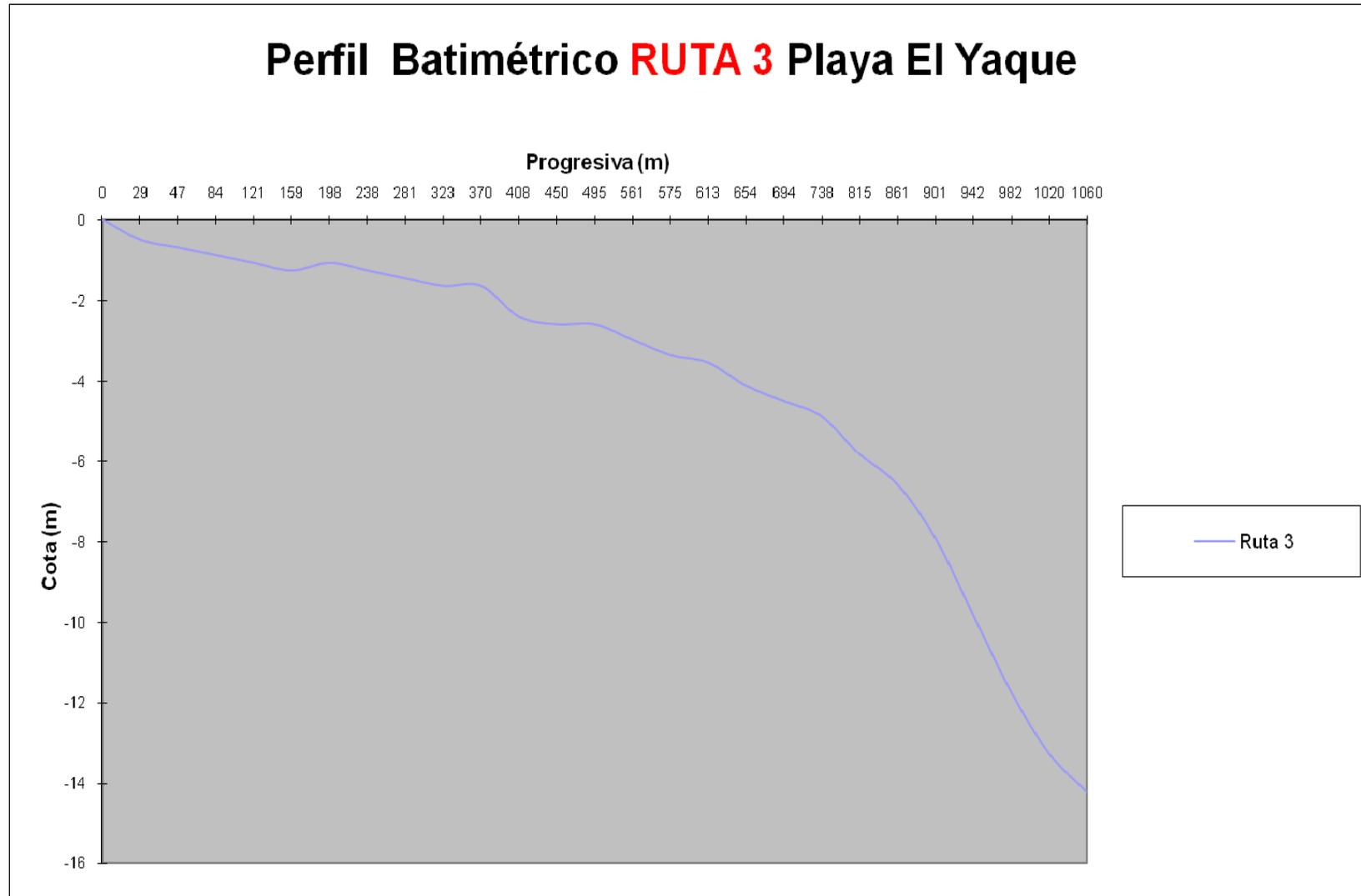
*Estudio del Proceso Erosivo Presentado en la Costa de Playa El Yaque  
Isla de Margarita, Edo. Nueva Esparta*

**ANEXO (3).** Representación gráfica de Perfil #2 en playa El Yaque

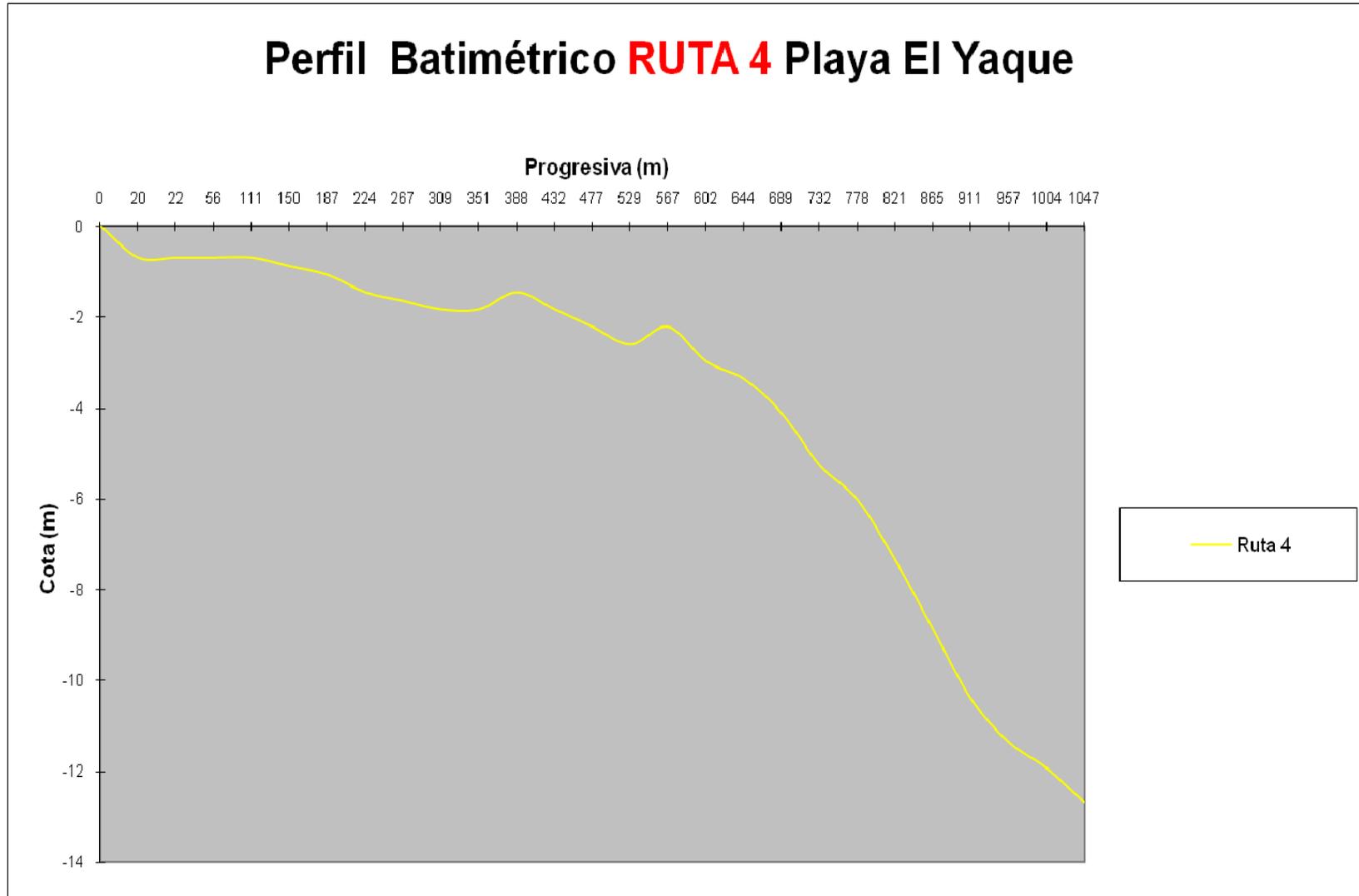


*Estudio del Proceso Erosivo Presentado en la Costa de Playa El Yaque  
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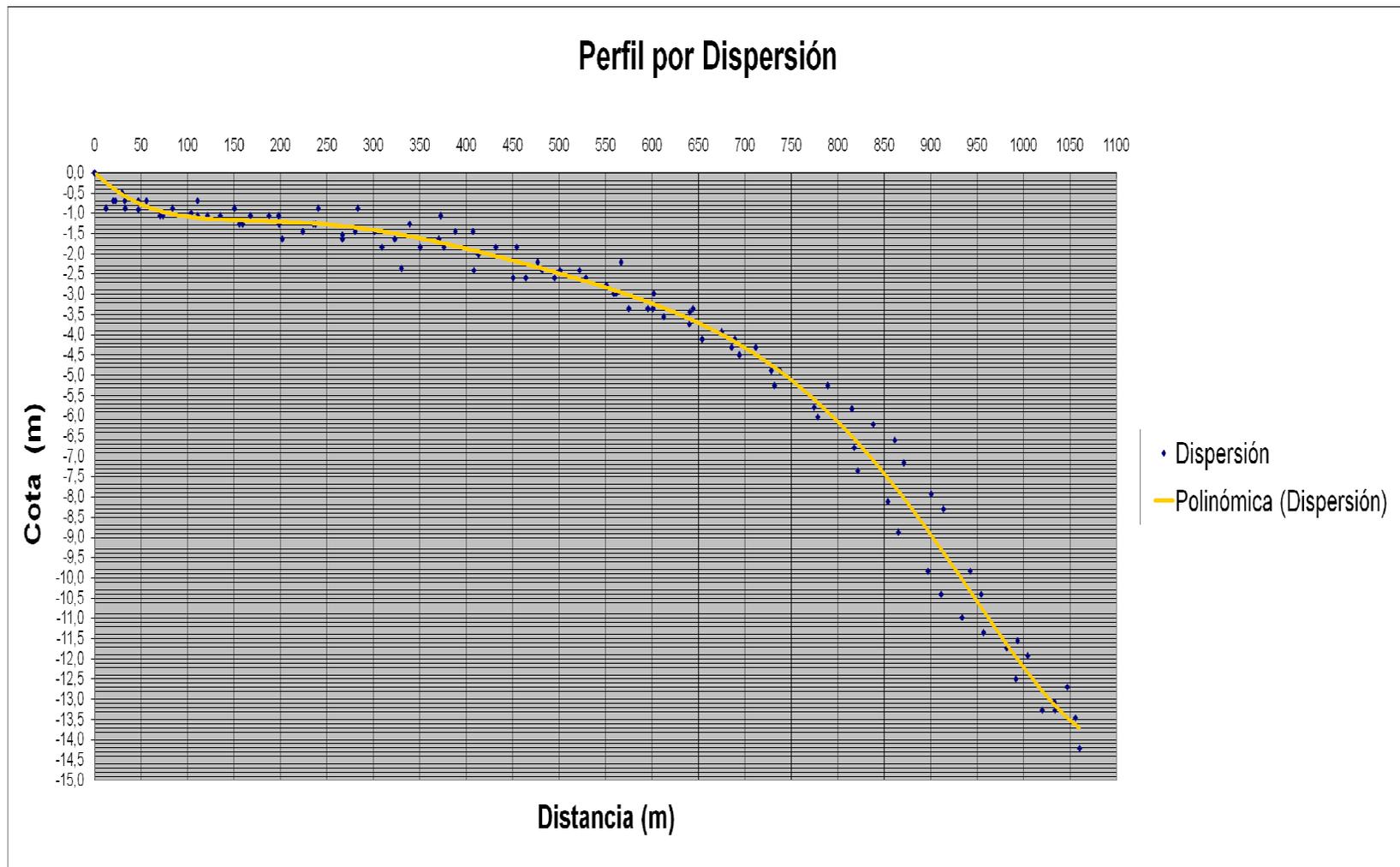
**ANEXO (4).** Representación gráfica de Perfil # 3 en playa El Yaque



**ANEXO (5).** Representación gráfica del Perfil # 4 en playa El Yaque



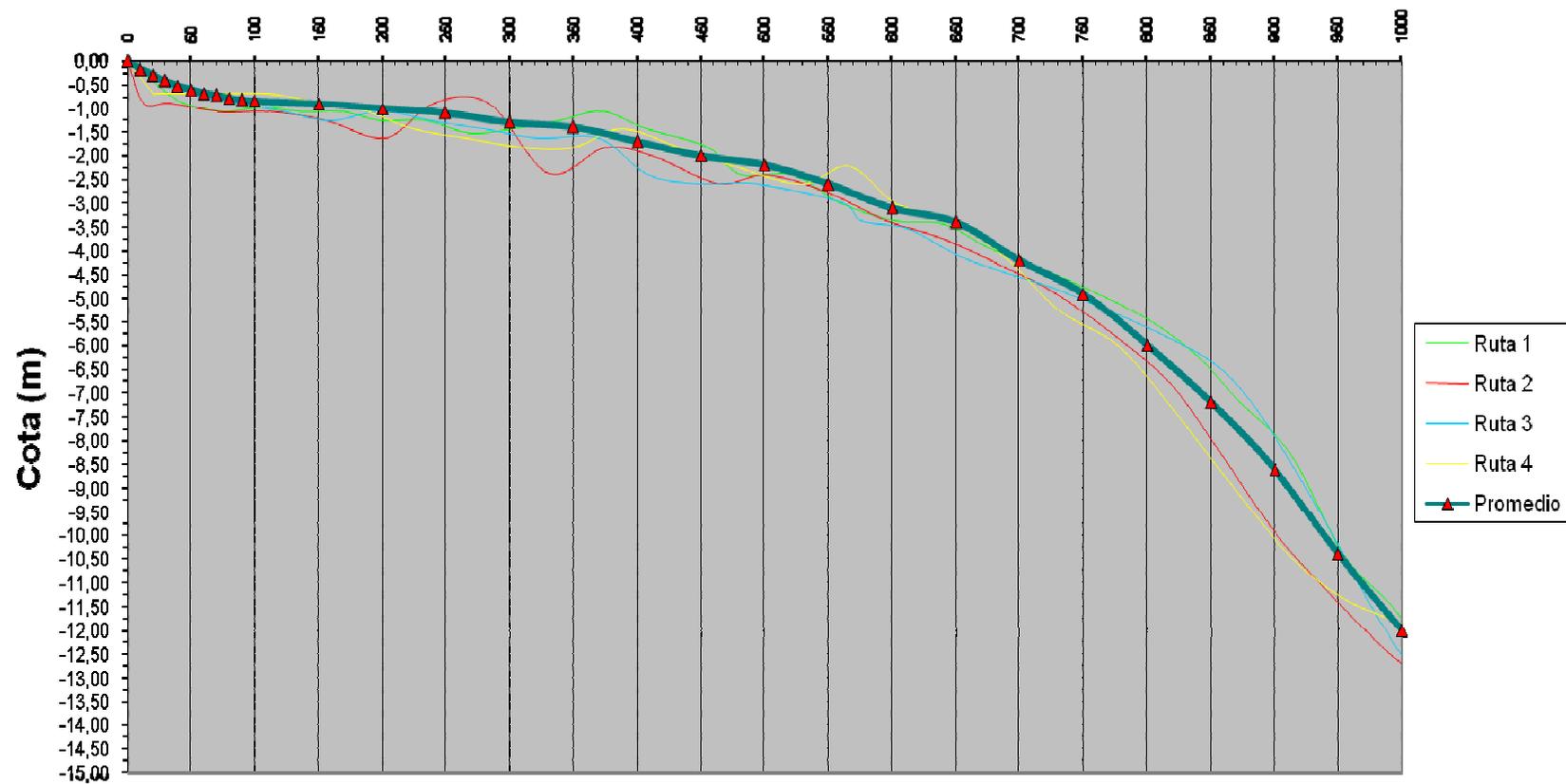
*Estudio del Proceso Erosivo Presentado en la Costa de Playa El Yaque  
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**ANEXO (6).** Representación gráfica de Perfil Promedio por dispersión en playa El Yaque

**ANEXO (7).** Representación gráfica de Perfil Promedio en playa El Yaque

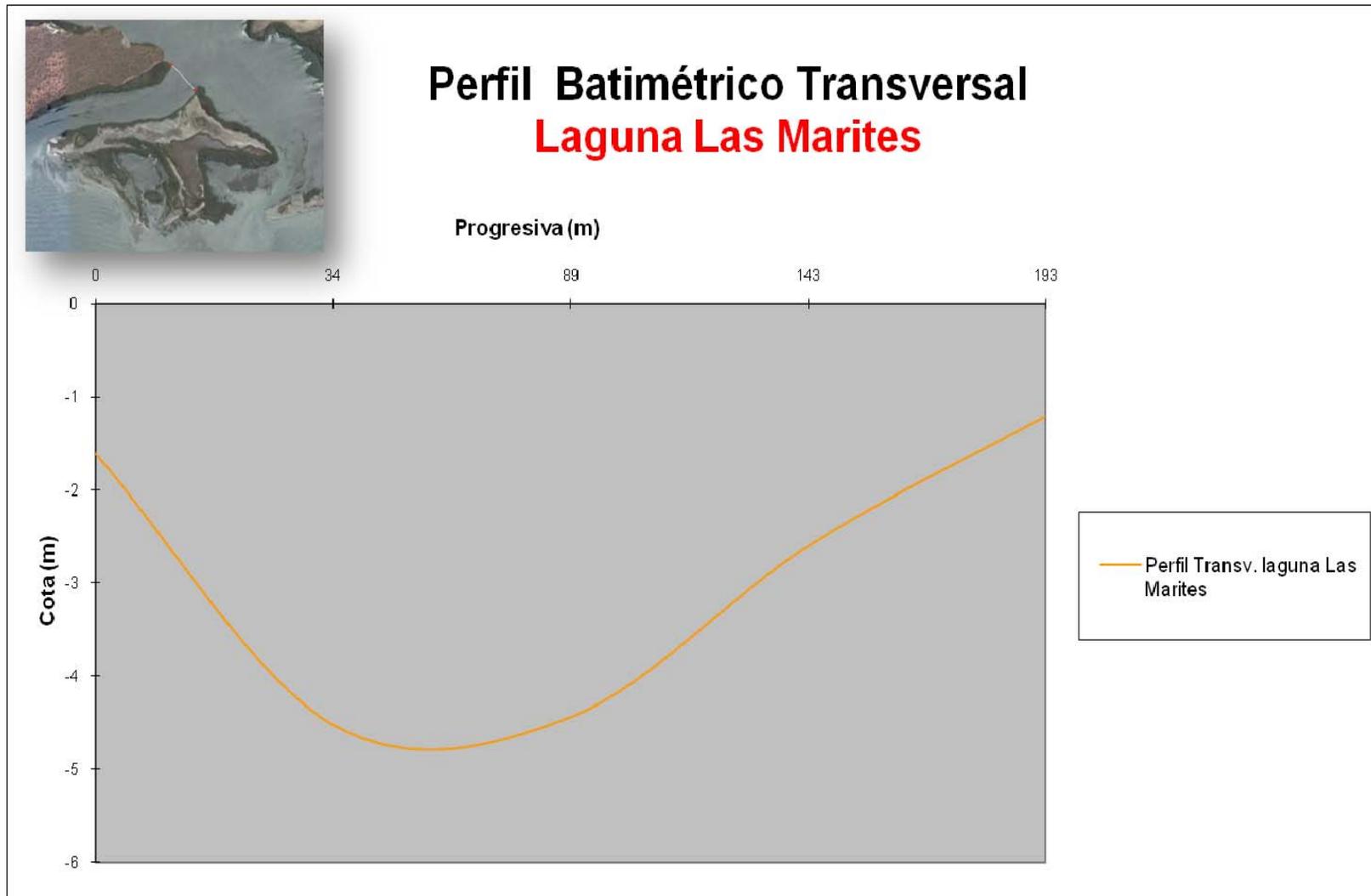
## Perfiles Batimétricos de Playa EL YAQUE

Progresiva (m)

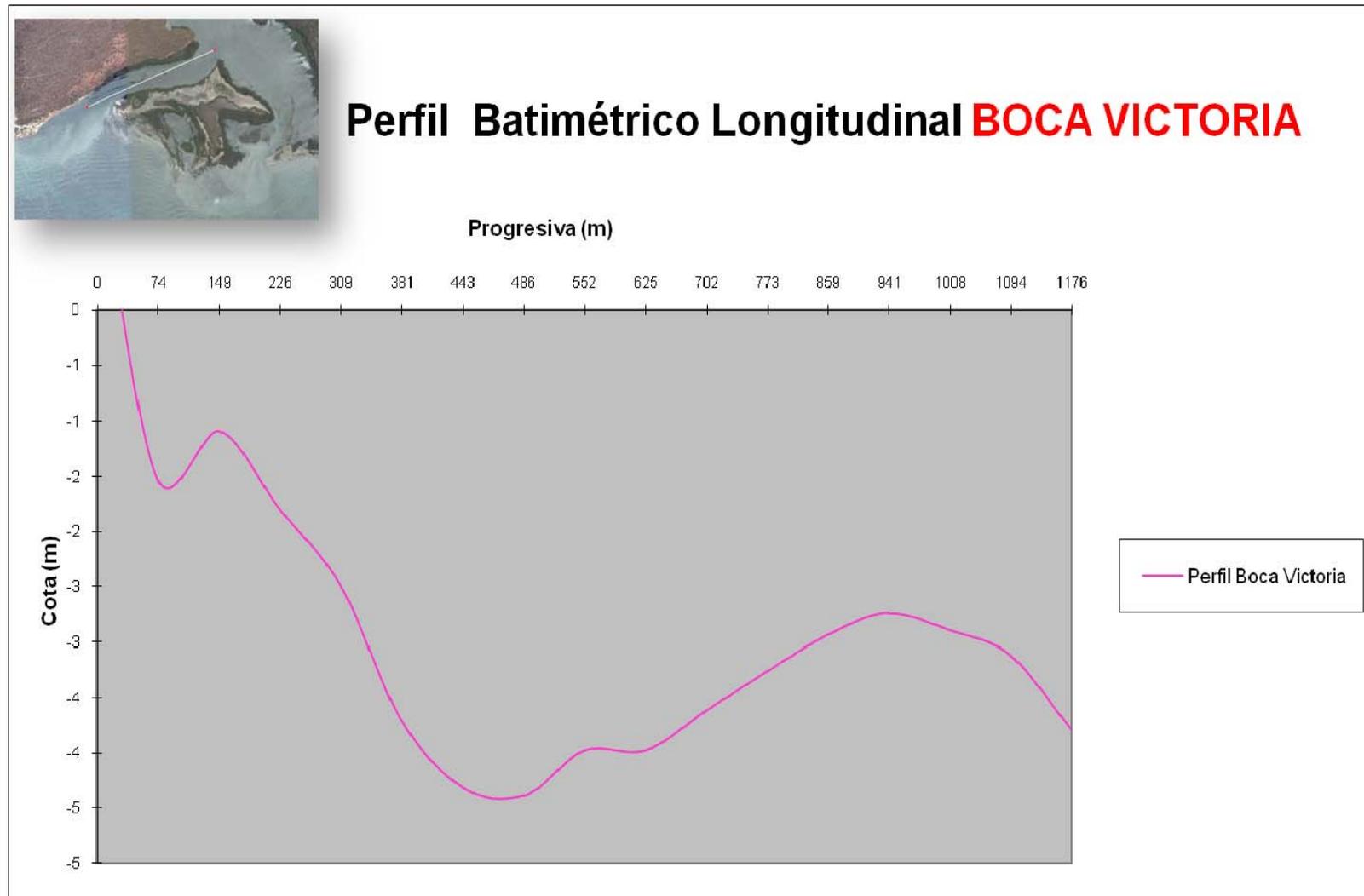


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**ANEXO (8).** Representación gráfica del Perfil Transversal Laguna Las Marites en playa El Yaque

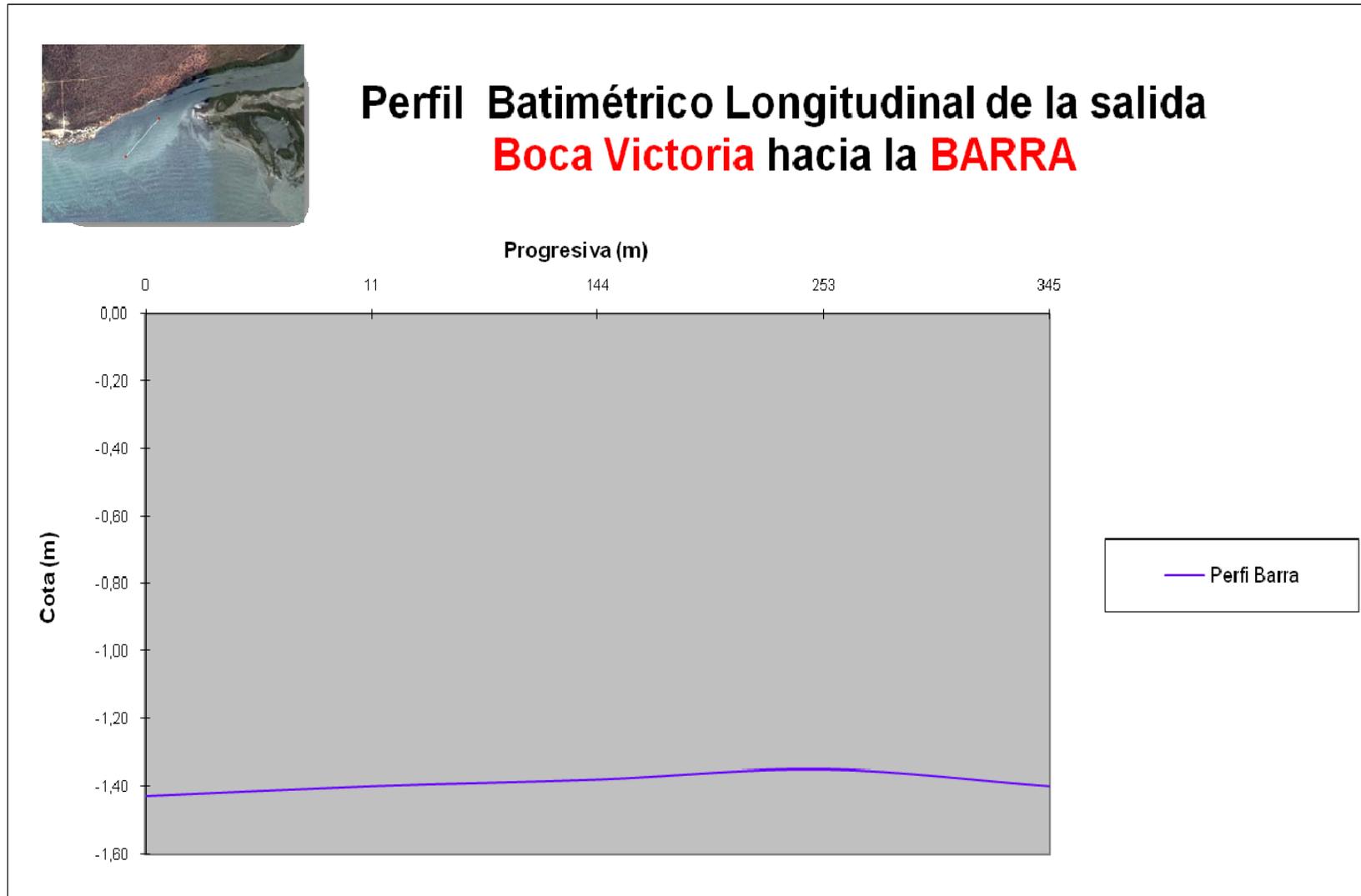


**ANEXO (9).** Representación gráfica de Perfil longitudinal en Boca Victoria en playa El Yaque



*Estudio del Proceso Erosivo Presentado en la Costa de Playa El Yaque  
Isla de Margarita, Edo. Nueva Esparta*

**ANEXO (10).** Representación gráfica de perfil longitudinal en la Barra en la salida de Boca Victoria laguna Las Marites



**ANEXO (11).** Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE																				
E																				
	Ho (m)	T (s)	Lo (m)	Co	θ <sub>0</sub>															
	0,5	5,8	52,52	9,06	-80,00															
Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>sh</sub>	H <sub>sh</sub> (m)	θ	K <sub>r</sub>	H <sub>sh</sub> (m)	H <sub>r</sub> /h	H/h	L1	L50	L promedio	L	% de error
7,0	49,70	A.P	0,946	0,94627	52,522	52,522	9,055	0,500	1,000	0,500	-79,996	1,000	0,500	0,01	0,01	52,52175	52,52175	52,52175	52,52175	0,00000
8,0	47,60	A.P	0,906	0,90630	52,521	52,522	9,055	0,500	1,000	0,500	-79,993	1,000	0,500	0,01	0,01	52,52128	52,52128	52,52128	52,52128	0,00000
5,0	45,70	A.P	0,870	0,87013	52,521	52,522	9,055	0,500	1,000	0,500	-79,988	0,999	0,500	0,01	0,01	52,52059	52,52059	52,52059	52,52059	0,00000
4,0	25,30	transicion	0,482	0,48391	52,283	52,399	9,014	0,514	0,989	0,494	-78,613	0,938	0,464	0,02	0,02	52,27616	52,28288	52,28288	52,28288	0,00000
3,0	14,90	transicion	0,284	0,29751	50,082	51,057	8,635	0,589	0,944	0,472	-69,892	0,711	0,335	0,02	0,03	49,63161	50,08191	50,08191	50,08191	0,00000
2,0	14,20	transicion	0,270	0,28570	49,702	50,794	8,569	0,599	0,939	0,470	-68,737	0,692	0,325	0,02	0,03	49,12161	49,70195	49,70195	49,70195	0,00000
1,050	13,40	transicion	0,255	0,27234	49,203	50,436	8,483	0,612	0,934	0,467	-67,303	0,671	0,313	0,02	0,03	48,43213	49,20265	49,20265	49,20265	0,00000
1,000	12,00	transicion	0,228	0,24930	48,134	49,627	8,299	0,637	0,926	0,463	-64,493	0,635	0,294	0,02	0,04	46,89189	48,13438	48,13438	48,13438	0,00000
0,950	10,40	transicion	0,198	0,22344	46,545	48,327	8,025	0,670	0,918	0,459	-60,778	0,596	0,274	0,03	0,04	44,46716	46,54509	46,54509	46,54509	0,00000
0,900	8,60	transicion	0,164	0,19476	44,158	46,191	7,613	0,713	0,913	0,457	-55,890	0,556	0,254	0,03	0,05	40,62239	44,15772	44,15772	44,15772	0,00000
0,850	7,20	transicion	0,137	0,17251	41,737	43,847	7,196	0,751	0,915	0,458	-51,497	0,528	0,242	0,03	0,06	36,60500	41,73673	41,73673	41,73673	0,00000
0,800	6,00	transicion	0,114	0,15323	39,156	41,207	6,751	0,787	0,923	0,462	-47,239	0,506	0,233	0,04	0,08	32,32899	39,15635	39,15635	39,15635	0,00000
0,750	4,90	transicion	0,093	0,13511	36,267	38,134	6,253	0,822	0,939	0,469	-42,845	0,487	0,228	0,05	0,10	27,68682	36,26693	36,26693	36,26693	0,00000
0,700	4,20	transicion	0,080	0,12317	34,098	35,778	5,879	0,845	0,955	0,477	-39,743	0,475	0,227	0,05	0,11	24,37220	34,09799	34,09799	34,09799	0,00000
0,650	3,40	transicion	0,065	0,10892	31,216	32,619	5,382	0,872	0,962	0,491	-35,825	0,463	0,227	0,07	0,14	20,25784	31,21622	31,21622	31,21622	0,00003
0,600	3,10	transicion	0,059	0,10333	30,000	31,282	5,172	0,883	0,996	0,498	-34,229	0,458	0,228	0,07	0,16	18,63148	29,99970	29,99967	29,99968	0,00013
0,550	2,60	A.P.P	0,050	0,09363	27,768	28,834	4,788	0,901	1,025	0,512	-31,376	0,451	0,231	0,09	0,20	15,82910	27,76807	27,76777	27,76781	0,00015
0,500	2,20	A.P.P	0,042	0,08541	25,759	26,640	4,441	0,916	1,055	0,528	-28,880	0,445	0,235	0,11	0,24	13,51246	25,76038	25,75866	25,75882	0,00065
0,450	2,00	A.P.P	0,038	0,08109	24,663	25,450	4,252	0,923	1,074	0,537	-27,545	0,443	0,238	0,12	0,27	12,33195	24,66684	24,66275	24,66309	0,001384
0,400	1,70	A.P.P	0,032	0,07430	23,851	23,525	3,945	0,934	1,108	0,554	-25,405	0,438	0,243	0,14	0,32	10,53655	23,85430	23,87963	23,89065	0,004503
0,350	1,40	A.P.P	0,027	0,06701	20,893	21,395	3,602	0,945	1,153	0,577	-23,063	0,434	0,250	0,18	0,41	8,71513	20,94100	20,89016	20,89304	0,013779
0,300	1,30	A.P.P	0,025	0,06444	20,175	20,630	3,478	0,949	1,171	0,586	-22,227	0,433	0,254	0,20	0,45	8,10292	20,24685	20,17056	20,17451	0,019577
0,250	1,10	A.P.P	0,021	0,05903	18,634	18,998	3,213	0,957	1,214	0,607	-20,450	0,430	0,261	0,24	0,55	6,87188	18,79640	18,62720	18,63412	0,037140
0,200	1,00	A.P.P	0,019	0,05617	17,803	18,123	3,070	0,961	1,239	0,620	-19,501	0,429	0,266	0,27	0,62	6,25338	18,04447	17,97469	17,90328	0,048280
0,150	0,90	A.P.P	0,017	0,05318	16,924	17,201	2,918	0,965	1,268	0,634	-18,502	0,428	0,271	0,30	0,70	5,63312	17,28063	16,91438	16,92415	0,057707
0,100	0,85	A.P.P	0,016	0,05163	16,464	16,720	2,839	0,967	1,285	0,642	-17,981	0,427	0,274	0,32	0,76	5,32238	16,89649	16,45428	16,46407	0,059415
0,098	0,84	A.P.P	0,016	0,05131	16,370	16,622	2,822	0,967	1,288	0,644	-17,875	0,427	0,275	0,33	0,77	5,26018	16,81963	16,36055	16,37026	0,059296
0,095	0,83	A.P.P	0,016	0,05100	16,276	16,523	2,806	0,967	1,291	0,646	-17,769	0,427	0,276	0,33	0,78	5,19797	16,74279	16,26244	16,27584	0,058978
0,093	0,82	A.P.P	0,016	0,05068	16,181	16,424	2,790	0,968	1,295	0,648	-17,662	0,427	0,276	0,34	0,79	5,13575	16,66598	16,17133	16,18078	0,058436
0,090	0,81	A.P.P	0,015	0,05036	16,085	16,324	2,773	0,968	1,299	0,649	-17,554	0,427	0,277	0,34	0,80	5,07351	16,58920	16,07581	16,08508	0,057645
0,088	0,80	A.P.P	0,015	0,05012	16,013	16,249	2,761	0,968	1,301	0,651	-17,472	0,427	0,278	0,35	0,81	5,02682	16,53165	16,00378	16,01288	0,056870
0,085	0,80	A.P.P	0,015	0,04987	15,940	16,173	2,748	0,969	1,304	0,652	-17,391	0,427	0,278	0,35	0,82	4,98013	16,47414	15,93140	15,94031	0,055925
0,083	0,79	A.P.P	0,015	0,04963	15,867	16,097	2,736	0,969	1,307	0,653	-17,308	0,426	0,279	0,35	0,83	4,93342	16,41667	15,85866	15,86736	0,054797
0,080	0,78	A.P.P	0,015	0,04939	15,794	16,021	2,723	0,969	1,310	0,655	-17,226	0,426	0,279	0,36	0,84	4,88671	16,35924	15,78558	15,79403	0,053470
0,078	0,77	A.P.P	0,015	0,04906	15,696	15,918	2,706	0,970	1,314	0,657	-17,115	0,426	0,280	0,36	0,85	4,84442	16,28275	15,68758	15,69564	0,051364
0,075	0,76	A.P.P	0,014	0,04873	15,597	15,815	2,689	0,970	1,317	0,659	-17,004	0,426	0,281	0,37	0,87	4,76211	16,20636	15,58994	15,59556	0,048835
0,073	0,75	A.P.P	0,014	0,04840	15,497	15,711	2,672	0,970	1,321	0,661	-16,892	0,426	0,281	0,38	0,88	4,68978	16,13009	15,48955	15,49575	0,048337
0,070	0,74	A.P.P	0,014	0,04806	15,396	15,607	2,655	0,971	1,325	0,663	-16,779	0,426	0,282	0,38	0,90	4,63745	16,05396	15,38970	15,39622	0,042322
0,068	0,73	A.P.P	0,014	0,04756	15,244	15,449	2,628	0,971	1,332	0,666	-16,608	0,426	0,283	0,39	0,92	4,54392	15,94005	15,23853	15,24401	0,035960
0,065	0,71	A.P.P	0,014	0,04705	15,090	15,289	2,602	0,972	1,338	0,669	-16,436	0,426	0,285	0,40	0,94	4,45036	15,82654	15,08584	15,09008	0,028108
0,063	0,70	A.P.P	0,013	0,04654	14,934	15,127	2,575	0,973	1,345	0,672	-16,262	0,425	0,286	0,41	0,97	4,35678	15,71347	14,93160	14,93437	0,018534
0,060	0,68	A.P.P	0,013	0,04602	14,777	14,964	2,548	0,973	1,351	0,676	-16,085	0,425	0,287	0,42	0,99	4,26317	15,60091	14,77579	14,77682	0,006971
0,058	0,66	A.P.P	0,013	0,04532	14,564	14,743	2,511	0,974	1,361	0,680	-15,847	0,425	0,289	0,44	1,03	4,13831	15,45173	14,56555	14,56379	0,012068
0,055	0,640	A.P.P	0,012	0,04461	14,347	14,519	2,474	0,975	1,370	0,685	-15,606	0,425	0,291	0,45	1,07	4,01340	15,30372	14,35241	14,34724	0,036026
0,053	0,62	A.P.P	0,012	0,04389	14,127	14,291	2,436	0,976	1,380	0,690	-15,360	0,424	0,293	0,47	1,11	3,88845	15,15703	14,13631	14,12700	0,065906
0,050	0,60	A.P.P	0,011	0,04316	13,903	14,059	2,397	0,976	1,391	0,695	-15,111	0,424	0,295	0,49	1,16	3,76345	15,01183	13,91721	13,90290	0,102903
0,048	0,58	A.P.P	0,011	0,04251	13,703	13,853	2,363	0,977	1,401	0,700	-14,889	0,424	0,297	0,51	1,20	3,65404	14,88615	13,72299	13,70350	0,142230
0,045	0,57	A.P.P	0,011	0,04185	13,501	13,644	2,328	0,978	1,411	0,705	-14,664	0,424	0,299	0,53	1,25	3,54460	14,76188	13,52494	13,50086	0,189226
0,043	0,55	A.P.P	0,010	0,04118	13,295	13,432	2,292	0,978	1,421	0,710	-14,435	0,423	0,301	0,55	1,30	3,43513	14,63913	13,32743	13,29483	0,245209
0,040	0,53	A.P.P	0,010	0,04050	13,085	13,216	2,256	0,979	1,432	0,716	-14,203	0,423	0,303	0,57	1,35	3,32563	14,51805	13,12604	13,08525	0,311724
0,038	0,50	A.P.P	0,010	0,03932	12,717	12,838	2,193	0,980	1,451	0,726	-13,795	0,423	0,307	0,61	1,45	3,13785	14,31473	12,77516	12,71722	0,455613
0,035	0,47	A.P.P	0,009	0,03810	12,337	12,448	2,127	0,981	1,473	0,736	-13,375	0,422	0,311	0,66	1,57	2,94999	14,11742	12,41712	12,33726	0,647280

