APPENDIX C

GEOLOGICAL CHANCE OF SUCCESS

The Geological Chance of Success is intended to evaluate the probability that a functioning petroleum system is in place for each prospective reservoir. The chance of success is a yes / no probability that a discovery may occur. A discovery may or may not be of sufficient size to warrant development. Additional drilling may be required to determine if a discovery is economic to develop.

For the purposes of this evaluation, each of the mapped intervals on each of the structures is evaluated independently. The chance of success is evaluated by considering four risk parameters: trap, reservoir, source and timing and migration. The risk factor for each parameter for each prospective reservoir is assigned based on the criteria shown in the Risk Factor Assignment Criteria table. Depth values in the discussions are from Ryder Scott's time / depth conversion using data from the Doubloon Saxon well and may be significantly different from the true depths of the structures.

RISK FACTOR DEFINITIONS

Trap Risk	The probability that adequate vertical and lateral seals exist which could confine hydrocarbons within adjacent reservoir rock.
Reservoir Risk	The probability that a lithology exists with sufficient porosity, permeability and continuity to contain moveable hydrocarbons.
Source Risk	The probability that a lithology exists with sufficient quantity and quality of thermally mature organic matter to have expelled oil or gas which could feasibly have migrated to the reservoir.
Timing and Migration Risk	The probability that a source rock expelled oil or gas after the reservoir and trap were in place and that a flow path existed between source and reservoir.
Total Geologic Risk	= (Trap Risk) x (Reservoir Risk) x (Source Risk) x (Timing and Migration Risk)

RISK FACTOR ASSIGNMENT CRITERIA

Risk Factor	Assigned Value	Criteria
Trap	0.9	Trap reasonably certain; clearly defined by 3D seismic data; laterally continuous seals present in wells and seismic, trap dip defined only minor faulting present
	0.7	High confidence of trap; seen and delineated on seismic; seals present in wells and some lateral continuity in seismic, trap mostly dip defined, some fault dependent closure
	0.5	Equal probability of trap or no trap; seen, but poorly delineated; seals present in some wells; seismic reflectors generally continuous, trap mostly fault dependent
	0.3	Low confidence of trap; indicated on seismic; questionable seals in wells
	0.1	No trap mechanism seen on seismic; presence of seals unknown
Reservoir	0.9	Reservoir rock present in nearby wells; reasonably certain at new location
	0.7	Reservoir rock present in basin; good probability at new location
	0.5	Equal probability of reservoir or no reservoir; evidence on seismic or model
	0.3	Reservoir rock generally absent; low probability at new location
	0.1	Nearby well confirms absence of reservoir rock
Source	0.9	Established source of hydrocarbons clearly identified at new location
	0.7	Source of hydrocarbons present in basin, good probability at new location
	0.5	Equal probability of source or no source present
	0.3	Source rock generally absent, low probability at new location
	0.1	No source rock identified
Timing &	0.9	Migration occurred after reservoir and trap in place, clearly defined flow path
Migration	0.7	Good probability that migration occurred after trap formation, probable flow path
	0.5	Equal probability that migration occurred before or after trap formation
	0.3	Low probability of flow paths and migration occurring prior to trap formation
	0.1	No evidence of migration before trap formation or flow paths

SUMMARY OF GEOLOGICAL CHANCE OF SUCCESS

Structure	Horizon	Trap	Reservoir	Source	Timing & Migration	Chance of Success
A	Top Cretaceous	.4	.9	.6	.5	11%
	Top Albian	.4	.9	.6	.6	13%
	Top Aptian	.65	.9	.7	.75	31%
B	Top Cretaceous	.7	.9	.6	.7	26%
	Top Albian	.6	.9	.6	.7	23%
	Top Aptian	.75	.9	.7	.75	35%
C	Top Cretaceous	.75	.9	.6	.7	28%
	Top Albian	.75	.9	.6	.7	28%
	Top Aptian	.8	.9	.7	.7	35%
D	Top Cretaceous	.4	.9	.6	.4	9%
	Top Albian	.55	.9	.6	.4	12%

