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Clastic deposition, provenance, and sequence of Andean thrusting in the frontal Eastern Cordillera and Llanos foreland basin of Colombia

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Supplemental data for lithofacies, point-count, U-Pb, and (U-Th)/He analyses

STRATIGRAPHY

A ~4.5 km thick composite stratigraphic section (Fig. DR1) consists of the Eocene Mirador Formation (~180 m, Virgen section), Oligocene–Miocene Carbonera Formation (~950 m, Tocaría and Buenavista sections), León Formation (~650 m, Tocaría section), and the upper and lower Guayabo Formation (~810 m, Rincón del Soldado, Morcote, Tocaría, and Huron sections). This composite section was constructed from measured sections along the east limb of the Monterralo anticline (Virgen section), west limb of the Nunchia syncline (Huron, Morcote, and Tocaría sections) and east limb of the Nunchia syncline (Rincón del Soldado and Buenavista sections).

LITHOFACIES DESCRIPTIONS

Lithofacies Association FA1 (Fm, Fl, Fps, Smt, Sml, Sr): Mudstone with Interbedded Sandstone

This association is composed of red to light brown, laterally extensive, tabular, laminated or massive mudstone interbedded with thin sandstone beds (Fig. DR2A). Sandstone layers are red to beige, fine- to medium-grained, have upward-fining tendencies and occur with lenticular and tabular geometries of 0.1–0.5 m thick. These beds are arranged in stacked, 1-5 m thick sets that coarsen and thicken upward. Sandstone beds have sharp, erosive bases. This facies association occurs in several of the lithostratigraphic units: lower Mirador and lower and upper Guayabo. Mudstones in the lower Mirador Formation lack the interbedded sandstones. Sporadic occurrences of moderately well developed nodular blocky horizons, 1–2 m thick, indicate the presence of paleosols (Fig. DR2B) in the lower Guayabo Formation. Where present they are always at the top of the bed (Fig. DR2C) and change the color of the bed to light red. In the upper Guayabo Formation, the mudstones are multicolored (dark grey, purple, yellow and beige), laminated and have cm-scale thick organic rich layers (Fig. DR2D).

On the basis of grain size, sheet-like geometry, and lack of channelization, these strata are interpreted as overbank deposits produced by flooding or avulsion of the main stream providing mud and sand to the flanking area (Collinson, 1996). The sandstone beds represent crevasse splay and levee deposits. The upward-coarsening trends suggest phases of crevasse lobe migration into floodplain areas (Farrell, 2001) and the upward-fining successions reflect crevasse abandonment. The mudstones represent deposition from low-energy flow or standing water during channel abandonment (Miall, 1996). This interpretation is supported by the lateral continuity of the beds coupled with horizontal lamination. The presence of paleosols reflects subaerial exposure and periods of stability in floodplain areas during deposition of the lower Guayabo Formation. The presence of organic matter in the upper Guaybo may suggest rapid plant accumulation under a relatively humid paleoclimate.

Lithofacies Association FA2 (Ss, St, Sp, Sh, Sml): Amalgamated Channelized Sandstone

This facies association consists of red to light yellow, moderately sorted, medium to very coarse-grained sandstone exhibiting upward-fining trends. Thicknesses range from 5 to 20 m and

some show lenticular erosive surfaces (Fig. DR2D) with upward-fining patterns. The erosive basal contact with the underlying unit is sharp and the sandstone grades upward into the mudstone with interbedded sandstone facies association (FA 1). Sedimentary structures in the sand bodies include small- to medium-scale trough and planar cross stratification (Fig. DR2E) and massive and horizontal lamination. Facies association 2 is present in the lower Mirador and lower and upper Guayabo formations. The lower Mirador shows a near absence of floodplain deposits (Fig. DR1), in sharp contrast with the lower Guayabo Formation. Pebbles and mudstone rip-up clasts are present as a lag deposit in the lower Guayabo Formation.

These sandstone bodies are interpreted as the principal channel deposits of medium-energy streams, based on the upward-fining trends, basal erosive surfaces with pebble lags, and the presence of tractional sedimentary structures (Collinson, 1996; Einsele, 2000). The abundant floodplain deposits and moderate degree of sandstone lateral amalgamation could be related to a limited tendency for channel migration or rapid subsidence rates in Guayabo Formation. However, the high degree of lateral amalgamation and absence of overbank deposits in the Mirador Formation suggests relatively low accommodation. Pebbles and mudstone rip-up clasts suggest relatively high energy and erosion of the bordering floodplain deposits. Finely laminated sandstones near sequence tops indicate upper flow regime conditions (Stear, 1985). The overall upward-fining tendency, due to an upslope decrease in bed shear stress on the surface of the river bar, is consistent with a decrease in stream energy and channel abandonment. Trough cross-bedded lithofacies and planar cross stratification represent 3-D and 2-D dunes, respectively, within shallow channels and bars (Miall, 1985: Bridge, 2003). The lack of lateral accretion surfaces suggest limited lateral migration of point bars.

Lithofacies Association FA3 (Smt, Ssw, Sh, Sr, Sb, Fl): Upward-Coarsening Cross-Stratified Quartzose Sandstone

This association consists of stacked tabular beds ranging in thickness from 0.1 to 1 m, constituting upward-coarsening sequences 10–20 m thick. Beds coarsen and thicken upwards from laminated siltstone to horizontally laminated, trough and swaley cross-stratified white medium-grained sandstone with subordinate granules and pebbles. Burrows of *Skolithos* ichnofacies are present as trace fossils. Detrital grains are moderately sorted but well rounded.

Thin layers (1–5 cm thick) rich in black heavy minerals are present, but rare. This lithofacies association is present in the upper Mirador Formation.

This lithofacies association is interpreted as wave-dominated coastal (shoreface) deposits on the basis of their tabular bedding style, upward-coarsening grain size trend, and presence of trough and swaley cross-stratification (Reineck and Singh, 1980; Bhattacharya and Walker, 1992). The presence of burrows of the *Skolithos* ichnofacies supports the interpretation of deposition above fair-weather wave base.