## ANEXO (12). Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE  
E

	Ho (m) 1	T (s) 5,8	Lo (m) 52,52	Co 9,06	$\theta_0$ -80,00																			
Progresiva (km)	Profundidad (m)	Condición	h/L0	h/L	L (m)	L' (m)	C	n	$K_{sh}$	$H_{sh}$ (m)	$\theta_1$	$K_r$	$H_{sh+rr}$ (m)	H/h	H/h	L1	L50	L promedio	L	% de error				
7.0	49.70	A.P	0.946	0.94627	52.522	52.522	9.055	0.500	1.000	1.000	-79.996	1.000	1.000	0.02	0.02	52.52175	52.52175	52.52175	52.52175	0.000000				
6.0	47.60	A.P	0.906	0.90630	52.521	52.522	9.055	0.500	1.000	1.000	-79.993	1.000	1.000	0.02	0.02	52.52128	52.52128	52.52128	52.52128	0.000000				
5.0	45.70	A.P	0.870	0.87013	52.521	52.522	9.055	0.500	1.000	1.000	-79.988	0.999	0.999	0.02	0.02	52.52059	52.52059	52.52059	52.52059	0.000000				
4.0	25.30	transicion	0.482	0.48391	52.283	52.399	9.014	0.514	0.989	0.989	-78.613	0.938	0.927	0.04	0.04	52.27616	52.28288	52.28288	52.28288	0.000000				
3.0	14.90	transicion	0.284	0.29751	50.082	51.057	8.635	0.589	0.944	0.944	-69.892	0.711	0.671	0.05	0.06	49.63161	50.08191	50.08191	50.08191	0.000000				
2.0	14.20	transicion	0.270	0.28570	49.702	50.794	8.569	0.599	0.939	0.939	-68.737	0.692	0.650	0.05	0.07	49.12161	49.70195	49.70195	49.70195	0.000000				
1.050	13.40	transicion	0.255	0.27234	49.203	50.436	8.483	0.612	0.934	0.934	-67.303	0.671	0.627	0.05	0.07	48.43213	49.20265	49.20265	49.20265	0.000000				
1.000	12.00	transicion	0.228	0.24930	48.134	49.627	8.299	0.637	0.926	0.926	-64.493	0.635	0.588	0.05	0.08	46.89189	48.13438	48.13438	48.13438	0.000000				
0.950	10.40	transicion	0.198	0.22344	46.545	48.327	8.025	0.670	0.918	0.918	-60.778	0.596	0.547	0.05	0.09	44.46716	46.54509	46.54509	46.54509	0.000000				
0.900	8.60	transicion	0.164	0.19476	44.158	46.191	7.613	0.713	0.913	0.913	-55.890	0.556	0.508	0.06	0.11	40.62239	44.15772	44.15772	44.15772	0.000000				
0.850	7.20	transicion	0.137	0.17251	41.737	43.847	7.196	0.751	0.915	0.915	-51.497	0.528	0.483	0.07	0.13	36.60500	41.73673	41.73673	41.73673	0.000000				
0.800	6.00	transicion	0.114	0.15323	39.156	41.207	6.751	0.787	0.923	0.923	-47.239	0.506	0.467	0.08	0.15	32.32899	39.15635	39.15635	39.15635	0.000000				
0.750	4.90	transicion	0.093	0.13511	36.267	38.134	6.253	0.822	0.939	0.939	-42.845	0.487	0.457	0.09	0.19	27.68662	36.26693	36.26693	36.26693	0.000000				
0.700	4.20	transicion	0.080	0.12317	34.098	35.778	5.879	0.845	0.955	0.955	-39.743	0.475	0.454	0.11	0.23	24.37220	34.09799	34.09799	34.09799	0.000000				
0.650	3.40	transicion	0.065	0.10892	31.216	32.619	5.382	0.872	0.982	0.982	-35.825	0.463	0.454	0.13	0.29	20.25784	31.21623	31.21623	31.21623	0.000003				
0.600	3.10	transicion	0.059	0.10333	30.000	31.282	5.172	0.883	0.996	0.996	-34.229	0.458	0.456	0.15	0.32	18.63148	29.99970	29.99970	29.99970	0.000013				
0.550	2.60	A.P.P	0.050	0.09363	27.768	28.834	4.788	0.901	1.025	1.025	-31.376	0.451	0.462	0.18	0.39	15.82910	27.76807	27.76807	27.76807	0.000115				
0.500	2.20	A.P.P	0.042	0.08541	25.759	26.640	4.441	0.916	1.055	1.055	-28.880	0.445	0.470	0.21	0.48	13.51246	25.76038	25.76038	25.76038	0.000615				
0.450	2.00	A.P.P	0.038	0.08109	24.663	25.450	4.252	0.923	1.074	1.074	-27.545	0.443	0.475	0.24	0.54	12.33195	24.66684	24.66684	24.66684	0.001384				
0.400	1.70	A.P.P	0.032	0.07430	22.881	23.525	3.945	0.934	1.108	1.108	-25.405	0.438	0.486	0.29	0.65	10.53655	22.89430	22.89430	22.89430	0.004503				
0.350	1.40	A.P.P	0.027	0.06701	20.993	21.395	3.602	0.945	1.153	1.153	-23.063	0.434	0.501	0.36	0.92	8.71513	20.94100	20.94100	20.94100	0.013779				
0.300	1.30	A.P.P	0.025	0.06444	20.175	20.630	3.478	0.949	1.171	1.171	-22.227	0.433	0.507	0.40	0.90	8.10292	20.24685	20.24685	20.24685	0.019577				
0.250	1.10	A.P.P	0.021	0.05903	18.634	18.998	3.213	0.957	1.214	1.214	-20.450	0.430	0.522	0.47	1.10	6.87188	18.79640	18.79640	18.79640	0.037140				
0.200	1.00	A.P.P	0.019	0.05617	17.803	18.123	3.070	0.961	1.239	1.239	-19.501	0.429	0.532	0.53	1.24	6.25338	18.04477	17.79469	17.90328	0.048280				
0.150	0.90	A.P.P	0.017	0.05318	16.924	17.201	2.918	0.965	1.268	1.268	-18.502	0.428	0.543	0.60	1.41	5.63312	17.28063	16.91438	16.92415	0.057707				
0.100	0.85	A.P.P	0.016	0.05163	16.464	16.720	2.839	0.967	1.285	1.285	-17.991	0.427	0.549	0.65	1.51	5.32238	16.89649	16.45428	16.46407	0.059415				
0.098	0.84	A.P.P	0.016	0.05131	16.370	16.622	2.822	0.967	1.288	1.288	-17.875	0.427	0.550	0.65	1.53	5.26018	16.81963	16.36065	16.37026	0.059296				
0.095	0.83	A.P.P	0.016	0.05100	16.276	16.523	2.806	0.967	1.291	1.291	-17.769	0.427	0.551	0.66	1.56	5.19797	16.74279	16.26224	16.27584	0.058978				
0.093	0.82	A.P.P	0.016	0.05068	16.181	16.424	2.790	0.968	1.295	1.295	-17.662	0.427	0.553	0.67	1.58	5.13575	16.66598	16.17133	16.18078	0.058436				
0.090	0.81	A.P.P	0.015	0.05036	16.085	16.324	2.773	0.968	1.299	1.299	-17.564	0.427	0.554	0.68	1.60	5.07351	16.58920	16.07581	16.08508	0.057645				
0.088	0.80	A.P.P	0.015	0.05012	16.013	16.249	2.761	0.968	1.301	1.301	-17.472	0.427	0.555	0.69	1.62	5.02682	16.53165	16.00378	16.01288	0.056870				
0.085	0.80	A.P.P	0.015	0.04987	15.940	16.173	2.748	0.969	1.304	1.304	-17.391	0.427	0.556	0.70	1.64	4.98013	16.47414	15.93140	15.94031	0.055925				
0.083	0.79	A.P.P	0.015	0.04963	15.867	16.097	2.736	0.969	1.307	1.307	-17.308	0.426	0.557	0.71	1.66	4.93342	16.41667	15.85866	15.86736	0.054797				
0.080	0.78	A.P.P	0.015	0.04939	15.794	16.021	2.723	0.969	1.310	1.310	-17.226	0.426	0.558	0.72	1.68	4.88671	16.35924	15.78558	15.79403	0.053470				
0.078	0.77	A.P.P	0.015	0.04906	15.696	15.918	2.706	0.970	1.314	1.314	-17.115	0.426	0.560	0.73	1.71	4.82442	16.28275	15.68758	15.69564	0.051364				
0.075	0.76	A.P.P	0.014	0.04873	15.597	15.815	2.689	0.970	1.317	1.317	-17.004	0.426	0.561	0.74	1.73	4.76211	16.20636	15.58994	15.59656	0.048835				
0.073	0.75	A.P.P	0.014	0.04840	15.497	15.711	2.672	0.970	1.321	1.321	-16.892	0.426	0.563	0.75	1.76	4.69978	16.13005	15.48965	15.49675	0.045837				
0.070	0.74	A.P.P	0.014	0.04806	15.396	15.607	2.655	0.971	1.325	1.325	-16.779	0.426	0.564	0.76	1.79	4.63745	16.05396	15.38970	15.39622	0.042322				
0.068	0.73	A.P.P	0.014	0.04756	15.244	15.449	2.628	0.971	1.332	1.332	-16.668	0.426	0.567	0.79	1.84	4.54392	15.94005	15.23853	15.24401	0.035660				
0.065	0.71	A.P.P	0.014	0.04705	15.090	15.289	2.602	0.972	1.338	1.338	-16.436	0.425	0.569	0.80	1.88	4.45036	15.82654	15.08584	15.09008	0.028108				
0.063	0.70	A.P.P	0.013	0.04654	14.934	15.127	2.575	0.973	1.345	1.345	-16.262	0.425	0.572	0.82	1.93	4.35678	15.71347	14.93160	14.93437	0.018534				
0.060	0.68	A.P.P	0.013	0.04602	14.777	14.964	2.548	0.973	1.351	1.351	-16.085	0.425	0.574	0.84	1.99	4.26317	15.60091	14.77579	14.77682	0.006971				
0.058	0.66	A.P.P	0.013	0.04532	14.564	14.743	2.511	0.974	1.361	1.361	-15.847	0.425	0.578	0.88	2.06	4.13831	15.45173	14.56555	14.56379	0.012068				
0.055	0.640	A.P.P	0.012	0.04461	14.347	14.519	2.474	0.975	1.370	1.370	-15.606	0.425	0.582	0.91	2.14	4.01340	15.30372	14.35241	14.34724	0.036026				
0.053	0.62	A.P.P	0.012	0.04389	14.127	14.291	2.436	0.976	1.380	1.380	-15.360	0.424	0.586	0.94	2.23	3.88845	15.15703	14.13631	14.12700	0.065906				
0.050	0.60	A.P.P	0.011	0.04316	13.903	14.059	2.397	0.976	1.391	1.391	-15.111	0.424	0.590	0.98	2.32	3.76345	15.01183	13.91721	13.90290	0.102903				
0.048	0.58	A.P.P	0.011	0.04251	13.703	13.853	2.363	0.977	1.401	1.401	-14.889	0.424	0.594	1.02	2.40	3.65404	14.86615	13.72299	13.70350	0.142230				
0.045	0.57	A.P.P	0.011	0.04185	13.501	13.644	2.328	0.978	1.411	1.411	-14.664	0.424	0.598	1.06	2.50	3.54460	14.76188	13.52640	13.50086	0.189226				
0.043	0.55	A.P.P	0.010	0.04118	13.295	13.432	2.292	0.978	1.421	1.421	-14.435	0.423	0.602	1.10	2.60	3.43513	14.63913	13.32743	13.29483	0.245209				
0.040	0.53	A.P.P	0.010	0.04050	13.085	13.216	2.256	0.979	1.432	1.432	-14.203	0.423	0.606	1.14	2.70	3.32563	14.51805	13.12604	13.08255	0.311724				
0.038	0.50	A.P.P	0.010	0.03932	12.717	12.838	2.193	0.980	1.451	1.451	-13.795	0.423	0.614	1.23	2.90	3.13785	14.31473	12.77516	12.71722	0.455613				
0.035	0.47	A.P.P	0.009	0.03810	12.337	12.448	2.127	0.981	1.473	1.473	-13.375	0.422	0.622	1.32	3.13	2.94999	14.11742	12.41712	12.33726	0.647280				
0.033																								

### ANEXO (13). Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE																				
E																				
	Ho (m)	T (s)	Lo (m)	Co	θ <sub>o</sub>															
	2	5,8	52,52	9,06	-80,00															
Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>Sh</sub>	H <sub>Sh</sub> (m)	θ <sub>i</sub>	K <sub>r</sub>	H <sub>Sh</sub> er (m)	H <sub>i</sub> /h	H/h	L1	L50	L promedio	L	% de error
7.0	49.70	A.P	0.946	0.94627	52.522	52.522	9.055	0.500	1.000	2.000	-79.996	1.000	1.999	0.04	0.04	52.52175	52.52175	52.52175	52.52175	0.000000
6.0	47.60	A.P	0.906	0.90630	52.521	52.522	9.055	0.500	1.000	2.000	-79.993	1.000	1.999	0.04	0.04	52.52128	52.52128	52.52128	52.52128	0.000000
5.0	45.70	A.P	0.870	0.87013	52.521	52.522	9.055	0.500	1.000	2.000	-79.988	0.999	1.999	0.04	0.04	52.52059	52.52059	52.52059	52.52059	0.000000
4.0	25.30	transicion	0.482	0.48391	52.283	52.399	9.014	0.514	0.989	1.977	-78.613	0.938	1.854	0.07	0.08	52.27616	52.28288	52.28288	52.28288	0.000000
3.0	14.90	transicion	0.284	0.29751	50.082	51.057	8.635	0.589	0.944	1.887	-69.892	0.711	1.341	0.09	0.13	49.63161	50.08191	50.08191	50.08191	0.000000
2.0	14.20	transicion	0.270	0.28570	49.702	50.794	8.569	0.599	0.939	1.878	-68.737	0.692	1.300	0.09	0.13	49.12161	49.70195	49.70195	49.70195	0.000000
1.050	13.40	transicion	0.255	0.27234	49.203	50.436	8.483	0.612	0.934	1.868	-67.303	0.671	1.253	0.09	0.14	48.43213	49.20265	49.20265	49.20265	0.000000
1.000	12.00	transicion	0.228	0.24930	48.134	49.627	8.299	0.637	0.926	1.851	-64.493	0.635	1.176	0.10	0.15	46.89189	48.13438	48.13438	48.13438	0.000000
0.950	10.40	transicion	0.198	0.22344	46.545	48.327	8.025	0.670	0.918	1.835	-60.778	0.596	1.095	0.11	0.18	44.46716	46.54509	46.54509	46.54509	0.000000
0.900	8.60	transicion	0.164	0.19476	44.158	46.191	7.613	0.713	0.913	1.825	-55.890	0.556	1.016	0.12	0.21	40.62239	44.15772	44.15772	44.15772	0.000000
0.850	7.20	transicion	0.137	0.17251	41.737	43.847	7.196	0.751	0.915	1.830	-51.497	0.528	0.967	0.13	0.25	36.60500	41.73673	41.73673	41.73673	0.000000
0.800	6.00	transicion	0.114	0.15323	39.156	41.207	6.751	0.787	0.923	1.846	-47.239	0.506	0.934	0.16	0.31	32.32899	39.15635	39.15635	39.15635	0.000000
0.750	4.90	transicion	0.093	0.13511	36.267	38.134	6.253	0.822	0.939	1.878	-42.845	0.487	0.914	0.19	0.38	27.68682	36.26693	36.26693	36.26693	0.000000
0.700	4.20	transicion	0.080	0.12317	34.098	35.778	5.879	0.845	0.965	1.910	-39.743	0.475	0.907	0.22	0.46	24.37220	34.09799	34.09799	34.09799	0.000000
0.650	3.40	transicion	0.065	0.10892	31.216	32.619	5.382	0.872	0.982	1.964	-35.825	0.463	0.909	0.27	0.58	20.25784	31.21623	31.21623	31.21623	0.000003
0.600	3.10	transicion	0.059	0.10333	30.000	31.282	5.172	0.883	0.996	1.991	-34.229	0.458	0.913	0.29	0.64	18.63148	29.99970	29.99970	29.99968	0.000013
0.550	2.60	A.P.P	0.050	0.09363	27.768	28.834	4.788	0.901	1.025	2.049	-31.376	0.451	0.924	0.36	0.79	15.82910	27.76807	27.76807	27.76811	0.000115
0.500	2.20	A.P.P	0.042	0.08541	25.759	26.640	4.441	0.916	1.055	2.111	-28.880	0.445	0.940	0.43	0.96	13.51246	25.76038	25.76038	25.76886	0.000616
0.450	2.00	A.P.P	0.038	0.08109	24.663	25.450	4.252	0.923	1.074	2.148	-27.545	0.443	0.951	0.48	1.07	12.33195	24.66684	24.66684	24.66309	0.001384
0.400	1.70	A.P.P	0.032	0.07430	22.881	23.255	3.945	0.934	1.108	2.217	-25.405	0.438	0.972	0.57	1.30	10.53655	22.89430	22.89430	22.89666	0.004503
0.350	1.40	A.P.P	0.027	0.06701	20.893	21.395	3.602	0.945	1.153	2.306	-23.063	0.434	1.002	0.72	1.65	8.71513	20.94100	20.94100	20.89304	0.013779
0.300	1.30	A.P.P	0.025	0.06444	20.175	20.630	3.478	0.949	1.171	2.342	-22.227	0.433	1.014	0.78	1.80	8.10292	20.24685	20.17056	20.17451	0.019577
0.250	1.10	A.P.P	0.021	0.05903	18.634	18.998	3.213	0.957	1.214	2.427	-20.450	0.430	1.045	0.95	2.21	6.87188	18.79640	18.62720	18.34412	0.037140
0.200	1.00	A.P.P	0.019	0.05617	17.803	18.123	3.070	0.961	1.239	2.478	-19.501	0.429	1.064	1.06	2.48	6.25338	18.04447	17.79469	17.80328	0.048280
0.150	0.90	A.P.P	0.017	0.05318	16.924	17.201	2.918	0.965	1.268	2.537	-18.502	0.428	1.085	1.21	2.82	5.63312	17.28063	16.91438	16.92415	0.057707
0.100	0.85	A.P.P	0.016	0.05163	16.464	16.720	2.839	0.967	1.285	2.569	-17.981	0.427	1.098	1.29	3.02	5.32238	16.89649	16.45428	16.46407	0.059415
0.098	0.84	A.P.P	0.016	0.05131	16.370	16.622	2.822	0.967	1.288	2.576	-17.875	0.427	1.100	1.31	3.07	5.26018	16.81963	16.36655	16.37026	0.059296
0.095	0.83	A.P.P	0.016	0.05100	16.276	16.523	2.806	0.967	1.291	2.583	-17.769	0.427	1.103	1.33	3.11	5.19797	16.74279	16.26624	16.27584	0.058978
0.093	0.82	A.P.P	0.016	0.05068	16.181	16.424	2.790	0.968	1.295	2.590	-17.662	0.427	1.106	1.35	3.16	5.13575	16.66598	16.17133	16.18078	0.058436
0.090	0.81	A.P.P	0.015	0.05036	16.085	16.324	2.773	0.968	1.299	2.597	-17.554	0.427	1.109	1.37	3.21	5.07361	16.58920	16.07581	16.08508	0.057645
0.088	0.80	A.P.P	0.015	0.05012	16.013	16.249	2.761	0.968	1.301	2.603	-17.472	0.427	1.110	1.38	3.24	5.02682	16.53165	16.00378	16.01288	0.056870
0.085	0.80	A.P.P	0.015	0.04987	15.940	16.173	2.748	0.969	1.304	2.608	-17.391	0.427	1.113	1.40	3.28	4.98013	16.47414	15.93410	15.94031	0.055925
0.083	0.79	A.P.P	0.015	0.04963	15.867	16.097	2.736	0.969	1.307	2.614	-17.308	0.426	1.115	1.42	3.32	4.93342	16.41667	15.85866	15.86736	0.054797
0.080	0.78	A.P.P	0.015	0.04939	15.794	16.021	2.723	0.969	1.310	2.619	-17.226	0.426	1.117	1.43	3.36	4.88671	16.35924	15.78558	15.79403	0.053470
0.078	0.77	A.P.P	0.015	0.04906	15.696	15.918	2.706	0.970	1.314	2.627	-17.115	0.426	1.120	1.45	3.41	4.84244	16.28275	15.68758	15.69664	0.051364
0.075	0.76	A.P.P	0.014	0.04873	15.597	15.815	2.689	0.970	1.317	2.635	-17.004	0.426	1.123	1.48	3.47	4.76211	16.20636	15.58894	15.59656	0.048835
0.073	0.75	A.P.P	0.014	0.04840	15.497	15.711	2.672	0.970	1.321	2.643	-16.892	0.426	1.126	1.50	3.52	4.69978	16.13009	15.48965	15.49675	0.046537
0.070	0.74	A.P.P	0.014	0.04806	15.396	15.607	2.655	0.971	1.325	2.651	-16.779	0.426	1.129	1.53	3.58	4.63745	16.05396	15.38970	15.39622	0.044322
0.068	0.73	A.P.P	0.014	0.04756	15.244	15.449	2.628	0.971	1.332	2.663	-16.608	0.426	1.134	1.56	3.67	4.54392	15.94005	15.23853	15.24401	0.035960
0.065	0.71	A.P.P	0.014	0.04705	15.090	15.289	2.602	0.972	1.338	2.676	-16.436	0.425	1.139	1.60	3.77	4.45036	15.82654	15.08584	15.09008	0.028108
0.063	0.70	A.P.P	0.013	0.04654	14.934	15.127	2.575	0.973	1.345	2.689	-16.262	0.425	1.144	1.65	3.87	4.36678	15.71347	14.93160	14.93347	0.018534
0.060	0.68	A.P.P	0.013	0.04602	14.777	14.964	2.548	0.973	1.351	2.703	-16.085	0.425	1.149	1.69	3.97	4.26317	15.60091	14.77579	14.77682	0.006971
0.058	0.66	A.P.P	0.013	0.04532	14.564	14.743	2.511	0.974	1.361	2.721	-15.847	0.425	1.156	1.75	4.12	4.13831	15.45173	14.56555	14.56379	0.012068
0.055	0.640	A.P.P	0.012	0.04461	14.347	14.519	2.474	0.975	1.370	2.741	-15.606	0.425	1.164	1.82	4.28	4.01340	15.30372	14.35241	14.34724	0.036026
0.053	0.62	A.P.P	0.012	0.04389	14.127	14.291	2.436	0.976	1.380	2.761	-15.360	0.424	1.172	1.89	4.45	3.88845	15.15703	14.13631	14.12700	0.065906
0.050	0.60	A.P.P	0.011	0.04316	13.903	14.059	2.397	0.976	1.391	2.782	-15.111	0.424	1.180	1.97	4.64	3.76345	15.01183	13.91721	13.90290	0.102903
0.048	0.58	A.P.P	0.011	0.04251	13.703	13.853	2.363	0.977	1.401	2.801	-14.889	0.424	1.187	2.04	4.81	3.65404	14.88615	13.72299	13.70350	0.142230
0.045	0.57	A.P.P	0.011	0.04188	13.501	13.644	2.328	0.978	1.411	2.821	-14.666	0.424	1.195	2.12	4.99	3.54463	14.76188	13.52640	13.50086	0.189226
0.043	0.55	A.P.P	0.010	0.04118	13.295	13.432	2.292	0.978	1.421	2.842	-14.435	0.423	1.203	2.20	5.19	3.43513	14.63913	13.32743	13.29483	0.245209
0.040	0.53	A.P.P	0.010	0.04050	13.085	13.216	2.256	0.979	1.432	2.863	-14.203	0.423	1.212	2.29	5.40	3.32563	14.51805	13.12604	13.08525	0.311724
0.038	0.50	A.P.P	0.010	0.03932	12.717	12.838	2.193	0.980	1.451	2.903	-13.795	0.423	1.227	2.45	5.81	3.13785	14.31473	12.75116	12.71722	0.455613
0.035	0.47	A.P.P	0.009	0.03810	12.337	12.448	2.127	0.981	1.473	2.945	-13.375	0.422	1.244	2.66	6.20	2.94999	14.11742	12.41712	12.33	

**ANEXO (14).** Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE																				
E																				
Ho (m)		T (s)		Lo (m)		Co		θ <sub>0</sub>												
3		5,8		52,52		9,06		-80,00												
Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>sh</sub>	H <sub>sh (m)</sub>	θ <sub>1</sub>	K <sub>c</sub>	H <sub>sc (m)</sub>	H <sub>h</sub> /h	H/h	L1	L50	L promedio	L	% de error
7.0	49.70	A.P	0.946	0.94627	52.522	52.522	9.065	0.500	1.000	3.000	-79.996	1.000	2.999	0.06	0.06	52.52175	52.52175	52.52175	52.52175	0.000000
6.0	47.60	A.P	0.906	0.90630	52.521	52.522	9.055	0.500	1.000	3.000	-79.993	1.000	2.999	0.06	0.06	52.52128	52.52128	52.52128	52.52128	0.000000
5.0	45.70	A.P	0.870	0.87013	52.521	52.522	9.055	0.500	1.000	2.999	-79.988	0.999	2.998	0.07	0.07	52.52059	52.52059	52.52059	52.52059	0.000000
4.0	25.30	transicion	0.482	0.48391	52.283	52.399	9.014	0.514	0.989	2.966	-78.613	0.938	2.782	0.11	0.12	52.27616	52.28288	52.28288	52.28288	0.000000
3.0	14.90	transicion	0.284	0.29751	50.082	51.057	8.635	0.589	0.944	2.831	-69.892	0.711	2.012	0.14	0.19	49.63161	50.08191	50.08191	50.08191	0.000000
2.0	14.20	transicion	0.270	0.28570	49.702	50.794	8.569	0.599	0.939	2.817	-68.737	0.692	1.949	0.14	0.20	49.12161	49.70195	49.70195	49.70195	0.000000
1.050	13.40	transicion	0.255	0.27234	49.203	50.436	8.483	0.612	0.934	2.802	-67.303	0.671	1.880	0.14	0.21	48.43213	49.20265	49.20265	49.20265	0.000000
1.000	12.00	transicion	0.228	0.24930	48.134	49.627	8.299	0.637	0.926	2.777	-64.493	0.635	1.763	0.15	0.23	46.89189	48.13438	48.13438	48.13438	0.000000
0.950	10.40	transicion	0.198	0.22344	46.545	48.327	8.025	0.670	0.918	2.753	-60.778	0.596	1.642	0.16	0.26	44.46716	46.54509	46.54509	46.54509	0.000000
0.900	8.60	transicion	0.164	0.19476	44.158	46.191	7.613	0.713	0.913	2.739	-55.890	0.556	1.524	0.18	0.32	40.62239	44.15772	44.15772	44.15772	0.000000
0.850	7.20	transicion	0.137	0.17251	41.737	43.847	7.196	0.751	0.915	2.745	-51.497	0.528	1.450	0.20	0.38	36.60500	41.73673	41.73673	41.73673	0.000000
0.800	6.00	transicion	0.114	0.15323	39.156	41.207	6.751	0.787	0.923	2.770	-47.239	0.506	1.401	0.23	0.46	32.32899	39.15635	39.15635	39.15635	0.000000
0.750	4.90	transicion	0.093	0.13511	36.267	38.134	6.283	0.822	0.939	2.816	-42.845	0.487	1.371	0.28	0.57	27.88682	36.26693	36.26693	36.26693	0.000000
0.700	4.20	transicion	0.080	0.12317	34.098	35.778	5.879	0.845	0.955	2.864	-39.743	0.475	1.361	0.32	0.68	24.37220	34.09799	34.09799	34.09799	0.000000
0.650	3.40	transicion	0.065	0.10892	31.216	32.619	5.382	0.872	0.982	2.946	-35.825	0.463	1.363	0.40	0.87	20.25784	31.21622	31.21622	31.21622	0.000003
0.600	3.10	transicion	0.059	0.10333	30.000	31.282	5.172	0.883	0.996	2.987	-34.229	0.458	1.369	0.44	0.96	18.63148	29.99970	29.99967	29.99967	0.000013
0.550	2.60	A.P.P	0.050	0.09363	27.768	28.834	4.788	0.901	1.025	3.074	-31.376	0.451	1.386	0.53	1.18	15.82910	27.76807	27.76807	27.76807	0.000115
0.500	2.20	A.P.P	0.042	0.08541	25.759	26.640	4.441	0.916	1.055	3.166	-28.880	0.445	1.410	0.64	1.44	13.51246	25.75868	25.75868	25.75868	0.000615
0.450	2.00	A.P.P	0.038	0.08109	24.663	25.450	4.252	0.923	1.074	3.222	-27.545	0.443	1.426	0.71	1.61	12.33195	24.66684	24.66684	24.66684	0.001384
0.400	1.70	A.P.P	0.032	0.07430	22.881	23.525	3.945	0.934	1.108	3.325	-25.405	0.438	1.458	0.86	1.96	10.53655	22.89430	22.89430	22.89430	0.004503
0.350	1.40	A.P.P	0.027	0.06701	20.893	21.395	3.602	0.945	1.153	3.459	-23.063	0.434	1.503	1.07	2.47	8.71513	20.89016	20.89016	20.89016	0.013779
0.300	1.30	A.P.P	0.025	0.06444	20.175	20.630	3.478	0.949	1.171	3.513	-22.227	0.433	1.522	1.17	2.70	8.10292	20.24685	20.24685	20.24685	0.019577
0.250	1.10	A.P.P	0.021	0.05903	18.634	18.998	3.213	0.957	1.214	3.641	-20.450	0.430	1.567	1.42	3.31	6.87188	18.79640	18.79640	18.79640	0.037140
0.200	1.00	A.P.P	0.019	0.05617	17.803	18.123	3.070	0.961	1.239	3.717	-19.501	0.429	1.595	1.60	3.72	6.25338	18.04447	17.79469	17.79469	0.048280
0.150	0.90	A.P.P	0.017	0.05318	16.924	17.201	2.918	0.965	1.268	3.805	-18.502	0.428	1.628	1.81	4.23	5.63312	17.28063	16.91438	16.91438	0.057707
0.100	0.85	A.P.P	0.016	0.05163	16.464	16.720	2.839	0.967	1.285	3.854	-17.981	0.427	1.647	1.94	4.53	5.32238	16.89649	16.45428	16.45428	0.059415
0.098	0.84	A.P.P	0.016	0.05131	16.370	16.622	2.822	0.967	1.288	3.864	-17.875	0.427	1.651	1.96	4.60	5.26018	16.81963	16.36055	16.36055	0.059296
0.095	0.83	A.P.P	0.016	0.05100	16.276	16.523	2.806	0.967	1.291	3.874	-17.769	0.427	1.654	1.99	4.67	5.19797	16.74279	16.26624	16.26624	0.058978
0.093	0.82	A.P.P	0.016	0.05068	16.181	16.424	2.790	0.968	1.295	3.885	-17.662	0.427	1.659	2.02	4.74	5.13575	16.66598	16.17133	16.17133	0.058436
0.090	0.81	A.P.P	0.015	0.05036	16.085	16.324	2.773	0.968	1.299	3.896	-17.554	0.427	1.663	2.05	4.81	5.07351	16.58920	16.07581	16.07581	0.057845
0.088	0.80	A.P.P	0.015	0.05012	16.013	16.249	2.761	0.968	1.301	3.904	-17.472	0.427	1.666	2.08	4.86	5.02682	16.53165	16.00378	16.00378	0.056870
0.085	0.80	A.P.P	0.015	0.04987	15.940	16.173	2.748	0.969	1.304	3.912	-17.391	0.427	1.669	2.10	4.92	4.98013	16.47414	15.93140	15.93140	0.055925
0.083	0.79	A.P.P	0.015	0.04963	15.867	16.097	2.736	0.969	1.307	3.921	-17.308	0.426	1.672	2.12	4.98	4.93342	16.41667	15.85866	15.85866	0.054797
0.080	0.78	A.P.P	0.015	0.04939	15.794	16.021	2.723	0.969	1.310	3.929	-17.226	0.426	1.675	2.15	5.04	4.88671	16.35924	15.78568	15.78568	0.053470
0.078	0.77	A.P.P	0.015	0.04906	15.696	15.918	2.706	0.970	1.314	3.941	-17.115	0.426	1.680	2.18	5.12	4.82442	16.28275	15.68758	15.68758	0.051364
0.075	0.76	A.P.P	0.014	0.04873	15.597	15.815	2.689	0.970	1.317	3.952	-17.004	0.426	1.684	2.22	5.20	4.76211	16.20636	15.58894	15.58894	0.048835
0.073	0.75	A.P.P	0.014	0.04840	15.497	15.711	2.672	0.970	1.321	3.964	-16.892	0.426	1.689	2.25	5.29	4.69978	16.13009	15.48965	15.48965	0.045837
0.070	0.74	A.P.P	0.014	0.04806	15.396	15.607	2.655	0.971	1.325	3.976	-16.779	0.426	1.693	2.29	5.37	4.63745	16.05396	15.38970	15.38970	0.042322
0.068	0.73	A.P.P	0.014	0.04756	15.244	15.449	2.628	0.971	1.332	3.995	-16.608	0.426	1.701	2.35	5.51	4.54392	15.94005	15.23853	15.24401	0.035960
0.065	0.71	A.P.P	0.014	0.04705	15.090	15.289	2.602	0.972	1.338	4.014	-16.436	0.426	1.708	2.41	5.65	4.45036	15.82654	15.08584	15.08584	0.028108
0.063	0.70	A.P.P	0.013	0.04654	14.934	15.127	2.575	0.973	1.345	4.034	-16.262	0.425	1.716	2.47	5.80	4.35678	15.71347	14.93160	14.93160	0.018534
0.060	0.68	A.P.P	0.013	0.04602	14.777	14.964	2.548	0.973	1.351	4.054	-16.085	0.425	1.723	2.53	5.96	4.26317	15.60091	14.77579	14.77579	0.006971
0.058	0.66	A.P.P	0.013	0.04532	14.564	14.743	2.511	0.974	1.361	4.082	-15.847	0.425	1.734	2.63	6.18	4.13831	15.45173	14.56555	14.56379	0.012068
0.055	0.640	A.P.P	0.012	0.04461	14.347	14.519	2.474	0.975	1.370	4.111	-15.606	0.425	1.746	2.73	6.42	4.01340	15.30372	14.35241	14.34724	0.036026
0.053	0.62	A.P.P	0.012	0.04389	14.127	14.291	2.436	0.976	1.380	4.141	-15.360	0.424	1.757	2.83	6.68	3.88845	15.15703	14.13631	14.12700	0.065906
0.050	0.60	A.P.P	0.011	0.04316	13.903	14.059	2.397	0.976	1.391	4.173	-15.111	0.424	1.770	2.95	6.95	3.76345	15.01183	13.91721	13.90290	0.129093
0.048	0.58	A.P.P	0.011	0.04251	13.703	13.853	2.363	0.977	1.401	4.202	-14.889	0.424	1.781	3.06	7.21	3.65404	14.88615	13.72299	13.70350	0.142230
0.045	0.57	A.P.P	0.011	0.04185	13.501	13.644	2.328	0.978	1.411	4.232	-14.664	0.424	1.793	3.17	7.49	3.54460	14.76188	13.52640	13.50085	0.189226
0.043	0.55	A.P.P	0.010	0.04118	13.295	13.432	2.292	0.978	1.421	4.263	-14.425	0.423	1.805	3.30	7.79	3.43513	14.63913	13.32743	13.29483	0.245209
0.040	0.53	A.P.P	0.010	0.04050	13.085	13.216	2.256	0.979	1.432	4.295	-14.203	0.423	1.818	3.43	8.10	3.32563	14.51805	13.12604	13.08525	0.311724
0.038	0.50	A.P.P	0.010	0.03932	12.717	12.838	2.193	0.980	1.451	4.354	-13.795	0.423	1.841	3.68	8.71	3.13785	14.31473	12.75162	12.71722	0.455613
0.035	0.47	A.P.P	0.009	0.03810	12.337	12.448	2.127	0.981	1.473	4.418	-13.375	0.422	1.867	3.97	9.40	2.94999	14.11742			