Top Cretaceous Horizon

Structure A

At the Top Cretaceous horizon a 600' column is mapped to a lowest closing contour at -6600'. To the northeast, the structure is bounded by a large displacement, northwest-southeast trending normal fault which is imaged across the area of interest on 18 dip oriented lines. This fault appears to extend upward to the sea bottom. The structure appears to be a closure on the northwest nose of regional structure that may continue to climb to the southeast. A structural high at this level is imaged on 11 dip lines. The northwest-southeast oriented strike line on the south flank exhibits primarily northwest regional dip. The certainty of closure to the southeast may also be affected by the terminations of dip lines due to proximity to the Bahamas – Cuba border.

In the Doubloon Saxon well vertical seals in this section are poorly defined, while in Great Isaac anhydrite beds are present. At this horizon, the structure appears to be related to a platform margin. Consequently, the Doubloon Saxon well may be more representative of the depositional environment than the Great Isaac.

Including both structure and seal risk, trap risk is .4.

Reservoirs are developed at this level in both Doubloon Saxon and Great Isaac.

Reservoir risk is .9.
Both live and dead hydrocarbon shows have been encountered in the deep Bahamas wells although no commercial accumulations have yet been found.

Source risk is .6.

The geothermal gradient in the Bahamas is low; most likely hydrocarbon generation is at great depth. Structure A may be a carbonate platform overlying a basement horst and persistent through time. Seismic reflectors above Near Top Cretaceous horizon appear to onlap the structure. The bounding fault does not extend to depth.

Trap formation prior to migration seems likely but migration path at this level is poorly defined.

Timing and migration risk is .5.

Chance of success for Top Cretaceous on Structure A:

.4 X .9 X .6 X .5 = .11

Structure B

At the Top Cretaceous horizon 4200' of structural closure is mapped to a lowest closing contour at -8800'. The closure is imaged on 16 northeast-southwest oriented dip lines and substantiated by a shot-for-purpose northwest-southeast strike line along the crest.

As noted above, there is a lack of well defined vertical seals in the Doubloon Saxon well at this level although anhydrites are present in the Great Isaac. The structure is located nearer to the center of the present day Bahamas Channel. Platform margin deposition as represented by the Great Isaac well is

thought to be the more appropriate model here. Laterally continuous seismic peak / trough pairs just above the Top Albian horizon may indicate reservoir / seal pairs in the lower part of the section.

Trap risk is .7.

Reservoir discussion as above.

Reservoir risk is .9.

Source discussion as above.

Source risk is .6.

In the lower part of the section Structure B appears to be related to one or more deep thrust faults connecting it to a large synclinal area to the southwest and a deep syncline to the northeast. Seismic reflectors above the Near Top Cretaceous horizon appear to onlap the southwest flank of the structure.

Timing and migration risk is .7.

Chance of success for Top Cretaceous on Structure B:

.7 X .9 X .6 X .7 = .26

Structure C

At the Top Cretaceous horizon 1800' of structural closure is mapped to a lowest closing contour at -7000'. The structural crest of Structure C is approximately equivalent to the adjacent portion of Structure B but significantly low to structural culminations both northwest and southeast on Structure B. The Structure C closure is visible on 6 dip lines. A strike oriented line on the northeast flank is too far downdip to image the northwest-southeast closure.

As noted above, there is a lack of well defined vertical seals in the Doubloon Saxon well at this level although anhydrites are present in the Great Isaac. The structure is located at the base of a slope off the flank of the present day Bahamas Platform. Platform margin deposition as represented by the Great Isaac well may be the more appropriate model at this location. Laterally continuous, conformable peak / trough pairs are present throughout the section possibly representing reservoir / seal pairs.

Trap risk is .75.

Reservoir discussion as above.

Reservoir risk is .9.

Source discussion as above.

Source risk is .6.

