

C. VERTICAL AND HORIZONTAL CONTROL *See also H-Cell Report*

Tide and water level corrections were determined and applied in accordance with Attachment #7 of the Statement of Work. Tidal zoning as set forth in the Statement of Work was applied. Data from Port Fourchon, LA (8762075) was used as the primary source of tides, while Grand Isle, LA (8761724) was used as a back up. Because there were no outages at the primary station during the survey, the secondary station was not used for any tidal corrections. The following table shows the tidal zone and correctors that were used for this sheet. Tidal data were processed using the 1983-01 epoch.

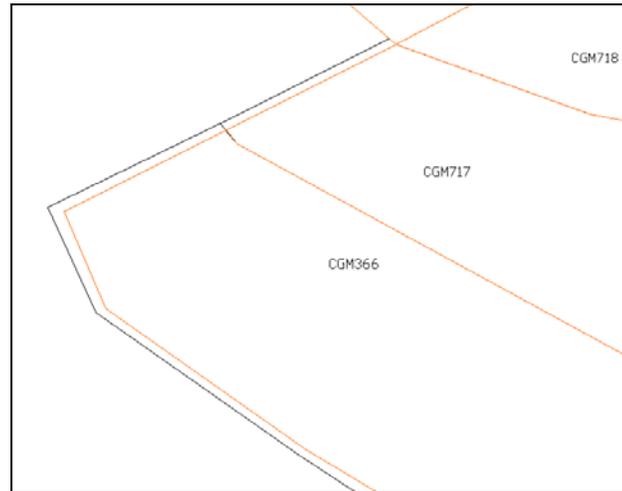
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Tide Zone	Reference Station	Primary/ Secondary	Time Corrector	Range Ratio
CGM366	8762075	PRIM	-12	1.05
CGM366	8761724	SEC	-48	1.23
CGM717	8762075	PRIM	-12	1.05
CGM717	8761724	SEC	-48	1.23
CGM718	8762075	PRIM	-12	1.05
CGM718	8761724	SEC	-42	1.23
CGM731	8762075	PRIM	-12	1.05
CGM731	8761724	SEC	-42	1.23
CGM732	8762075	PRIM	-6	1.09
CGM732	8761724	SEC	-42	1.27
CGM733	8762075	PRIM	-6	1.17
CGM733	8761724	SEC	-36	1.37
CGM734	8762075	PRIM	-6	1.09
CGM734	8761724	SEC	-36	1.27
CGM735	8762075	PRIM	-6	1.05
CGM735	8761724	SEC	-42	1.23
CGM749	8762075	PRIM	0	1.13
CGM749	8761724	SEC	-36	1.32
CGM750	8762075	PRIM	0	1.09
CGM750	8761724	SEC	-36	1.27
WGM416	8762075	PRIM	-6	1.21
WGM416	8761724	SEC	-36	1.42
CGM364	8762075	PRIM	-6	1.09
CGM364	8761724	SEC	-36	1.27

To ensure complete coverage, C&C created line files that extended beyond the survey boundary by approximately 150 to 300 meters. The zone definition file provided by CO-OPS had to be altered by C&C in order to cover this area. The result was zones CGM366 and CGM717 being extended along their northwest boundaries by approximately 600 meters. This file was named K354KR2009CORP_C&C_Edit.zdf and affects only subarea 1. The image below shows the new .zdf file (black) compared to the old file (orange).

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The horizontal datum for the survey is the North American Datum of 1983 (NAD 83). The projection is Universal Transverse Mercator (UTM) Zone 15 North. The vertical datum for the soundings is Mean Lower Low Water (MLLW). *Concur.*

The tidal data applied to all multibeam echo sounder data was downloaded from the following website:

http://tidesandcurrents.noaa.gov/station_retrieve.shtml?type=Historic%20Tide%20Data&state=Louisiana&id1=876

ABSTRACT OF TIMES OF HYDROGRAPHY

Project: OPR-K354-KR-09

Contractor Name: C & C Technologies, Inc.

Inclusive Dates: **October 13th, 2009 - April 8th, 2010**

Registry No.: H12069 (Sheet H)

Date: April 2010

Sheet Letter: H

Field Work is Complete

Time (UTC)

Date	Julian Day	Start	End	Year
10/13/2009	286	2046	2400	2009
10/14/2009	287	0000	2400	2009
10/15/2009	288	0000	2400	2009
10/19/2009	292	1615	2400	2009
10/20/2009	293	0000	2400	2009
10/21/2009	294	0000	0003	2009
10/24/2009	297	2345	2400	2009
10/25/2009	298	0000	2400	2009
10/26/2009	299	0000	1337	2009
11/12/2009	316	2230	2400	2009
11/13/2009	317	0000	2400	2009
11/14/2009	318	0000	2400	2009
11/15/2009	319	0000	2400	2009
11/16/2009	320	0000	2400	2009
11/17/2009	321	0000	2400	2009
11/18/2009	322	0000	2400	2009
11/19/2009	323	0000	1650	2009
11/23/2009	327	0015	2400	2009
11/24/2009	328	0000	2115	2009
11/27/2009	331	1910	2400	2009
11/28/2009	332	0000	2400	2009
11/29/2009	333	0000	2000	2009
12/20/2009	354	0630	0000	2009
12/21/2009	355	0000	2400	2009
12/22/2009	356	0000	1440	2009
1/2/2010	002	1930	2400	2010
1/3/2010	003	0000	2400	2010
1/4/2010	004	0000	2400	2010
1/5/2010	005	0000	2400	2010
1/6/2010	006	0000	2400	2010
1/7/2010	007	0000	0748	2010
1/11/2010	011	0016	2400	2010
1/12/2010	012	0000	2400	2010
1/13/2010	013	0000	2400	2010
1/14/2010	014	0000	2400	2010
1/15/2010	015	0000	0100	2010

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2/20/2010	051	2218	2400	2010
2/21/2010	052	0000	2400	2010
2/22/2010	053	0000	2113	2010
2/23/2010	054	0846	1414	2010
2/25/2010	056	0940	1548	2010
2/25/2010	056	2227	2400	2010
2/26/2010	057	0000	2400	2010
2/27/2010	058	0000	2400	2010
2/28/2010	059	0000	2400	2010
3/1/2010	060	0000	1130	2010
3/3/2010	062	2145	2400	2010
3/4/2010	063	0000	1649	2010
3/5/2010	064	1353	2400	2010
3/6/2010	065	0000	2400	2010
3/7/2010	066	0000	2400	2010
3/8/2010	067	0000	2400	2010
3/9/2010	068	0000	1113	2010
3/11/2010	070	0600	2400	2010
3/12/2010	071	0000	1946	2010
3/14/2010	073	1344	2400	2010
3/15/2010	074	0000	2400	2010
3/16/2010	075	0000	1800	2010
3/17/2010	076	1830	2400	2010
3/18/2010	077	0000	2400	2010
3/19/2010	078	0000	2400	2010
3/20/2010	079	0000	1403	2010
3/23/2010	082	0400	2400	2010
3/24/2010	083	0000	2200	2010
3/26/2010	085	0500	2400	2010
3/27/2010	086	0000	2400	2010
3/28/2010	087	0000	1730	2010
3/29/2010	088	2000	2400	2010
3/30/2010	089	0000	2400	2010
3/31/2010	090	0000	2400	2010
4/1/2010	091	0000	2400	2010
4/2/2010	092	0000	1208	2010
4/3/2010	093	0135	2400	2010
4/4/2010	094	0000	2400	2010
4/5/2010	095	0000	1334	2010
4/7/2010	097	1705	2400	2010
4/8/2010	098	0000	0057	2010