**ANEXO (15).** Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE  
SE

Ho (m) 0,5 T (s) 5,8 Lo (m) 52,52 Co 9,06 θ₀ -35,00

Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>sp</sub>	H <sub>sp</sub> (m)	θ <sub>1</sub>	K <sub>c</sub>	H <sub>sterr</sub> (m)	H <sub>r</sub> /h	H/h	L1	L50	L promedio	L	% de error
7.0	49.70	A.P	0.946	0.94627	52.522	52.522	9.055	0.500	1.000	0.500	-34.999	1.000	0.500	0.01	0.01	52.52175	52.52175	52.52175	52.52175	0.00000
6.0	47.60	A.P	0.906	0.90630	52.521	52.522	9.055	0.500	1.000	0.500	-34.999	1.000	0.500	0.01	0.01	52.52128	52.52128	52.52128	52.52128	0.00000
5.0	45.70	A.P	0.870	0.87013	52.521	52.522	9.055	0.500	1.000	0.500	-34.999	1.000	0.500	0.01	0.01	52.52059	52.52059	52.52059	52.52059	0.00000
4.0	25.30	transición	0.482	0.48391	52.283	52.399	9.014	0.514	0.989	0.494	-34.817	0.999	0.494	0.02	0.02	52.27616	52.28288	52.28288	52.28288	0.00000
3.0	14.90	transición	0.284	0.29751	50.082	51.057	8.635	0.589	0.944	0.472	-33.156	0.989	0.467	0.03	0.03	49.63161	50.08191	50.08191	50.08191	0.00000
2.0	14.20	transición	0.270	0.28570	49.702	50.794	8.569	0.599	0.939	0.470	-32.873	0.988	0.464	0.03	0.03	49.12161	49.70195	49.70195	49.70195	0.00000
1.050	13.40	transición	0.255	0.27234	49.203	50.436	8.483	0.612	0.934	0.467	-32.502	0.986	0.460	0.03	0.03	48.43213	49.20265	49.20265	49.20265	0.00000
1.000	12.00	transición	0.228	0.24930	48.134	49.627	8.299	0.637	0.926	0.463	-31.712	0.981	0.454	0.04	0.04	46.89189	48.13438	48.13438	48.13438	0.00000
0.950	10.40	transición	0.198	0.22344	46.545	48.327	8.025	0.670	0.918	0.459	-30.551	0.975	0.447	0.04	0.04	44.46716	46.54509	46.54509	46.54509	0.00000
0.900	8.60	transición	0.164	0.19476	44.158	46.191	7.613	0.713	0.913	0.457	-28.831	0.967	0.441	0.05	0.05	40.62239	44.15772	44.15772	44.15772	0.00000
0.850	7.20	transición	0.137	0.17251	41.737	43.847	7.196	0.751	0.915	0.458	-27.116	0.959	0.439	0.06	0.06	36.60500	41.73673	41.73673	41.73673	0.00000
0.800	6.00	transición	0.114	0.15323	39.156	41.207	6.751	0.787	0.923	0.462	-25.316	0.952	0.439	0.07	0.08	32.32899	39.15635	39.15635	39.15635	0.00000
0.750	4.90	transición	0.093	0.13511	36.267	38.134	6.263	0.822	0.939	0.469	-23.332	0.945	0.443	0.09	0.10	27.68682	36.26693	36.26693	36.26693	0.00000
0.700	4.20	transición	0.080	0.12317	34.098	35.778	5.879	0.845	0.955	0.477	-21.862	0.939	0.449	0.11	0.11	24.37220	34.09799	34.09799	34.09799	0.00000
0.650	3.40	transición	0.065	0.10892	31.216	32.619	5.382	0.872	0.982	0.491	-19.932	0.933	0.458	0.13	0.14	20.25784	31.21623	31.21622	31.21622	0.00003
0.600	3.10	transición	0.059	0.10333	30.000	31.282	5.172	0.883	0.996	0.498	-19.124	0.931	0.464	0.15	0.16	18.63148	29.99970	29.99967	29.99967	0.00013
0.550	2.60	A.P.P	0.050	0.09363	27.768	28.834	4.788	0.901	1.025	0.512	-17.652	0.927	0.475	0.18	0.20	15.82910	27.76807	27.76777	27.76777	0.00015
0.500	2.20	A.P.P	0.042	0.08541	25.759	26.640	4.441	0.916	1.055	0.528	-16.338	0.924	0.487	0.22	0.24	13.51246	25.76038	25.75866	25.75862	0.00065
0.450	2.00	A.P.P	0.038	0.08109	24.663	25.450	4.252	0.923	1.074	0.537	-15.625	0.922	0.495	0.25	0.27	12.33195	24.66684	24.66275	24.66309	0.00138
0.400	1.70	A.P.P	0.032	0.07430	22.881	23.525	3.945	0.934	1.108	0.564	-14.470	0.920	0.510	0.30	0.33	10.53655	22.89430	22.87963	22.89066	0.00450
0.350	1.40	A.P.P	0.027	0.06701	20.993	21.395	3.602	0.945	1.153	0.577	-13.189	0.917	0.529	0.38	0.41	8.71513	20.94100	20.89016	20.89304	0.01379
0.300	1.30	A.P.P	0.025	0.06444	20.175	20.630	3.478	0.949	1.171	0.586	-12.728	0.916	0.537	0.41	0.45	8.10292	20.24685	20.17056	20.17451	0.01957
0.250	1.10	A.P.P	0.021	0.05903	18.634	18.998	3.213	0.957	1.214	0.607	-11.741	0.915	0.555	0.50	0.55	6.87188	18.79640	18.63412	18.63412	0.03714
0.200	1.00	A.P.P	0.019	0.05617	17.803	18.123	3.070	0.961	1.239	0.620	-11.211	0.914	0.566	0.57	0.62	6.25338	18.04447	17.79469	17.80328	0.04820
0.150	0.90	A.P.P	0.017	0.05318	16.924	17.201	2.918	0.965	1.268	0.634	-10.651	0.913	0.579	0.64	0.70	5.63312	17.28063	16.91438	16.91438	0.05770
0.100	0.85	A.P.P	0.016	0.05163	16.464	16.720	2.839	0.967	1.285	0.642	-10.358	0.913	0.586	0.69	0.76	5.32238	16.89649	16.45428	16.46407	0.059415
0.098	0.84	A.P.P	0.016	0.05131	16.370	16.622	2.822	0.967	1.288	0.644	-10.298	0.912	0.588	0.70	0.77	5.26018	16.81963	16.36055	16.37026	0.059296
0.095	0.83	A.P.P	0.016	0.05100	16.276	16.523	2.806	0.967	1.291	0.646	-10.238	0.912	0.589	0.71	0.78	5.19797	16.74279	16.26624	16.27584	0.058978
0.093	0.82	A.P.P	0.016	0.05068	16.181	16.424	2.790	0.968	1.295	0.648	-10.178	0.912	0.591	0.72	0.79	5.13575	16.66598	16.17133	16.18078	0.058436
0.090	0.81	A.P.P	0.015	0.05036	16.085	16.324	2.773	0.968	1.299	0.649	-10.117	0.912	0.592	0.73	0.80	5.07351	16.58920	16.07581	16.08508	0.057645
0.088	0.80	A.P.P	0.015	0.05012	16.013	16.249	2.761	0.968	1.301	0.651	-10.071	0.912	0.593	0.74	0.81	5.02682	16.53165	16.03078	16.01288	0.056870
0.085	0.80	A.P.P	0.015	0.04987	15.940	16.173	2.748	0.969	1.304	0.652	-10.025	0.912	0.595	0.75	0.82	4.98013	16.47414	15.93140	15.94031	0.055925
0.083	0.79	A.P.P	0.015	0.04963	15.867	16.097	2.736	0.969	1.307	0.653	-9.979	0.912	0.596	0.76	0.83	4.93342	16.41667	15.85866	15.86736	0.054797
0.080	0.78	A.P.P	0.015	0.04939	15.794	16.021	2.723	0.969	1.310	0.655	-9.932	0.912	0.597	0.77	0.84	4.88671	16.35924	15.78558	15.79403	0.053470
0.078	0.77	A.P.P	0.015	0.04906	15.696	15.918	2.706	0.970	1.314	0.657	-9.870	0.912	0.599	0.78	0.85	4.82442	16.28275	15.68758	15.69564	0.051364
0.075	0.76	A.P.P	0.014	0.04873	15.597	15.815	2.689	0.970	1.317	0.659	-9.807	0.912	0.601	0.79	0.87	4.76211	16.20636	15.58894	15.59656	0.048835
0.073	0.75	A.P.P	0.014	0.04840	15.497	15.711	2.672	0.970	1.321	0.661	-9.743	0.912	0.602	0.80	0.88	4.69978	16.13009	15.48965	15.49675	0.046337
0.070	0.74	A.P.P	0.014	0.04806	15.395	15.607	2.655	0.971	1.325	0.663	-9.679	0.912	0.604	0.82	0.90	4.63745	16.05396	15.38970	15.39622	0.043222
0.068	0.73	A.P.P	0.014	0.04775	15.244	15.449	2.628	0.971	1.332	0.666	-9.583	0.911	0.607	0.84	0.92	4.54392	15.94005	15.28353	15.24401	0.035960
0.065	0.71	A.P.P	0.014	0.04705	15.090	15.289	2.602	0.972	1.338	0.669	-9.485	0.911	0.610	0.86	0.94	4.45036	15.82654	15.08584	15.09008	0.028108
0.063	0.70	A.P.P	0.013	0.04654	14.934	15.127	2.575	0.973	1.345	0.672	-9.386	0.911	0.613	0.88	0.97	4.35678	15.71347	14.93160	14.93437	0.018634
0.060	0.68	A.P.P	0.013	0.04602	14.777	14.964	2.548	0.973	1.351	0.676	-9.287	0.911	0.616	0.91	0.99	4.26317	15.60091	14.77579	14.77682	0.006971
0.058	0.66	A.P.P	0.013	0.04532	14.564	14.743	2.511	0.974	1.361	0.680	-9.151	0.911	0.620	0.94	1.03	4.13831	15.45173	14.56555	14.56379	0.012068
0.055	0.640	A.P.P	0.012	0.04461	14.347	14.519	2.474	0.975	1.370	0.685	-9.014	0.911	0.624	0.97	1.07	4.01340	15.30372	14.35241	14.34724	0.036026
0.053	0.62	A.P.P	0.012	0.04389	14.127	14.291	2.436	0.976	1.380	0.690	-8.875	0.911	0.628	1.01	1.11	3.88845	15.15703	14.13631	14.12700	0.065906
0.050	0.60	A.P.P	0.011	0.04316	13.903	14.059	2.397	0.976	1.391	0.695	-8.733	0.910	0.633	1.06	1.16	3.76345	15.01183	13.91721	13.90290	0.029093
0.048	0.58	A.P.P	0.011	0.04251	13.703	13.853	2.363	0.977	1.401	0.700	-8.607	0.910	0.637	1.09	1.20	3.65404	14.88615	13.72299	13.70350	0.042230
0.045	0.57	A.P.P	0.011	0.04185	13.501	13.644	2.328	0.978	1.411	0.705	-8.478	0.910	0.642	1.14	1.25	3.54460	14.76188	13.52640	13.50086	0.089226
0.043	0.55	A.P.P	0.010	0.04118	13.295	13.432	2.292	0.978	1.421	0.710	-8.348	0.910	0.646	1.18	1.30	3.43513	14.63913	13.32743	13.29483	0.245209
0.040	0.53	A.P.P	0.010	0.04050	13.085	13.216	2.256	0.979	1.432	0.716	-8.216	0.910	0.651	1.23	1.35	3.32563	14.51805	13.12604	13.08255	0.311724
0.038	0.50	A.P.P	0.010	0.03932	12.717	12.838	2.193	0.980	1.451	0.726	-7.983	0.909	0.660	1.32	1.45	3.13785	14.31473	12.77516	12.71722	0.455613
0.035	0.47	A.P.P	0.009	0.03810	12.337	12.448	2.127	0.981	1.473	0.736	-7.743	0.909	0.670	1.42	1.57	2.94999	14.11742	12.41712	12.33726	0.647280
0.033	0.44	A.P.P	0.008	0.03684	11.944	12.044														

### ANEXO (16). Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE																				
SE																				
Ho (m)		T (s)		Lo (m)		Co		θ <sub>0</sub>												
1		5,8		52.52		9.06		-35.00												
Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>sh</sub>	H <sub>sh</sub> (m)	θ <sub>1</sub>	K <sub>c</sub>	H <sub>ncr</sub> (m)	H <sub>1</sub> /h	H <sub>1</sub> /H	L1	L50	L promedio	L	% de error
7.0	49.70	A.P	0.946	0.94627	52.522	52.522	9.065	0.500	1.000	1.000	-34.999	1.000	1.000	0.02	0.02	52.52175	52.52175	52.52175	52.52175	0.000000
6.0	47.60	A.P	0.906	0.90630	52.521	52.522	9.065	0.500	1.000	1.000	-34.999	1.000	1.000	0.02	0.02	52.52128	52.52128	52.52128	52.52128	0.000000
5.0	45.70	A.P	0.870	0.87013	52.521	52.522	9.065	0.500	1.000	1.000	-34.999	1.000	1.000	0.02	0.02	52.52059	52.52059	52.52059	52.52059	0.000000
4.0	25.30	transicion	0.482	0.48391	52.283	52.399	9.014	0.514	0.989	0.989	-34.817	0.999	0.988	0.04	0.04	52.27616	52.28288	52.28288	52.28288	0.000000
3.0	14.90	transicion	0.284	0.29751	50.082	51.057	8.635	0.589	0.944	0.944	-33.156	0.989	0.933	0.06	0.06	49.63161	50.08191	50.08191	50.08191	0.000000
2.0	14.20	transicion	0.270	0.28570	49.702	50.794	8.569	0.599	0.939	0.939	-32.873	0.988	0.927	0.07	0.07	49.12161	49.70195	49.70195	49.70195	0.000000
1.050	13.40	transicion	0.255	0.27234	49.203	50.436	8.483	0.612	0.934	0.934	-32.502	0.986	0.921	0.07	0.07	48.43213	49.20265	49.20265	49.20265	0.000000
1.000	12.00	transicion	0.228	0.24930	48.134	49.627	8.299	0.637	0.926	0.926	-31.712	0.981	0.908	0.08	0.08	46.89189	48.13438	48.13438	48.13438	0.000000
0.950	10.40	transicion	0.198	0.22344	46.545	48.327	8.025	0.670	0.918	0.918	-30.551	0.975	0.895	0.09	0.09	44.46716	46.54509	46.54509	46.54509	0.000000
0.900	8.60	transicion	0.164	0.19476	44.158	46.191	7.613	0.713	0.913	0.913	-28.831	0.967	0.883	0.10	0.11	40.62239	44.15772	44.15772	44.15772	0.000000
0.850	7.20	transicion	0.137	0.17251	41.737	43.847	7.196	0.751	0.915	0.915	-27.116	0.959	0.878	0.12	0.13	36.60500	41.73673	41.73673	41.73673	0.000000
0.800	6.00	transicion	0.114	0.15323	39.156	41.207	6.751	0.787	0.923	0.923	-25.316	0.952	0.879	0.15	0.15	32.32899	39.15635	39.15635	39.15635	0.000000
0.750	4.90	transicion	0.093	0.13511	36.267	38.134	6.253	0.822	0.939	0.939	-23.332	0.945	0.867	0.18	0.19	27.68682	36.26693	36.26693	36.26693	0.000000
0.700	4.20	transicion	0.080	0.12317	34.098	35.778	5.879	0.845	0.955	0.955	-21.862	0.939	0.897	0.21	0.23	24.37220	34.09799	34.09799	34.09799	0.000000
0.650	3.40	transicion	0.065	0.10892	31.216	32.619	5.382	0.872	0.982	0.982	-19.932	0.933	0.917	0.27	0.29	20.25784	31.21623	31.21623	31.21623	0.000003
0.600	3.10	transicion	0.059	0.10333	30.000	31.282	5.172	0.883	0.996	0.996	-19.124	0.931	0.927	0.30	0.32	18.63148	29.99970	29.99967	29.99967	0.000013
0.550	2.60	A.P.P	0.050	0.09363	27.768	28.834	4.788	0.901	1.025	1.025	-17.652	0.927	0.950	0.37	0.39	15.82910	27.76807	27.76807	27.76807	0.000115
0.500	2.20	A.P.P	0.042	0.08541	25.759	26.640	4.441	0.916	1.055	1.055	-16.338	0.924	0.975	0.44	0.48	13.51246	25.76038	25.75866	25.75862	0.000615
0.450	2.00	A.P.P	0.038	0.08109	24.663	25.450	4.252	0.923	1.074	1.074	-15.625	0.922	0.991	0.50	0.54	12.33195	24.66684	24.66309	24.66309	0.001384
0.400	1.70	A.P.P	0.032	0.07430	22.881	23.525	3.945	0.934	1.108	1.108	-14.470	0.920	1.020	0.60	0.65	10.53655	22.89430	22.87963	22.88066	0.004503
0.350	1.40	A.P.P	0.027	0.06701	20.893	21.395	3.602	0.945	1.153	1.153	-13.189	0.917	1.058	0.76	0.82	8.71513	20.89016	20.89016	20.89016	0.013779
0.300	1.30	A.P.P	0.025	0.06444	20.175	20.630	3.478	0.949	1.171	1.171	-12.728	0.916	1.073	0.83	0.90	8.10292	20.24685	20.17056	20.17451	0.019577
0.250	1.10	A.P.P	0.021	0.05903	18.634	18.998	3.213	0.957	1.214	1.214	-11.741	0.915	1.110	1.01	1.10	6.87188	18.79640	18.63412	18.63412	0.037140
0.200	1.00	A.P.P	0.019	0.05617	17.803	18.123	3.070	0.961	1.239	1.239	-11.211	0.914	1.132	1.13	1.24	6.25338	18.04447	17.79469	17.80328	0.048280
0.150	0.90	A.P.P	0.017	0.05318	16.924	17.201	2.918	0.965	1.268	1.268	-10.651	0.913	1.158	1.29	1.41	5.63312	17.28063	16.91438	16.92415	0.057707
0.100	0.85	A.P.P	0.016	0.05163	16.464	16.720	2.839	0.967	1.285	1.285	-10.368	0.913	1.172	1.38	1.51	5.32238	16.89649	16.45428	16.46407	0.059415
0.098	0.84	A.P.P	0.016	0.05131	16.370	16.622	2.822	0.967	1.288	1.288	-10.298	0.912	1.175	1.40	1.53	5.26018	16.81963	16.36055	16.37026	0.059296
0.095	0.83	A.P.P	0.016	0.05100	16.276	16.523	2.806	0.967	1.291	1.291	-10.238	0.912	1.178	1.42	1.56	5.19797	16.74279	16.26624	16.27584	0.058978
0.093	0.82	A.P.P	0.016	0.05068	16.181	16.424	2.790	0.968	1.295	1.295	-10.178	0.912	1.181	1.44	1.58	5.13575	16.66598	16.17133	16.18078	0.058436
0.090	0.81	A.P.P	0.015	0.05036	16.085	16.324	2.773	0.968	1.299	1.299	-10.117	0.912	1.185	1.46	1.60	5.07351	16.58920	16.07581	16.08508	0.057845
0.088	0.80	A.P.P	0.015	0.05012	16.013	16.249	2.761	0.968	1.301	1.301	-10.071	0.912	1.187	1.48	1.62	5.02682	16.53165	16.00378	16.01288	0.056870
0.085	0.80	A.P.P	0.015	0.04987	15.940	16.173	2.748	0.969	1.304	1.304	-10.025	0.912	1.189	1.50	1.64	4.98013	16.47414	15.93140	15.94031	0.055925
0.083	0.79	A.P.P	0.015	0.04963	15.867	16.097	2.736	0.969	1.307	1.307	-9.979	0.912	1.192	1.51	1.66	4.93342	16.41667	15.85866	15.86736	0.054797
0.080	0.78	A.P.P	0.015	0.04939	15.794	16.021	2.723	0.969	1.310	1.310	-9.932	0.912	1.194	1.53	1.68	4.88671	16.35924	15.78558	15.79403	0.053470
0.078	0.77	A.P.P	0.015	0.04906	15.696	15.918	2.706	0.970	1.314	1.314	-9.870	0.912	1.198	1.56	1.71	4.82442	16.28275	15.68758	15.69664	0.051364
0.075	0.76	A.P.P	0.014	0.04873	15.597	15.815	2.689	0.970	1.317	1.317	-9.807	0.912	1.201	1.58	1.73	4.76211	16.20636	15.58894	15.59656	0.048835
0.073	0.75	A.P.P	0.014	0.04840	15.497	15.711	2.672	0.970	1.321	1.321	-9.743	0.912	1.205	1.61	1.76	4.69978	16.13009	15.48955	15.49675	0.045837
0.070	0.74	A.P.P	0.014	0.04806	15.396	15.607	2.655	0.971	1.325	1.325	-9.679	0.912	1.208	1.63	1.79	4.63745	16.05396	15.38970	15.39622	0.042322
0.068	0.73	A.P.P	0.014	0.04756	15.244	15.449	2.628	0.971	1.332	1.332	-9.583	0.911	1.214	1.67	1.84	4.54392	15.94005	15.23853	15.24401	0.035960
0.065	0.71	A.P.P	0.014	0.04705	15.090	15.289	2.602	0.972	1.338	1.338	-9.486	0.911	1.219	1.72	1.88	4.45036	15.82654	15.08584	15.09008	0.028108
0.063	0.70	A.P.P	0.013	0.04654	14.934	15.127	2.575	0.973	1.345	1.345	-9.386	0.911	1.225	1.76	1.93	4.35678	15.71347	14.93160	14.93437	0.018534
0.060	0.68	A.P.P	0.013	0.04602	14.777	14.964	2.548	0.973	1.351	1.351	-9.287	0.911	1.231	1.81	1.99	4.26317	15.60091	14.77579	14.77682	0.006971
0.058	0.66	A.P.P	0.013	0.04532	14.564	14.743	2.511	0.974	1.361	1.361	-9.151	0.911	1.239	1.88	2.06	4.13831	15.45173	14.56555	14.56379	0.012068
0.055	0.640	A.P.P	0.012	0.04461	14.347	14.519	2.474	0.975	1.370	1.370	-9.014	0.911	1.248	1.95	2.14	4.01340	15.30372	14.35241	14.34724	0.036026
0.053	0.62	A.P.P	0.012	0.04389	14.127	14.291	2.436	0.976	1.380	1.380	-8.875	0.911	1.257	2.03	2.23	3.88845	15.15703	14.13631	14.12700	0.065906
0.050	0.60	A.P.P	0.011	0.04316	13.903	14.059	2.397	0.976	1.391	1.391	-8.733	0.910	1.266	2.11	2.32	3.76345	15.01183	13.91721	13.90290	0.129093
0.048	0.58	A.P.P	0.011	0.04251	13.703	13.853	2.363	0.977	1.401	1.401	-8.607	0.910	1.275	2.19	2.40	3.65404	14.86615	13.72299	13.70350	0.142230
0.045	0.57	A.P.P	0.011	0.04185	13.501	13.644	2.328	0.978	1.411	1.411	-8.478	0.910	1.284	2.27	2.50	3.54460	14.71888	13.52640	13.50085	0.189226
0.043	0.55	A.P.P	0.010	0.04118	13.295	13.432	2.292	0.978	1.421	1.421	-8.345	0.910	1.293	2.36	2.60	3.43513	14.53913	13.32743	13.29483	0.245209
0.040	0.53	A.P.P	0.010	0.04050	13.085	13.216	2.256	0.979	1.432	1.432	-8.216	0.910	1.303	2.46	2.70	3.32563	14.351805	13.12604	13.08525	0.311724
0.038	0.50	A.P.P	0.010	0.03932	12.717	12.838	2.193	0.980	1.451	1.451	-7.983	0.909	1.320	2.64	2.90	3.13785	14.31473	12.75162	12.71722	0.455613
0.035	0.47	A.P.P	0.009	0.03810	12.337	12.448	2.127	0.981	1.473	1.473	-7.743	0.909	1.339	2.85	3.13	2.94999	14.11742	12.417		

### ANEXO (17). Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE																				
SE																				
	Ho (m)	T (s)	Lo (m)	Co	θ <sub>0</sub>															
	2	5,8	52,52	9,06	-35,00															
Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>sh</sub>	H <sub>sh(m)</sub>	θ <sub>i</sub>	K <sub>r</sub>	H <sub>sh+τ</sub>	H <sub>r/h</sub>	H/h	L1	L50	L promedio	L	% de error
7.0	49.70	A.P	0.946	0.94627	52.522	52.522	9.055	0.500	1.000	2.000	-34.999	1.000	2.000	0.04	0.04	52.52175	52.52175	52.52175	52.52175	0.000000
6.0	47.60	A.P	0.906	0.90630	52.521	52.522	9.055	0.500	1.000	2.000	-34.999	1.000	2.000	0.04	0.04	52.52128	52.52128	52.52128	52.52128	0.000000
5.0	45.70	A.P	0.870	0.87013	52.521	52.522	9.055	0.500	1.000	2.000	-34.999	1.000	2.000	0.04	0.04	52.52059	52.52059	52.52059	52.52059	0.000000
4.0	25.30	transicion	0.482	0.48391	52.283	52.399	9.014	0.514	0.989	1.977	-34.817	0.999	1.975	0.08	0.08	52.27616	52.28288	52.28288	52.28288	0.000000
3.0	14.90	transicion	0.284	0.29751	50.082	51.067	8.635	0.589	0.944	1.887	-33.156	0.989	1.867	0.13	0.13	49.63161	50.08191	50.08191	50.08191	0.000000
2.0	14.20	transicion	0.270	0.28570	49.702	50.794	8.569	0.599	0.939	1.878	-32.873	0.988	1.855	0.13	0.13	49.12161	49.70195	49.70195	49.70195	0.000000
1.050	13.40	transicion	0.255	0.27234	49.203	50.436	8.483	0.612	0.934	1.868	-32.502	0.986	1.841	0.14	0.14	48.43213	49.20265	49.20265	49.20265	0.000000
1.000	12.00	transicion	0.228	0.24930	48.134	49.627	8.299	0.637	0.926	1.851	-31.712	0.981	1.817	0.15	0.15	46.89189	48.13438	48.13438	48.13438	0.000000
0.950	10.40	transicion	0.198	0.22344	46.545	48.327	8.025	0.670	0.918	1.835	-30.551	0.975	1.790	0.17	0.18	44.46716	46.54509	46.54509	46.54509	0.000000
0.900	8.60	transicion	0.164	0.19476	44.158	46.191	7.613	0.713	0.913	1.826	-28.831	0.967	1.766	0.21	0.21	40.62239	44.15772	44.15772	44.15772	0.000000
0.850	7.20	transicion	0.137	0.17251	41.737	43.847	7.196	0.751	0.915	1.830	-27.116	0.959	1.756	0.24	0.25	36.60500	41.73673	41.73673	41.73673	0.000000
0.800	6.00	transicion	0.114	0.15323	39.156	41.207	6.751	0.787	0.923	1.846	-25.316	0.952	1.758	0.29	0.31	32.32899	39.15635	39.15635	39.15635	0.000000
0.750	4.90	transicion	0.093	0.13511	36.267	38.134	6.253	0.822	0.939	1.878	-23.332	0.945	1.773	0.36	0.38	27.68682	36.26693	36.26693	36.26693	0.000000
0.700	4.20	transicion	0.080	0.12317	34.098	35.778	5.879	0.845	0.956	1.910	-21.862	0.939	1.794	0.43	0.45	24.37220	34.09799	34.09799	34.09799	0.000000
0.650	3.40	transicion	0.065	0.10892	31.216	32.619	5.382	0.872	0.982	1.964	-19.932	0.933	1.833	0.54	0.58	20.25784	31.21623	31.21623	31.21623	0.000003
0.600	3.10	transicion	0.059	0.10333	30.000	31.282	5.172	0.883	0.996	1.991	-19.124	0.931	1.854	0.60	0.64	18.63148	29.99970	29.99970	29.99970	0.000013
0.550	2.60	A.P.P	0.050	0.09363	27.768	28.834	4.788	0.901	1.025	2.049	-17.652	0.927	1.900	0.73	0.79	15.82910	27.76807	27.76807	27.76807	0.000015
0.500	2.20	A.P.P	0.042	0.08541	25.759	26.640	4.441	0.916	1.055	2.111	-16.338	0.924	1.950	0.89	0.96	13.51246	25.76038	25.76038	25.76038	0.000015
0.450	2.00	A.P.P	0.038	0.08109	24.663	25.450	4.252	0.923	1.074	2.148	-15.625	0.922	1.981	0.99	1.07	12.33195	24.66684	24.66684	24.66684	0.001384
0.400	1.70	A.P.P	0.032	0.07430	22.881	23.525	3.945	0.934	1.108	2.217	-14.470	0.920	2.039	1.20	1.30	10.53655	22.89430	22.89430	22.89430	0.004503
0.350	1.40	A.P.P	0.027	0.06701	20.893	21.395	3.602	0.945	1.153	2.306	-13.189	0.917	2.115	1.51	1.65	8.71513	20.94100	20.94100	20.94100	0.013779
0.300	1.30	A.P.P	0.025	0.06444	20.175	20.630	3.478	0.949	1.171	2.342	-12.728	0.916	2.146	1.65	1.80	8.10292	20.24685	20.24685	20.24685	0.019577
0.250	1.10	A.P.P	0.021	0.05903	18.634	18.998	3.213	0.957	1.214	2.427	-11.741	0.912	2.220	2.02	2.21	6.87188	18.79640	18.79640	18.79640	0.037140
0.200	1.00	A.P.P	0.019	0.05617	17.803	18.123	3.070	0.961	1.239	2.478	-11.211	0.914	2.265	2.26	2.48	6.25338	18.04477	17.79469	17.80328	0.048280
0.150	0.90	A.P.P	0.017	0.05318	16.924	17.201	2.918	0.965	1.268	2.537	-10.651	0.913	2.316	2.57	2.82	5.63312	17.28063	16.91438	16.92415	0.057707
0.100	0.85	A.P.P	0.016	0.05163	16.464	16.720	2.839	0.967	1.285	2.569	-10.358	0.913	2.345	2.76	3.02	5.32238	16.89649	16.45428	16.46407	0.059415
0.098	0.84	A.P.P	0.016	0.05131	16.370	16.622	2.822	0.967	1.288	2.576	-10.298	0.912	2.351	2.80	3.07	5.26018	16.81963	16.36055	16.37026	0.059296
0.095	0.83	A.P.P	0.016	0.05100	16.276	16.523	2.806	0.967	1.291	2.583	-10.239	0.912	2.357	2.84	3.11	5.19797	16.74275	16.26524	16.27584	0.059799
0.093	0.82	A.P.P	0.016	0.05068	16.181	16.424	2.790	0.968	1.295	2.590	-10.179	0.912	2.363	2.88	3.16	5.13575	16.66598	16.17133	16.18078	0.059436
0.090	0.81	A.P.P	0.015	0.05036	16.085	16.324	2.773	0.968	1.299	2.597	-10.117	0.912	2.369	2.92	3.21	5.07351	16.58920	16.07581	16.08508	0.057645
0.088	0.80	A.P.P	0.015	0.05012	16.013	16.249	2.761	0.968	1.301	2.603	-10.071	0.912	2.374	2.96	3.24	5.02682	16.53165	16.00378	16.01288	0.056870
0.085	0.80	A.P.P	0.015	0.04987	15.940	16.173	2.748	0.969	1.304	2.608	-10.025	0.912	2.379	2.99	3.28	4.98013	16.47414	15.93140	15.94031	0.055925
0.083	0.79	A.P.P	0.015	0.04963	15.867	16.097	2.736	0.969	1.307	2.614	-9.979	0.912	2.384	3.03	3.32	4.93342	16.41667	15.85866	15.86736	0.054799
0.080	0.78	A.P.P	0.015	0.04939	15.794	16.021	2.723	0.969	1.310	2.619	-9.932	0.912	2.389	3.06	3.36	4.88671	16.35924	15.78558	15.79403	0.053470
0.078	0.77	A.P.P	0.015	0.04906	15.696	15.918	2.706	0.970	1.314	2.627	-9.870	0.912	2.396	3.11	3.41	4.84242	16.28275	15.68758	15.69664	0.051364
0.075	0.76	A.P.P	0.014	0.04873	15.597	15.815	2.689	0.970	1.317	2.635	-9.807	0.912	2.402	3.16	3.47	4.76211	16.20636	15.58894	15.59656	0.048835
0.073	0.75	A.P.P	0.014	0.04840	15.497	15.711	2.672	0.970	1.321	2.643	-9.743	0.912	2.409	3.21	3.52	4.69978	16.13099	15.48965	15.49675	0.045837
0.070	0.74	A.P.P	0.014	0.04806	15.396	15.607	2.655	0.971	1.325	2.651	-9.679	0.912	2.417	3.27	3.58	4.63745	16.05396	15.38970	15.39622	0.042322
0.068	0.73	A.P.P	0.014	0.04756	15.244	15.449	2.628	0.971	1.332	2.663	-9.583	0.911	2.428	3.35	3.67	4.54392	15.94005	15.23853	15.24401	0.035960
0.065	0.71	A.P.P	0.014	0.04705	15.090	15.289	2.602	0.972	1.338	2.676	-9.485	0.911	2.439	3.43	3.77	4.45036	15.82654	15.08584	15.09008	0.028108
0.063	0.70	A.P.P	0.013	0.04654	14.934	15.127	2.575	0.973	1.345	2.689	-9.386	0.911	2.450	3.53	3.87	4.35678	15.71347	14.93160	14.93437	0.018534
0.060	0.68	A.P.P	0.013	0.04602	14.777	14.964	2.548	0.973	1.351	2.703	-9.287	0.911	2.462	3.62	3.97	4.26317	15.60091	14.77579	14.77682	0.006971
0.058	0.66	A.P.P	0.013	0.04532	14.564	14.743	2.511	0.974	1.361	2.721	-9.181	0.911	2.479	3.76	4.12	4.13831	15.45173	14.56555	14.56379	0.012068
0.055	0.640	A.P.P	0.012	0.04461	14.347	14.519	2.474	0.975	1.370	2.741	-9.074	0.911	2.496	3.90	4.28	4.01340	15.30372	14.35241	14.34724	0.036026
0.053	0.62	A.P.P	0.012	0.04389	14.127	14.291	2.436	0.976	1.380	2.756	-8.975	0.911	2.514	4.05	4.45	3.88845	15.15703	14.13631	14.12700	0.065906
0.050	0.60	A.P.P	0.011	0.04316	13.903	14.059	2.397	0.976	1.391	2.782	-8.733	0.910	2.533	4.22	4.64	3.76345	15.01183	13.91721	13.90290	0.102903
0.048	0.58	A.P.P	0.011	0.04251	13.703	13.853	2.363	0.977	1.401	2.801	-8.607	0.910	2.550	4.38	4.81	3.65404	14.86615	13.72299	13.70350	0.142230
0.045	0.57	A.P.P	0.011	0.04185	13.501	13.644	2.328	0.978	1.411	2.821	-8.478	0.910	2.567	4.54	4.99	3.54460	14.76188	13.52640	13.50086	0.189226
0.043	0.55	A.P.P	0.010	0.04118	13.295	13.432	2.292	0.978	1.421	2.842	-8.348	0.910	2.586	4.72	5.19	3.43513	14.63913	13.32743	13.29483	0.245209
0.040	0.53	A.P.P	0.010	0.04050	13.085	13.216	2.256	0.979	1.432	2.863	-8.216	0.910	2.605	4.92	5.40	3.32563	14.51805	13.12604	13.08525	0.311724
0.038	0.50	A.P.P	0.010	0.03932	12.717	12.838	2.193	0.980	1.451	2.903	-7.983	0.909	2.640	5.28	5.81	3.13785	14.31473	12.75162	12.71722	0.455613
0.035	0.47	A.P.P	0.009	0.03810	12.337	12.448	2.127	0.981	1.473	2.945	-7.743	0.909	2.678	5.70	6.27	2.94999	14.11742	12.41712	12.33726	0.647280