Lithofacies Association FA4: (Sml, Sb, Sr, Fl,Fm,C): Upward-Fining Bioturbated Sandstone

This association is composed of upward-fining, mostly dark green, moderately sorted medium- to fine-grained sandstone intercalated with grey laminated siltstone. Sandstone bed thicknesses vary from 1 to 6 m and most are amalgamated with lenticular geometries (Fig. DR3A). Intervals of stacked sandstone beds reach up to 20 m in thickness. Low-angle cross stratification characterizes the sandstone beds (Fig. DR3B), which are often bioturbated (including *Thalassinoides* and *Ophiomorpha* burrows) with the highest degree of perturbation near the tops of individual beds. Bed bases are commonly erosive (Fig. DR3C) with a gravel lag. Laminated and massive grey mudstone occurs between the sandstone beds with abundant organic matter and sporadic coal layers. At a finer scale, ripple and horizontal-laminated sandstone occur within the mudstone intervals (Fig. DR3C). Beds of this facies association are arranged into an upward-fining pattern. This facies association occurs in the upper Carbonera and León formations.

These deposits are attributed to an estuarine, tidally influenced environment with sandstone bodies representing distributary channels and bars within a transgressive setting. Interdistributary and “behind-the-coast” areas are indicated by the presence of fine particles and abundant coal layering (Reading and Collinson, 1996). The severe burrowing near the bedding tops and the presence of coal implies channel abandonment. The erosive-based, upward-fining sequences imply an unsteady depositional system typical of a tidally influenced environment and are interpreted as tidal bars within tidal or fluvial channels (Dalrymple, 1992; Reading and Collinson, 1996).

Lithofacies Association FA5 (Fm, Fl, Sb, Sf, Sw, Sr, Smt, Sml): Mudstone

This facies association is composed mainly of black and dark grey claystone and siltstone with no visible sedimentary structures. These fine-grained deposits have intercalations of flaser-laminated fine-grained sandstone with lenticular or tabular shaped beds less than 1 m thick. These sandstone units sometimes contain *Thalassinoides* burrows. This facies association occurs in the upper Carbonera and León formations. Within the C2 member of the Carbonera Formation, a fossiliferous-rich horizon (Fig. DR3D) contains abundant mollusk shells.

These deposits are attributed to a progradational or aggradational prodelta (Coleman and Wright, 1975; Bhattacharya and Walker, 1992; Reading and Collinson, 1996). Thin, symmetrical cross-stratified sandstone intercalations may indicate nonmarine detrital input below fair-weather wave base, possibly deposited by hyperpycnal flows (Reading and Collinson, 1996). The mollusk-bearing horizon is interpreted as the northern age equivalent of the Huesser horizon (Gomez et al., 2009). Following this correlation, this horizon represents a short marine incursion, consistent with the interpretation of a distal subenvironment.

Lithofacies Association FA6 (Sh, Sle, Sf, Sw, Sr, Sp, Fm, Smt): Upward-Coarsening Sandstone

This association is composed of upward-coarsening and thickening intervals consisting of 0.01 to 0.1 m beds stacked into 20–70 m thick sequences (Fig. DR3E). Lower levels of the stacked sequences commonly have current ripple cross-lamination intercalated with horizontally laminated or laminated hetherolitic deposits (flaser, wavy and lenticular bedding). Planar cross stratification is common in the sandy intervals together with symmetric ripple cross lamination. Small-scale erosive surfaces occur in the sandstone beds and fine-grained particles form mud drapes over the sandy layers (Fig. DR3F). These upward-coarsening intervals start with laminated siltstone that coarsens up to green, laminated, fine-grained sandstone capped by olive medium-grained sandstone (Fig. DR3G). Plant fragments are common on bedding planes and fine-grained sediments contain a large amount of organic matter. Toward the top of these intervals, thin interbedded sandstone and mudstone with lenticular and flaser lamination complete the succession. Bioturbation is not abundant, but vertical *Skolithos* burrows (Fig. DR3F) are present.

These upward-coarsening sequences are interpreted as prograding distal to medial sand bar/ridge systems in a tidally influenced delta-front subenvironment, on the basis of the upward-

coarsening trend, current-generated tractional structures toward the sequence tops, and the presence of mud drapes and lenticular and flaser lamination (Collinson, 1988; Reading and Collinson, 1996). Flaser bedding coupled with planar and climbing ripple cross stratification indicates a depositional setting above fair-weather base in a mixed fluvial to tide-influenced delta front (Bhattacharya and Walker, 1992).

Lithofacies Association FA7 (Gci, Gcm, Gt, Gp, Sh, St, Sp): Conglomerate and Interbedded Cross-Stratified Sandstone

Conglomerate clasts of this facies association range from granules to cobbles, are subangular to well rounded, moderately sorted, and clast supported. Individual beds have mostly tabular geometries, but some lenses have also been found (Fig. DR2B). The conglomeratic intervals commonly show normal and occasionally inverse grading and exhibit moderately to well-developed clast imbrication. Conglomerate beds are amalgamated (Fig. DR2F), showing sharply erosive bases and trough and planar cross stratification. Interbedded with the conglomerates are coarse-grained sandstones with minor pebbles (Fig. DR2F). The sandstone bodies are typically 1 m thick with horizontal lamination and planar and trough cross stratification.

This facies association is interpreted as the result of deposition in bedload-dominated, poorly to well-confined channels of a fluvial megafan system (DeCelles and Cavazza, 1999; Horton and DeCelles, 2001) or distributive fluvial system (Hartley et al., 2010). The clast-supported fabric, erosive basal contacts, and development of imbricated clasts and cross stratification is consistent with deposition in shallow incised channels of low sinuosity with gravel bedload sedimentation under waning-energy flows (Miall, 1996; Blair, 1999; Uba et al., 2005).

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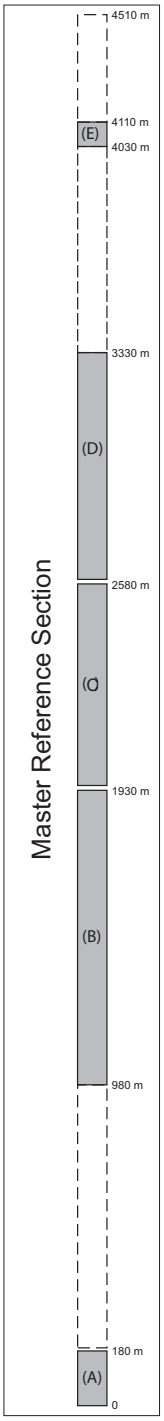
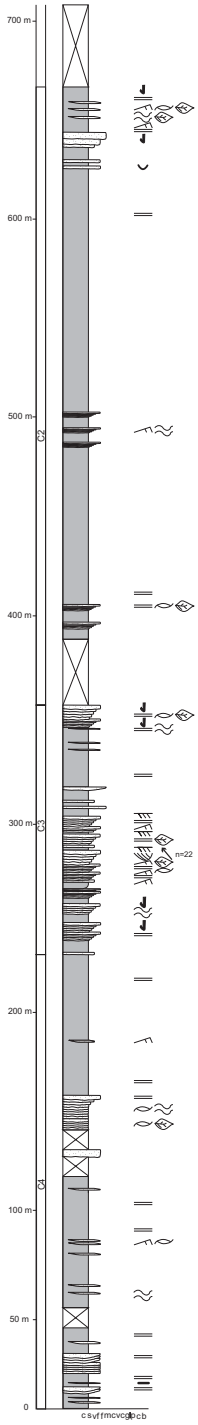
Fig. DR1. Measured stratigraphic sections of the (A) Mirador, (B) upper Carbonera, (C) León, and (D) lower Guayabo and (E) upper Guayabo formations, including sedimentary structures and paleocurrent data. A composite reference section (left) shows the relative stratigraphic positions and total thickness of the Eocene–Pliocene section, including covered intervals (dashed).