In the lower one half of the section Structure C appears to be a "pop-up" structure between a southwest dipping thrust fault and a potential northeast dipping back thrust. Both faults are mapped deep into the Aptian section. Above the Near Top Cretaceous horizon seismic reflectors appear to onlap the structure on both northeast and southwest flanks.

Timing and migration risk is .7.

Chance of success for Top Cretaceous on Structure C:

.75 X .9 X .6 X .7 = .28

Structure D

At the Top Cretaceous level 200' of closure is mapped to a lowest closing contour at -11,250'. The structure is imaged on 3 dip lines and is developed in a region of relatively low dip downdip of Structures B and C. Due to the relatively thick Tertiary section overlying the structure, the depth to the Top Cretaceous horizon is very sensitive to the time-depth conversion. The depth of the crest of the structure varies from approximately 8000' using the Great Isaac Tertiary velocity to 11,000' using the Doubloon Saxon Tertiary velocity. The "Pearl" 3D survey currently being acquired does not extend over this structure.

Trap risk is .4.

Reservoir discussion as above.

Reservoir risk is .9.

Source discussion as above.

Source risk is .6.

The timing of the structure is not well defined and there is no apparent direct connection to the deeper section.

Timing and migration risk is .4.

Chance of success for Top Cretaceous on Structure D:

.4 X .9 X .6 X .4 = .09

Top Albian Horizon

Structure A

At the Top Albian horizon Structure A consists of a group of structural culminations separated by shallow synclines with an overall lowest closing contour at -10,900'. On the highest culmination the structural column reaches 1300'. The northeast flank of the structure exhibits steep northeast dip which may be a platform edge and appears to be related to a basement horst block. The structure is imaged on 6 northeast-southwest oriented 2011 lines. A northwest-southeast oriented strike line that runs along the south flank of the structure gives little structural definition. Critical northwest dip separating the structure from regional southeast dip off the Cay Sal bank is not well imaged. The highest part of the Albian structure and most of the closure lies to the northwest of the Top Cretaceous closure.

First anhydrite in the Doubloon Saxon well was encountered at 17,300' which may be near the base of the Albian. Potential seals higher in the section in Doubloon Saxon are poorly defined low porosity

limestones and dolomites. In contrast, the Great Isaac well penetrated significant thicknesses of anhydrite as high as 7000'. Seismic quality within the Albian is poor and does not provide information on potential seals.

Trap risk is .4.

Reservoirs are developed at this level in both Doubloon Saxon and Great Isaac.

Reservoir risk is .9.

As discussed in the Top Cretaceous assessment, hydrocarbon shows are present in the deep Bahamas wells.

Source risk is .6.

There is an extensive syncline northeast of the structure. At the top Aptian horizon, depths in the center of the syncline may approach 20,000' depending on the time / depth relationship used. The Top Albian and Top Aptian horizons are poorly imaged by seismic on Structure A. The current seismic interpretation shows the Top Cretaceous, Top Albian and Top Aptian horizon essentially parallel. There is no clear indication of the structure's existence prior to the Top Cretaceous.

Timing and migration risk is .6.

Chance of success for Top Albian on Structure A:

.4 X .9 X .6 X .6 = .13

Structure B

At the Top Albian horizon 5200' of closure is mapped to the lowest closing contour at -11,000'. On the northeast flank the structure is bounded by a potential southwest dipping thrust fault and a deep syncline. Another apparent southwest dipping thrust separates the southwest flank from the crestal area of the structure. For the purposes of this evaluation both fault blocks are considered to be in communication with common contacts based on the Doubloon Saxon time / depth conversion. The Top Albian horizon is, in some areas of the structure, a complex surface which may reflect the presence of additional faulting, carbonate buildups or seismic imaging issues. The structure is imaged on 16 dip oriented lines. The northwest-southeast strike oriented line is affected by the crestal faulting but indicates overall closure on the northwest and southeast plunges of the structure.