# ANEXO (18). Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE  
SE

Ho (m) 3 T (s) 5,8 Lo (m) 52,52 Co 9,06 θ<sub>o</sub> -35,00

Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>sh</sub>	H <sub>sh</sub> (m)	θ <sub>i</sub>	K <sub>r</sub>	H <sub>sh+rr</sub> (m)	H/h	H/h	L1	L50	L promedio	L	% de error
7.0	49.70	A.P	0.946	0.94627	52.522	52.522	9.055	0.500	1.000	3.000	-34.999	1.000	3.000	0.06	0.06	52.52175	52.52175	52.52175	52.52175	0.000000
6.0	47.60	A.P	0.906	0.90630	52.521	52.522	9.055	0.500	1.000	3.000	-34.999	1.000	3.000	0.06	0.06	52.52128	52.52128	52.52128	52.52128	0.000000
5.0	45.70	A.P	0.870	0.87013	52.521	52.522	9.055	0.500	1.000	2.999	-34.999	1.000	2.999	0.07	0.07	52.52059	52.52059	52.52059	52.52059	0.000000
4.0	25.30	transición	0.482	0.48391	52.283	52.399	9.014	0.514	0.989	2.966	-34.817	0.999	2.963	0.12	0.12	52.27616	52.28288	52.28288	52.28288	0.000000
3.0	14.90	transición	0.284	0.29751	50.082	51.057	8.635	0.589	0.944	2.811	-33.166	0.989	2.800	0.19	0.19	49.63161	50.08191	50.08191	50.08191	0.000000
2.0	14.20	transición	0.270	0.28570	49.702	50.794	8.569	0.599	0.939	2.817	-32.873	0.988	2.782	0.20	0.20	49.12161	49.70195	49.70195	49.70195	0.000000
1.050	13.40	transición	0.256	0.27234	49.203	50.436	8.483	0.612	0.934	2.802	-32.502	0.986	2.762	0.21	0.21	48.43213	49.20265	49.20265	49.20265	0.000000
1.000	12.00	transición	0.228	0.24930	48.134	49.627	8.299	0.637	0.926	2.777	-31.712	0.981	2.725	0.23	0.23	46.89189	48.13438	48.13438	48.13438	0.000000
0.950	10.40	transición	0.198	0.22344	46.545	48.327	8.025	0.670	0.918	2.753	-30.551	0.975	2.685	0.26	0.26	44.46716	46.54509	46.54509	46.54509	0.000000
0.900	8.60	transición	0.164	0.19476	44.158	46.191	7.613	0.713	0.913	2.739	-28.831	0.967	2.649	0.31	0.32	40.62239	44.15772	44.15772	44.15772	0.000000
0.850	7.20	transición	0.137	0.17251	41.737	43.847	7.196	0.751	0.915	2.745	-27.116	0.959	2.634	0.37	0.38	36.60500	41.73673	41.73673	41.73673	0.000000
0.800	6.00	transición	0.114	0.15323	39.156	41.207	6.751	0.787	0.923	2.770	-25.316	0.952	2.637	0.44	0.46	32.32899	39.15635	39.15635	39.15635	0.000000
0.750	4.90	transición	0.093	0.13511	36.267	38.134	6.253	0.822	0.939	2.816	-23.332	0.945	2.660	0.54	0.57	27.68682	36.26693	36.26693	36.26693	0.000000
0.700	4.20	transición	0.080	0.12317	34.098	35.778	5.879	0.845	0.956	2.864	-21.862	0.939	2.691	0.64	0.68	24.37220	34.09799	34.09799	34.09799	0.000000
0.650	3.40	transición	0.065	0.10892	31.216	32.619	5.382	0.872	0.982	2.946	-19.932	0.933	2.750	0.81	0.87	20.25784	31.21623	31.21622	31.21622	0.000003
0.600	3.10	transición	0.059	0.10333	30.000	31.282	5.172	0.883	0.996	2.987	-19.124	0.931	2.781	0.90	0.96	18.63148	29.99970	29.99970	29.99970	0.000013
0.550	2.60	A.P.P	0.050	0.09363	27.768	28.834	4.788	0.901	1.025	3.074	-17.652	0.927	2.850	1.10	1.18	15.82910	27.76807	27.76777	27.76781	0.000115
0.500	2.20	A.P.P	0.042	0.08541	25.759	26.640	4.441	0.916	1.055	3.166	-16.338	0.924	2.925	1.33	1.44	13.51246	25.76038	25.75866	25.75882	0.000615
0.450	2.00	A.P.P	0.038	0.08109	24.663	25.450	4.252	0.923	1.074	3.222	-15.625	0.922	2.972	1.49	1.61	12.33195	24.66684	24.66275	24.66309	0.001384
0.400	1.70	A.P.P	0.032	0.07430	22.881	23.525	3.945	0.934	1.108	3.325	-14.470	0.920	3.059	1.80	1.96	10.53655	22.89430	22.87963	22.88066	0.004503
0.350	1.40	A.P.P	0.027	0.06791	20.893	21.385	3.602	0.945	1.153	3.459	-13.189	0.917	3.173	2.27	2.47	8.71513	20.99110	20.99394	20.99379	0.013779
0.300	1.30	A.P.P	0.025	0.06444	20.175	20.630	3.478	0.949	1.171	3.513	-12.728	0.916	3.219	2.48	2.70	8.10292	20.24685	20.17056	20.17451	0.019577
0.250	1.10	A.P.P	0.021	0.05903	18.634	18.998	3.213	0.957	1.214	3.641	-11.741	0.915	3.330	3.03	3.31	6.87188	18.79640	18.62720	18.63412	0.037140
0.200	1.00	A.P.P	0.019	0.05617	17.803	18.123	3.070	0.961	1.239	3.717	-11.211	0.914	3.397	3.40	3.72	6.25338	18.04477	17.79469	17.80328	0.048280
0.150	0.90	A.P.P	0.017	0.05318	16.924	17.201	2.918	0.965	1.268	3.805	-10.651	0.913	3.474	3.86	4.23	5.63312	17.28063	16.91438	16.92415	0.057707
0.100	0.85	A.P.P	0.016	0.05163	16.464	16.720	2.839	0.967	1.285	3.854	-10.358	0.913	3.517	4.14	4.53	5.32238	16.89649	16.45428	16.46407	0.059415
0.098	0.84	A.P.P	0.016	0.05131	16.370	16.622	2.822	0.967	1.288	3.864	-10.298	0.912	3.526	4.20	4.60	5.26018	16.81963	16.36055	16.37026	0.059296
0.095	0.83	A.P.P	0.016	0.05100	16.276	16.523	2.806	0.967	1.291	3.874	-10.238	0.912	3.536	4.26	4.67	5.19797	16.74279	16.26624	16.27584	0.058978
0.093	0.82	A.P.P	0.016	0.05068	16.181	16.424	2.790	0.968	1.295	3.885	-10.178	0.912	3.544	4.32	4.74	5.13575	16.66598	16.17133	16.18078	0.058436
0.090	0.81	A.P.P	0.015	0.05036	16.085	16.324	2.773	0.968	1.299	3.896	-10.117	0.912	3.554	4.39	4.81	5.07351	16.58920	16.07581	16.08508	0.057645
0.088	0.80	A.P.P	0.015	0.05012	16.013	16.249	2.761	0.968	1.301	3.904	-10.071	0.912	3.561	4.44	4.86	5.02682	16.53165	16.00378	16.01288	0.056870
0.085	0.80	A.P.P	0.015	0.04987	15.940	16.173	2.748	0.969	1.304	3.912	-10.025	0.912	3.568	4.49	4.92	4.98013	16.47414	15.93140	15.94031	0.055925
0.083	0.79	A.P.P	0.015	0.04963	15.867	16.097	2.736	0.969	1.307	3.921	-9.979	0.912	3.576	4.54	4.98	4.93342	16.41667	15.85866	15.86736	0.054797
0.080	0.78	A.P.P	0.015	0.04939	15.794	16.021	2.723	0.969	1.310	3.929	-9.932	0.912	3.583	4.59	5.04	4.88671	16.35924	15.78558	15.79403	0.053470
0.078	0.77	A.P.P	0.015	0.04906	15.696	15.918	2.706	0.970	1.314	3.941	-9.870	0.912	3.593	4.67	5.12	4.82442	16.28275	15.68758	15.69564	0.051364
0.075	0.76	A.P.P	0.014	0.04873	15.597	15.815	2.689	0.970	1.317	3.952	-9.807	0.912	3.604	4.74	5.20	4.76211	16.20636	15.58894	15.59656	0.048835
0.073	0.75	A.P.P	0.014	0.04840	15.497	15.711	2.672	0.970	1.321	3.964	-9.743	0.912	3.614	4.82	5.29	4.69978	16.13009	15.48965	15.49675	0.045837
0.070	0.74	A.P.P	0.014	0.04806	15.396	15.607	2.655	0.971	1.325	3.976	-9.679	0.912	3.625	4.90	5.37	4.63745	16.05396	15.38970	15.39622	0.043232
0.068	0.73	A.P.P	0.014	0.04756	15.244	15.449	2.628	0.971	1.332	3.995	-9.593	0.911	3.641	5.02	5.51	4.54392	15.94095	15.23953	15.24401	0.039960
0.066	0.71	A.P.P	0.014	0.04705	15.090	15.289	2.602	0.972	1.338	4.014	-9.485	0.911	3.658	5.15	5.65	4.45036	15.82654	15.08584	15.09008	0.028108
0.063	0.70	A.P.P	0.013	0.04654	14.934	15.127	2.575	0.973	1.345	4.034	-9.386	0.911	3.676	5.29	5.80	4.35678	15.71347	14.93160	14.93437	0.018634
0.060	0.68	A.P.P	0.013	0.04602	14.777	14.964	2.548	0.973	1.351	4.054	-9.287	0.911	3.694	5.43	5.96	4.26317	15.60091	14.77579	14.77682	0.006971
0.058	0.66	A.P.P	0.013	0.04532	14.564	14.743	2.511	0.974	1.361	4.082	-9.151	0.911	3.718	5.63	6.18	4.13831	15.45173	14.56555	14.56379	0.012068
0.055	0.640	A.P.P	0.012	0.04461	14.347	14.519	2.474	0.975	1.370	4.111	-9.014	0.911	3.744	5.85	6.42	4.01340	15.30372	14.35241	14.34724	0.036026
0.053	0.62	A.P.P	0.012	0.04389	14.127	14.291	2.436	0.976	1.380	4.141	-8.875	0.911	3.771	6.08	6.68	3.88845	15.16703	14.13631	14.12700	0.065906
0.050	0.60	A.P.P	0.011	0.04316	13.903	14.059	2.397	0.976	1.391	4.173	-8.733	0.910	3.799	6.33	6.95	3.76345	15.01183	13.91721	13.90290	0.102903
0.048	0.58	A.P.P	0.011	0.04251	13.703	13.853	2.363	0.977	1.401	4.202	-8.607	0.910	3.824	6.57	7.21	3.65404	14.86151	13.72299	13.70350	0.142230
0.045	0.57	A.P.P	0.011	0.04185	13.501	13.644	2.328	0.978	1.411	4.232	-8.478	0.910	3.851	6.82	7.49	3.54460	14.76188	13.52640	13.50886	0.189226
0.043	0.55	A.P.P	0.010	0.04118	13.295	13.432	2.292	0.978	1.421	4.263	-8.348	0.910	3.879	7.08	7.79	3.43513	14.63913	13.32743	13.29483	0.245209
0.040	0.53	A.P.P	0.010	0.04050	13.085	13.216	2.256	0.979	1.432	4.295	-8.216	0.910	3.908	7.37	8.10	3.32563	14.51805	13.12604	13.08525	0.311724
0.038	0.50	A.P.P	0.010	0.03932	12.717	12.838	2.193	0.980	1.451	4.354	-7.983	0.909	3.960	7.92	8.71	3.13785	14.31473	12.77516	12.71722	0.455613
0.035	0.47	A.P.P	0.009	0.03810	12.337	12.448	2.127	0.981	1.473	4.418	-7.743	0.909	4.017	8.55	9.40	2.94999	14.11742	12.41712	12.33726	0.647280
0.033	0.44	A.P.P	0.008	0.03684	1															

## ANEXO (19). Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE																				
S																				
	Ho (m)	T (s)	Lo (m)	Co	θ <sub>0</sub>															
	0,5	5,8	52,52	9,06	10,00															
Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>dh</sub>	H <sub>dm</sub> (m)	θ <sub>i</sub>	K <sub>r</sub>	H <sub>dmr</sub> (m)	H/h	H/h	L1	L50	L promedio	L	% de error
7,0	49,70	A.P	0,946	0,94627	52,522	52,522	9,055	0,500	1,000	0,500	10,000	1,000	0,500	0,01	0,01	52,52175	52,52175	52,52175	52,52175	0,00000
6,0	47,60	A.P	0,906	0,90630	52,521	52,522	9,055	0,500	1,000	0,500	10,000	1,000	0,500	0,01	0,01	52,52128	52,52128	52,52128	52,52128	0,00000
5,0	45,70	A.P	0,870	0,87013	52,521	52,522	9,055	0,500	1,000	0,500	10,000	1,000	0,500	0,01	0,01	52,52059	52,52059	52,52059	52,52059	0,00000
4,0	25,30	transición	0,482	0,48391	52,283	52,399	9,014	0,514	0,989	0,494	9,954	1,000	0,494	0,02	0,02	52,27616	52,28288	52,28288	52,28288	0,00000
3,0	14,90	transición	0,284	0,29751	50,082	51,057	8,635	0,589	0,944	0,472	9,531	0,999	0,471	0,03	0,03	49,63161	50,08191	50,08191	50,08191	0,00000
2,0	14,20	transición	0,270	0,28570	49,702	50,794	8,569	0,599	0,939	0,470	9,458	0,999	0,469	0,03	0,03	49,12161	49,70195	49,70195	49,70195	0,00000
1,050	13,40	transición	0,255	0,27234	49,203	50,436	8,483	0,612	0,934	0,467	9,362	0,999	0,467	0,03	0,03	48,43213	49,20265	49,20265	49,20265	0,00000
1,000	12,00	transición	0,228	0,24930	48,134	49,627	8,299	0,637	0,926	0,463	9,157	0,999	0,462	0,04	0,04	46,89189	48,13438	48,13438	48,13438	0,00000
0,950	10,40	transición	0,198	0,22344	46,545	48,327	8,025	0,670	0,918	0,459	8,852	0,998	0,458	0,04	0,04	44,46716	46,54509	46,54509	46,54509	0,00000
0,900	8,60	transición	0,164	0,19476	44,158	46,191	7,613	0,713	0,913	0,457	8,395	0,998	0,456	0,05	0,05	40,62239	44,15772	44,15772	44,15772	0,00000
0,850	7,20	transición	0,137	0,17251	41,737	43,847	7,196	0,751	0,915	0,458	7,931	0,997	0,456	0,06	0,06	36,60500	41,73673	41,73673	41,73673	0,00000
0,800	6,00	transición	0,114	0,15323	39,156	41,207	6,751	0,787	0,923	0,462	7,438	0,997	0,460	0,08	0,08	32,32899	39,15635	39,15635	39,15635	0,00000
0,750	4,90	transición	0,093	0,13511	36,267	38,134	6,253	0,822	0,939	0,469	6,887	0,996	0,468	0,10	0,10	27,68682	36,26693	36,26693	36,26693	0,00000
0,700	4,20	transición	0,080	0,12317	34,098	35,778	5,879	0,845	0,955	0,477	6,473	0,996	0,475	0,11	0,11	24,37220	34,09799	34,09799	34,09799	0,00000
0,650	3,40	transición	0,065	0,10892	31,216	32,619	5,382	0,872	0,982	0,491	5,924	0,995	0,489	0,14	0,14	20,25784	31,21622	31,21622	31,21622	0,00003
0,600	3,10	A.P.P	0,059	0,10333	30,000	31,282	5,172	0,883	0,996	0,498	5,692	0,995	0,495	0,16	0,16	18,63148	29,99970	29,99967	29,99968	0,00013
0,550	2,60	A.P.P	0,050	0,09363	27,768	28,834	4,788	0,901	1,025	0,512	5,267	0,994	0,509	0,20	0,20	15,82910	27,76807	27,76807	27,76811	0,00015
0,500	2,20	A.P.P	0,042	0,08541	25,759	26,640	4,441	0,916	1,055	0,528	4,885	0,994	0,525	0,24	0,24	13,51246	25,76038	25,76866	25,76882	0,00015
0,450	2,00	A.P.P	0,038	0,08109	24,663	25,450	4,252	0,923	1,074	0,537	4,677	0,994	0,534	0,27	0,27	12,33195	24,66684	24,66275	24,66309	0,001384
0,400	1,70	A.P.P	0,032	0,07430	22,881	23,525	3,945	0,934	1,108	0,554	4,398	0,994	0,551	0,32	0,33	10,53655	22,89430	22,87963	22,88066	0,004503
0,350	1,40	A.P.P	0,027	0,06701	20,893	21,395	3,602	0,945	1,153	0,577	3,961	0,994	0,573	0,41	0,41	8,71513	20,94100	20,89016	20,89304	0,013779
0,300	1,30	A.P.P	0,025	0,06444	20,175	20,630	3,478	0,949	1,171	0,586	3,824	0,993	0,582	0,45	0,45	8,10292	20,24685	20,17056	20,17451	0,019577
0,250	1,10	A.P.P	0,021	0,05903	18,634	18,998	3,213	0,957	1,214	0,607	3,532	0,993	0,603	0,55	0,55	6,87188	18,79640	18,62720	18,63412	0,037140
0,200	1,00	A.P.P	0,019	0,05617	17,803	18,123	3,070	0,961	1,239	0,620	3,374	0,993	0,615	0,62	0,62	6,25338	18,04447	17,79469	17,80328	0,048280
0,150	0,90	A.P.P	0,017	0,05318	16,924	17,201	2,918	0,965	1,268	0,634	3,208	0,993	0,630	0,70	0,70	5,63312	17,28063	16,91438	16,92415	0,057707
0,100	0,85	A.P.P	0,016	0,05163	16,464	16,720	2,839	0,967	1,285	0,642	3,120	0,993	0,638	0,75	0,75	5,32238	16,89649	16,45428	16,46407	0,059415
0,098	0,84	A.P.P	0,016	0,05131	16,370	16,622	2,822	0,967	1,288	0,644	3,103	0,993	0,640	0,76	0,77	5,26018	16,81963	16,36055	16,37026	0,059296
0,095	0,83	A.P.P	0,016	0,05100	16,276	16,523	2,806	0,967	1,291	0,646	3,085	0,993	0,641	0,77	0,78	5,19797	16,74279	16,26624	16,27584	0,058978
0,093	0,82	A.P.P	0,016	0,05068	16,181	16,424	2,790	0,968	1,295	0,648	3,067	0,993	0,643	0,78	0,79	5,13575	16,66598	16,17133	16,18078	0,058436
0,090	0,81	A.P.P	0,015	0,05036	16,085	16,324	2,773	0,968	1,299	0,649	3,048	0,993	0,645	0,80	0,80	5,07351	16,58920	16,07581	16,08508	0,057645
0,088	0,80	A.P.P	0,015	0,05012	16,013	16,249	2,761	0,968	1,301	0,651	3,035	0,993	0,646	0,81	0,81	5,02682	16,51365	16,00378	16,01288	0,056870
0,085	0,80	A.P.P	0,015	0,04987	15,940	16,173	2,748	0,969	1,304	0,652	3,021	0,993	0,648	0,81	0,82	4,98013	16,47414	15,93140	15,94031	0,055925
0,083	0,79	A.P.P	0,015	0,04963	15,867	16,097	2,736	0,969	1,307	0,653	3,007	0,993	0,649	0,82	0,83	4,93342	16,41667	15,88566	15,88736	0,054797
0,080	0,78	A.P.P	0,015	0,04939	15,794	16,021	2,723	0,969	1,310	0,655	2,993	0,993	0,650	0,83	0,84	4,88671	16,35924	15,78558	15,79403	0,053470
0,078	0,77	A.P.P	0,015	0,04906	15,696	15,918	2,706	0,970	1,314	0,657	2,975	0,993	0,652	0,85	0,85	4,84242	16,28275	15,68758	15,69654	0,051364
0,075	0,76	A.P.P	0,014	0,04873	15,597	15,815	2,689	0,970	1,317	0,659	2,956	0,993	0,654	0,86	0,87	4,76211	16,20636	15,58994	15,59656	0,048835
0,073	0,75	A.P.P	0,014	0,04840	15,497	15,711	2,672	0,970	1,321	0,661	2,937	0,993	0,656	0,87	0,88	4,69978	16,13009	15,48965	15,49675	0,045837
0,070	0,74	A.P.P	0,014	0,04806	15,396	15,607	2,655	0,971	1,325	0,663	2,918	0,993	0,658	0,89	0,90	4,63745	16,05396	15,39970	15,39622	0,042322
0,068	0,73	A.P.P	0,014	0,04766	15,244	15,449	2,628	0,971	1,332	0,666	2,899	0,993	0,661	0,91	0,92	4,54392	15,94005	15,28653	15,24401	0,035960
0,065	0,71	A.P.P	0,014	0,04705	15,090	15,289	2,602	0,972	1,338	0,669	2,860	0,993	0,664	0,94	0,94	4,45036	15,82654	15,08584	15,09008	0,028108
0,063	0,70	A.P.P	0,013	0,04654	14,934	15,127	2,575	0,973	1,345	0,672	2,830	0,993	0,668	0,96	0,97	4,35678	15,71347	14,93160	14,93437	0,018534
0,060	0,68	A.P.P	0,013	0,04602	14,777	14,964	2,548	0,973	1,351	0,676	2,800	0,993	0,671	0,99	0,99	4,26317	15,60091	14,77579	14,77682	0,006971
0,058	0,66	A.P.P	0,013	0,04532	14,664	14,743	2,511	0,974	1,361	0,680	2,760	0,993	0,676	1,02	1,03	4,13831	15,45173	14,66565	14,66379	0,012068
0,055	0,640	A.P.P	0,012	0,04461	14,347	14,519	2,474	0,975	1,370	0,685	2,719	0,993	0,680	1,06	1,07	4,01340	15,30372	14,35241	14,34724	0,036026
0,053	0,62	A.P.P	0,012	0,04389	14,127	14,291	2,436	0,976	1,380	0,690	2,677	0,993	0,685	1,11	1,11	3,88845	15,15703	14,13631	14,12700	0,065906
0,050	0,60	A.P.P	0,011	0,04316	13,903	14,059	2,397	0,976	1,391	0,695	2,635	0,993	0,691	1,15	1,16	3,76345	15,01183	13,91721	13,90290	0,102903
0,048	0,58	A.P.P	0,011	0,04251	13,703	13,853	2,363	0,977	1,401	0,700	2,597	0,993	0,695	1,19	1,20	3,65404	14,86615	13,72299	13,70350	0,142230
0,045	0,57	A.P.P	0,011	0,04185	13,501	13,644	2,328	0,978	1,411	0,705	2,558	0,993	0,700	1,24	1,25	3,54460	14,76188	13,52640	13,50086	0,189226
0,043	0,55	A.P.P	0,010	0,04118	13,295	13,432	2,292	0,978	1,421	0,710	2,519	0,993	0,705	1,29	1,30	3,43513	14,63913	13,32743	13,29483	0,245209
0,040	0,53	A.P.P	0,010	0,04050	13,085	13,216	2,256	0,979	1,432	0,716	2,480	0,993	0,711	1,34	1,35	3,32563	14,51805	13,12603	13,08525	0,311724
0,038	0,50	A.P.P	0,010	0,03932	12,717	12,838	2,193	0,980	1,451	0,728	2,410	0,993	0,721	1,44	1,45	3,13785	14,31473	12,77616	12,71722	0,455613
0,035	0,47	A.P.P	0,009	0,03810	12,337	12,448	2,127	0,981	1,473	0,736	2,338	0,993	0,731	1,56	1,57	2,94999	14,11742	12,41712	12,33725	0,647983
0,033	0,44	A.P.P	0,008	0,03684																

**ANEXO (20).** Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE																				
S																				
Ho (m)	T (s)	Lo (m)	Co	θ <sub>0</sub>																
1	5,8	52,52	9,06	10,00																
Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>th</sub>	H <sub>th</sub> (m)	θ <sub>i</sub>	K <sub>r</sub>	H <sub>th</sub> (m)	H/h	H/h	L1	L50	L promedio	L	% de error
7,0	49,70	A.P	0,946	0,94627	52,522	52,522	9,055	0,500	1,000	1,000	10,000	1,000	1,000	0,02	0,02	52,52175	52,52175	52,52175	52,52175	0,00000
6,0	47,60	A.P	0,906	0,90630	52,521	52,522	9,055	0,500	1,000	1,000	10,000	1,000	1,000	0,02	0,02	52,52128	52,52128	52,52128	52,52128	0,00000
5,0	45,70	A.P	0,870	0,87013	52,521	52,522	9,055	0,500	1,000	1,000	10,000	1,000	1,000	0,02	0,02	52,52059	52,52059	52,52059	52,52059	0,00000
4,0	25,30	transición	0,482	0,48391	52,283	52,399	9,014	0,514	0,989	0,989	9,954	1,000	0,989	0,04	0,04	52,27616	52,28288	52,28288	52,28288	0,00000
3,0	14,90	transición	0,284	0,29751	50,082	51,057	8,635	0,589	0,944	0,944	9,531	0,999	0,943	0,06	0,06	49,63161	50,08191	50,08191	50,08191	0,00000
2,0	14,20	transición	0,270	0,28570	49,702	50,794	8,569	0,599	0,939	0,939	9,458	0,999	0,938	0,07	0,07	49,12161	49,70195	49,70195	49,70195	0,00000
1,050	13,40	transición	0,255	0,27234	49,203	50,436	8,483	0,612	0,934	0,934	9,362	0,999	0,933	0,07	0,07	48,43213	49,20265	49,20265	49,20265	0,00000
1,000	12,00	transición	0,228	0,24930	48,134	49,627	8,299	0,637	0,926	0,926	9,157	0,999	0,924	0,08	0,08	46,89189	48,13438	48,13438	48,13438	0,00000
0,950	10,40	transición	0,198	0,22344	46,545	48,327	8,025	0,670	0,918	0,918	8,852	0,998	0,916	0,09	0,09	44,46716	46,54509	46,54509	46,54509	0,00000
0,900	8,60	transición	0,164	0,19476	44,158	46,191	7,613	0,713	0,913	0,913	8,395	0,998	0,911	0,11	0,11	40,62239	44,15772	44,15772	44,15772	0,00000
0,850	7,20	transición	0,137	0,17251	41,737	43,847	7,196	0,751	0,915	0,915	7,931	0,997	0,913	0,13	0,13	36,60500	41,73673	41,73673	41,73673	0,00000
0,800	6,00	transición	0,114	0,15323	39,156	41,207	6,751	0,787	0,923	0,923	7,438	0,997	0,920	0,15	0,15	32,32899	39,15635	39,15635	39,15635	0,00000
0,750	4,90	transición	0,093	0,13511	36,267	38,134	6,253	0,822	0,939	0,939	6,887	0,996	0,935	0,19	0,19	27,68682	36,26693	36,26693	36,26693	0,00000
0,700	4,20	transición	0,080	0,12317	34,098	35,778	5,879	0,845	0,955	0,955	6,473	0,996	0,951	0,23	0,23	24,37220	34,09799	34,09799	34,09799	0,00000
0,650	3,40	transición	0,065	0,10892	31,216	32,619	5,382	0,872	0,982	0,982	5,924	0,995	0,977	0,29	0,29	20,25794	31,21623	31,21622	31,21622	0,00003
0,600	3,10	transición	0,059	0,10333	30,000	31,282	5,172	0,883	0,996	0,996	5,632	0,995	0,991	0,32	0,32	18,63148	29,99970	29,99968	29,99968	0,00013
0,550	2,80	A.P.P	0,050	0,09363	27,768	28,834	4,788	0,901	1,025	1,025	5,287	0,994	1,019	0,39	0,39	15,82910	27,76807	27,76777	27,76777	0,00115
0,500	2,20	A.P.P	0,042	0,08541	25,759	26,640	4,441	0,916	1,055	1,055	4,885	0,994	1,049	0,48	0,48	13,51246	25,76038	25,75866	25,75862	0,00015
0,450	2,00	A.P.P	0,038	0,08109	24,663	25,450	4,252	0,923	1,074	1,074	4,677	0,994	1,058	0,53	0,54	12,33195	24,66284	24,66275	24,66309	0,001384
0,400	1,70	A.P.P	0,032	0,07430	22,881	23,525	3,945	0,934	1,108	1,108	4,338	0,994	1,102	0,65	0,65	10,53655	22,89430	22,87963	22,88066	0,004503
0,350	1,40	A.P.P	0,027	0,06701	20,893	21,395	3,602	0,945	1,153	1,153	3,961	0,994	1,146	0,82	0,82	8,71513	20,94100	20,89016	20,89304	0,013779
0,300	1,30	A.P.P	0,025	0,06444	20,176	20,630	3,478	0,949	1,171	1,171	3,824	0,993	1,163	0,89	0,90	8,10292	20,24685	20,17056	20,17451	0,019577
0,250	1,10	A.P.P	0,021	0,05903	18,634	18,998	3,213	0,957	1,214	1,214	3,532	0,993	1,205	1,10	1,10	6,87188	18,79640	18,62720	18,63412	0,037140
0,200	1,00	A.P.P	0,019	0,05617	17,803	18,123	3,070	0,961	1,239	1,239	3,374	0,993	1,231	1,23	1,24	6,25338	18,04447	17,79469	17,80328	0,048280
0,150	0,90	A.P.P	0,017	0,05318	16,924	17,201	2,918	0,965	1,268	1,268	3,208	0,993	1,260	1,40	1,41	5,63312	17,28063	16,91438	16,92415	0,057707
0,100	0,85	A.P.P	0,016	0,05163	16,464	16,720	2,839	0,967	1,285	1,285	3,120	0,993	1,276	1,50	1,51	5,32238	16,89649	16,45428	16,46407	0,059415
0,098	0,84	A.P.P	0,016	0,05131	16,370	16,622	2,822	0,967	1,288	1,288	3,103	0,993	1,279	1,52	1,53	5,26018	16,81963	16,36055	16,37026	0,059296
0,095	0,83	A.P.P	0,016	0,05100	16,276	16,523	2,806	0,967	1,291	1,291	3,085	0,993	1,283	1,55	1,56	5,19797	16,74279	16,26624	16,27684	0,059878
0,093	0,82	A.P.P	0,016	0,05068	16,181	16,424	2,790	0,968	1,295	1,295	3,067	0,993	1,286	1,57	1,58	5,13575	16,66598	16,17133	16,18078	0,058436
0,090	0,81	A.P.P	0,015	0,05036	16,085	16,324	2,773	0,968	1,299	1,299	3,048	0,993	1,290	1,59	1,60	5,07351	16,58920	16,07581	16,08508	0,057645
0,088	0,80	A.P.P	0,015	0,05012	16,013	16,249	2,761	0,968	1,301	1,301	3,035	0,993	1,292	1,61	1,62	5,02682	16,53165	16,03078	16,01288	0,056870
0,085	0,80	A.P.P	0,015	0,04987	15,940	16,173	2,748	0,969	1,304	1,304	3,021	0,993	1,295	1,63	1,64	4,98013	16,47414	15,93140	15,94031	0,056925
0,083	0,79	A.P.P	0,015	0,04963	15,867	16,097	2,736	0,969	1,307	1,307	3,007	0,993	1,298	1,65	1,66	4,93342	16,41667	15,85866	15,86736	0,056479
0,080	0,78	A.P.P	0,015	0,04939	15,794	16,021	2,723	0,969	1,310	1,310	2,993	0,993	1,301	1,67	1,68	4,88671	16,35924	15,78558	15,79403	0,056340
0,078	0,77	A.P.P	0,015	0,04906	15,696	15,918	2,706	0,970	1,314	1,314	2,975	0,993	1,304	1,69	1,71	4,84042	16,29775	15,68756	15,69564	0,0561364
0,075	0,76	A.P.P	0,014	0,04873	15,597	15,815	2,689	0,970	1,317	1,317	2,956	0,993	1,306	1,72	1,73	4,79421	16,23636	15,58894	15,59656	0,048835
0,073	0,75	A.P.P	0,014	0,04840	15,497	15,711	2,672	0,970	1,321	1,321	2,937	0,993	1,312	1,75	1,76	4,74797	16,17509	15,48965	15,49675	0,048537
0,070	0,74	A.P.P	0,014	0,04806	15,396	15,607	2,655	0,971	1,325	1,325	2,918	0,993	1,316	1,78	1,79	4,70174	16,11396	15,39970	15,39622	0,048232
0,068	0,73	A.P.P	0,014	0,04776	15,244	15,449	2,628	0,971	1,332	1,332	2,899	0,993	1,322	1,82	1,84	4,65592	15,94005	15,23853	15,24401	0,039690
0,065	0,71	A.P.P	0,014	0,04705	15,090	15,289	2,602	0,972	1,338	1,338	2,860	0,993	1,329	1,87	1,88	4,60936	15,82654	15,08584	15,09008	0,028108
0,063	0,70	A.P.P	0,013	0,04654	14,934	15,127	2,575	0,973	1,345	1,345	2,830	0,993	1,335	1,92	1,93	4,56278	15,71347	14,93160	14,93437	0,018534
0,060	0,68	A.P.P	0,013	0,04602	14,777	14,964	2,548	0,973	1,351	1,351	2,800	0,993	1,342	1,97	1,99	4,51617	15,60091	14,77579	14,77682	0,006971
0,058	0,66	A.P.P	0,013	0,04532	14,564	14,743	2,511	0,974	1,361	1,361	2,760	0,993	1,351	2,05	2,06	4,46951	15,48713	14,56555	14,56379	0,012068
0,055	0,640	A.P.P	0,012	0,04461	14,347	14,519	2,474	0,975	1,370	1,370	2,719	0,993	1,361	2,13	2,14	4,42284	15,30372	14,35241	14,34724	0,036026
0,053	0,62	A.P.P	0,012	0,04389	14,127	14,291	2,436	0,976	1,380	1,380	2,677	0,993	1,371	2,21	2,23	4,37617	15,15703	14,13631	14,12700	0,065906
0,050	0,60	A.P.P	0,011	0,04316	13,903	14,059	2,397	0,976	1,391	1,391	2,635	0,993	1,381	2,30	2,32	4,32950	15,01183	13,91721	13,90290	0,029093
0,048	0,58	A.P.P	0,011	0,04251	13,703	13,853	2,363	0,977	1,401	1,401	2,597	0,993	1,391	2,39	2,40	4,28283	14,86615	13,72299	13,70350	0,014230
0,045	0,57	A.P.P	0,011	0,04185	13,501	13,644	2,328	0,978	1,411	1,411	2,558	0,993	1,400	2,48	2,50	4,23616	14,71688	13,52460	13,50086	0,0189226
0,043	0,55	A.P.P	0,010	0,04118	13,295	13,432	2,292	0,978	1,421	1,421	2,519	0,993	1,411	2,58	2,60	4,18950	14,56913	13,32743	13,29483	0,0245209
0,040	0,53	A.P.P	0,010	0,04050	13,085	13,216	2,256	0,979	1,432	1,432	2,480	0,993	1,421	2,68	2,70	4,14283	14,42185	13,12604	13,08525	0,0311724
0,038	0,50	A.P.P	0,010	0,03982	12,717	12,838	2,193	0,980	1,451	1,451	2,410	0,993	1,441	2,88	2,90	4,09616	14,27457	12,71722	12,71722	0,0455613
0,035	0,47	A.P.P	0,009	0,03810	12,337	12,448	2,127	0,981	1,473	1,473	2,338	0,993	1,462	3,11	3,13	4,04950	14,12729	12,41172	12,33725	0,0472980
0,033	0,44	A.P.P	0,008	0,03684	11															