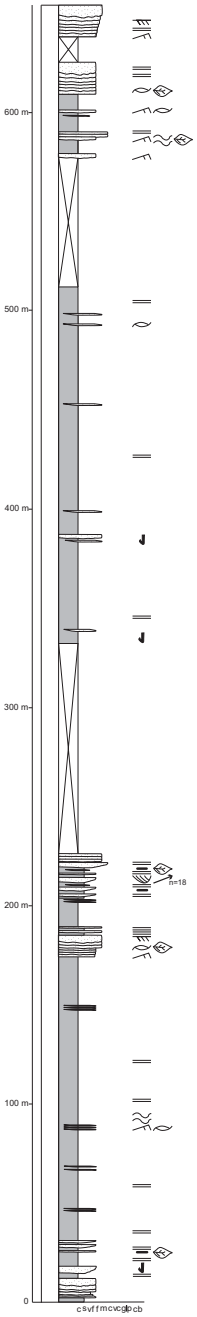
Bande et al., Fig. DR1



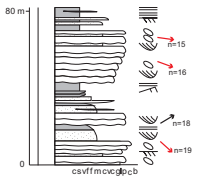
(B) upper Carbonera Fm.



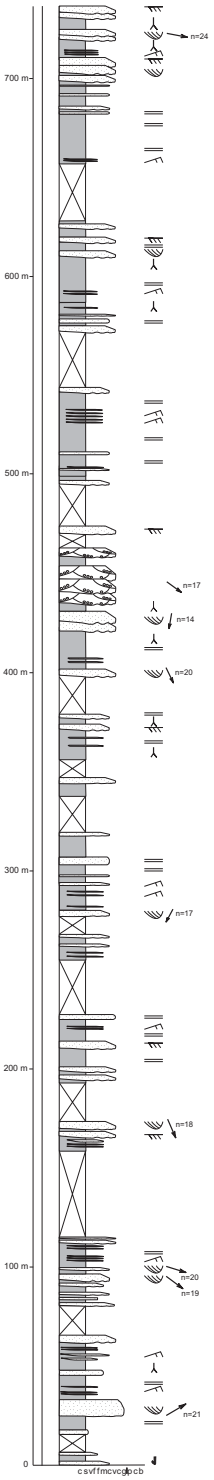
(C) León Fm.



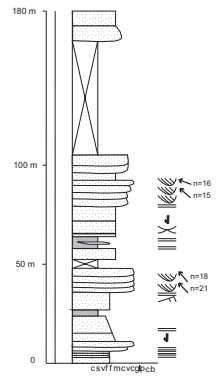
(E) upper Guayabo Fm.



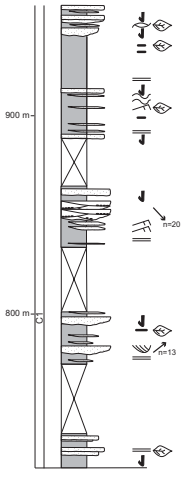
(D) lower Guayabo Fm.



(A) Mirador Fm.



(B) upper Carbonera Fm. (cont.)



EXPLANATION

- Horizontal stratification
- Planar cross stratification
- Trough cross stratification
- Wavy bedding
- Flaser bedding
- Swaley cross stratification
- Ripple cross-lamination
- Scour and fill structures
- Gravel imbrication
- Coal
- Plant fragments
- Roots - paleosols
- Marine fossils
- Burrows - bioturbation

GRAIN SIZE

md | ss | cgl

c s vf f m cv cg gl p cb

md (mudstone)
ss (sandstone)
cgl (conglomerate)

PALEOCURRENT DATA

n = number of measurements

- Trough cross-stratification
- clast imbrication

Fig. DR2. Photographs of representative sedimentary facies of the lower and upper Guayabo Formation in the Nunchía syncline (Fig. 3). (A) Overbank facies association (FA 1) capping a 4 m thick amalgamated sandstone channel belt (FA 2). (B) Well-defined channelized conglomerate (Gcm) bed contained in pedogenic mudstone (Fps) interval. Jacob staff for scale. (C) Multicolored mudstone facies association (FA 1) in the upper Guayabo Formation. (D) Erosive-based sandstone unit (FA 2) above mudstones of FA 1. The pedogenic zone (Fps) is better developed at the top of the mudstone interval. (E) Detail of trough cross-stratified sandstone (St) bed with basal pebbles in the upper Guayabo Formation. Pen for scale. (F) Stacked conglomerates (Gci) with medium-grained sandstone intercalations of FA 7 in the upper Guayabo Formation. Person for scale.