As with Structure A, the presence of vertical seals in this section is uncertain and seismic quality is poor and not useful for evaluating the presence of seals in the section.

Trap risk is .6.

Reservoir discussion as above.

Reservoir risk is .9.

Source discussion as above.

Source risk is .6.

As discussed above, the syncline between Structure A and Structure B reaches depths of 20,000' at the Top Aptian Horizon indicating the base of the Albian section may be in the oil generation window. The two apparent thrust faults that form the northeast boundary of Structure B may extend to significant depths providing another potential migration path from deeper sediments into the Albian section. The syncline to the northeast between Structure B and Structure C also approaches depths of 20,000'.

The bounding faults do not penetrate the Top Cretaceous horizon which may indicate that the structure and faults were present before deep burial by the Tertiary section. The complexity of the Top Albian surface on Structure B may indicate an erosional surface.

Timing and migration risk is .7.

Chance of success for Top Albian on Structure B:

.6 X .9 X .6 X .7 = .23

Structure C

At the Top Albian horizon Structure C has 3200' of closure to the lowest closing contour at -14,200'. The structure is bounded on the northeast flank by a southwest dipping thrust fault and on the southwest flank by a northeast dipping back thrust. Almost all of the mapped closure is within the "pop-up" horst between the two faults. The structure is imaged on 9 dip oriented lines. A strike oriented line off the northeast flank and outside of the horst does not add to the structural definition.

The crest of the structure at the deeper Top Aptian horizon is at an approximate depth of -15,500' based on the Doubloon Saxon time / depth conversion. This is a higher elevation than the first anhydrite occurrence in Doubloon Saxon but the structural relationship of Structure C to the Doubloon Saxon is uncertain due to the lack of a direct seismic tie. There are potential anhydrite seals in the Great Isaac at much shallower depths. The Top Albian horizon on Structure C and in the synclinal areas northeast and southwest of the structure is a high amplitude event. Continuous, conformable peak / trough pairs within the Albian section may indicate the presence of seal / reservoir pairs in the section.

Trap risk is .75.

Reservoir discussion as above.

Reservoir risk is .9.

Source discussion as above.

Source risk is .6.

As discussed earlier, Structure C is bounded on both flanks by apparent thrust faults that are present at depth. Both faults terminate below the Top Cretaceous horizon. The Top Cretaceous, Top Albian and Top Aptian horizons as currently interpreted on Structure C are essentially parallel both on the structure and off the flanks. There is no clear indication of the structure's existence prior to Top Cretaceous.

Timing and migration risk is .7.

Chance of success for the Top Albian on Structure C:

.75 X .9 X .6 X .7 = .28

Structure D

At the Top Albian horizon Structure D is a four-way closure with 400' of column to the lowest closing contour at -15,000' based on the Doubloon Saxon velocity information. The structure is developed on a relatively flat structural shelf on generally northeast regional dip. The structure is imaged on 5 northeast-southwest oriented dip lines from the 2011 2D data set and one near north-south line from the 2010 2D data set. The structure is not covered by the "Pearl" 3D seismic volume currently being acquired.

As discussed above, the presence of vertical seals in the Albian section is uncertain.

Trap risk is .55.

Reservoir discussion as above.

Reservoir risk is .9.

Source discussion as above.

Source risk is .6.

The timing of the structure is not well defined and there is no apparent direct connection to the deeper section.

Timing and migration risk is .4.

Chance of success for the Top Albian on Structure D:

.55 X .9 X .6 X .4 = .12

Top Aptian Horizon

Structure A

At the Top Aptian horizon a 1500' column is mapped to the lowest closing contour at -18,100'. Structure A consists of a line of four structural culminations with the highest feature developed at the southeast end of the structure. Closure on the northwest nose of the structure is a moderately deep syncline. The structure is seen on 14 northeast-southwest oriented dip lines. Northwest-southeast oriented strike line 2010-4 crosses the crest of the southeast culmination. A second northwest-southeast oriented strike line, 2011-12, sees relatively gentle northwest and southeast dip components of the broader, and shallower northwest culmination. Seismic imaging at the Top Aptian horizon is poor but the overall trend of a northwest-southeast trending, asymmetric closure with a steep northeast flank and less steeply dipping southwest flank can be discerned.