## ANEXO (21). Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE S

Ho (m) 2 T (s) 5,8 Lo (m) 52,52 Co 9,06 θ<sub>0</sub> 10,00

Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>sh</sub>	H <sub>sh</sub> (m)	θ <sub>r</sub>	K <sub>r</sub>	H <sub>sh,r</sub> (m)	H <sub>r</sub> /h	H/h	L1	L50	L promedio	L	% de error
7.0	49.70	A.P	0.946	0.94627	52.522	52.522	9.056	0.500	1.000	2.000	10.000	1.000	2.000	0.04	0.04	52.52175	52.52175	52.52175	52.52175	0.000000
6.0	47.60	A.P	0.906	0.90630	52.521	52.522	9.055	0.500	1.000	2.000	10.000	1.000	2.000	0.04	0.04	52.52128	52.52128	52.52128	52.52128	0.000000
5.0	45.70	A.P	0.870	0.87013	52.521	52.522	9.055	0.500	1.000	2.000	10.000	1.000	2.000	0.04	0.04	52.52059	52.52059	52.52059	52.52059	0.000000
4.0	25.30	transición	0.462	0.45391	52.283	52.399	9.014	0.514	0.989	1.977	9.954	1.000	1.977	0.08	0.08	52.27616	52.28288	52.28288	52.28288	0.000000
3.0	14.90	transición	0.284	0.29751	50.082	51.057	8.635	0.589	0.944	1.887	9.531	0.999	1.886	0.13	0.13	49.63161	50.08191	50.08191	50.08191	0.000000
2.0	14.20	transición	0.270	0.28570	49.702	50.794	8.569	0.599	0.939	1.878	9.458	0.999	1.877	0.13	0.13	49.12161	49.70195	49.70195	49.70195	0.000000
1.050	13.40	transición	0.255	0.27234	49.203	50.436	8.483	0.612	0.934	1.868	9.362	0.999	1.866	0.14	0.14	48.43213	49.20265	49.20265	49.20265	0.000000
1.000	12.00	transición	0.228	0.24930	48.134	49.627	8.299	0.637	0.926	1.851	9.157	0.999	1.849	0.15	0.15	46.89189	48.13438	48.13438	48.13438	0.000000
0.950	10.40	transición	0.198	0.22344	46.545	48.327	8.025	0.670	0.918	1.835	8.852	0.998	1.832	0.18	0.18	44.46716	46.54509	46.54509	46.54509	0.000000
0.900	8.60	transición	0.164	0.19476	44.158	46.191	7.613	0.713	0.913	1.826	8.395	0.998	1.822	0.21	0.21	40.62239	44.15772	44.15772	44.15772	0.000000
0.850	7.20	transición	0.137	0.17251	41.737	43.847	7.196	0.751	0.915	1.830	7.931	0.997	1.825	0.25	0.25	36.60500	41.73673	41.73673	41.73673	0.000000
0.800	6.00	transición	0.114	0.15323	39.156	41.207	6.751	0.787	0.923	1.846	7.438	0.997	1.840	0.31	0.31	32.32899	39.15635	39.15635	39.15635	0.000000
0.750	4.90	transición	0.093	0.13511	36.267	38.134	6.253	0.822	0.939	1.878	6.887	0.996	1.870	0.38	0.38	27.68682	36.26693	36.26693	36.26693	0.000000
0.700	4.20	transición	0.080	0.12317	34.098	36.778	5.879	0.845	0.955	1.910	6.473	0.996	1.901	0.45	0.45	24.37220	34.09799	34.09799	34.09799	0.000000
0.650	3.40	transición	0.065	0.10892	31.216	32.619	5.382	0.872	0.982	1.964	5.924	0.995	1.954	0.57	0.58	20.25784	31.21623	31.21622	31.21622	0.000003
0.600	3.00	transición	0.059	0.10333	30.000	31.282	5.172	0.883	0.996	1.991	5.992	0.995	1.981	0.64	0.64	18.63148	29.99970	29.99967	29.99968	0.000013
0.550	2.60	A.P.P	0.050	0.09363	27.768	28.834	4.788	0.901	1.025	2.049	5.267	0.994	2.038	0.78	0.79	15.82910	27.76807	27.76771	27.76781	0.000115
0.500	2.20	A.P.P	0.042	0.08541	25.759	26.640	4.441	0.916	1.055	2.111	4.885	0.994	2.098	0.95	0.96	13.51246	25.76038	25.75866	25.75882	0.000615
0.450	2.00	A.P.P	0.038	0.08109	24.663	25.450	4.252	0.923	1.074	2.148	4.677	0.994	2.135	1.07	1.07	12.33195	24.66684	24.66275	24.66309	0.001384
0.400	1.70	A.P.P	0.032	0.07430	22.881	23.525	3.945	0.934	1.108	2.217	4.339	0.994	2.203	1.30	1.30	10.53655	22.89430	22.87963	22.88066	0.004593
0.350	1.40	A.P.P	0.027	0.06701	20.893	21.385	3.602	0.945	1.153	2.306	3.951	0.994	2.291	1.64	1.65	8.71513	20.89616	20.89304	20.89304	0.013779
0.300	1.30	A.P.P	0.025	0.06444	20.175	20.630	3.478	0.949	1.171	2.342	3.824	0.993	2.277	1.79	1.80	8.10292	20.24685	20.17056	20.17451	0.019577
0.250	1.10	A.P.P	0.021	0.05903	18.634	18.998	3.213	0.957	1.214	2.427	3.532	0.993	2.411	2.19	2.21	6.87188	18.79640	18.63412	18.63412	0.037140
0.200	1.00	A.P.P	0.019	0.05617	17.803	18.123	3.070	0.961	1.239	2.478	3.374	0.993	2.451	2.46	2.48	6.25338	18.04447	17.79469	17.80328	0.048280
0.150	0.90	A.P.P	0.017	0.05318	16.924	17.201	2.918	0.965	1.268	2.537	3.208	0.993	2.519	2.80	2.82	5.63312	17.28063	16.91438	16.92415	0.057707
0.100	0.85	A.P.P	0.016	0.05163	16.464	16.720	2.839	0.967	1.285	2.569	3.120	0.993	2.552	3.00	3.02	5.32238	16.89649	16.45428	16.46407	0.059416
0.098	0.84	A.P.P	0.016	0.05131	16.370	16.622	2.822	0.967	1.288	2.576	3.103	0.993	2.558	3.05	3.07	5.26018	16.81963	16.36055	16.37026	0.059296
0.095	0.83	A.P.P	0.016	0.05100	16.276	16.523	2.806	0.967	1.291	2.583	3.085	0.993	2.565	3.09	3.11	5.19797	16.74279	16.26624	16.27684	0.058978
0.093	0.82	A.P.P	0.016	0.05068	16.181	16.424	2.790	0.968	1.295	2.590	3.067	0.993	2.572	3.14	3.16	5.13575	16.66598	16.17133	16.18078	0.058436
0.090	0.81	A.P.P	0.015	0.05036	16.085	16.324	2.773	0.968	1.299	2.597	3.048	0.993	2.579	3.18	3.21	5.07351	16.58920	16.07581	16.08508	0.057645
0.088	0.80	A.P.P	0.015	0.05012	16.013	16.249	2.761	0.968	1.301	2.603	3.035	0.993	2.585	3.22	3.24	5.02682	16.53165	16.03218	16.01288	0.056870
0.085	0.80	A.P.P	0.015	0.04987	15.940	16.173	2.748	0.969	1.304	2.608	3.021	0.993	2.590	3.26	3.28	4.98013	16.47414	15.93140	15.94031	0.055925
0.083	0.79	A.P.P	0.015	0.04963	15.867	16.097	2.736	0.969	1.307	2.614	3.007	0.993	2.596	3.30	3.32	4.93342	16.41667	15.85866	15.86736	0.054797
0.080	0.78	A.P.P	0.015	0.04939	15.794	16.021	2.723	0.969	1.310	2.619	2.993	0.993	2.601	3.33	3.36	4.88671	16.35924	15.78558	15.79403	0.053470
0.078	0.77	A.P.P	0.015	0.04906	15.696	15.918	2.706	0.970	1.314	2.627	2.975	0.993	2.609	3.39	3.41	4.82442	16.28275	15.68758	15.69564	0.051364
0.075	0.76	A.P.P	0.014	0.04873	15.597	15.815	2.689	0.970	1.317	2.635	2.956	0.993	2.617	3.44	3.47	4.76211	16.20636	15.58894	15.59656	0.048835
0.073	0.75	A.P.P	0.014	0.04840	15.497	15.711	2.672	0.970	1.321	2.643	2.937	0.993	2.624	3.50	3.52	4.69978	16.13009	15.48965	15.49675	0.045937
0.070	0.74	A.P.P	0.014	0.04806	15.396	15.607	2.655	0.971	1.325	2.651	2.918	0.993	2.632	3.56	3.58	4.63745	16.05396	15.38970	15.39622	0.043222
0.068	0.73	A.P.P	0.014	0.04756	15.244	15.449	2.638	0.971	1.332	2.663	2.899	0.993	2.646	3.65	3.67	4.54392	15.94095	15.23853	15.24401	0.035960
0.065	0.71	A.P.P	0.014	0.04705	15.090	15.289	2.622	0.972	1.338	2.676	2.880	0.993	2.657	3.74	3.77	4.45036	15.82584	15.08588	15.09008	0.028108
0.063	0.70	A.P.P	0.013	0.04654	14.934	15.127	2.575	0.973	1.345	2.689	2.830	0.993	2.670	3.84	3.87	4.35678	15.71347	14.93160	14.93437	0.018534
0.060	0.68	A.P.P	0.013	0.04602	14.777	14.964	2.548	0.973	1.351	2.703	2.800	0.993	2.684	3.95	3.97	4.26317	15.60091	14.77579	14.77682	0.006971
0.058	0.66	A.P.P	0.013	0.04532	14.564	14.743	2.511	0.974	1.361	2.721	2.760	0.993	2.702	4.09	4.12	4.13831	15.45173	14.56555	14.56379	0.012068
0.055	0.640	A.P.P	0.012	0.04461	14.347	14.519	2.474	0.975	1.370	2.741	2.719	0.993	2.721	4.25	4.28	4.01340	15.30372	14.35241	14.34724	0.036026
0.053	0.62	A.P.P	0.012	0.04389	14.127	14.291	2.436	0.976	1.380	2.761	2.677	0.993	2.741	4.42	4.45	3.88845	15.15703	14.13631	14.12700	0.065906
0.050	0.60	A.P.P	0.011	0.04316	13.903	14.059	2.397	0.976	1.391	2.782	2.635	0.993	2.762	4.60	4.64	3.76345	15.01183	13.91721	13.90290	0.102903
0.048	0.58	A.P.P	0.011	0.04251	13.703	13.853	2.363	0.977	1.401	2.801	2.597	0.993	2.781	4.77	4.81	3.65404	14.86615	13.72299	13.70350	0.142230
0.045	0.57	A.P.P	0.011	0.04185	13.501	13.644	2.328	0.978	1.411	2.821	2.558	0.993	2.801	4.96	4.99	3.54460	14.76188	13.52640	13.50086	0.189226
0.043	0.55	A.P.P	0.010	0.04118	13.295	13.432	2.292	0.978	1.421	2.842	2.519	0.993	2.822	5.15	5.19	3.43513	14.63913	13.32743	13.29483	0.245209
0.040	0.53	A.P.P	0.010	0.04050	13.085	13.216	2.256	0.979	1.432	2.863	2.480	0.993	2.843	5.36	5.40	3.32653	14.51805	13.12604	13.08525	0.311724
0.038	0.50	A.P.P	0.010	0.03932	12.717	12.838	2.193	0.980	1.451	2.903	2.410	0.993	2.882	5.76	5.81	3.13785	14.31473	12.77516	12.71722	0.455613
0.035	0.47	A.P.P	0.009	0.03810	12.337	12.448	2.127	0.981	1.473	2.945	2.338	0.993	2.924	6.22	6.27	2.94999	14.11742	12.41172	12.33726	0.647280
0.033	0.44	A.P.P	0.008	0.03684	11.944	12.044	2.059													

## ANEXO (22). Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLEAJE  
S

Ho (m) 3 T (s) 5,8 Lo (m) 52,52 Co 9,06 θs 10,00

Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	Ksh	Hsh (m)	θr	Kr	Hshv (m)	H/h	H/h	L1	L50	L promedio	L	% de error
7,0	49,70	A.P	0,946	0,94627	52,522	52,522	9,055	0,500	1,000	3,000	10,000	1,000	3,000	0,06	0,06	52,52175	52,52175	52,52175	52,52175	0,000000
6,0	47,60	A.P	0,906	0,90630	52,521	52,522	9,055	0,500	1,000	3,000	10,000	1,000	3,000	0,06	0,06	52,52128	52,52128	52,52128	52,52128	0,000000
5,0	45,70	A.P	0,870	0,87013	52,521	52,522	9,055	0,500	1,000	2,999	10,000	1,000	2,999	0,07	0,07	52,52059	52,52059	52,52059	52,52059	0,000000
4,0	25,30	transición	0,482	0,48391	52,283	52,399	9,014	0,514	0,989	2,966	9,954	1,000	2,966	0,12	0,12	52,27616	52,28288	52,28288	52,28288	0,000000
3,0	14,90	transición	0,284	0,29751	50,082	51,057	8,635	0,589	0,944	2,831	9,531	0,999	2,829	0,19	0,19	49,63161	50,08191	50,08191	50,08191	0,000000
2,0	14,20	transición	0,270	0,28570	49,702	50,794	8,569	0,599	0,939	2,817	9,458	0,999	2,815	0,20	0,20	49,12161	49,70195	49,70195	49,70195	0,000000
1,050	13,40	transición	0,255	0,27234	49,203	50,436	8,483	0,612	0,934	2,802	9,362	0,999	2,799	0,21	0,21	48,43213	49,20265	49,20265	49,20265	0,000000
1,000	12,00	transición	0,228	0,24930	48,134	49,627	8,299	0,637	0,926	2,777	9,157	0,999	2,773	0,23	0,23	46,89189	48,13438	48,13438	48,13438	0,000000
0,950	10,40	transición	0,198	0,22344	46,545	48,327	8,025	0,670	0,918	2,753	8,852	0,998	2,748	0,26	0,26	44,46716	46,54509	46,54509	46,54509	0,000000
0,900	8,60	transición	0,164	0,19476	44,158	46,191	7,613	0,713	0,913	2,739	8,395	0,998	2,733	0,32	0,32	40,62239	44,15772	44,15772	44,15772	0,000000
0,850	7,20	transición	0,137	0,17251	41,737	43,847	7,196	0,751	0,915	2,745	7,931	0,997	2,738	0,38	0,38	36,60500	41,73673	41,73673	41,73673	0,000000
0,800	6,00	transición	0,114	0,15323	39,156	41,207	6,751	0,787	0,923	2,770	7,438	0,997	2,760	0,46	0,46	32,32899	39,15635	39,15635	39,15635	0,000000
0,750	4,90	transición	0,093	0,13511	36,267	38,134	6,253	0,822	0,939	2,816	6,887	0,996	2,805	0,57	0,57	27,68682	36,26693	36,26693	36,26693	0,000000
0,700	4,20	transición	0,080	0,12317	34,098	35,778	5,879	0,845	0,956	2,864	6,473	0,996	2,852	0,68	0,68	24,37220	34,09799	34,09799	34,09799	0,000000
0,650	3,40	transición	0,065	0,10892	31,216	32,619	5,382	0,872	0,982	2,946	5,924	0,995	2,931	0,86	0,87	20,26784	31,21623	31,21622	31,21622	0,000003
0,600	3,10	transición	0,059	0,10333	30,000	31,282	5,172	0,883	0,996	2,987	5,692	0,995	2,972	0,96	0,96	18,63148	29,99970	29,99967	29,99968	0,000013
0,550	2,60	A.P.P	0,050	0,09363	27,768	28,834	4,788	0,901	1,025	3,074	5,267	0,994	3,057	1,18	1,18	15,82910	27,76807	27,76777	27,76781	0,000115
0,500	2,20	A.P.P	0,042	0,08541	25,759	26,640	4,441	0,916	1,055	3,166	4,885	0,994	3,147	1,43	1,44	13,51246	25,76038	25,76666	25,75882	0,000615
0,450	2,00	A.P.P	0,038	0,08109	24,663	25,450	4,252	0,923	1,074	3,222	4,677	0,994	3,203	1,60	1,61	12,33195	24,66684	24,66275	24,66309	0,001384
0,400	1,70	A.P.P	0,032	0,07430	22,881	23,525	3,945	0,934	1,108	3,325	4,338	0,994	3,305	1,94	1,96	10,53655	22,89630	22,89663	22,89666	0,000450
0,350	1,40	A.P.P	0,027	0,06701	20,893	21,395	3,602	0,945	1,153	3,459	3,961	0,994	3,437	2,45	2,47	8,71153	20,94100	20,89016	20,89304	0,013779
0,300	1,30	A.P.P	0,025	0,06444	20,175	20,630	3,478	0,949	1,171	3,513	3,824	0,993	3,490	2,68	2,70	8,10292	20,24695	20,24695	20,24695	0,019977
0,250	1,10	A.P.P	0,021	0,05903	18,634	18,998	3,213	0,957	1,214	3,641	3,532	0,993	3,616	3,29	3,31	6,87198	18,79540	18,63270	18,63412	0,037140
0,200	1,00	A.P.P	0,019	0,05617	17,803	18,123	3,070	0,961	1,239	3,717	3,374	0,993	3,692	3,69	3,72	6,25338	18,04447	17,79469	17,80289	0,048280
0,150	0,90	A.P.P	0,017	0,05318	16,924	17,201	2,918	0,965	1,268	3,805	3,208	0,993	3,779	4,20	4,23	5,63312	17,28063	16,91438	16,92415	0,057707
0,100	0,85	A.P.P	0,016	0,05163	16,464	16,720	2,839	0,967	1,285	3,854	3,120	0,993	3,827	4,50	4,53	5,32238	16,89649	16,45428	16,46407	0,059415
0,098	0,84	A.P.P	0,016	0,05131	16,370	16,622	2,822	0,967	1,288	3,864	3,103	0,993	3,837	4,57	4,60	5,26018	16,81963	16,36055	16,37026	0,059296
0,095	0,83	A.P.P	0,016	0,05100	16,276	16,523	2,806	0,967	1,291	3,874	3,085	0,993	3,846	4,64	4,67	5,19797	16,74279	16,26624	16,27584	0,058978
0,093	0,82	A.P.P	0,016	0,05068	16,181	16,424	2,790	0,968	1,295	3,885	3,067	0,993	3,856	4,71	4,74	5,13575	16,66598	16,17133	16,18078	0,058436
0,090	0,81	A.P.P	0,015	0,05036	16,085	16,324	2,773	0,968	1,299	3,896	3,048	0,993	3,869	4,78	4,81	5,07351	16,58920	16,07581	16,08508	0,057645
0,088	0,80	A.P.P	0,015	0,05012	16,013	16,249	2,761	0,968	1,301	3,904	3,035	0,993	3,877	4,83	4,86	5,02682	16,53165	16,03718	16,04288	0,056870
0,085	0,80	A.P.P	0,015	0,04987	15,940	16,173	2,748	0,969	1,304	3,912	3,021	0,993	3,886	4,89	4,92	4,98013	16,47414	15,93140	15,94031	0,055925
0,083	0,79	A.P.P	0,015	0,04963	15,867	16,097	2,736	0,969	1,307	3,921	3,007	0,993	3,893	4,94	4,98	4,93342	16,41667	15,85866	15,86736	0,054797
0,080	0,78	A.P.P	0,015	0,04939	15,794	16,021	2,723	0,969	1,310	3,929	2,993	0,993	3,902	5,00	5,04	4,88671	16,35924	15,78558	15,79403	0,053470
0,078	0,77	A.P.P	0,015	0,04906	15,696	15,918	2,706	0,970	1,314	3,941	2,975	0,993	3,913	5,08	5,12	4,82442	16,28275	15,68756	15,69564	0,051364
0,075	0,76	A.P.P	0,014	0,04873	15,597	15,815	2,689	0,970	1,317	3,952	2,956	0,993	3,925	5,16	5,20	4,76211	16,20636	15,58894	15,59666	0,048835
0,073	0,75	A.P.P	0,014	0,04840	15,497	15,711	2,672	0,970	1,321	3,964	2,937	0,993	3,937	5,25	5,29	4,69978	16,13009	15,48965	15,49675	0,046937
0,070	0,74	A.P.P	0,014	0,04806	15,396	15,607	2,655	0,971	1,325	3,976	2,918	0,993	3,949	5,34	5,37	4,63745	16,05396	15,38970	15,39622	0,045222
0,068	0,73	A.P.P	0,014	0,04756	15,244	15,449	2,628	0,971	1,332	3,995	2,899	0,993	3,967	5,47	5,51	4,54392	15,94005	15,23853	15,24401	0,035960
0,065	0,71	A.P.P	0,014	0,04705	15,090	15,289	2,602	0,972	1,338	4,014	2,880	0,993	3,986	5,61	5,65	4,45036	15,82654	15,08584	15,09008	0,028108
0,063	0,70	A.P.P	0,013	0,04654	14,934	15,127	2,575	0,973	1,345	4,034	2,860	0,993	4,005	5,76	5,80	4,35678	15,71347	14,93160	14,93437	0,018534
0,060	0,68	A.P.P	0,013	0,04602	14,777	14,964	2,548	0,973	1,351	4,054	2,839	0,993	4,026	5,92	5,96	4,26317	15,60091	14,77579	14,77682	0,006971
0,058	0,66	A.P.P	0,013	0,04532	14,664	14,743	2,511	0,974	1,361	4,082	2,760	0,993	4,053	6,14	6,18	4,13831	15,45173	14,56555	14,56379	0,012068
0,055	0,640	A.P.P	0,012	0,04461	14,347	14,519	2,474	0,975	1,370	4,111	2,719	0,993	4,082	6,38	6,42	4,01340	15,30372	14,35241	14,34724	0,006026
0,053	0,62	A.P.P	0,012	0,04389	14,127	14,291	2,436	0,976	1,380	4,141	2,677	0,993	4,112	6,63	6,68	3,88845	15,15703	14,13631	14,12700	0,005906
0,050	0,60	A.P.P	0,011	0,04316	13,903	14,059	2,397	0,976	1,391	4,173	2,635	0,993	4,143	6,91	6,95	3,76345	15,01183	13,91721	13,90290	0,002903
0,048	0,58	A.P.P	0,011	0,04251	13,703	13,853	2,363	0,977	1,401	4,202	2,597	0,993	4,172	7,16	7,21	3,65404	14,86615	13,72299	13,70350	0,001230
0,045	0,57	A.P.P	0,011	0,04185	13,501	13,644	2,328	0,978	1,411	4,232	2,558	0,993	4,201	7,44	7,49	3,54460	14,76188	13,52640	13,50086	0,0019226
0,043	0,55	A.P.P	0,010	0,04118	13,295	13,432	2,292	0,978	1,421	4,263	2,519	0,993	4,232	7,73	7,79	3,43513	14,63913	13,32743	13,29483	0,0024209
0,040	0,53	A.P.P	0,010	0,04050	13,085	13,216	2,256	0,979	1,432	4,295	2,480	0,993	4,264	8,05	8,10	3,32563	14,51805	13,12604	13,08525	0,0031724
0,038	0,50	A.P.P	0,010	0,03932	12,717	12,838	2,193	0,980	1,451	4,354	2,410	0,993	4,323	8,65	8,71	3,13785	14,31473	12,77516	12,71722	0,0045613
0,035	0,47	A.P.P	0,009	0,03810	12,337	12,448	2,127	0,981	1,473	4,418	2,338	0,993	4,386	9,33	9,40	2,94999	14,11742	12,41712	12,33726	0,0047280
0,033	0,44	A.P.P	0,008	0,03684	11,944	12,044	2,059	0,983	1,496	4,48										

## ANEXO (23). Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE  
SW

		Ho (m)	T (s)	Lo (m)	Co	θ <sub>0</sub>																			
		0,5	5,8	52,52	9,06	55,00																			
Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>sh</sub>	H <sub>sh (m)</sub>	θ <sub>s</sub>	K <sub>r</sub>	H <sub>sh (m)</sub>	H/h	H/h	L1	L50	L promedio	L	% de error					
7.0	49.70	A.P	0.946	0.94627	52.522	52.522	9.055	0.500	1.000	0.500	54.999	1.000	0.500	0.01	0.01	52.52175	52.52175	52.52175	52.52175	0.00000					
6.0	47.60	A.P	0.906	0.90630	52.521	52.522	9.055	0.500	1.000	0.500	54.998	1.000	0.500	0.01	0.01	52.52128	52.52128	52.52128	52.52128	0.00000					
5.0	45.70	A.P	0.870	0.87013	52.521	52.522	9.055	0.500	1.000	0.500	54.997	1.000	0.500	0.01	0.01	52.52059	52.52059	52.52059	52.52059	0.00000					
4.0	25.30	transicion	0.482	0.48391	52.283	52.399	9.014	0.514	0.989	0.494	54.628	0.995	0.492	0.02	0.02	52.27616	52.28288	52.28288	52.28288	0.00000					
3.0	14.90	transicion	0.284	0.29751	50.082	51.057	8.635	0.589	0.944	0.472	51.360	0.958	0.452	0.03	0.03	49.63161	50.08191	50.08191	50.08191	0.00000					
2.0	14.20	transicion	0.270	0.28570	49.702	50.794	8.569	0.599	0.939	0.470	50.820	0.963	0.447	0.03	0.03	49.12161	49.70195	49.70195	49.70195	0.00000					
1.050	13.40	transicion	0.255	0.27234	49.203	50.436	8.483	0.612	0.934	0.467	50.119	0.946	0.442	0.03	0.03	48.43213	49.20265	49.20265	49.20265	0.00000					
1.000	12.00	transicion	0.228	0.24930	48.134	49.627	8.299	0.637	0.926	0.463	48.652	0.932	0.431	0.04	0.04	46.89189	48.13438	48.13438	48.13438	0.00000					
0.950	10.40	transicion	0.198	0.22344	46.545	48.327	8.025	0.670	0.918	0.459	46.546	0.913	0.419	0.04	0.04	44.46716	46.54509	46.54509	46.54509	0.00000					
0.900	8.60	transicion	0.164	0.19476	44.158	46.191	7.613	0.713	0.913	0.457	43.527	0.889	0.406	0.05	0.05	40.62239	44.15772	44.15772	44.15772	0.00000					
0.850	7.20	transicion	0.137	0.17251	41.737	43.847	7.196	0.751	0.915	0.458	40.612	0.869	0.398	0.06	0.06	36.60500	41.73673	41.73673	41.73673	0.00000					
0.800	6.00	transicion	0.114	0.15323	39.156	41.207	6.751	0.787	0.923	0.462	37.639	0.851	0.393	0.07	0.08	32.32899	39.15635	39.15635	39.15635	0.00000					
0.750	4.90	transicion	0.093	0.13511	36.267	38.134	6.253	0.822	0.939	0.469	34.446	0.834	0.391	0.08	0.10	27.68682	36.26693	36.26693	36.26693	0.00000					
0.700	4.20	transicion	0.080	0.12317	34.098	35.778	5.879	0.845	0.955	0.477	32.127	0.823	0.393	0.09	0.11	24.37220	34.09799	34.09799	34.09799	0.00000					
0.650	3.40	transicion	0.065	0.10892	31.216	32.619	5.382	0.872	0.982	0.491	29.134	0.810	0.398	0.12	0.14	20.25784	31.21623	31.21623	31.21623	0.00003					
0.600	3.10	transicion	0.059	0.10333	30.000	31.262	5.172	0.883	0.996	0.498	27.897	0.806	0.401	0.13	0.16	18.63148	29.99970	29.99970	29.99970	0.00013					
0.550	2.60	A.P.P	0.050	0.09363	27.768	28.834	4.788	0.901	1.025	0.512	25.663	0.798	0.409	0.16	0.20	15.82910	27.76807	27.76807	27.76807	0.00115					
0.500	2.20	A.P.P	0.042	0.08541	25.759	26.640	4.441	0.916	1.055	0.528	23.687	0.791	0.418	0.19	0.24	13.51246	25.76038	25.76038	25.76038	0.00615					
0.450	2.00	A.P.P	0.038	0.08109	24.663	25.450	4.252	0.923	1.074	0.537	22.622	0.788	0.423	0.21	0.27	12.33195	24.66684	24.66684	24.66684	0.01384					
0.400	1.70	A.P.P	0.032	0.07430	22.881	23.525	3.945	0.934	1.108	0.554	20.907	0.784	0.434	0.26	0.33	10.53655	22.89430	22.89430	22.89430	0.04503					
0.350	1.40	A.P.P	0.027	0.06701	20.893	21.395	3.602	0.945	1.153	0.577	19.017	0.779	0.449	0.32	0.41	8.71513	20.94100	20.94100	20.94100	0.01379					
0.300	1.30	A.P.P	0.025	0.06444	20.175	20.630	3.478	0.949	1.171	0.586	18.339	0.777	0.455	0.35	0.45	8.10292	20.24685	20.24685	20.24685	0.01957					
0.250	1.10	A.P.P	0.021	0.05903	18.634	18.998	3.213	0.957	1.214	0.607	16.895	0.774	0.470	0.43	0.55	6.87188	18.79640	18.79640	18.79640	0.03714					
0.200	1.00	A.P.P	0.019	0.05617	17.803	18.123	3.070	0.961	1.239	0.620	16.121	0.773	0.479	0.48	0.62	6.25338	18.04447	17.94669	17.94669	0.04828					
0.150	0.90	A.P.P	0.017	0.05318	16.824	17.201	2.918	0.965	1.268	0.634	15.305	0.771	0.489	0.54	0.70	5.63312	17.28063	16.91438	16.92415	0.05770					
0.100	0.85	A.P.P	0.016	0.05163	16.464	16.720	2.839	0.967	1.285	0.644	14.879	0.770	0.495	0.58	0.76	5.32238	16.89649	16.45428	16.46407	0.05945					
0.098	0.84	A.P.P	0.016	0.05131	16.370	16.622	2.822	0.967	1.288	0.642	14.792	0.770	0.496	0.59	0.77	5.26018	16.81963	16.36055	16.37026	0.05929					
0.095	0.83	A.P.P	0.016	0.05100	16.276	16.523	2.806	0.967	1.291	0.646	14.705	0.770	0.497	0.60	0.78	5.19797	16.74279	16.26624	16.27584	0.05898					
0.093	0.82	A.P.P	0.016	0.05068	16.181	16.424	2.790	0.968	1.295	0.648	14.617	0.770	0.499	0.61	0.79	5.13575	16.66598	16.17133	16.18078	0.05843					
0.090	0.81	A.P.P	0.015	0.05036	16.085	16.324	2.773	0.968	1.299	0.649	14.529	0.770	0.500	0.62	0.80	5.07351	16.58920	16.07581	16.08508	0.05764					
0.088	0.80	A.P.P	0.015	0.05012	16.013	16.249	2.761	0.968	1.301	0.651	14.462	0.770	0.501	0.62	0.81	5.02682	16.53165	16.00378	16.01288	0.05680					
0.085	0.80	A.P.P	0.015	0.04987	15.940	16.173	2.748	0.969	1.304	0.652	14.395	0.770	0.502	0.63	0.82	4.98013	16.47414	15.93140	15.94031	0.05595					
0.083	0.79	A.P.P	0.015	0.04963	15.867	16.097	2.736	0.969	1.307	0.653	14.328	0.769	0.503	0.64	0.83	4.93342	16.41667	15.85865	15.86736	0.05479					
0.080	0.78	A.P.P	0.015	0.04939	15.794	16.021	2.723	0.969	1.310	0.655	14.260	0.769	0.504	0.65	0.84	4.88671	16.35924	15.78558	15.79403	0.05340					
0.078	0.77	A.P.P	0.015	0.04906	15.696	15.912	2.706	0.970	1.314	0.657	14.190	0.769	0.505	0.66	0.85	4.82442	16.28275	15.68758	15.69664	0.05136					
0.075	0.76	A.P.P	0.014	0.04873	15.597	15.815	2.689	0.970	1.317	0.659	14.078	0.769	0.507	0.67	0.87	4.76211	16.20636	15.58894	15.59666	0.04883					
0.073	0.75	A.P.P	0.014	0.04840	15.497	15.711	2.672	0.970	1.321	0.661	13.985	0.769	0.508	0.68	0.88	4.69978	16.13009	15.48965	15.49675	0.04587					
0.070	0.74	A.P.P	0.014	0.04806	15.396	15.607	2.655	0.971	1.325	0.663	13.894	0.769	0.509	0.69	0.90	4.63745	16.05396	15.38970	15.39622	0.04322					
0.068	0.73	A.P.P	0.014	0.04775	15.244	15.449	2.628	0.971	1.332	0.666	13.754	0.768	0.512	0.71	0.92	4.54392	15.94005	15.23853	15.24401	0.03960					
0.065	0.71	A.P.P	0.014	0.04705	15.090	15.289	2.602	0.972	1.338	0.669	13.612	0.768	0.514	0.72	0.94	4.45036	15.82654	15.08584	15.09008	0.02810					
0.063	0.70	A.P.P	0.013	0.04654	14.934	15.127	2.575	0.973	1.345	0.672	13.469	0.768	0.516	0.74	0.97	4.36678	15.71347	14.93160	14.93477	0.01854					
0.060	0.68	A.P.P	0.013	0.04602	14.777	14.964	2.548	0.973	1.351	0.676	13.324	0.768	0.519	0.76	0.99	4.26317	15.60091	14.77579	14.77682	0.00697					
0.058	0.66	A.P.P	0.013	0.04532	14.664	14.743	2.511	0.974	1.361	0.680	13.190	0.767	0.522	0.79	1.03	4.13831	15.45173	14.56555	14.56379	0.01268					
0.055	0.64	A.P.P	0.012	0.04461	14.347	14.519	2.474	0.975	1.370	0.685	12.930	0.767	0.526	0.82	1.07	4.01340	15.30372	14.35241	14.34724	0.03602					
0.053	0.62	A.P.P	0.012	0.04389	14.127	14.291	2.436	0.976	1.380	0.690	12.728	0.767	0.529	0.85	1.11	3.88845	15.15703	14.13631	14.12700	0.06596					
0.050	0.60	A.P.P	0.011	0.04316	13.903	14.059	2.397	0.976	1.391	0.695	12.523	0.767	0.533	0.89	1.16	3.76345	15.01183	13.91721	13.92029	0.10293					
0.048	0.58	A.P.P	0.011	0.04251	13.703	13.853	2.363	0.977	1.401	0.700	12.341	0.766	0.537	0.92	1.20	3.65404	14.86615	13.72299	13.70350	0.14220					
0.045	0.57	A.P.P	0.011	0.04185	13.501	13.644	2.328	0.978	1.411	0.705	12.155	0.766	0.540	0.96	1.25	3.54460	14.76188	13.52640	13.50086	0.18922					
0.043	0.55	A.P.P	0.010	0.04118	13.295	13.432	2.292	0.978	1.421	0.710	11.967	0.766	0.544	0.99	1.30	3.43513	14.63913	13.32743	13.29483	0.24520					
0.040	0.53	A.P.P	0.010	0.04050	13.085	13.216	2.256	0.979	1.432	0.716	11.776	0.766	0.548	1.03	1.35	3.32563	14.51805	13.12604	13.08525	0.31172					
0.038	0.50	A.P.P	0.010	0.03982	12.717	12.838	2.193	0.980	1.451	0.726	11.440	0.765	0.555	1.11	1.45	3.13785	14.31473	12.77516	12.71722	0.45563					
0.035	0.47	A.P.P	0.009	0.03810	12.337	12.448	2.127	0.981	1.473	0.736	11.094	0.765	0.563	1.20	1.57	2.94999	14.11742	12.41712	12.33726	0.64780					
0.033	0.44	A.P.P																							