Bande et al., Fig. DR2

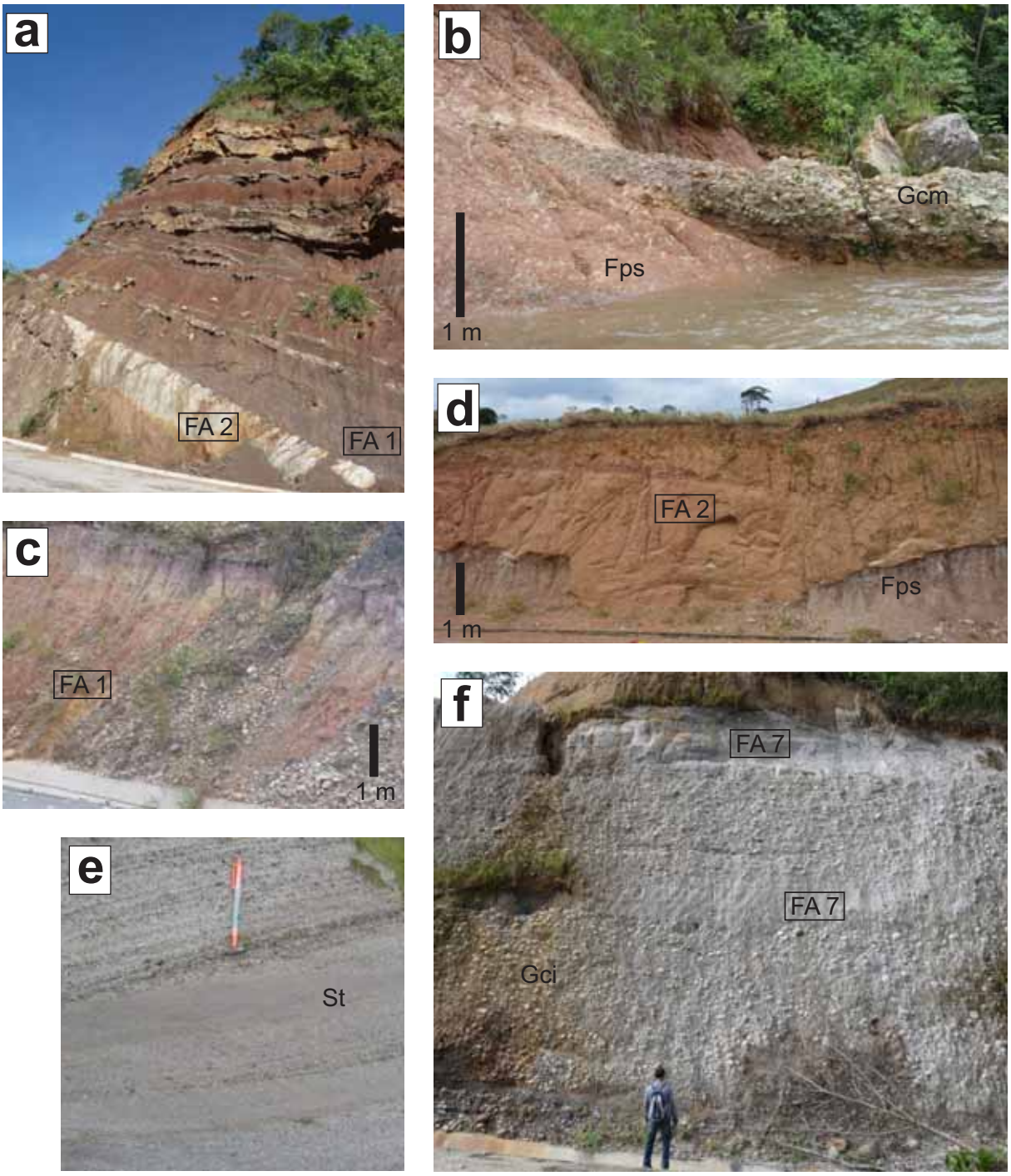


Fig. DR3. Photographs of representative sedimentary facies of the upper Carbonera and León Formations in the Nunchía syncline (Fig. 3). (A) Amalgamated, erosive-based, lenticular sandstone in upper Carbonera Formation. (B) Low angle cross-stratification in sandstone bed of FA 4. Person for scale. (C) Fine-grained ripples and ripple cross-stratification intercalated with mudstones of FA 4, upper Carbonera Formation. Rock hammer for scale. (D) Pecten embedded in muddy matrix, belonging to a mollusk-rich horizon at the top of the C2 member (age equivalent of Huesser Horizon, Gómez et al., 2009). (E) Well-defined upward-coarsening and thickening succession in upper Carbonera Formation. Bed thickness increases from 10 cm to 1 m. Person for scale. (F) Detail of small-scale erosive surfaces and fine-grained organic-rich material forming mud drapes on top of the rippled sandstone layers. Skolithos burrows are present. (G) Laminated siltstone succession coarsening upward to laminated and massive sandstones of the León Formation.

Bande et al., Fig. DR3

Table DR1. Description and interpretation of sedimentary lithofacies (after Miall, 1996).

Lithofacies	Code	Description	Interpretation
Massive mudstone	Fm	Strutureless claystones and siltstones	Suspension deposits, overbank or abandoned channels
Laminated siltstone	Fl	Finely laminated siltstones, occasionaly calcareous.	Suspension deposits, overbank or abandoned channels
Siltstones with paleosols	Fps	Massive, moderate developed paleosoil, ocassionaly crude lamination. Bed thicknes: 1 to 2 meters. Tabular bed geometry.	Overbank or abandoned channel, soil development.
Lenticular bedded sandstone	Sle	Intercalated mudstones and fine-grained sandstones. Moderate sorting. Tabular bed geometry. The mudstone are normally black and ripples can be found in the sandstone intercalations.	Suspension deposits combined with low flow regime and 2D or 3D ripples.
Wavy bedded sandstone	Sw	Very fine to fine grained sandstones intercalated with siltstones and claystones. Moderate sorting. Tabular bed geometry. Bed thickness: 1 to 2 meters. In the fine grained layers there is presence of of coal. In the sandstones ripple lamination is present.	Suspension deposits combined with low flow regime and 2D or 3D ripples.
Flaser bedded sandstone	Sf	Very fine to fine sized sandstones intercalated with siltstones and claystones. Moderate sorting. Tabular bed geometry. Bed thickness: 1 to 3 meters. In the fine grained layers there is presence of of coal. In the sandstones ripple lamination is present.	Suspension deposits combined with low flow regime and 2D or 3D ripples.
Massive Lenticular Sandstone	Sml	Fine to very coarse grained sandstones, quartzose composition. Moderate to well sorting. Thickness range: 1 to 2 meters. Lenticular bed geometry.	Rapid deposition or sedimentary structures have been vanished during diagenesis. But the shape of the body suggest a channelized stream.
Massive Tabular Sandstone	Smt	Fine to very coarse sandstone, quartzose composition, moderate sorting. Thickness range: 1 to 6 meters. Tabular bed geometry.	Rapid deposition or sedimentary structures have been vanished during diagenesis
Horizontally stratified sandstone	Sh	Horizontally stratified sandstone. Very fine and coarse grain size, internally is has centimeter scale lamination. Well sorted. Subrounded grains. Tabular bed geometry. Bed thickness: 2 to 5 meters.	Planar bed flow, upper flow regime.
Ripple cross-stratified sandstone	Sr	Very fine to fine grained sandstone with abundant current ripples lamination (cm). Ocassionaly climbing ripples. Moderate to well sorting. Subrounded grains. Tabular bed geometry. Thickness: less than 1 meter.	Migration of 2D or 3D ripples
Trough cross-stratified sandstone	St	Fine to coarse grained sandstones, occasionaly pebbly. Moderate sorting. Bed thickness: 2 to 5 meters. Subrounded grains.	3D dunes migration, lower flow regime