At this depth both Doubloon Saxon and Great Isaac wells penetrate multiple anhydrite and minor salt layers that may serve as vertical seals.

Trap risk is .65.

Reservoir discussion as above.

Reservoir risk is .9.

Live oil shows are more prevalent in the deepest section of the Doubloon Saxon well. The Great Isaac well penetrated a clastic section with source potential at the base of the well.

Source risk is .7

Portions of the Aptian section should be in the oil generation window, the formations encountered at this depth may be self-sourcing. There are direct paths on the flanks of the structure from the adjacent synclines that occur at depths greater than 20,000'. As at the Albian horizon, there is no seismic evidence of the presence of Structure A during Aptian time.

Timing and migration risk is .75.

Chance of success for Top Aptian on Structure A:

.65 X .9 X .7 X .75 = .31

Structure B

At the Top Aptian horizon 6400' of structural column is mapped to the lowest closing contour at -18,000'. Almost all of the mapped area of closure is on the southwest side of the two southwest dipping faults that form most of the northeast boundary of the structure. The structure is imaged on 19 dip oriented lines. The crestal northwest-southeast oriented strike line is caught up in the faults but gives an overall sense of closure on the northwest and southeast noses of the structure.

Potentially sealing anhydrites and minor salt layers are present in both Doubloon Saxon and Great Isaac at what is considered the equivalent stratigraphic interval. Imaging on the crest of the structure is fair at the Top Aptian horizon but some parallel peak / trough pairs are evident on the seismic on the southwest and northeast flanks.

Trap risk is .75.

Reservoir discussion as above.

Reservoir risk is .9.

Source discussion same as for Structure A above except bounding faults on Structure B appear to extend into the deep section. They may provide a direct path to the crest of a potential basement horst block. A potential clastic source section such as that seen in the bottom of the Great Isaac well may exist on top of these basement features.

Source risk is .7.

Depth at Top Aptian may be sufficient to allow self-sourcing and short migration paths. Faults on the northeast flank may tie into possible basement horsts which may be overlain by clastic section equivalent to that seen in the bottom of the Great Isaac well. No clear evidence of structure at Top

Aptian time; parallel reflectors in northeast syncline may indicate minimal structural influence before Top Cretaceous time.

Migration and timing risk is .75.

Chance of success for Top Aptian on Structure B:

.75 X .9 X .7 X .75 = .35

Structure C

At the Top Aptian horizon 3000' of structural column is mapped to the lowest closing contour at -18,200'. The mapped structural closure is contained within the horst block between the southwest dipping fault on the northeast flank and the antithetic fault on the southwest flank. The structure is imaged on 8 northeast-southwest trending dip lines. There is no properly positioned strike line to directly image closure on the northwest and southeast noses.

As discussed above potential vertical seals in the forms of anhydrites and minor salt layers have been observed in the equivalent stratigraphic section in Doubloon Saxon and Great Isaac. Multiple parallel peak / trough pairs are seen on seismic in the Aptian section both on Structure C and in the adjacent synclines.

Trap risk is .8.

Reservoir discussion as above.

Reservoir risk is .9.

Source discussion same as for Structures A and B except deep section is not imaged with current seismic processing.

Source risk is .7.

The bounding faults appear to extend to some depth below the Top Aptian horizon and terminate in the Top Cretaceous section. There is some seismic evidence that the horst block was present during Aptian time as the overall section within the Aptian appears to thin on the crest of the feature; however, reflectors on the flanks and into the adjacent synclines are mostly parallel.

Timing and migration risk is .7

Chance of success for Top Aptian on Structure C:

.8 X .9 X .7 X .7 = .35

Structure D

Structure D is not developed at the Top Aptian horizon.