## ANEXO (24). Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE																				
SW																				
	Ho (m)	T (s)	Lo (m)	Co	θ <sub>0</sub>															
	1	5,8	52,52	9,06	55,00															
Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>0,5</sub>	H <sub>0,5</sub> (m)	θ <sub>1</sub>	K <sub>r</sub>	H <sub>0,5err</sub> (m)	H/h	H/h	L1	L50	L promedio	L	% de error
7.0	49.70	A.P	0.946	0.94627	52.522	52.522	9.055	0.500	1.000	1.000	54.999	1.000	1.000	0.02	0.02	52.52175	52.52175	52.52175	52.52175	0.00000
6.0	47.60	A.P	0.906	0.90630	52.521	52.522	9.055	0.500	1.000	1.000	54.998	1.000	1.000	0.02	0.02	52.52128	52.52128	52.52128	52.52128	0.00000
5.0	45.70	A.P	0.870	0.87013	52.521	52.522	9.055	0.500	1.000	1.000	54.997	1.000	1.000	0.02	0.02	52.52059	52.52059	52.52059	52.52059	0.00000
4.0	25.30	transicion	0.482	0.48391	52.283	52.399	9.014	0.514	0.989	0.989	54.628	1.000	0.984	0.04	0.04	52.27616	52.28288	52.28288	52.28288	0.00000
3.0	14.90	transicion	0.284	0.29751	50.082	51.057	8.635	0.589	0.944	0.944	51.360	0.958	0.904	0.06	0.06	49.63161	50.08191	50.08191	50.08191	0.00000
2.0	14.20	transicion	0.270	0.28570	49.702	50.794	8.569	0.599	0.939	0.939	50.820	0.953	0.895	0.06	0.07	49.12161	49.70195	49.70195	49.70195	0.00000
1.050	13.40	transicion	0.255	0.27234	49.203	50.436	8.483	0.612	0.934	0.934	50.119	0.946	0.883	0.07	0.07	48.43213	49.20265	49.20265	49.20265	0.00000
1.000	12.00	transicion	0.228	0.24930	48.134	49.627	8.299	0.637	0.926	0.926	48.652	0.932	0.862	0.07	0.08	46.89189	48.13438	48.13438	48.13438	0.00000
0.950	10.40	transicion	0.198	0.22344	46.545	48.327	8.025	0.670	0.918	0.918	46.546	0.913	0.838	0.08	0.09	44.46716	46.54509	46.54509	46.54509	0.00000
0.900	8.60	transicion	0.164	0.19476	44.158	46.191	7.613	0.713	0.913	0.913	43.527	0.889	0.812	0.09	0.11	40.62239	44.15772	44.15772	44.15772	0.00000
0.850	7.20	transicion	0.137	0.17251	41.737	43.847	7.196	0.751	0.915	0.915	40.612	0.869	0.795	0.11	0.13	36.60500	41.73673	41.73673	41.73673	0.00000
0.800	6.00	transicion	0.114	0.15323	39.156	41.207	6.751	0.787	0.923	0.923	37.639	0.851	0.786	0.13	0.15	32.32899	39.15635	39.15635	39.15635	0.00000
0.750	4.90	transicion	0.093	0.13511	36.267	38.134	6.253	0.822	0.939	0.939	34.446	0.834	0.783	0.16	0.19	27.68682	36.26693	36.26693	36.26693	0.00000
0.700	4.20	transicion	0.080	0.12317	34.098	35.778	5.879	0.845	0.955	0.955	32.127	0.823	0.786	0.19	0.23	24.37220	34.09799	34.09799	34.09799	0.00000
0.650	3.40	transicion	0.065	0.10892	31.216	32.619	5.392	0.872	0.982	0.982	29.134	0.810	0.795	0.23	0.29	20.26784	31.21623	31.21623	31.21623	0.00003
0.600	3.10	transicion	0.059	0.10333	30.000	31.282	5.172	0.883	0.996	0.996	27.897	0.806	0.802	0.26	0.32	18.63148	29.99970	29.99967	29.99967	0.00013
0.550	2.60	A.P.P	0.050	0.09363	27.768	28.834	4.788	0.901	1.025	1.025	25.663	0.798	0.817	0.31	0.39	15.82910	27.76807	27.76807	27.76807	0.00115
0.500	2.20	A.P.P	0.042	0.08541	25.759	26.640	4.441	0.916	1.055	1.055	23.687	0.791	0.835	0.38	0.48	13.51246	25.76038	25.76038	25.76038	0.00016
0.450	2.00	A.P.P	0.038	0.08109	24.663	25.450	4.252	0.923	1.074	1.074	22.622	0.798	0.847	0.42	0.54	12.33195	24.66684	24.66684	24.66684	0.001384
0.400	1.70	A.P.P	0.032	0.07430	22.881	23.525	3.945	0.934	1.108	1.108	20.907	0.784	0.869	0.51	0.65	10.53655	22.89430	22.89463	22.89463	0.004503
0.350	1.40	A.P.P	0.027	0.06701	20.893	21.395	3.602	0.945	1.153	1.153	19.017	0.779	0.898	0.64	0.82	8.71513	20.94100	20.89016	20.89034	0.013779
0.300	1.30	A.P.P	0.025	0.06444	20.175	20.630	3.478	0.949	1.171	1.171	18.339	0.777	0.910	0.70	0.90	8.10292	20.24685	20.17056	20.17451	0.019577
0.250	1.10	A.P.P	0.021	0.05903	18.634	18.998	3.213	0.957	1.214	1.214	16.995	0.774	0.940	0.85	1.10	6.87188	18.79640	18.62720	18.63412	0.037140
0.200	1.00	A.P.P	0.019	0.05617	17.803	18.123	3.070	0.961	1.239	1.239	16.121	0.773	0.957	0.96	1.24	6.25338	18.04447	17.79469	17.80328	0.048280
0.150	0.90	A.P.P	0.017	0.05318	16.924	17.201	2.918	0.965	1.268	1.268	15.305	0.771	0.978	1.09	1.41	5.63312	17.20063	16.91438	16.92415	0.057707
0.100	0.85	A.P.P	0.016	0.05163	16.464	16.720	2.839	0.967	1.285	1.285	14.879	0.770	0.990	1.16	1.51	5.32238	16.89649	16.45428	16.46407	0.059415
0.098	0.84	A.P.P	0.016	0.05131	16.370	16.622	2.822	0.967	1.288	1.288	14.792	0.770	0.992	1.18	1.53	5.26018	16.81963	16.36055	16.37026	0.059296
0.095	0.83	A.P.P	0.016	0.05100	16.276	16.523	2.806	0.967	1.291	1.291	14.705	0.770	0.995	1.20	1.56	5.19797	16.74279	16.26624	16.27584	0.058978
0.093	0.82	A.P.P	0.016	0.05068	16.181	16.424	2.790	0.968	1.295	1.295	14.617	0.770	0.997	1.22	1.58	5.13575	16.66598	16.17133	16.18078	0.058436
0.090	0.81	A.P.P	0.015	0.05036	16.085	16.324	2.773	0.968	1.299	1.299	14.529	0.770	1.000	1.23	1.60	5.07351	16.58920	16.07581	16.08508	0.057645
0.088	0.80	A.P.P	0.015	0.05012	16.013	16.249	2.761	0.968	1.301	1.301	14.462	0.770	1.002	1.25	1.62	5.02682	16.53165	16.00378	16.01288	0.056870
0.085	0.80	A.P.P	0.015	0.04987	15.940	16.173	2.748	0.969	1.304	1.304	14.395	0.770	1.004	1.26	1.64	4.98013	16.47414	15.93140	15.94031	0.055925
0.083	0.79	A.P.P	0.015	0.04963	15.867	16.097	2.736	0.969	1.307	1.307	14.328	0.769	1.006	1.28	1.66	4.93342	16.41667	15.85866	15.86736	0.054797
0.080	0.78	A.P.P	0.015	0.04939	15.794	16.021	2.723	0.969	1.310	1.310	14.260	0.769	1.008	1.29	1.68	4.88671	16.35924	15.78558	15.79403	0.053470
0.078	0.77	A.P.P	0.015	0.04916	15.696	15.918	2.706	0.970	1.314	1.314	14.170	0.769	1.010	1.31	1.71	4.82442	16.28275	15.68758	15.69564	0.051364
0.075	0.76	A.P.P	0.014	0.04873	15.597	15.815	2.689	0.970	1.317	1.317	14.078	0.769	1.013	1.33	1.73	4.76211	16.20636	15.58894	15.59656	0.048835
0.073	0.75	A.P.P	0.014	0.04840	15.497	15.711	2.672	0.970	1.321	1.321	13.986	0.769	1.016	1.35	1.76	4.69978	16.13009	15.48965	15.49675	0.045837
0.070	0.74	A.P.P	0.014	0.04806	15.396	15.607	2.655	0.971	1.325	1.325	13.894	0.769	1.019	1.38	1.79	4.63745	16.05396	15.38970	15.39622	0.042322
0.068	0.73	A.P.P	0.014	0.04756	15.244	15.449	2.628	0.971	1.332	1.332	13.754	0.768	1.023	1.41	1.84	4.54392	15.94005	15.23853	15.24401	0.035960
0.065	0.71	A.P.P	0.014	0.04705	15.090	15.289	2.602	0.972	1.338	1.338	13.612	0.768	1.028	1.45	1.88	4.45036	15.82654	15.08564	15.09008	0.028108
0.063	0.70	A.P.P	0.013	0.04654	14.934	15.127	2.575	0.973	1.345	1.345	13.469	0.768	1.033	1.49	1.93	4.35678	15.71347	14.93160	14.93437	0.018534
0.060	0.68	A.P.P	0.013	0.04602	14.777	14.964	2.548	0.973	1.351	1.351	13.324	0.768	1.038	1.53	1.99	4.26317	15.60091	14.77579	14.77682	0.006971
0.058	0.66	A.P.P	0.013	0.04532	14.564	14.743	2.511	0.974	1.361	1.361	13.129	0.767	1.044	1.58	2.06	4.13831	15.45173	14.56555	14.56379	0.012068
0.055	0.640	A.P.P	0.012	0.04461	14.347	14.519	2.474	0.975	1.370	1.370	12.930	0.767	1.051	1.64	2.14	4.01340	15.30372	14.35241	14.34724	0.036026
0.053	0.62	A.P.P	0.012	0.04389	14.127	14.291	2.436	0.976	1.380	1.380	12.728	0.767	1.059	1.71	2.23	3.88845	15.15703	14.13631	14.12700	0.065906
0.050	0.60	A.P.P	0.011	0.04316	13.903	14.059	2.397	0.976	1.391	1.391	12.523	0.767	1.066	1.78	2.32	3.76345	15.01183	13.91721	13.90290	0.102903
0.048	0.58	A.P.P	0.011	0.04251	13.703	13.853	2.363	0.977	1.401	1.401	12.341	0.766	1.073	1.84	2.40	3.65404	14.88615	13.72299	13.70350	0.142230
0.045	0.57	A.P.P	0.011	0.04185	13.501	13.644	2.328	0.978	1.411	1.411	12.155	0.766	1.080	1.91	2.50	3.54460	14.76188	13.52640	13.50086	0.189226
0.043	0.55	A.P.P	0.010	0.04118	13.295	13.432	2.292	0.979	1.421	1.421	11.967	0.766	1.088	1.99	2.60	3.43513	14.63913	13.32743	13.29483	0.245209
0.040	0.53	A.P.P	0.010	0.04050	13.085	13.215	2.256	0.979	1.432	1.432	11.776	0.765	1.096	2.07	2.70	3.32563	14.51805	13.12604	13.08525	0.311724
0.038	0.50	A.P.P	0.010	0.03992	12.717	12.838	2.193	0.980	1.451	1.451	11.440	0.765	1.110	2.22	2.90	3.13785	14.31473	12.77516	12.77222	0.455613
0.035	0.47	A.P.P	0.009	0.03810	12.337	12.448	2.127	0.981	1.473	1.473	11.094	0.765	1.126	2.40	3.13	2.94999	14.11742	12.41712	12.33726	0.647280</

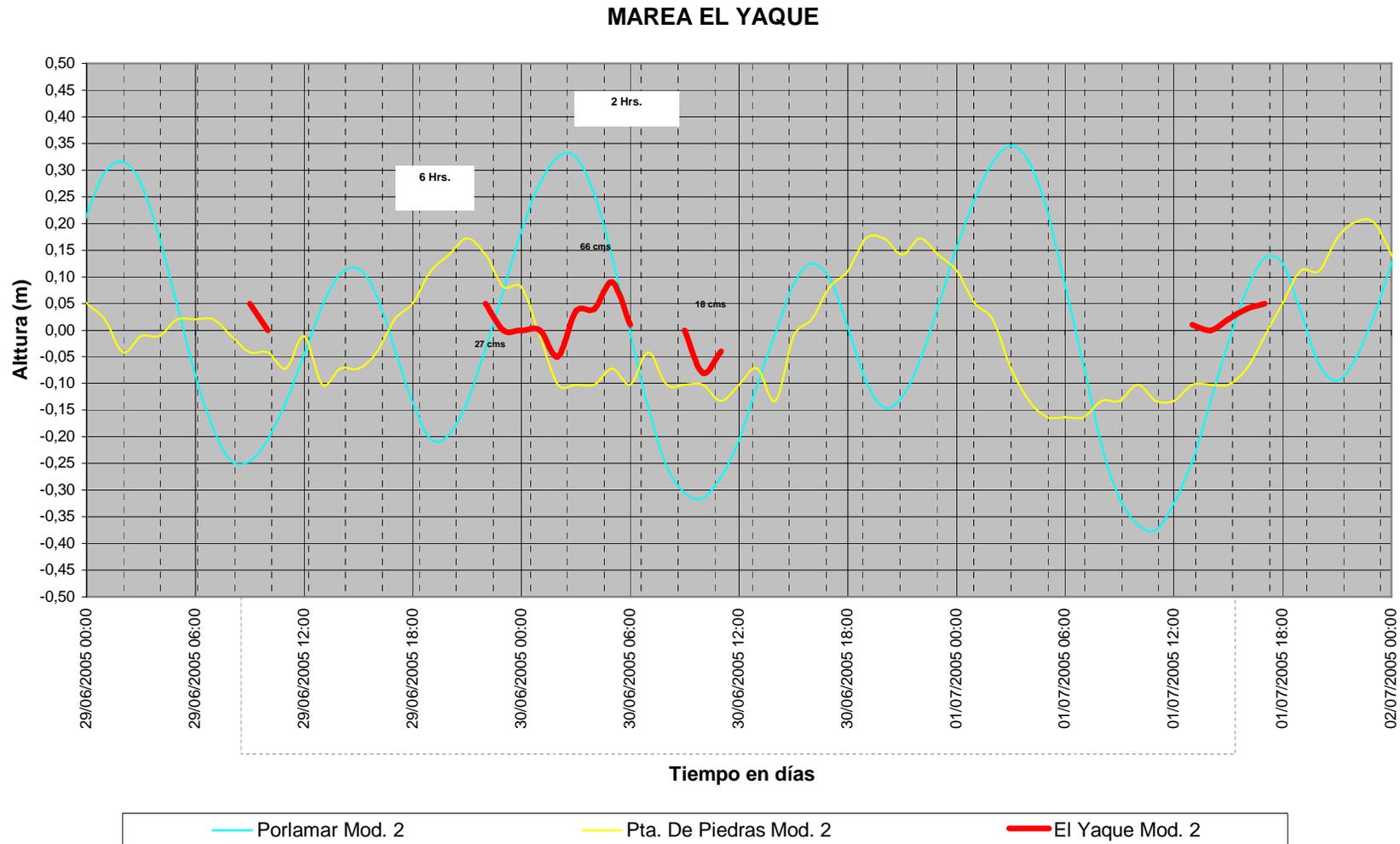
### ANEXO (25). Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE SW																				
		Ho (m)	T (s)	Lo (m)	Co	θ <sub>0</sub>														
		2	5,8	52,52	9,06	55,00														
Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>SN</sub>	H <sub>SN</sub> (m)	θ <sub>1</sub>	K <sub>c</sub>	H <sub>SN+1</sub> (m)	H/h	H/h	L1	L50	L promedio	L	% de error
7.0	49.70	A.P	0.946	0.94627	52.522	52.522	9.055	0.500	1.000	2.000	54.999	1.000	2.000	0.04	0.04	52.62175	52.52175	52.52175	52.52175	0.000000
6.0	47.60	A.P	0.906	0.90630	52.521	52.522	9.055	0.500	1.000	2.000	54.998	1.000	2.000	0.04	0.04	52.62128	52.52128	52.52128	52.52128	0.000000
5.0	45.70	A.P	0.870	0.87013	52.521	52.522	9.055	0.500	1.000	2.000	54.997	1.000	2.000	0.04	0.04	52.62059	52.52059	52.52059	52.52059	0.000000
4.0	25.30	transicion	0.482	0.48391	52.283	52.399	9.014	0.514	0.989	1.977	54.268	0.995	1.968	0.08	0.08	52.27616	52.28288	52.28288	52.28288	0.000000
3.0	14.90	transicion	0.284	0.29751	50.082	51.057	8.635	0.589	0.944	1.887	51.360	0.958	1.809	0.12	0.13	49.63161	50.08191	50.08191	50.08191	0.000000
2.0	14.20	transicion	0.270	0.28570	49.702	50.794	8.569	0.599	0.939	1.878	50.820	0.953	1.790	0.13	0.13	49.12161	49.70195	49.70195	49.70195	0.000000
1.050	13.40	transicion	0.255	0.27234	49.203	50.436	8.483	0.612	0.934	1.868	50.119	0.946	1.767	0.13	0.14	48.43213	49.20265	49.20265	49.20265	0.000000
1.000	12.00	transicion	0.228	0.24930	48.134	49.627	8.299	0.637	0.926	1.851	48.652	0.932	1.725	0.14	0.15	46.89189	48.13438	48.13438	48.13438	0.000000
0.950	10.40	transicion	0.198	0.22344	46.545	48.327	8.025	0.670	0.918	1.835	46.546	0.913	1.676	0.16	0.18	44.46716	46.54509	46.54509	46.54509	0.000000
0.900	8.60	transicion	0.164	0.19476	44.158	46.191	7.613	0.713	0.913	1.826	43.527	0.889	1.624	0.19	0.21	40.62239	44.15772	44.15772	44.15772	0.000000
0.850	7.20	transicion	0.137	0.17251	41.737	43.847	7.196	0.751	0.915	1.830	40.612	0.869	1.591	0.22	0.25	36.60500	41.73673	41.73673	41.73673	0.000000
0.800	6.00	transicion	0.114	0.15323	39.156	41.207	6.751	0.787	0.923	1.846	37.639	0.851	1.572	0.26	0.31	32.32899	39.15635	39.15635	39.15635	0.000000
0.750	4.90	transicion	0.093	0.13511	36.267	38.134	6.253	0.822	0.939	1.878	34.446	0.834	1.566	0.32	0.38	27.68682	36.26693	36.26693	36.26693	0.000000
0.700	4.20	transicion	0.080	0.12317	34.098	35.778	5.879	0.845	0.955	1.910	32.127	0.823	1.572	0.37	0.45	24.37220	34.09799	34.09799	34.09799	0.000000
0.650	3.40	transicion	0.065	0.10892	31.216	32.619	5.392	0.872	0.982	1.954	29.134	0.810	1.592	0.47	0.58	20.25784	31.21623	31.21622	31.21622	0.000003
0.600	3.10	transicion	0.059	0.10333	30.000	31.282	5.172	0.883	0.996	1.991	27.897	0.806	1.604	0.52	0.64	18.63148	29.99970	29.99970	29.99970	0.000013
0.550	2.60	A.P.P	0.050	0.09363	27.768	28.834	4.798	0.901	1.025	2.045	25.663	0.798	1.635	0.63	0.79	15.92910	27.76807	27.76777	27.76781	0.000115
0.500	2.20	A.P.P	0.042	0.08541	25.759	26.640	4.441	0.916	1.055	2.111	25.697	0.791	1.670	0.76	0.96	13.61246	25.76038	25.75866	25.75882	0.000615
0.450	2.00	A.P.P	0.038	0.08109	24.663	25.450	4.252	0.923	1.074	2.148	22.522	0.788	1.693	0.85	1.07	12.33195	24.66684	24.66300	24.66300	0.001384
0.400	1.70	A.P.P	0.032	0.07430	22.881	23.525	3.945	0.934	1.108	2.217	20.907	0.784	1.737	1.02	1.30	10.53655	22.89430	22.87963	22.88056	0.004503
0.350	1.40	A.P.P	0.027	0.06701	20.893	21.395	3.602	0.945	1.153	2.306	19.017	0.779	1.796	1.28	1.65	8.71513	20.94100	20.89016	20.89304	0.0013779
0.300	1.30	A.P.P	0.025	0.06444	20.175	20.630	3.478	0.949	1.171	2.342	18.339	0.777	1.821	1.40	1.80	8.10292	20.24685	20.17056	20.17451	0.0019577
0.250	1.10	A.P.P	0.021	0.05903	18.634	18.998	3.213	0.957	1.214	2.427	16.995	0.774	1.879	1.71	2.21	6.87188	18.79640	18.62720	18.63412	0.037140
0.200	1.00	A.P.P	0.019	0.05617	17.803	18.123	3.070	0.961	1.239	2.478	16.121	0.773	1.915	1.91	2.48	6.25338	18.04447	17.79469	17.80328	0.048280
0.150	0.90	A.P.P	0.017	0.05318	16.924	17.201	2.918	0.965	1.268	2.537	15.305	0.771	1.956	2.17	2.82	5.63312	17.28063	16.91438	16.92415	0.057707
0.100	0.85	A.P.P	0.016	0.05163	16.464	16.720	2.839	0.967	1.285	2.569	14.879	0.770	1.979	2.33	3.02	5.32238	16.89649	16.45428	16.46407	0.059415
0.098	0.84	A.P.P	0.016	0.05131	16.370	16.622	2.822	0.967	1.288	2.576	14.792	0.770	1.984	2.36	3.07	5.26018	16.81963	16.36055	16.37026	0.059296
0.095	0.83	A.P.P	0.016	0.05100	16.276	16.523	2.806	0.967	1.291	2.583	14.705	0.770	1.989	2.40	3.11	5.19797	16.74279	16.26624	16.27684	0.058978
0.093	0.82	A.P.P	0.016	0.05068	16.181	16.424	2.790	0.968	1.295	2.590	14.617	0.770	1.994	2.43	3.16	5.13575	16.66598	16.17133	16.18078	0.058436
0.090	0.81	A.P.P	0.015	0.05036	16.085	16.324	2.773	0.968	1.299	2.597	14.529	0.770	1.999	2.47	3.21	5.07351	16.58920	16.07581	16.08508	0.057645
0.088	0.80	A.P.P	0.015	0.05012	16.013	16.249	2.761	0.968	1.301	2.603	14.462	0.770	2.003	2.50	3.24	5.02682	16.53165	16.00378	16.01288	0.056870
0.085	0.80	A.P.P	0.015	0.04987	15.940	16.173	2.748	0.969	1.304	2.608	14.395	0.770	2.007	2.52	3.28	4.98013	16.47414	15.93140	15.94031	0.055925
0.083	0.79	A.P.P	0.015	0.04963	15.867	16.097	2.736	0.969	1.307	2.614	14.328	0.769	2.011	2.55	3.32	4.93342	16.41667	15.85866	15.86736	0.054797
0.080	0.78	A.P.P	0.015	0.04939	15.794	16.021	2.723	0.969	1.310	2.619	14.260	0.769	2.015	2.58	3.36	4.88674	16.35924	15.78558	15.79403	0.053470
0.078	0.77	A.P.P	0.015	0.04906	15.696	15.918	2.706	0.970	1.314	2.627	14.170	0.769	2.021	2.62	3.41	4.84242	16.28275	15.68758	15.69564	0.051364
0.075	0.76	A.P.P	0.014	0.04873	15.597	15.815	2.689	0.970	1.317	2.635	14.078	0.769	2.026	2.67	3.47	4.76211	16.20636	15.58894	15.59656	0.048835
0.073	0.75	A.P.P	0.014	0.04840	15.497	15.711	2.672	0.970	1.321	2.643	13.986	0.769	2.032	2.71	3.52	4.69978	16.13009	15.48965	15.49675	0.045837
0.070	0.74	A.P.P	0.014	0.04806	15.396	15.607	2.655	0.971	1.325	2.651	13.894	0.769	2.038	2.75	3.58	4.63745	16.05396	15.38970	15.39622	0.042322
0.068	0.73	A.P.P	0.014	0.04766	15.244	15.449	2.628	0.971	1.332	2.663	13.754	0.768	2.047	2.82	3.67	4.54392	15.94005	15.28853	15.24401	0.035960
0.065	0.71	A.P.P	0.014	0.04705	15.090	15.289	2.602	0.972	1.338	2.676	13.612	0.768	2.056	2.90	3.77	4.45036	15.82654	15.08584	15.09008	0.028108
0.063	0.70	A.P.P	0.013	0.04654	14.934	15.127	2.575	0.973	1.345	2.689	13.469	0.768	2.065	2.97	3.87	4.35678	15.71347	14.93160	14.93437	0.018534
0.060	0.68	A.P.P	0.013	0.04602	14.777	14.964	2.548	0.973	1.351	2.703	13.324	0.768	2.075	3.05	3.97	4.26317	15.60091	14.77579	14.77682	0.006971
0.058	0.66	A.P.P	0.013	0.04532	14.564	14.743	2.511	0.974	1.361	2.721	13.129	0.767	2.088	3.16	4.12	4.13831	15.45173	14.56555	14.56379	0.012068
0.055	0.640	A.P.P	0.012	0.04461	14.347	14.519	2.474	0.975	1.370	2.741	12.930	0.767	2.102	3.29	4.28	4.01340	15.30372	14.35241	14.34724	0.036026
0.053	0.62	A.P.P	0.012	0.04389	14.127	14.291	2.436	0.976	1.380	2.761	12.728	0.767	2.117	3.41	4.45	3.88845	15.15703	14.13631	14.12700	0.065906
0.050	0.60	A.P.P	0.011	0.04316	13.903	14.059	2.397	0.976	1.391	2.782	12.523	0.767	2.132	3.55	4.64	3.76345	15.01183	13.91721	13.92900	0.102903
0.048	0.58	A.P.P	0.011	0.04251	13.703	13.853	2.363	0.977	1.401	2.801	12.341	0.766	2.146	3.68	4.81	3.65404	14.88615	13.72299	13.70350	0.142230
0.045	0.57	A.P.P	0.011	0.04185	13.501	13.644	2.328	0.978	1.411	2.821	12.158	0.766	2.161	3.82	4.99	3.54460	14.76188	13.52400	13.50086	0.189226
0.043	0.55	A.P.P	0.010	0.04118	13.295	13.432	2.292	0.978	1.421	2.842	11.967	0.766	2.176	3.97	5.19	3.43513	14.63913	13.32743	13.29483	0.245209
0.040	0.53	A.P.P	0.010	0.04050	13.085	13.216	2.256	0.979	1.432	2.863	11.776	0.765	2.192	4.14	5.40	3.32563	14.51805	13.12604	13.08525	0.311724
0.038	0.50	A.P.P	0.010	0.03982	12.877	12.998	2.193	0.980	1.451	2.903	11.440	0.765	2.221	4.44	5.81	3.13785	14.31473	12.77516	12.71722	0.455613
0.035	0.47	A.P.P	0.009	0.03910	12.637	12.748	2.127	0.981	1.473	2.945	11.094	0.765	2.252	4.79	6.27	2.94989	14.11742	12.41712	12.33726	0.647

### ANEXO (26). Tabla de las diferentes mediciones de derivación de oleaje en playa El Yaque

DERIVACION DE OLAJE SW		Ho (m)	T (s)	Lo (m)	Co	θ <sub>0</sub>																
		3	5,8	52,52	9,06	55,00																
Progresiva (km)	Profundidad (m)	Condición	h/Lo	h/L	L (m)	L' (m)	C	n	K <sub>0n</sub>	H <sub>0n</sub> (m)	θ <sub>0</sub>	K <sub>1</sub>	H <sub>1n</sub> (m)	H <sub>r/h</sub>	H/h	L1	L50	L promedio	L	% de error		
7.0	49.70	A.P	0.946	0.94627	52.522	52.522	9.065	0.500	1.000	3.000	54.999	1.000	3.000	0.06	0.06	52.52175	52.52175	52.52175	52.52175	0.00000		
6.0	47.60	A.P	0.906	0.90630	52.521	52.522	9.055	0.500	1.000	3.000	54.998	1.000	3.000	0.06	0.06	52.52128	52.52128	52.52128	52.52128	0.00000		
5.0	45.70	A.P	0.870	0.87013	52.521	52.522	9.055	0.500	1.000	2.999	54.997	1.000	2.999	0.07	0.07	52.52059	52.52059	52.52059	52.52059	0.00000		
4.0	25.30	transición	0.482	0.48391	52.283	52.399	9.014	0.514	0.989	2.966	54.628	0.995	2.952	0.12	0.12	52.27616	52.28288	52.28288	52.28288	0.00000		
3.0	14.90	transición	0.284	0.29751	50.082	51.057	8.635	0.589	0.944	2.831	51.360	0.958	2.713	0.18	0.19	49.63161	50.08191	50.08191	50.08191	0.00000		
2.0	14.20	transición	0.270	0.28570	49.702	50.794	8.569	0.599	0.939	2.817	50.820	0.932	2.684	0.19	0.20	49.12617	49.70195	49.70195	49.70195	0.00000		
1.050	13.40	transición	0.255	0.27234	49.203	50.436	8.483	0.612	0.934	2.802	50.119	0.946	2.650	0.20	0.21	48.43213	49.20265	49.20265	49.20265	0.00000		
1.000	12.00	transición	0.228	0.24930	48.134	49.627	8.299	0.637	0.926	2.777	48.652	0.932	2.587	0.22	0.23	46.89189	48.13438	48.13438	48.13438	0.00000		
0.950	10.40	transición	0.198	0.22344	46.545	48.327	8.025	0.670	0.918	2.753	46.546	0.913	2.514	0.24	0.26	44.46716	46.54509	46.54509	46.54509	0.00000		
0.900	8.60	transición	0.164	0.19476	44.158	46.191	7.613	0.713	0.913	2.739	43.527	0.889	2.436	0.28	0.32	40.62239	44.15772	44.15772	44.15772	0.00000		
0.850	7.20	transición	0.137	0.17251	41.737	43.847	7.196	0.751	0.915	2.745	40.612	0.869	2.386	0.33	0.38	36.60500	41.73673	41.73673	41.73673	0.00000		
0.800	6.00	transición	0.114	0.15323	39.156	41.207	6.751	0.787	0.923	2.770	37.639	0.851	2.357	0.39	0.46	32.32899	39.15635	39.15635	39.15635	0.00000		
0.750	4.90	transición	0.093	0.13511	36.267	38.134	6.253	0.822	0.939	2.816	34.446	0.834	2.349	0.48	0.57	27.68682	36.26693	36.26693	36.26693	0.00000		
0.700	4.20	transición	0.080	0.12317	34.098	35.778	5.879	0.845	0.955	2.864	32.127	0.823	2.357	0.56	0.68	24.37220	34.09799	34.09799	34.09799	0.00000		
0.650	3.40	transición	0.065	0.10892	31.216	32.619	5.382	0.872	0.982	2.946	29.134	0.810	2.387	0.70	0.87	20.25784	31.21623	31.21623	31.21623	0.00003		
0.600	3.10	transición	0.059	0.10333	30.000	31.282	5.172	0.883	0.996	2.987	27.897	0.806	2.406	0.78	0.96	18.63148	29.99970	29.99967	29.99967	0.00013		
0.550	2.60	A.P.P	0.050	0.09363	27.768	28.834	4.788	0.901	1.025	3.074	25.663	0.798	2.452	0.94	1.18	15.82910	27.76807	27.76777	27.76781	0.00015		
0.500	2.20	A.P.P	0.042	0.08541	25.759	26.640	4.441	0.916	1.055	3.166	23.687	0.791	2.505	1.14	1.44	13.51246	25.75966	25.75962	25.75962	0.00015		
0.450	2.00	A.P.P	0.038	0.08109	24.663	25.450	4.252	0.923	1.074	3.222	22.622	0.789	2.540	1.27	1.61	12.33195	24.66684	24.66275	24.66309	0.001384		
0.400	1.70	A.P.P	0.032	0.07430	22.881	23.525	3.945	0.934	1.108	3.325	20.907	0.784	2.606	1.53	1.96	10.53655	22.89430	22.87953	22.88066	0.004603		
0.350	1.40	A.P.P	0.027	0.06701	20.893	21.395	3.602	0.945	1.153	3.459	19.017	0.779	2.694	1.92	2.47	8.71513	20.94100	20.89016	20.89304	0.013779		
0.300	1.30	A.P.P	0.025	0.06444	20.175	20.630	3.478	0.949	1.171	3.513	18.339	0.777	2.731	2.10	2.70	8.10292	20.24685	20.17056	20.17451	0.019577		
0.250	1.10	A.P.P	0.021	0.05903	18.634	18.998	3.213	0.957	1.214	3.641	16.895	0.774	2.819	2.56	3.31	6.87188	18.79640	18.62720	18.63412	0.037140		
0.200	1.00	A.P.P	0.019	0.05617	17.803	18.123	3.070	0.961	1.239	3.717	16.121	0.773	2.872	2.87	3.72	6.25338	18.04447	17.79469	17.80328	0.048280		
0.150	0.90	A.P.P	0.017	0.05318	16.924	17.201	2.918	0.965	1.268	3.805	15.305	0.771	2.934	3.26	4.23	5.63312	17.28063	16.91438	16.91438	0.057707		
0.100	0.85	A.P.P	0.016	0.05163	16.464	16.720	2.839	0.967	1.285	3.854	14.879	0.770	2.969	3.49	4.53	5.32238	16.89649	16.45428	16.46407	0.059415		
0.098	0.84	A.P.P	0.016	0.05131	16.370	16.622	2.822	0.967	1.288	3.864	14.792	0.770	2.976	3.54	4.60	5.26018	16.81963	16.36055	16.37026	0.059296		
0.095	0.83	A.P.P	0.016	0.05100	16.276	16.523	2.806	0.967	1.291	3.874	14.705	0.770	2.984	3.59	4.67	5.19797	16.74279	16.26624	16.27584	0.058978		
0.093	0.82	A.P.P	0.016	0.05068	16.181	16.424	2.790	0.968	1.295	3.885	14.617	0.770	2.991	3.65	4.74	5.13575	16.66598	16.17133	16.18078	0.058436		
0.090	0.81	A.P.P	0.015	0.05036	16.085	16.324	2.773	0.968	1.299	3.896	14.529	0.770	2.999	3.70	4.81	5.07351	16.58920	16.07581	16.08508	0.057645		
0.088	0.80	A.P.P	0.015	0.05012	16.013	16.249	2.761	0.968	1.301	3.904	14.462	0.770	3.005	3.74	4.86	5.02682	16.53165	16.03378	16.01288	0.056870		
0.085	0.80	A.P.P	0.015	0.04987	15.940	16.173	2.748	0.969	1.304	3.912	14.395	0.770	3.011	3.79	4.92	4.98013	16.47414	15.93140	15.94031	0.055925		
0.083	0.79	A.P.P	0.015	0.04963	15.867	16.097	2.736	0.969	1.307	3.921	14.328	0.769	3.017	3.83	4.98	4.93342	16.41667	15.85866	15.86736	0.054797		
0.080	0.78	A.P.P	0.015	0.04939	15.794	16.021	2.723	0.969	1.310	3.929	14.260	0.769	3.023	3.88	5.04	4.88671	16.35924	15.78558	15.79403	0.053470		
0.078	0.77	A.P.P	0.015	0.04916	15.696	15.918	2.706	0.970	1.314	3.941	14.170	0.769	3.031	3.94	5.12	4.82442	16.28275	15.68758	15.69564	0.051364		
0.075	0.76	A.P.P	0.014	0.04873	15.597	15.815	2.689	0.970	1.317	3.952	14.078	0.769	3.039	4.00	5.20	4.76211	16.20636	15.58894	15.59655	0.048835		
0.073	0.75	A.P.P	0.014	0.04840	15.497	15.711	2.672	0.970	1.321	3.964	13.985	0.769	3.048	4.06	5.29	4.69978	16.13009	15.48965	15.49675	0.045837		
0.070	0.74	A.P.P	0.014	0.04806	15.395	15.607	2.655	0.971	1.325	3.976	13.894	0.769	3.057	4.13	5.37	4.63745	16.05396	15.38970	15.39622	0.042322		
0.068	0.73	A.P.P	0.014	0.04775	15.244	15.449	2.628	0.971	1.332	3.995	13.754	0.768	3.070	4.23	5.51	4.54392	15.94005	15.23853	15.24401	0.035960		
0.065	0.71	A.P.P	0.014	0.04705	15.090	15.289	2.602	0.972	1.338	4.014	13.612	0.768	3.084	4.34	5.65	4.45036	15.82654	15.08584	15.09008	0.028108		
0.063	0.70	A.P.P	0.013	0.04654	14.934	15.127	2.575	0.973	1.345	4.034	13.469	0.768	3.098	4.46	5.80	4.35678	15.71347	14.93160	14.93437	0.018534		
0.060	0.68	A.P.P	0.013	0.04602	14.777	14.964	2.548	0.973	1.351	4.054	13.324	0.768	3.113	4.58	5.96	4.26317	15.60091	14.77599	14.77682	0.006971		
0.058	0.66	A.P.P	0.013	0.04532	14.564	14.743	2.511	0.974	1.361	4.082	13.129	0.767	3.133	4.75	6.18	4.13831	15.45173	14.56555	14.56379	0.012068		
0.055	0.640	A.P.P	0.012	0.04461	14.347	14.519	2.474	0.975	1.370	4.111	12.930	0.767	3.154	4.93	6.42	4.01340	15.30372	14.35241	14.34724	0.036026		
0.053	0.62	A.P.P	0.012	0.04389	14.127	14.291	2.436	0.976	1.380	4.141	12.728	0.767	3.176	5.12	6.68	3.88845	15.15703	14.13631	14.12700	0.065906		
0.050	0.60	A.P.P	0.011	0.04316	13.903	14.059	2.397	0.976	1.391	4.173	12.523	0.767	3.199	5.33	6.95	3.76345	15.01183	13.91721	13.90290	0.102903		
0.048	0.58	A.P.P	0.011	0.04251	13.703	13.853	2.363	0.977	1.401	4.202	12.341	0.766	3.220	5.53	7.21	3.65404	14.88615	13.72299	13.70350	0.142230		
0.045	0.55	A.P.P	0.011	0.04185	13.501	13.644	2.328	0.978	1.411	4.232	12.165	0.766	3.241	5.74	7.49	3.54460	14.76188	13.52640	13.50085	0.189226		
0.043	0.53	A.P.P	0.010	0.04118	13.295	13.432	2.292	0.978	1.421	4.263	11.967	0.766	3.264	5.96	7.79	3.43513	14.63913	13.32743	13.29483	0.245209		
0.040	0.50	A.P.P	0.010	0.04050	13.085	13.216	2.256	0.979	1.432	4.295	11.775	0.765	3.288	6.20	8.10	3.32563	14.51805	13.12604	13.08255	0.311724		
0.038	0.50	A.P.P	0.010	0.03932	12.717	12.838	2.193	0.980	1.451	4.354	11.440	0.765	3.331	6.66	8.71	3.13785	14.31473	12.77516	12.71722	0.455613		
0.035	0.47	A.P.P	0.009	0.03810	12.337	12.448	2.127	0.981	1.473	4.418	11.094	0.765	3.378	7.19	9.40	2.94999	14.11742	12.41712	12.33726	0.647280		
0.033	0.44																					

**ANEXO (27).** Representación gráfica de las diferentes mediciones de marea en playa El Yaque



**ANEXO (28).** Tabla de las diferentes mediciones de corrientes dentro de la laguna Las Marites**Fecha: 1ro de Julio de 2005 Sentido de corriente: entrando hacia la laguna**

Hora	SUPERFICIAL		MEDIO METRO		MEDIO METRO (1)		UN METRO (6)	
	N	E	N	E	N	E	N	E
11:43:41	1205592	397009						
11:44:08			1205580	397004				
12:00:28	1205695	397156						
12:01:12							1205669	397168
12:02:08					1205661	397131		
12:02:42			1205637	397114				
12:10:03			1205661	397157				
12:10:53					1205694	397180		
12:12:24	1205775	397248						
12:13:45							1205708	397272
12:14:54			1205681	397190				
12:15:29					1205706	397195		
12:16:59	1205794	397280						
12:17:24							1205723	397301
12:19:04			1205686	397237				
12:19:28					1205708	397229		
12:20:28							1205727	397326
12:21:28	1205810	397333						
12:23:45					1205722	397249		
12:23:58			1205705	397241				

SUPERFICIAL		MEDIO METRO		MEDIO METRO (1)		UN METRO (6)	
Distancia (m)	Tiempo (hor)	Distancia (m)	Tiempo (hor)	Distancia (m)	Tiempo (hor)	Distancia (m)	Tiempo (hor)
179,4	12:00:28	123,8	12:02:42	59,0	12:10:53	111,0	12:13:45
301,4	12:12:24	173,1	12:10:03	78,2	12:15:29	143,7	12:17:24
338,6	12:16:59	211,7	12:14:54	112,3	12:19:28	169,0	12:20:28
393,9	12:21:28	258,9	12:19:04	136,7	12:23:45		
		278,4	12:23:58				

**ANEXO (29).** Tabla de las diferentes velocidades promedio de las corrientes dentro de la laguna Las Marites, 01 de Julio de 2005.