Planar cross-stratified sandstone	Sp	Fine to coarse grained sandstones, occasionaly pebbly. Moderate to well sorting. Moderate to well sorting. Bed thickness: 1 to 3 meters.	2D dunes migration, lower flow regime
Swaley cross-stratified sandstone	Ssw	Fine to medium grained rounded sandstones where the cross sets cut across one another and only the swales are preserved	Storm waves deposits between fair-weather and storm wave base.
Scour surface	Ss	Fine to very coarse grained sandstone, filled with pebbles and mudclast. Normal grading. The surface has a convex upward shape.	Scour fills
Bioturbated sandstone	Sb	Fine and coarse grained sandstone. Mottled. Greenish, yellow and violet colored. Vertical and Horizontal burrows (*Thalassinoides, Ophiomorpha and Skolithos*). Iron oxides cementation. Moderate sorting. Tabular bed geometry. Bed thickeness: 3 to 4 meters	After deposition of the bed, organism colonized it and disturbed the primary structure.
Clast supported masive conglomerate	Gcm	Clast supported polymictic conglomerate. Gravels to cobbles, inverse to normal grading, subangular to rounded	Traction bedload, transported by fluvial streams
Clast supported imbricated conglomerate	Gci	Clast supported polymictic conglomerate. Gravels to cobbles, normal grading, subangular to rounded, well developed imbrication	Traction bedload, transported by persistent fluvial stream
Planar cross-stratified conglomerate	Gp	Clast supported planar cross-stratified conglomerate. Gravels to cobbles. Subrounded	Linguoid bar, transverse bar
Trough cross-stratified conglomerate	Gt	Clast supported trough cross stratified conglomerates. Gravels to pebbles, normal grading with imbrication	Tranverse bar, channel fill
Coal	C	Coal, carbonaceous mud, plant fragments	Swamp deposits

Table DR2. Parameters for sandstone point counts.

Symbol	Grain categories
Qm	monocrystalline quartz
Qp	polycrystalline quartz
Qpf	polycrystalline quartz, foliated
F	plagioclase and potassium feldespar
Lsi	argillaceous-shale lithic fragment
Lss	sandstone lithic fragment
Lsc	chert
Lmf	quartz-feldespar-mica lithic fragment, fine grained
Lmm	quartz-feldespar-mica lithic fragment, medium grained
Lv	volcanic lithic fragment (undifferentiated)
G	glauconitic lithic fragment
D	dense minerals (amphibole, pyroxene, etc)
M	monocrystalline white mica (muscovite)
B	monocrystalline black mica (biotite)

Table DR3. Sandstone modal point-count data (%).

Sample	Formation	Mono-crystalline Quartz	Poly-crystalline Quartz	Feldspar	Sedimentary lithics	Metamorphic lithics	Volcanic lithics	Glauconite	Dense minerals	Mica	Total
09MP018	Mirador	88.7	8.4	0.2	1.6	1.1	0.0	0.0	0.0	0.0	100
MON 0617091	Mirador	84.0	8.9	1.3	4.2	0.4	0.0	0.2	0.2	0.7	100
MON 0617092	Mirador	87.6	6.2	0.9	3.8	0.2	0.0	0.0	0.0	1.3	100
MON 0617093	Mirador	70.9	14.2	2.0	6.0	3.8	0.0	0.0	0.0	3.1	100
MON 0617094	Mirador	89.6	8.2	0.4	1.1	0.4	0.0	0.0	0.0	0.2	100