SUPERFICIAL				MEDIO METRO				MEDIO METRO (1)				UN METRO (6)			
Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)
179,5	0:16:47	1.006,80	0,18												
				123,89	0:18:34	1.113,60	0,11								
				49,24	0:07:21	441,00	0,11								
								59,08	0:08:45	525,00	0,11				
121,9	0:11:56	715,80	0,17												
												111,07	0:12:33	753,00	0,15
				38,59	0:04:51	291,00	0,13								
								19,21	0:04:36	276,00	0,07				
37,2	0:04:35	274,80	0,14												
												32,65	0:03:39	219,00	0,15
				47,27	0:04:10	249,60	0,19								
								34,06	0:03:59	238,80	0,14				
												25,32	0:03:04	183,60	0,14
55,4	0:04:29	268,80	0,21												
								24,41	0:04:17	256,80	0,10				
				19,42	0:04:54	294,00	0,07								
			V media = 0,17				V media = 0,12				V media = 0,10				V media = 0,14

**ANEXO (30).** Tabla de las diferentes mediciones de corrientes en la salida Boca Victoria en la laguna Las Marites, 01 de Julio de 2005.

Hora	SUPERFICIAL		MEDIO METRO		MEDIO METRO (1)		UN METRO (6)	
	N	E	N	E	N	E	N	E
12:36:27	1205263	396150	1205263	396150	1205263	396150	1205263	396150
12:42:40	1205302	396185					1205302	396185
12:43:18			1205303	396179	1205303	396179		
12:52:37	1205382	396283						
12:53:04							1205374	396282
12:53:33			1205370	396247	1205370	396247		
12:58:49	1205458	396350						
12:59:37							1205427	396332
13:00:14			1205423	396289	1205423	396289		

SUPERFICIAL		MEDIO METRO		MEDIO METRO (1)		UN METRO (6)	
Distancia (m)	Tiempo (hora)	Distancia (m)	Tiempo (hora)	Distancia (m)	Tiempo (hora)	Distancia (m)	Tiempo (hora)
52,4	12:42:40	49,4	12:02:42	49,4	12:10:53	52,4	12:13:45
178,9	12:52:37	144,9	12:10:03	144,9	12:15:29	173,2	12:17:24
280,2	12:58:49	212,5	12:14:54	212,5	12:19:28	246,1	12:20:28

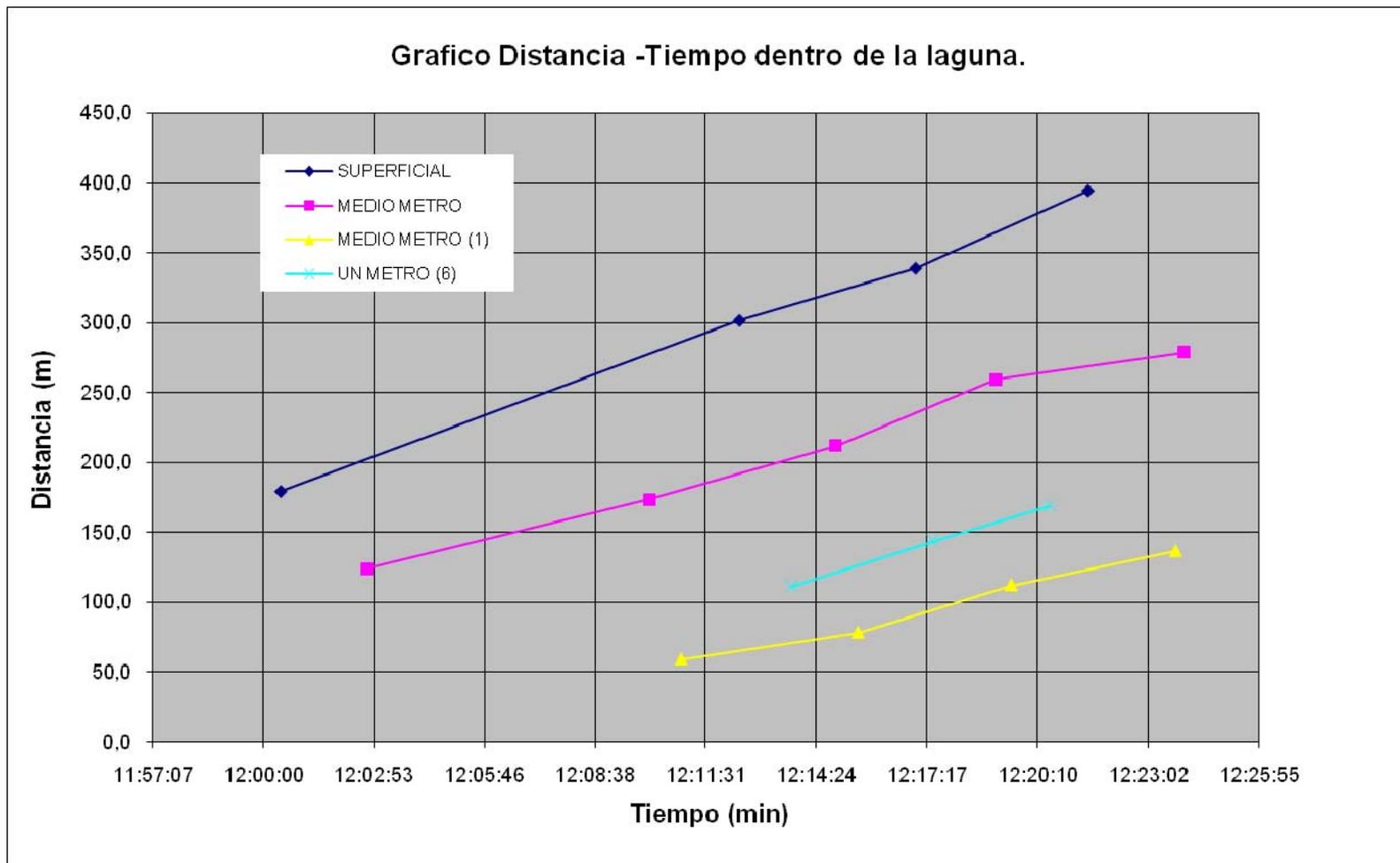


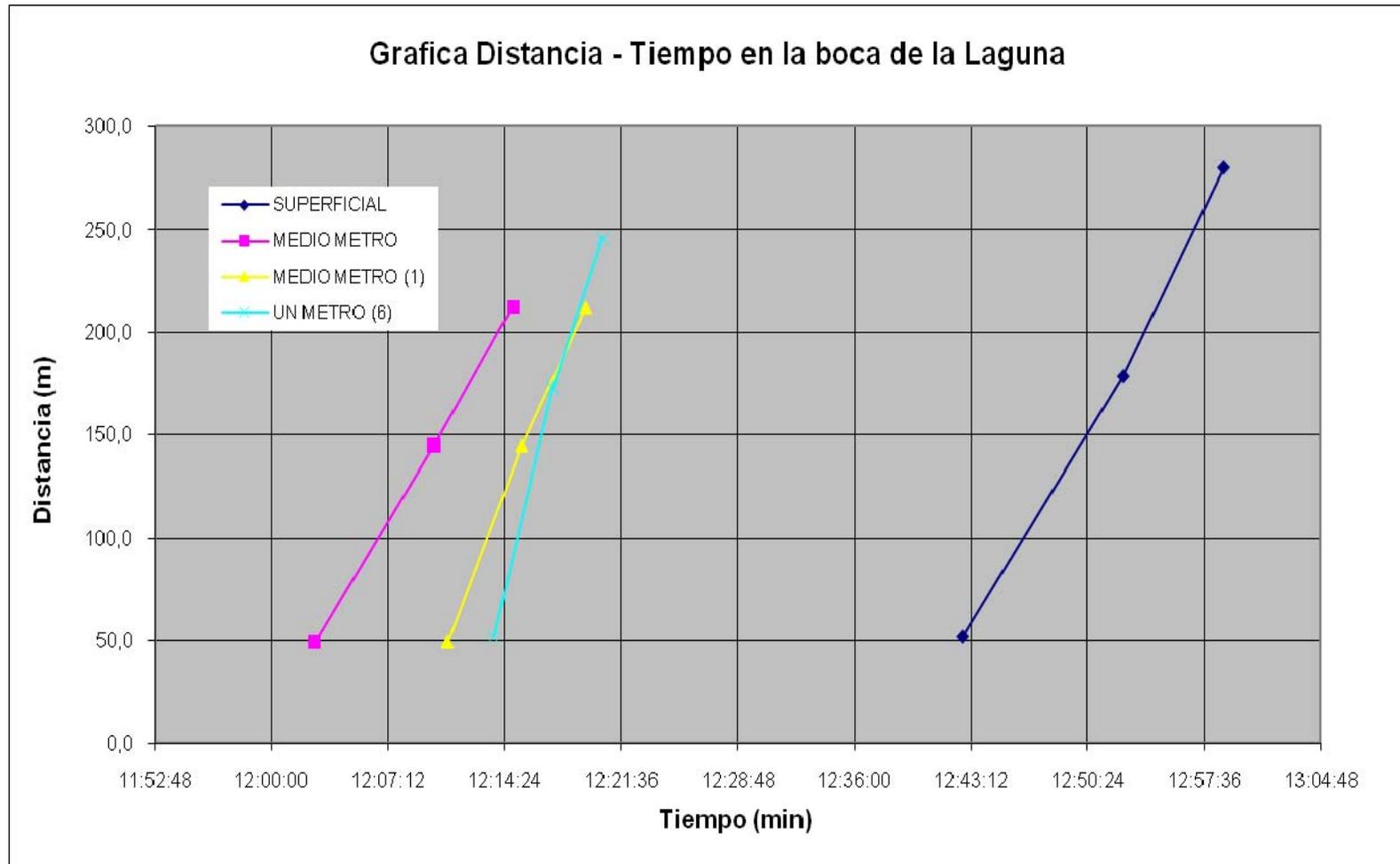
**ANEXO (32).** Tabla de las diferentes mediciones de corrientes frente a la playa (zona Este) 01 de Julio de 2005.

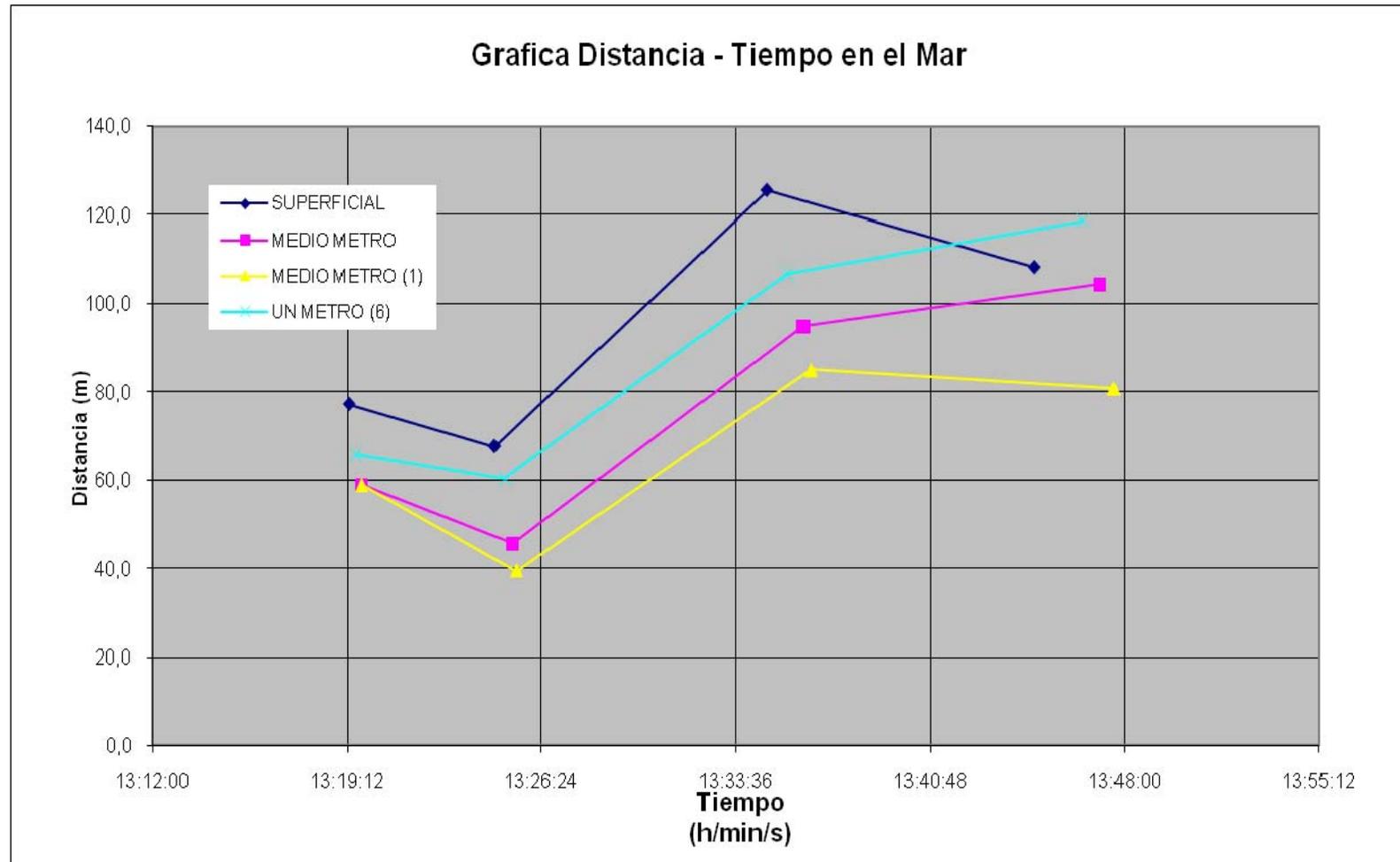
Hora	SUPERFICIAL		MEDIO METRO		MEDIO METRO (1)		UN METRO (6)	
	N	E	N	E	N	E	N	E
13:13:28	1204635	395681	1204635	395681	1204635	395681	1204635	395681
13:19:17	1204657	395755						
13:19:30							1204654	395744
13:19:45			1204653	395737	1204653	395737		
13:24:40	1204672	395821						
13:25:01							1204659	395804
13:25:19			1204661	395782				
13:25:29					1204669	395773		
13:34:45	1204720	395937						
13:35:30							1204696	395904
13:36:05			1204699	395869				
13:36:23					1204705	395850		
13:44:39	1204766	396035						
13:46:25							1204707	396022
13:47:03			1204707	395973				
13:47:35					1204722	395929		

SUPERFICIAL		MEDIO METRO		MEDIO METRO (1)		UN METRO (6)	
Distancia (m)	Tiempo (hor)	Distancia (m)	Tiempo (hor)	Distancia (m)	Tiempo (hor)	Distancia (m)	Tiempo (hor)
77,2	13:19:17	58,8	13:19:45	58,8	13:19:45	65,8	13:19:30
67,7	13:24:40	45,7	13:25:19	39,4	13:25:29	60,2	13:25:01
125,5	13:34:45	94,9	13:36:05	85,0	13:36:23	106,6	13:35:30
108,3	13:44:39	104,3	13:47:03	80,8	0,57471065	118,5	13:46:25



**ANEXO (34).** Representación gráfica de distancia y tiempo de recorrido de los flotadores dentro de Las Marites

**ANEXO (35 ).** Representación gráfica de distancia y tiempo de recorrido de los flotadores en Boca Victoria

**ANEXO (36).** Representación gráfica de distancia y tiempo de recorrido de los flotadores en mar abierto

**ANEXO (37).** Tabla de las posiciones en las mediciones de los flotadores en salida Boca Victoria**Fecha: 2do de Julio de 2005 Sentido de corriente: saliendo desde la laguna**

Hora	SUPERFICIAL		MEDIO METRO 0,5m		MEDIO METRO (1)		UN METRO (6)	
	N	E	N	E	N	E	N	E
6:16:48	1205365	396146	1205365	396146	1205365	396146	1205365	396146
6:29:28	1205285	395898						
6:26:44			1205279	395888				
6:29:58					1205267	395896	1205267	395896
6:34:33	1205284	395859						
6:34:56			1205264	395833				
6:35:16					1205246	395824		
6:35:28							1205243	395832
6:39:54	1205270	395833						
6:40:25			1205247	395794				
6:40:33							1205237	395789
6:40:47					1205222	395781		
6:46:03					1205194	395739		
6:46:29							1205223	395759
6:46:41			1205238	395758				
6:47:30	1205252	395802						
6:48:57							1205178	395739
6:51:28			1205143	395739				
6:51:43	1205120	395740						
6:52:40							1205157	395735
6:52:58					1205168	395719		
6:53:40			1205123	395719				
6:53:50	1205106	395722						
6:55:37					1205081	395712		
6:55:49							1205060	395719
7:00:17							1205037	395690

Hora	SUPERFICIAL		MEDIO METRO 0,5m		MEDIO METRO (1)		UN METRO (6)	
	N	E	N	E	N	E	N	E
7:00:38					1205046	395683		
7:00:54			1205068	395671				
7:01:10	1205056	395655						
7:06:10							1205001	395651
7:06:36					1205012	395656		
7:06:57			1205034	395631				
7:07:18	1205032	395599						
7:09:40							1204935	395640
7:10:52					1205004	395630		
7:11:46			1205029	395592				
7:12:13	1205018	395554						
7:14:17					1204951	395639		
7:14:51							1204907	395609
7:18:12			1205019	395547				
7:12:13	1204966	395470						
7:23:19							1204880	395541
7:23:45					1204886	395586		
7:25:06	1204972	395440						
7:27:27			1205003	395500				
7:28:31			1204967	395491				
7:29:45					1204865	395563		
7:30:12							1204869	395523
7:31:18	1204963	395400						
7:32:31			1204956	395476				
7:33:39					1204854	395537		
7:34:09							1204860	395505
7:35:24	1204964	395381						

Hora	SUPERFICIAL		MEDIO METRO 0,5m		MEDIO METRO (1)		UN METRO (6)	
	N	E	N	E	N	E	N	E
7:36:26			1204968	395469				
7:37:44					1204843	395529		
7:38:19							1204859	395485
7:39:52	1204957	395346						
7:40:53			1204969	395450				
7:42:10					1204840	395521		
7:42:43							1204863	395468
7:44:13	1204953	395303						
7:45:17			1204971	395424				
7:46:36					1204822	395507		
7:47:12							1204858	395445
7:48:44	1204961	395263						
7:50:12			1204971	395406				
7:51:45					1204821	395505		
7:52:37							1204869	395439
7:54:19	1204970	395233						
7:55:52			1204968	395395				
7:57:24					1204821	395489		
7:58:11							1204882	395420
8:00:04	1204993	395200						
8:01:44			1204967	395363				
8:03:15					1204828	395475		
8:04:13							1204894	395407
8:06:15	1205018	395172						
8:07:46			1204972	395337				
8:09:27					1204847	395485		
8:10:38							1204917	395399

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Hora	SUPERFICIAL		MEDIO METRO 0,5m		MEDIO METRO (1)		UN METRO (6)	
	N	E	N	E	N	E	N	E
8:13:02	1205024	395141						
8:14:43			1204975	395308				
8:15:30							1204926	395385
8:18:13	1205042	395125						
8:20:07			1204992	395298				
8:21:59	1205050	395105						
8:23:54			1205016	395296				
8:25:39	1205062	395097						
8:27:33			1205002	395286				
8:34:32			1205011	395278				
8:41:13	1205077	395080						
9:19:55			1205102	395209				

SUPERFICIAL		MEDIO METRO 0,5m		MEDIO METRO (1)		UN METRO (6)	
Distancia (m)	Tiempo (hora)	Distancia (m)	Tiempo (hora)	Distancia (m)	Tiempo (hora)	Distancia (m)	Tiempo (hora)
756,2	6:29:28	272,0	6:26:44	268,5	6:29:58	268,5	6:29:58
1795,2	6:34:33	329,0	6:34:56	343,5	6:35:16	336,9	6:35:28
1824,8	6:39:54	371,5	6:40:25	392,8	6:40:47	380,3	6:40:33
1860,6	6:47:30	408,6	6:46:41	443,2	6:46:03	413,4	6:46:29
2006,5	6:51:43	505,5	6:51:28	476,0	6:52:58	462,6	6:48:57
2029,3	6:53:50	533,8	6:53:40	563,3	6:55:37	484,0	6:52:40
2112,9	7:01:10	606,8	7:00:54	608,8	7:00:38	582,3	6:55:49
2173,8	7:07:18	659,3	7:06:57	652,2	7:06:36	619,3	7:00:17
2220,9	7:12:13	698,6	7:11:46	679,4	7:10:52	672,4	7:06:10
2319,7	7:12:13	744,7	7:18:12	733,2	7:14:17	739,3	7:09:40
2350,3	7:25:06	794,3	7:27:27	817,0	7:23:45	781,1	7:14:51
2391,3	7:31:18	831,5	7:28:31	848,2	7:29:45	854,3	7:23:19
2410,3	7:35:24	850,1	7:32:31	876,4	7:33:39	875,4	7:30:12
2446,0	7:39:52	863,9	7:36:26	890,0	7:37:44	895,5	7:34:09
2489,2	7:44:13	883,0	7:40:53	898,5	7:42:10	915,5	7:38:19
2530,0	7:48:44	909,1	7:45:17	921,4	7:46:36	933,0	7:42:43
2561,3	7:54:19	927,1	7:50:12	923,6	7:51:45	956,5	7:47:12
2601,5	8:00:04	938,5	7:55:52	939,6	7:57:24	969,0	7:52:37
2639,1	8:06:15	970,5	8:01:44	955,2	8:03:15	992,1	7:58:11
2670,7	8:13:02	996,9	8:07:46	976,7	8:09:27	1009,8	8:04:13
2694,7	8:18:13	1026,1	8:14:43			1034,1	8:10:38
2716,3	8:21:59	1045,8	8:20:07			1050,8	8:15:30
2730,7	8:25:39	1069,9	8:23:54				
2753,4	8:41:13	1087,1	8:27:33				
		1099,2	8:34:32				
		1213,4	9:19:55				

**ANEXO (38).** Tabla de las velocidades promedio en los flotadores en salida Boca Victoria, 2 de Julio de 2005

Superficial				Medio Metro				MEDIO METRO (1)				UN METRO (6)			
Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)
260,58	0:12:40	759,60	0,34												
				271,96	0:09:56	595,80	0,46								
								268,52	0:13:10	789,60	0,34	268,52	0:13:10	789,60	0,34
39,01	0:05:05	304,80	0,13												
				57,01	0:08:12	492,00	0,12								
								75,00	0:05:18	318,00	0,24				
												68,35	0:05:30	330,00	0,21
29,53	0:05:21	321,00	0,09												
				42,54	0:05:29	328,80	0,13								
												43,42	0:05:05	304,80	0,14
								49,24	0:05:31	330,60	0,15				
								50,48	0:05:16	315,60	0,16				
												33,11	0:05:56	355,80	0,09
				37,11	0:06:16	375,60	0,10								
35,85	0:07:36	456,00	0,08												
												49,24	0:02:28	147,60	0,33
				96,88	0:04:47	286,80	0,34								
145,84	0:04:13	252,60	0,58												
												21,38	0:03:43	222,60	0,10
								32,80	0:06:55	414,6	0,08				
				28,28	0:02:12	132	0,21								
22,80	0:02:07	126,6	0,18												
								87,28	0:02:39	159	0,55				
												98,31	0:03:09	189	0,52
												37,01	0:04:28	267,6	0,14
								45,45	0:05:01	300,6	0,15				

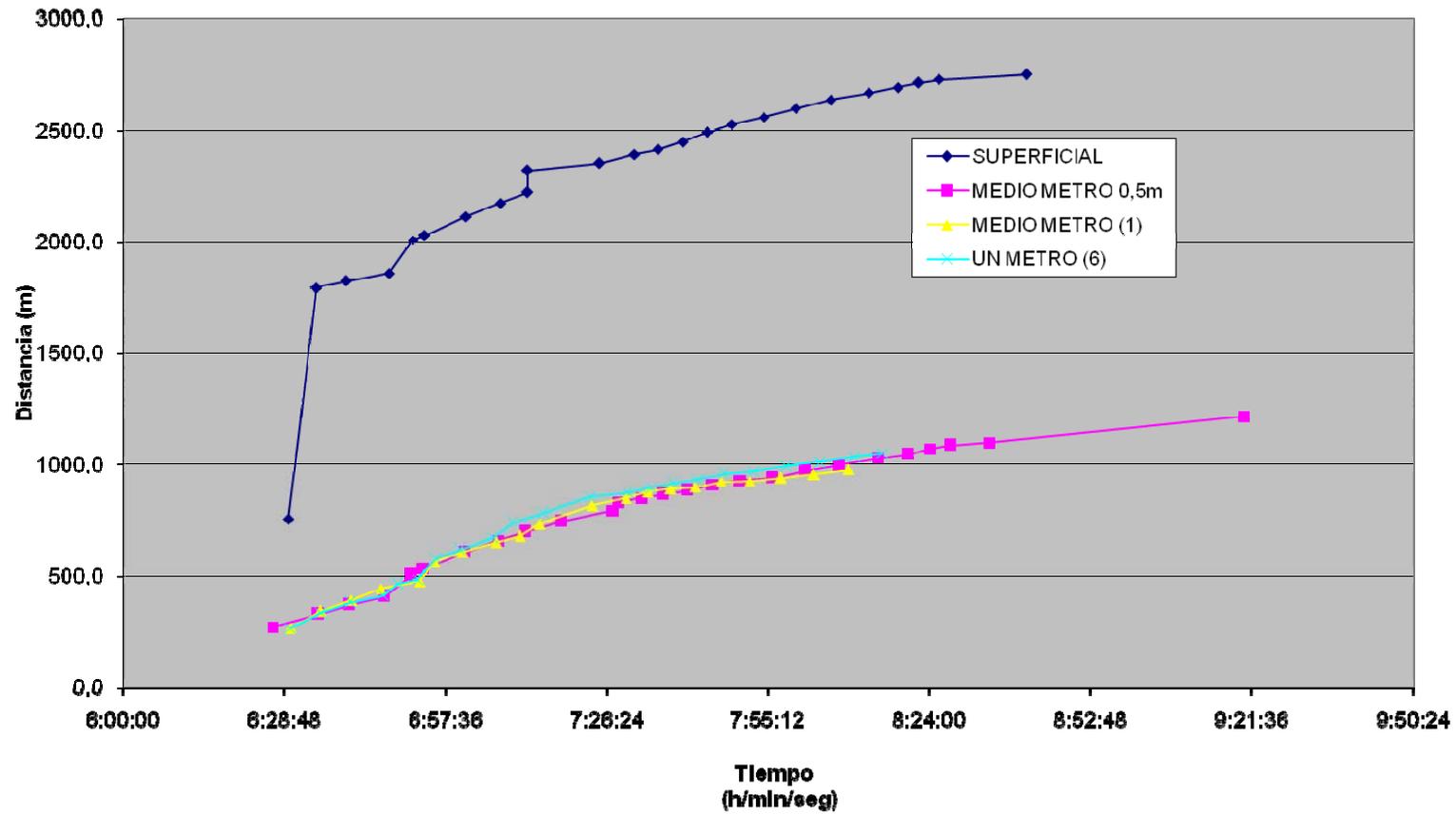
Superficial				Medio Metro				MEDIO METRO (1)				UN METRO (6)			
Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)
				73,00	0:07:14	433,8	0,17								
83,60	0:07:20	439,8	0,19												
												53,08	0:05:53	352,8	0,15
								43,42	0:05:58	357,6	0,12				
				52,50	0:06:03	363	0,14								
60,93	0:06:08	367,8	0,17												
												66,91	0:03:30	210	0,32
								27,20	0:04:16	255,6	0,11				
				39,32	0:04:49	288,6	0,14								
47,13	0:04:55	294,6	0,16												
								53,76	0:03:25	204,6	0,26				
												41,77	0:05:11	310,8	0,13
				46,10	0:06:26	385,8	0,12								
98,79	0:00:00	561,6	0,18												
												73,16	0:08:28	507,6	0,14
								83,87	0:09:28	567,6	0,15				
30,59	0:12:53	198,6	0,15												
				49,65	0:09:15	555	0,09								
				37,11	0:01:04	63,6	0,58								
								31,14	0:06:00	360	0,09				
												21,10	0:06:53	412,8	0,05
41,00	0:06:12	372	0,11												
				18,60	0:04:00	240	0,08								
								28,23	0:03:54	234	0,12				
												20,12	0:03:57	237	0,08

Superficial				Medio Metro				MEDIO METRO (1)				UN METRO (6)			
Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)
19,03	0:04:06	246	0,08												
				13,89	0:03:55	234,96	0,06								
								13,60	0:04:05	244,8	0,06				
												20,02	0:04:10	249,6	0,08
35,69	0:04:28	267,6	0,13												
				19,03	0:04:27	267	0,07								
								8,54	0:04:26	265,8	0,03				
												17,46	0:04:24	264	0,07
43,19	0:04:21	261	0,17												
				26,08	0:04:24	264	0,10								
								22,80	0:04:26	265,8	0,09				
												23,54	0:04:29	268,8	0,09
40,79	0:04:31	270,6	0,15												
				18,00	0:04:55	294,6	0,06								
								2,24	0:05:09	309	0,01				
												12,53	0:05:25	324,6	0,04
31,32	0:05:35	334,8	0,09												
				11,40	0:05:40	339,6	0,03								
								16,00	0:05:39	339	0,05				
												23,02	0:05:34	333,6	0,07
40,22	0:05:45	345	0,12												
				32,02	0:05:52	351,6	0,09								
								15,65	0:05:51	351	0,04				
												17,69	0:06:02	361,8	0,05
37,54	0:06:11	370,8	0,10												
				26,48	0:06:02	361,8	0,07								

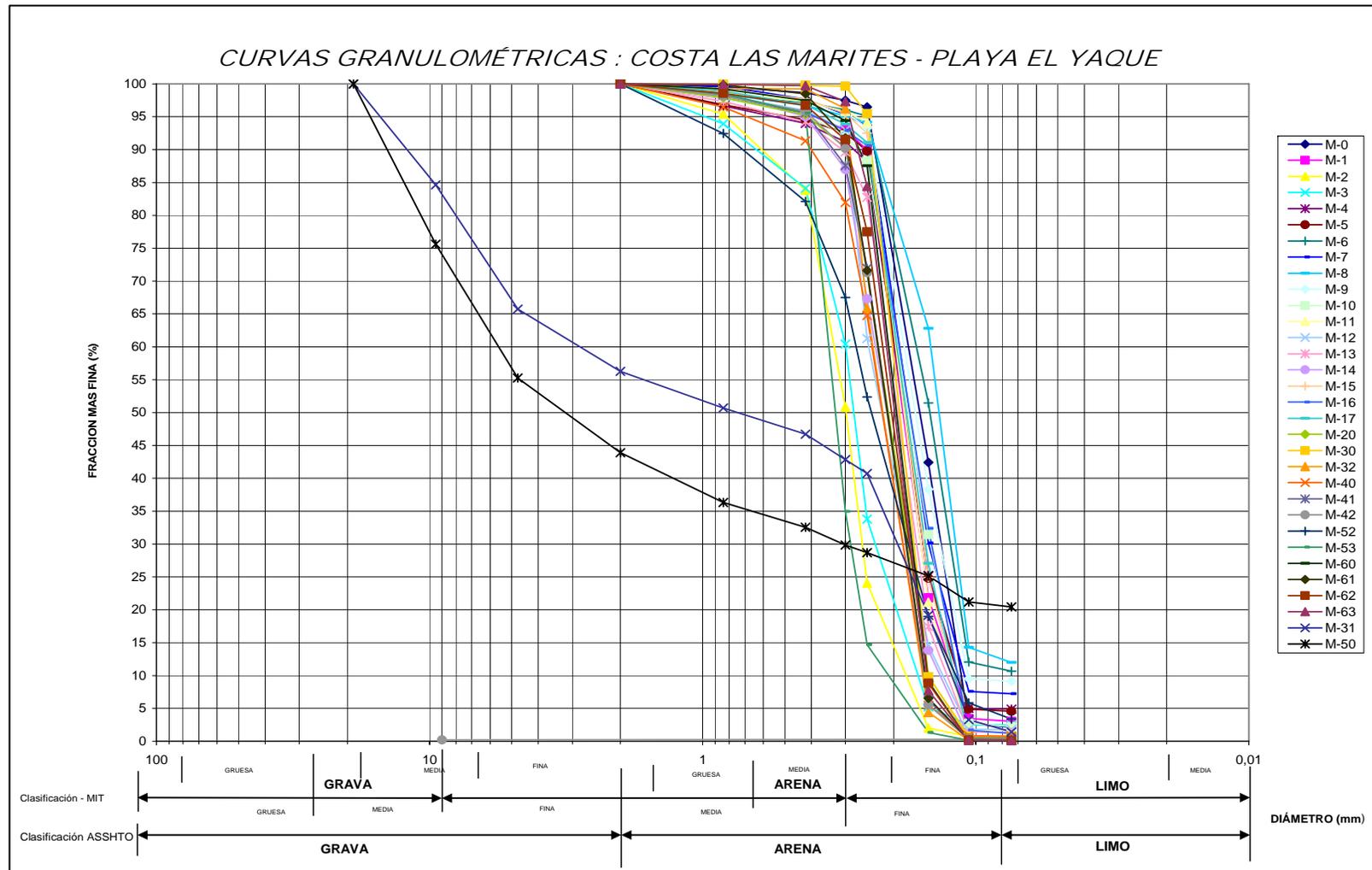
Superficial				Medio Metro				MEDIO METRO (1)				UN METRO (6)			
Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)	Distancia (m)	Tiempo (min)	tiempo (s)	Velocidad (m/s)
								21,47	0:06:12	372	0,06				
												24,35	0:06:25	384,6	0,06
31,58	0:06:47	406,8	0,08												
				29,15	0:06:57	417	0,07								
												16,64	0:04:52	291,6	0,06
24,08	0:05:11	310,8	0,08												
				19,72	0:05:24	324	0,06								
21,54	0:03:46	225,6	0,10												
				24,08	0:03:47	226,8	0,11								
14,42	0:03:40	219,6	0,07												
				17,20	0:03:39	219	0,08								
				12,04	0:10:38	637,8	0,02								
22,67	0:15:34	933,6	0,02												
				114,20	0:45:23	2722,8	0,04								
		V m =	0,15			V m =	0,14			V m =	0,14			V m =	0,15

**ANEXO (39).** Representación gráfica de distancia y tiempo de recorrido de los flotadores en salida Boca Victoria

**Grafico Distancia-Tiempo flotadores dia 2/7/2005**



**ANEXO (40).** Representación Granulométrica de las muestras de sedimentos en playa El Yaque

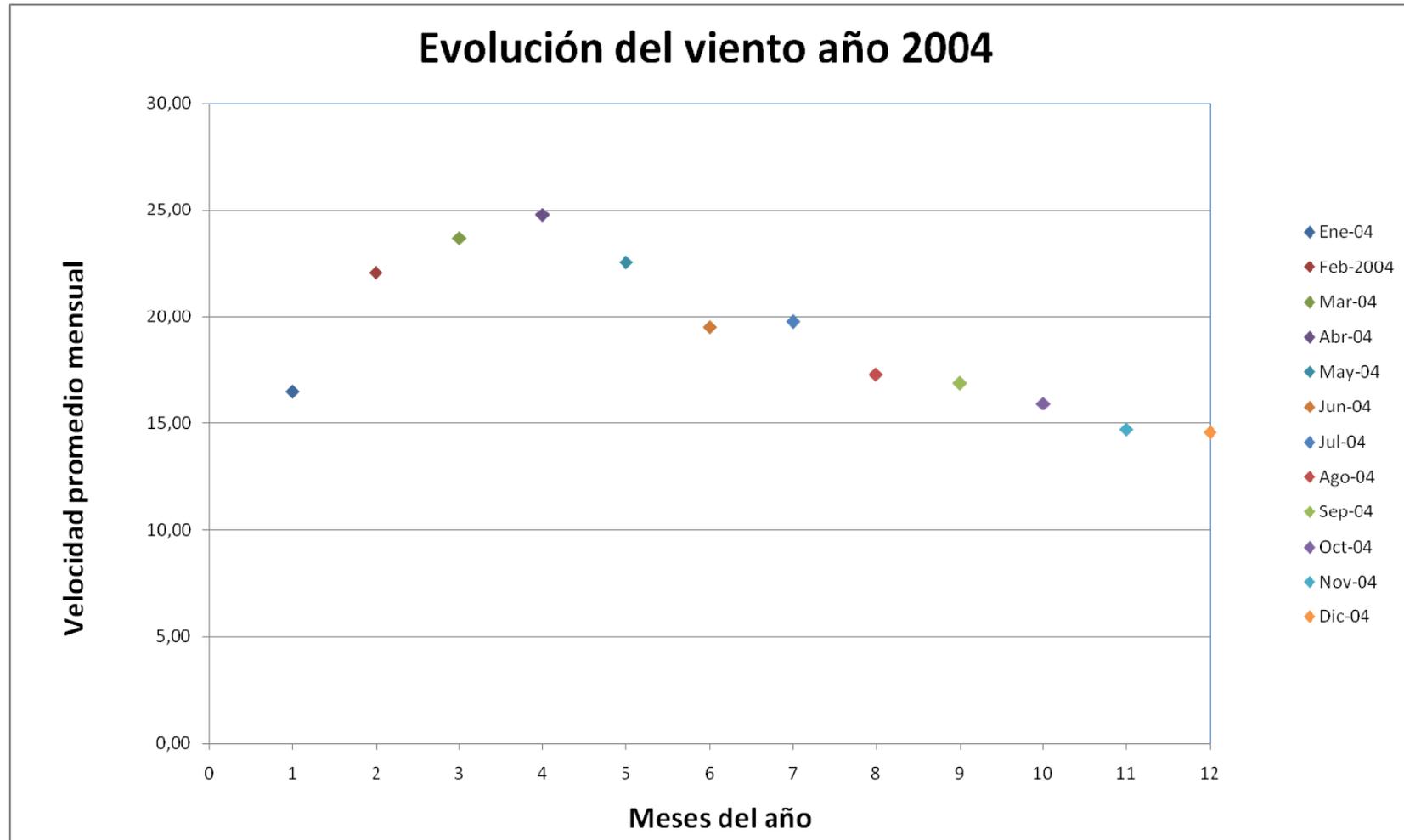


*Estudio del Proceso Erosivo Presentado en la Costa de Playa El Yaque  
Isla de Margarita, Edo. Nueva Esparta*

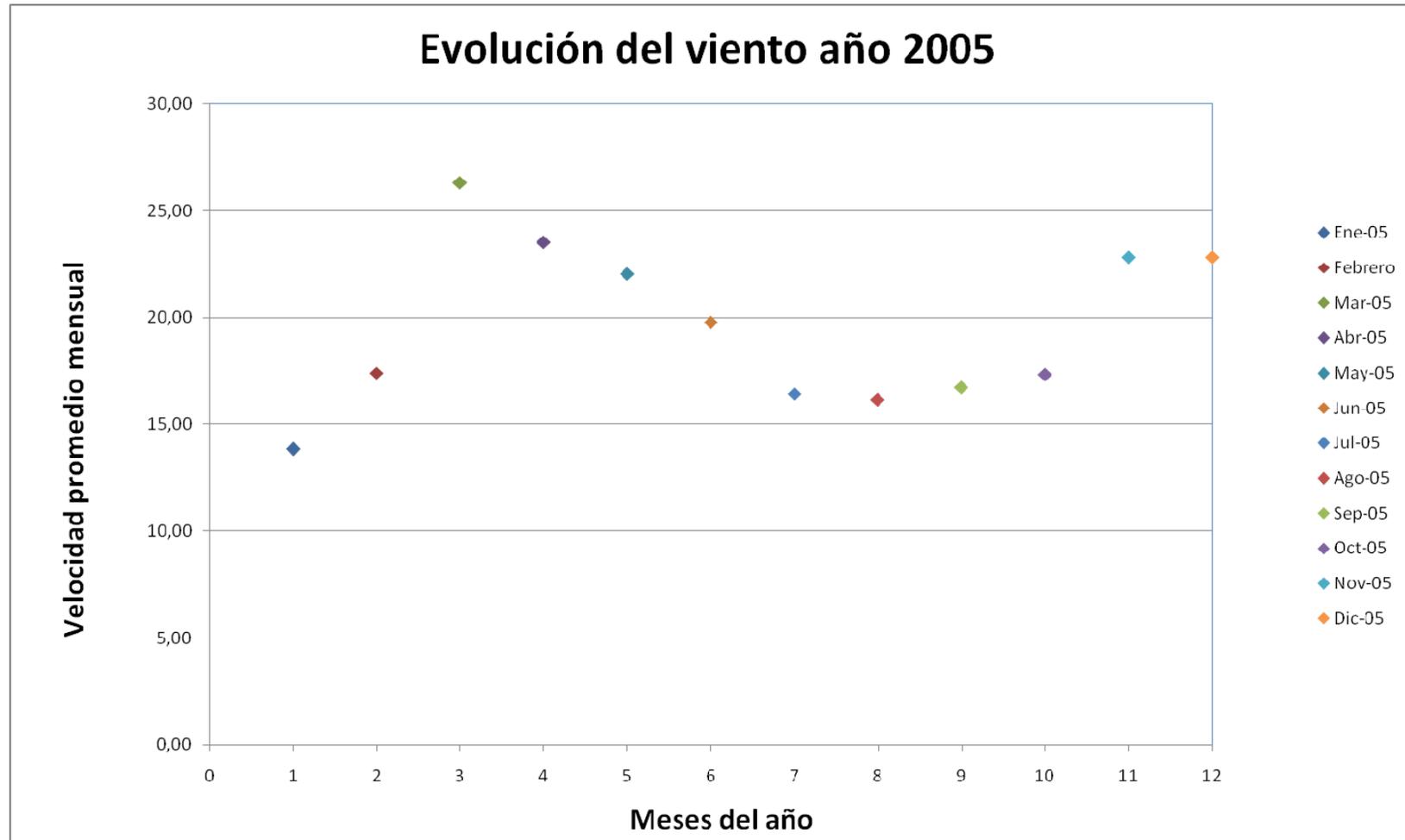
**ANEXO (41).** Tabla de las velocidades promedio de vientos en el año 2005

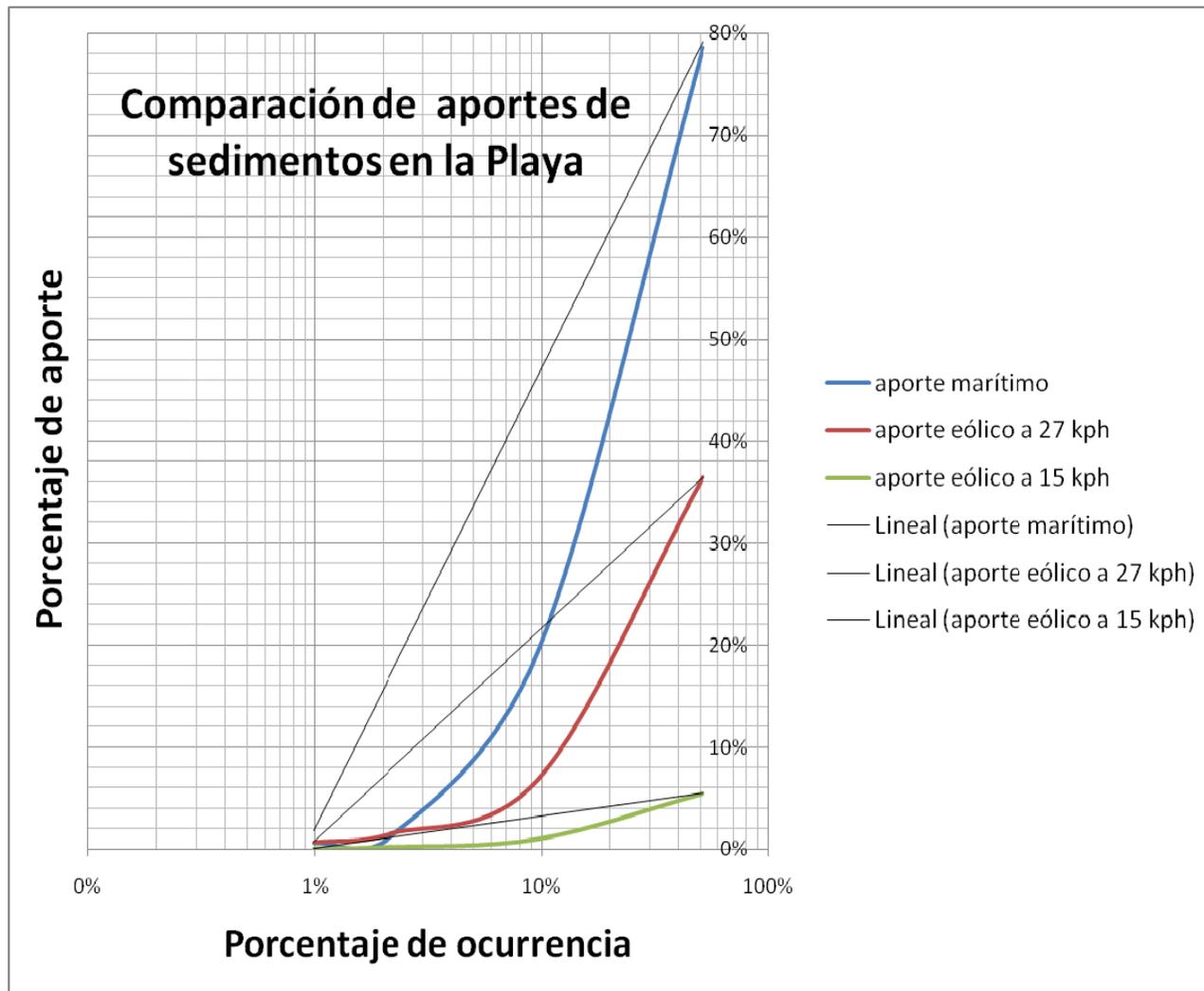
Días	Enero V (km/h)	Febrero V (km/h)	Marzo V (km/h)	Abril V (km/h)	Mayo V (km/h)	Junio V (km/h)	Julio V (km/h)	Agosto V (km/h)	Septiembre V (km/h)	Octubre V (km/h)	Noviembre V (km/h)	Diciembre V (km/h)
1	-	12,4	21,7	-	19,4	26,7	18,9	17	16,1	16,1	-	-
2	-	9,1	24,3	-	19,4	25,6	-	17,2	19,8	-	24,4	24,4
3	10,7	-	25,9	28,2	23,9	20,4	-	-	18,7	12,2	24,3	24,3
4	8,1	8,7	20,9	30,6	23,9	-	-	-	-	13,7	-	-
5	-	20,7	-	27	27	17,2	8,1	-	15,7	-	19,8	19,8
6	7,2	21,7	-	24,4	20,6	22,4	-	-	18	16,5	-	-
7	15,2	20,7	-	-	16,1	19,8	-	20,7	-	-	-	-
8	17,4	-	-	-	-	10,2	-	-	17	-	-	-
9	-	-	-	-	26,3	16,5	-	-	18	-	-	-
10	-	18,9	-	23,7	26,7	-	17	-	20,6	-	-	-
11	-	15,7	-	-	25,2	-	14,4	-	25,9	8,1	-	-
12	-	18	-	-	-	17,4	12,2	-	-	-	-	-
13	18,9	15,7	-	-	24,3	19,3	-	8,1	-	-	-	-
14	-	11,5	-	27	24,3	20,6	13	13,1	18	-	-	-
15	15,4	14,4	-	28	-	-	17	-	23	-	-	-
16	-	-	-	-	22,2	-	14,4	14,4	17,2	-	-	-
17	-	-	-	-	-	-	-	-	10,7	-	-	-
18	-	-	-	22,4	20,9	-	19,4	-	11,7	24,4	-	-
19	-	11,5	-	23,3	16,5	-	19,8	-	14,4	20,9	-	-
20	10,7	-	-	27,8	-	-	-	-	-	-	-	-
21	12,6	-	-	26,7	18	20,2	18	19,8	10,7	-	-	-
22	13,5	-	31,5	18,9	18	-	-	13,7	10,7	17	-	-
23	-	20,7	28,7	10,2	14,4	-	21,7	-	12,6	20,9	-	-
24	-	15,6	22,2	-	17,2	-	16,1	-	19,8	-	-	-
25	-	26,1	-	21,7	20,2	-	16,1	18,9	-	17,4	-	-
26	18,7	21,7	30,6	23,7	25,2	-	-	-	13	18,7	-	-
27	20,9	24,4	-	25,6	24,4	-	-	-	23,3	14,4	-	-
28	-	23,2	23,3	20,2	22,8	-	20,2	-	20,7	-	-	-
29	-	-	28	19,3	21,7	-	-	16,1	9,1	22,4	-	-
30	10,7	-	-	18,5	30,6	20,9	-	18,9	-	-	-	-
31	-	-	32,4	-	23,9	-	-	-	-	20,2	-	-
<b>PROMEDIO</b>	13,85	17,41	26,32	23,54	22,04	19,78	16,42	16,17	16,73	17,35	22,83	22,83

**ANEXO (42).** Representación gráfica de la Velocidad de viento promedio según los meses del año 2004



**ANEXO (43).** Representación gráfica de la Velocidad de viento promedio según los meses del año 2005



**ANEXO (44).** Representación gráfica del aporte de sedimento litoral y eólico en playa El Yaque

**ANEXO (45).** Tabla de relaciones entre muestras por % peso de Si

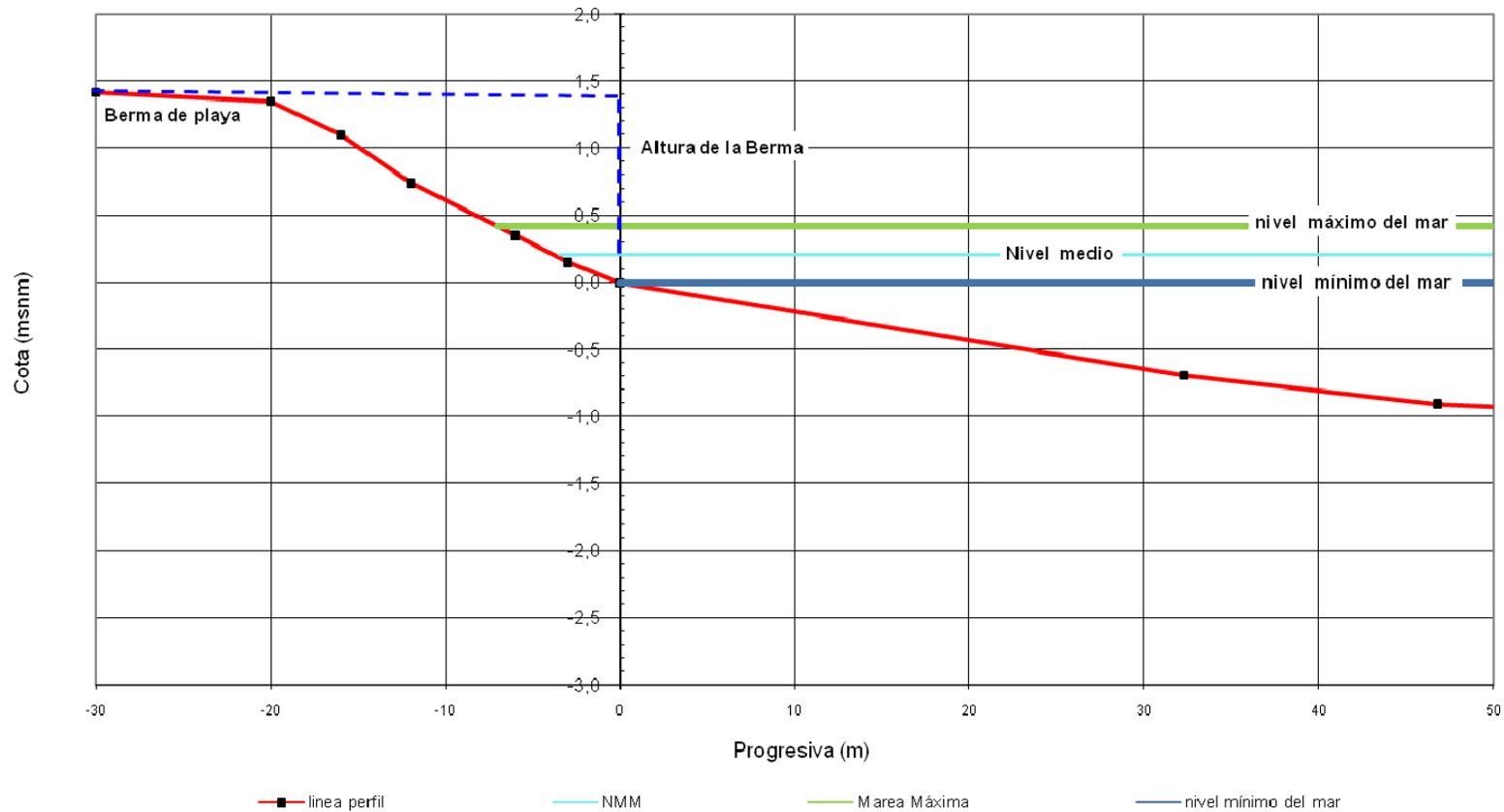
Si			Análisis de Área						
Frecuencia (Nº veces)	Índice de Si %Peso	Índice de Ca % peso	Nº Muestras	Nomenclatura	Ubicación	Coordenadas		% diferencia Si <1	% diferencia Ca <1
						E	N		
3	7,83	57,36	4	M50	Morro (parte alta)	395372	1205173	M50-M53-M31	M50-M53
	8,63	57,83	16	M31	Morro (parte alta)	395372	1205171		
	7,71	56,60	19	M53	Isleta	397688	1204975		
3	24,24	38,04	13	M41	Playa hoteles	395203	1205098	M1-M20-M41	-----
	23,97	33,10	6	M20	Frente Viejo espigón	394798	1204849		
	23,88	29,41	11	M1	Costa afuera frente Morro	395658	1204666		
3	29,15	34,39	10	M60	Lengüeta arena	394169	1205079	M12-M60	M13-M60
	27,71	34,29	1	M13	Frente morro	395580	1204934	M13-M12	-----
	28,51	32,53	22	M12	Frente morro	395555	1204926		
3	31,61	24,87	7	M15	Frente Hoteles	395240	1204895	M15-M30	-----
	32,03	32,60	3	M61	Playa Cerca Muelle	394761	1205134	M61-M30	M61-M30
	31,49	32,94	9	M30	Base del morro	395347	1205151		

**ANEXO (46).** Tabla de relaciones entre muestras por % peso de Ca

Ca Análisis de Área			Playa: Tierra	Frente: sumergido	Costa afuera : +Sumergido		% diferencia Si <1	% diferencia Ca <1		
Frecuencia (Nº veces)	Índice de Si %Peso	Índice de Ca % peso	Nº Muestras	Nomenclatura	Ubicación	Coordenadas				
							E	N		
3	50,30	6,52	5	M5	Costa afuera frente Morro	395750	1204296	M5-M11	M6-M11	
	49,98	7,67	2	M11	Costa afuera frente Hoteles	395289	1204691			
	47,62	6,84	26	M6	Costa afuera frente Morro	395596	1204332			
3	7,83	57,36	4	M50	Morro (parte alta)	395372	1205173	M50-M53-M31	M50-M53	
	8,63	57,83	16	M31	Morro (parte alta)	395372	1205171			
	7,71	56,60	19	M53	Isleta	397688	1204975			
7	29,15	34,39	10	M60	Lengüeta arena	394169	1205079		M60-M32-M13	
	30,69	33,59	12	M32	Parte de atrás morro	395528	1205148			
	27,71	34,29	1	M13	Frente morro	395580	1204934			
	23,97	33,10	6	M20	Frente Viejo espigón	394798	1204849	M30-M61	M12-M61-M30	
	31,49	32,94	9	M30	Base del morro	395347	1205151			
	32,03	32,60	3	M61	Playa Cerca Muelle	394761	1205134			
	28,51	32,53	22	M12	Frente morro	395555	1204926			

**ANEXO (47).** Representación gráfica de del Perfil Transversal y Berma de la costa de playa El Yaque

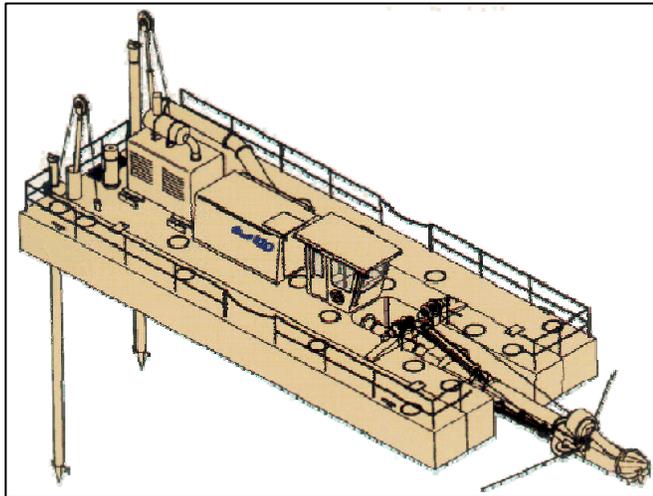
**Detallado del Perfil Transversal Costa de EL YAQUE**



Esc V: 1:125 Esc H: 1:10.000

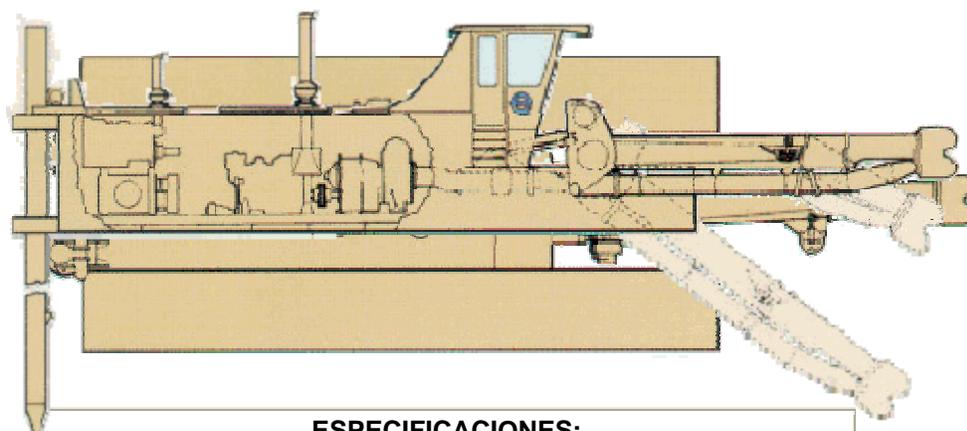
Datum: Nivel Medio del Mar.

**ANEXO (48).** Especificaciones técnicas de la draga Series 670 "DRAGON".  
Fuente: <http://www.dredge.com>



ESPECIFICACIONES:	
DIÁMETRO INTERIOR TUBERÍA DE SUCCIÓN	356 mm (14 pulgadas)
DIÁMETRO INTERIOR TUBERÍA DE DESCARGA EN CASCO	305 mm (12 pulgadas)
DIÁMETRO INTERIOR TUBERÍA FLOTANTE/TIERRA	356 mm (14 pulgadas)
DIÁMETRO IMPULSOR BOMBA DE DRAGADO	940 mm (37 pulgadas)
MÁXIMA VELOCIDAD DE ROTACION DEL IMPULSOR	605 rpm
MÁXIMA POTENCIA DE LA BOMBA	418 kW (560 hp)
ELEVACIÓN EN TERMINAL DE DESCARGA	3,05 m (10 pies)

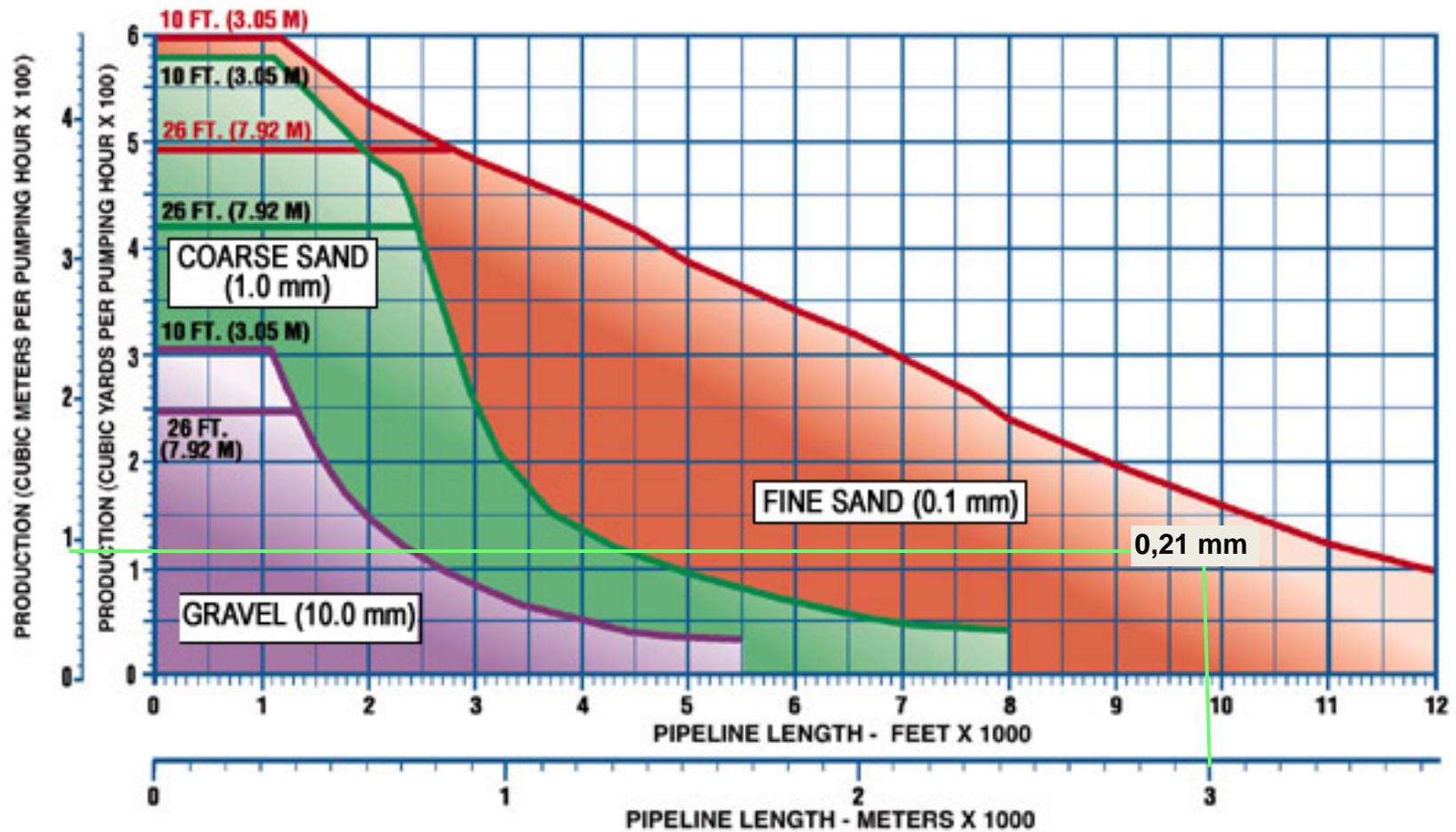
**ANEXO (49).** Especificaciones técnicas de la draga Series 1170 "DRAGON".  
Fuente: <http://www.dredge.com>



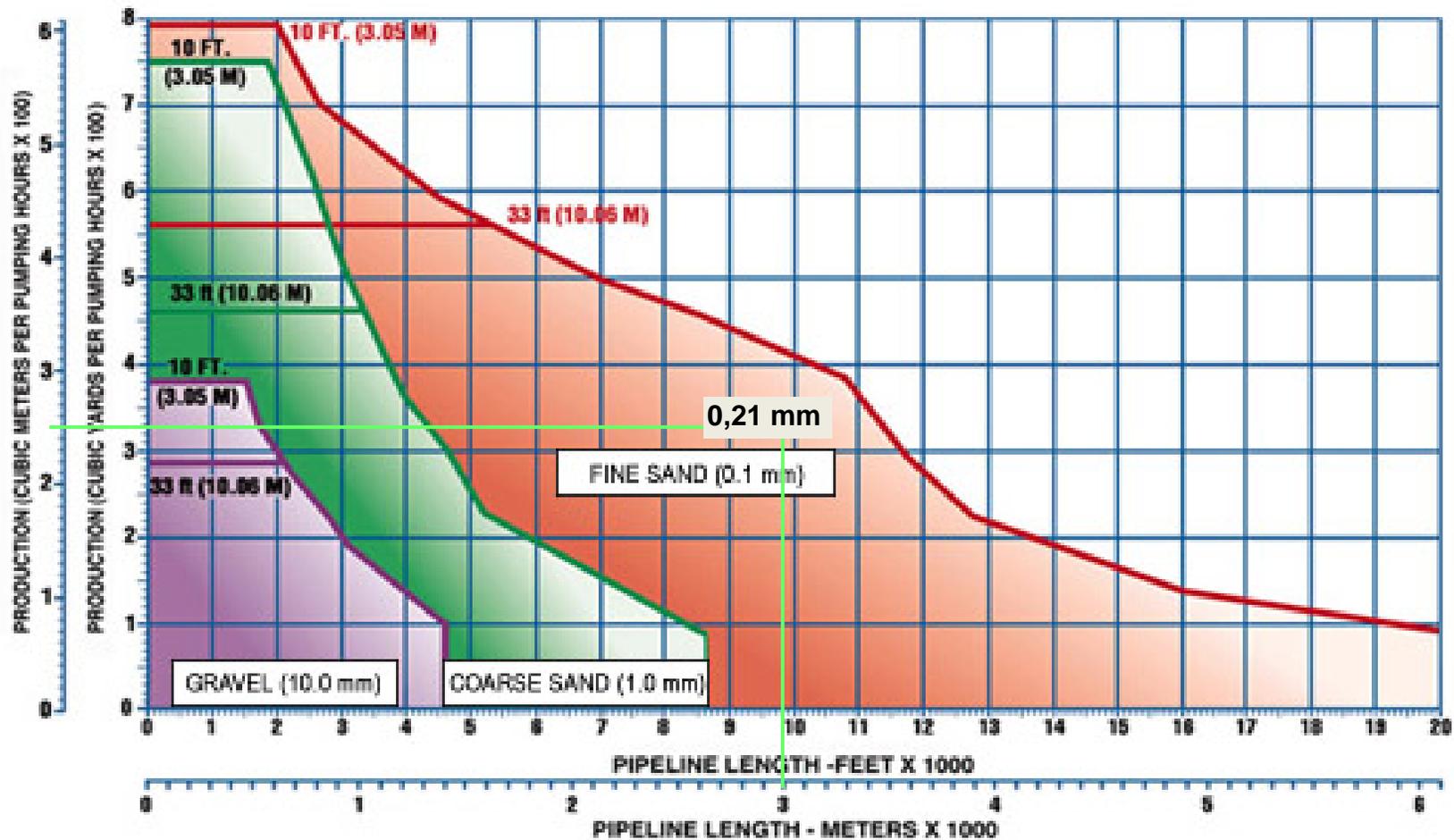
**ESPECIFICACIONES:**

DIÁMETRO INTERIOR TUBERÍA DE SUCCIÓN	406 mm (16 pulgadas)
DIÁMETRO INTERIOR TUBERÍA DE DESCARGA EN CASCO	356 mm (14 pulgadas)
DIÁMETRO INTERIOR TUBERÍA FLOTANTE/TIERRA	406 mm (16 pulgadas)
DIÁMETRO IMPULSOR BOMBA DE DRAGADO	965 mm (38 pulgadas)
MÁXIMA VELOCIDAD DE ROTACIÓN DEL IMPULSOR	605 rpm
MÁXIMA POTENCIA DE LA BOMBA	438 kW (855 hp)
ELEVACIÓN EN TERMINAL DE DESCARGA	3,05 m (10 pies)

**ANEXO (50).** Gráfica de valores de producción por longitud de bombeo la draga Series 670 "DRAGON".  
 Fuente: <http://www.dredge.com>



**ANEXO (51).** Gráfica de valores de producción por longitud de bombeo la draga Series 1170 "DRAGON".  
 Fuente: <http://www.dredge.com>



**ANEXO (52).** Curva de los valores de rendimientos de diferentes bombas Godwin Series “CD- Dri Prime”.  
 Fuente: <http://www.godwinpumps.com/images/pdfs/SpanishPDFs/Electric-SPA.pdf>