MON 0617095	Mirador	88.4	9.6	0.7	0.7	0.4	0.0	0.0	0.0	0.2	100
MON 0617096	Mirador	90.2	6.4	1.3	1.6	0.2	0.0	0.0	0.0	0.2	100
MOR 0612091	low Carbonera	90.9	6.2	0.4	1.6	0.0	0.0	0.0	0.4	0.4	100
MOR 0612093	low Carbonera	83.1	8.4	1.3	4.4	2.4	0.0	0.0	0.0	0.2	100
MOR 0612094	low Carbonera	81.3	14.4	0.7	3.1	0.4	0.0	0.0	0.0	0.0	100
MOR 0613091	low Carbonera	92.2	5.6	0.7	0.9	0.2	0.0	0.0	0.0	0.4	100
NIS0107091	low Carbonera	85.8	5.6	4.2	3.1	0.7	0.0	0.0	0.0	0.0	100
BVI0110092	up Carbonera	79.1	8.7	4.2	5.8	0.7	0.0	0.9	0.0	0.7	100
BVI 01100910	up Carbonera	77.1	9.3	2.7	8.2	0.0	0.0	1.6	0.4	0.7	100
RSO 0111091	up Carbonera	79.1	10.9	1.3	7.8	0.0	0.0	0.0	0.0	0.0	100
RSO 0111093	up Carbonera	87.8	7.6	0.4	2.9	0.4	0.0	0.0	0.4	0.4	100
RSO 011095	up Carbonera	81.8	12.4	0.2	3.6	0.4	0.4	1.1	0.2	0.7	100
TOC 0108094	up Carbonera	72.2	18.4	1.3	5.1	0.0	0.0	2.9	0.0	0.0	100
TOC 0610091	up Carbonera	79.6	12.9	2.9	2.9	0.0	0.0	0.4	0.2	1.1	100
TOC 0610093	up Carbonera	74.2	13.1	1.6	7.3	0.7	0.2	0.2	0.2	2.4	100
TOC 0610095	up Carbonera	75.1	14.4	0.7	6.7	1.6	0.4	0.9	0.0	0.0	100
TOC0610096	up Carbonera	77.1	6.4	3.3	9.8	0.7	0.4	1.1	0.2	0.9	100
TOC0610098	up Carbonera	80.9	3.6	2.4	7.8	1.6	0.0	1.6	0.4	1.8	100
TOC0610099	up Carbonera	82.9	8.2	2.2	4.7	0.2	0.0	0.9	0.2	0.7	100
RSO 0111096	León	80.0	10.9	1.6	4.7	0.2	0.0	2.0	0.0	0.7	100
RSO 0111098	León	76.7	14.7	2.2	2.7	1.3	0.2	2.2	0.0	0.0	100
RSO 01110910	León	82.9	10.4	0.7	2.7	0.7	0.0	1.3	0.4	0.9	100
TOC0108092	León	76.4	10.2	3.1	8.0	0.0	0.0	1.6	0.0	0.7	100
TOC 0115092	León	85.1	7.3	0.7	3.8	0.4	0.0	2.2	0.0	0.4	100
RSO 01110911	low Guayabo	75.6	15.3	1.1	4.9	0.7	0.2	2.2	0.0	0.0	100
RSO 0112091	low Guayabo	73.3	14.2	1.3	9.3	0.0	0.0	1.6	0.0	0.2	100
RSO 0112093	low Guayabo	72.7	13.1	0.4	9.3	0.4	0.0	3.6	0.0	0.4	100
RSO 0112094	low Guayabo	66.7	11.1	4.9	14.9	0.9	0.0	1.3	0.0	0.2	100
RSO 0112095	low Guayabo	76.4	6.7	3.8	10.7	1.8	0.0	0.7	0.0	0.0	100
RSO 0112097	low Guayabo	71.6	8.0	4.2	15.3	0.2	0.0	0.7	0.0	0.0	100
RSO0618091	low Guayabo	77.1	11.6	2.4	7.1	0.7	0.0	1.1	0.0	0.0	100
RSO0618092	low Guayabo	68.9	13.8	0.9	13.8	1.8	0.0	0.4	0.0	0.4	100
RSO0618093	low Guayabo	77.3	9.6	1.3	11.1	0.0	0.0	0.2	0.2	0.2	100
CHA0617091	low Guayabo	67.8	24.9	2.7	4.4	0.0	0.0	0.0	0.0	0.2	100
CHA0617092	low Guayabo	67.3	19.1	2.4	8.0	1.1	0.0	0.0	0.2	1.8	100
VOL0614091	low Guayabo	82.0	9.8	1.3	6.7	0.0	0.0	0.0	0.0	0.2	100
VOL 0614092	low Guayabo	72.7	15.8	1.6	8.9	0.4	0.2	0.4	0.0	0.0	100
TAU 0113091	mid Guayabo	75.1	7.6	1.1	13.8	0.7	0.2	0.7	0.0	0.9	100
TAU 0113092	mid Guayabo	73.1	10.0	0.4	15.3	0.4	0.0	0.7	0.0	0.0	100
CHI0619092	mid Guayabo	78.0	4.7	2.2	14.2	0.0	0.0	0.4	0.0	0.4	100
CHI0619091	mid Guayabo	74.0	12.7	0.4	11.6	0.4	0.0	0.4	0.2	0.2	100
ANT0614091	up Guayabo	73.8	8.7	1.1	15.6	0.0	0.0	0.0	0.2	0.7	100
VCB0114094	up Guayabo	63.6	2.0	7.6	20.4	4.4	0.2	0.0	0.0	1.6	100
CUP0109091	up Guayabo	62.4	3.1	2.0	29.8	1.6	0.7	0.0	0.0	0.0	100

Table DR4. LA-ICP-MS analyses for detrital zircon U-Pb geochronology.

	Isotopic ratios						Apparent ages (Ma)								
Analysis ID	Th/U	$^{207}Pb^*/^{235}U$	± (%)	$^{206}Pb^*/^{238}U$	± (%)	error corr.	$^{207}Pb^*/^{235}U$	± (Ma)	$^{206}Pb^*/^{238}U$	± (Ma)	$^{207}Pb^*/^{206}Pb^*$	± (Ma)	Preferred Age (Ma)	± (Ma)	% Disc.
08YEM01, middle Eocene Mirador Formation (N=93). 5.45754°N 72.47004°W															
08YEM01_2	0.36	7.0647	1.91	0.3967	1.82	0.97	2119.61	16.82	2153.62	33.30	2086.88	8.40	**2086.9**	**8.4**	-1.6%
08YEM01_83	0.39	4.5819	2.25	0.2919	1.48	0.89	1745.98	18.62	1651.15	21.51	1861.62	20.88	**1861.6**	**20.9**	5.6%
08YEM01_24	0.63	4.3787	2.20	0.2811	1.65	0.89	1708.33	18.02	1596.72	23.31	1848.22	19.05	**1848.2**	**19.1**	6.8%
08YEM01_61	0.33	4.4367	2.32	0.2863	1.76	0.91	1719.22	19.05	1622.84	25.19	1838.64	18.51	**1838.6**	**18.5**	5.8%
08YEM01_3	0.63	4.6731	1.99	0.3031	1.87	0.96	1762.43	16.47	1706.46	27.95	1829.55	10.64	**1829.6**	**10.6**	3.2%
08YEM01_14	0.35	4.6176	2.08	0.3030	1.78	0.93	1752.45	17.20	1705.94	26.66	1808.40	13.84	**1808.4**	**13.8**	2.7%
08YEM01_95	0.73	3.9249	2.56	0.2593	1.76	0.89	1618.83	20.54	1486.01	23.30	1796.20	22.96	**1796.2**	**23.0**	8.6%
08YEM01_37	0.52	4.4806	2.31	0.2967	1.68	0.88	1727.39	18.98	1674.72	24.76	1791.90	21.09	**1791.9**	**21.1**	3.1%
08YEM01_9	0.49	3.8427	2.15	0.2548	1.77	0.92	1601.74	17.19	1463.12	23.19	1789.21	15.47	**1789.2**	**15.5**	9.0%
08YEM01_120	0.35	4.4983	2.15	0.2985	1.40	0.89	1730.65	17.69	1683.94	20.74	1787.81	19.95	**1787.8**	**20.0**	2.7%
08YEM01_133	0.51	4.7075	2.31	0.3129	1.65	0.89	1768.57	19.16	1755.16	25.31	1784.64	20.18	**1784.6**	**20.2**	0.8%
08YEM01_94	0.39	4.3239	3.31	0.2877	2.73	0.93	1697.93	26.95	1630.02	39.26	1782.91	22.97	**1782.9**	**23.0**	4.1%
08YEM01_132	0.32	3.9984	2.76	0.2674	2.18	0.91	1633.87	22.20	1527.63	29.55	1773.65	21.92	**1773.6**	**21.9**	6.7%
08YEM01_102	0.26	4.7729	3.16	0.3192	2.43	0.90	1780.15	26.21	1785.98	37.85	1773.42	26.41	**1773.4**	**26.4**	-0.3%
08YEM01_5	0.45	4.8186	1.89	0.3223	1.82	0.97	1788.15	15.78	1800.99	28.58	1773.33	7.82	**1773.3**	**7.8**	-0.7%
08YEM01_108	0.24	4.4831	2.20	0.3007	1.46	0.89	1727.85	18.09	1694.69	21.71	1768.45	20.37	**1768.4**	**20.4**	1.9%
08YEM01_99	0.42	4.5974	2.61	0.3086	1.83	0.90	1748.80	21.52	1733.88	27.72	1766.79	22.91	**1766.8**	**22.9**	0.9%
08YEM01_44	0.46	4.7897	1.73	0.3216	1.03	0.89	1783.09	14.41	1797.47	16.21	1766.40	16.85	**1766.4**	**16.9**	-0.8%
08YEM01_29	0.54	4.3947	2.02	0.2952	1.54	0.91	1711.35	16.56	1667.44	22.52	1765.70	16.19	**1765.7**	**16.2**	2.6%
08YEM01_17	0.25	4.5213	1.93	0.3044	1.66	0.94	1734.90	15.92	1712.96	24.95	1761.47	12.01	**1761.5**	**12.0**	1.3%
08YEM01_75	0.26	4.4266	1.63	0.2980	1.18	0.90	1717.32	13.44	1681.49	17.51	1761.33	13.95	**1761.3**	**13.9**	2.1%
08YEM01_101	0.25	4.6850	2.60	0.3158	1.80	0.89	1764.57	21.56	1769.43	27.80	1758.93	23.42	**1758.9**	**23.4**	-0.3%
08YEM01_49	0.48	4.3261	1.79	0.2918	1.09	0.88	1698.36	14.68	1650.44	15.88	1758.10	17.76	**1758.1**	**17.8**	2.9%
08YEM01_50	0.31	4.3065	1.76	0.2906	1.08	0.89	1694.61	14.38	1644.72	15.64	1757.00	16.99	**1757.0**	**17.0**	3.0%
08YEM01_107	0.30	4.3378	2.15	0.2936	1.41	0.89	1700.57	17.60	1659.34	20.56	1751.97	20.00	**1752.0**	**20.0**	2.5%
08YEM01_84	0.38	4.5064	2.16	0.3056	1.40	0.90	1732.15	17.81	1718.87	21.08	1748.37	20.01	**1748.4**	**20.0**	0.8%
08YEM01_131	0.11	4.6449	3.09	0.3155	2.52	0.91	1757.38	25.47	1767.61	38.84	1745.44	23.66	**1745.4**	**23.7**	-0.6%
08YEM01_119	0.28	4.1990	2.13	0.2855	1.38	0.89	1673.82	17.32	1618.98	19.75	1743.49	19.89	**1743.5**	**19.9**	3.3%
08YEM01_112	0.35	4.5860	2.17	0.3128	1.40	0.88	1746.72	17.92	1754.68	21.44	1737.42	20.76	**1737.4**	**20.8**	-0.5%
08YEM01_78	0.41	4.0704	2.15	0.2777	1.39	0.90	1648.40	17.41	1579.67	19.43	1737.31	19.98	**1737.3**	**20.0**	4.3%
08YEM01_73	0.33	3.8344	1.81	0.2621	1.36	0.90	1600.00	14.50	1500.81	18.23	1733.25	15.48	**1733.2**	**15.5**	6.4%
08YEM01_85	0.27	3.3762	2.30	0.2428	1.57	0.89	1498.90	17.85	1401.48	19.71	1639.62	21.04	**1639.6**	**21.0**	6.7%
08YEM01_47	0.50	3.3293	2.39	0.2425	1.54	0.82	1487.94	18.52	1399.58	19.30	1616.35	26.70	**1616.3**	**26.7**	6.1%

08YEM01_33	0.47	2.9325	2.13	0.2155	1.68	0.92	1390.33	15.98	1258.25	19.20	1599.43	16.35	**1599.4**	**16.3**	10.0%
08YEM01_10	0.43	3.2485	2.20	0.2389	1.77	0.91	1468.82	16.94	1380.90	22.02	1598.34	17.70	**1598.3**	**17.7**	6.2%
08YEM01_128	0.51	3.9505	2.14	0.2917	1.39	0.88	1624.09	17.18	1650.14	20.28	1590.70	20.83	**1590.7**	**20.8**	-1.6%
08YEM01_87	0.62	2.9629	2.66	0.2196	1.80	0.85	1398.15	19.96	1279.87	20.81	1583.59	27.09	**1583.6**	**27.1**	8.8%
08YEM01_71	0.34	3.3106	2.45	0.2461	1.87	0.86	1483.56	18.91	1418.58	23.81	1577.78	23.32	**1577.8**	**23.3**	4.5%
08YEM01_59	0.66	3.3893	2.99	0.2521	2.38	0.89	1501.92	23.18	1449.55	30.85	1576.56	25.44	**1576.6**	**25.4**	3.5%
08YEM01_26	0.44	3.3094	1.86	0.2474	1.29	0.89	1483.27	14.39	1424.82	16.47	1568.07	17.19	**1568.1**	**17.2**	4.0%
08YEM01_27	0.36	3.6707	2.06	0.2744	1.41	0.86	1565.02	16.31	1563.32	19.57	1567.50	20.70	**1567.5**	**20.7**	0.1%
08YEM01_52	0.23	3.6291	2.35	0.2735	1.78	0.91	1555.94	18.55	1558.60	24.66	1552.30	19.59	**1552.3**	**19.6**	-0.2%
08YEM01_35	0.60	3.1456	2.69	0.2372	2.23	0.91	1443.92	20.53	1372.27	27.50	1551.26	21.03	**1551.3**	**21.0**	5.1%
08YEM01_36	0.53	3.5597	2.61	0.2691	1.93	0.86	1540.59	20.47	1536.39	26.33	1546.46	25.38	**1546.5**	**25.4**	0.3%
08YEM01_21	0.65	3.2752	1.89	0.2480	1.33	0.89	1475.18	14.57	1428.10	17.00	1543.75	17.24	**1543.7**	**17.2**	3.2%
08YEM01_48	0.55	3.3723	2.13	0.2571	1.37	0.84	1497.99	16.57	1474.92	18.06	1530.89	22.88	**1530.9**	**22.9**	1.6%
08YEM01_117	0.29	3.4512	2.11	0.2649	1.34	0.89	1516.14	16.48	1514.99	18.11	1517.97	20.64	**1518.0**	**20.6**	0.1%
08YEM01_106	0.23	3.1287	2.12	0.2403	1.35	0.89	1439.78	16.19	1388.27	16.78	1516.91	20.95	**1516.9**	**20.9**	3.6%
08YEM01_111	0.39	3.3956	2.26	0.2618	1.48	0.87	1503.38	17.60	1499.12	19.76	1509.59	22.64	**1509.6**	**22.6**	0.3%
08YEM01_40	0.53	3.3395	2.06	0.2610	1.22	0.83	1490.33	15.96	1494.79	16.20	1484.10	23.60	**1484.1**	**23.6**	-0.3%
08YEM01_124	0.47	3.1903	2.17	0.2509	1.44	0.88	1454.81	16.63	1443.22	18.63	1471.99	21.12	**1472.0**	**21.1**	0.8%
08YEM01_64	0.38	3.1515	2.49	0.2498	1.90	0.90	1445.36	18.98	1437.43	24.42	1456.99	21.45	**1457.0**	**21.5**	0.5%
08YEM01_39	0.26	2.7409	2.22	0.2175	1.65	0.89	1339.62	16.36	1268.78	18.99	1454.78	19.81	**1454.8**	**19.8**	5.4%
08YEM01_123	0.32	2.7900	2.04	0.2216	1.24	0.88	1352.86	15.15	1290.21	14.54	1453.54	21.23	**1453.5**	**21.2**	4.7%
08YEM01_22	0.29	3.1235	1.83	0.2485	1.22	0.88	1438.49	13.94	1430.86	15.70	1449.99	17.80	**1450.0**	**17.8**	0.5%
08YEM01_88	0.41	2.8400	2.44	0.2263	1.68	0.88	1366.18	18.15	1314.86	19.91	1447.51	23.59	**1447.5**	**23.6**	3.8%
08YEM01_60	0.31	3.0185	2.63	0.2410	2.06	0.91	1412.32	19.84	1391.69	25.79	1443.53	21.95	**1443.5**	**21.9**	1.5%
08YEM01_113	0.24	3.0179	2.19	0.2411	1.40	0.88	1412.15	16.58	1392.15	17.51	1442.66	22.25	**1442.7**	**22.3**	1.4%
08YEM01_69	0.28	2.9474	2.24	0.2356	1.82	0.91	1394.19	16.81	1364.02	22.33	1440.67	18.18	**1440.7**	**18.2**	2.2%
08YEM01_115	0.46	3.0941	2.16	0.2475	1.38	0.88	1431.23	16.43	1425.34	17.64	1440.21	21.61	**1440.2**	**21.6**	0.4%
08YEM01_104	0.28	3.1008	3.73	0.2483	2.91	0.88	1432.90	28.27	1429.90	37.17	1437.46	34.58	**1437.5**	**34.6**	0.2%
08YEM01_18	0.52	3.1497	2.02	0.2523	1.73	0.93	1444.92	15.45	1450.14	22.37	1437.26	14.07	**1437.3**	**14.1**	-0.4%
08YEM01_7	0.31	3.2080	2.08	0.2570	1.67	0.91	1459.09	15.95	1474.56	21.96	1436.66	16.68	**1436.7**	**16.7**	-1.1%
08YEM01_23	0.35	3.1191	1.88	0.2506	1.28	0.88	1437.42	14.37	1441.58	16.51	1431.46	18.46	**1431.5**	**18.5**	-0.3%
08YEM01_11	0.41	3.1480	2.03	0.2542	1.73	0.93	1444.52	15.53	1459.93	22.59	1421.94	14.35	**1421.9**	**14.3**	-1.1%
08YEM01_96	0.54	2.9291	3.13	0.2368	2.36	0.89	1389.47	23.41	1370.24	29.05	1419.23	28.48	**1419.2**	**28.5**	1.4%
08YEM01_8	0.37	3.1173	2.08	0.2521	1.69	0.92	1436.97	15.89	1449.08	21.92	1419.13	16.21	**1419.1**	**16.2**	-0.8%
08YEM01_42	0.27	3.1127	2.95	0.2518	2.52	0.93	1435.84	22.43	1447.65	32.54	1418.48	21.48	**1418.5**	**21.5**	-0.8%
08YEM01_103	0.41	3.1335	2.76	0.2539	1.97	0.89	1440.96	21.00	1458.77	25.68	1414.89	25.55	**1414.9**	**25.5**	-1.2%
08YEM01_32	0.34	2.9367	2.01	0.2389	1.43	0.88	1391.42	15.13	1380.74	17.73	1408.02	19.35	**1408.0**	**19.3**	0.8%
08YEM01_12	0.33	2.9833	2.38	0.2434	1.88	0.87	1403.38	17.93	1404.17	23.68	1402.20	22.53	**1402.2**	**22.5**	-0.1%

08YEM01_63	0.44	2.8501	2.44	0.2328	1.82	0.89	1368.83	18.18	1349.21	22.17	1399.53	22.04	**1399.5**	**22.0**	1.4%
08YEM01_127	0.24	3.0069	2.19	0.2460	1.40	0.87	1409.37	16.56	1417.93	17.83	1396.67	22.88	**1396.7**	**22.9**	-0.6%
08YEM01_13	0.53	2.4685	2.04	0.2021	1.79	0.95	1262.86	14.67	1186.45	19.33	1395.52	12.88	**1395.5**	**12.9**	6.2%
08YEM01_74	0.41	2.7375	1.76	0.2254	1.28	0.88	1338.71	13.03	1310.36	15.13	1384.36	16.68	**1384.4**	**16.7**	2.1%
08YEM01_58	0.60	2.8542	2.30	0.2356	1.71	0.90	1369.93	17.16	1363.54	20.93	1379.86	20.39	**1379.9**	**20.4**	0.5%
08YEM01_118	0.32	2.8678	2.16	0.2373	1.39	0.89	1373.48	16.13	1372.84	17.23	1374.70	21.57	**1374.7**	**21.6**	0.0%
08YEM01_70	0.35	2.7037	1.97	0.2254	1.60	0.92	1329.47	14.51	1310.11	18.96	1360.83	15.17	**1360.8**	**15.2**	1.5%
08YEM01_129	0.45	2.8754	2.35	0.2405	1.47	0.84	1375.50	17.54	1389.49	18.40	1354.05	26.26	**1354.1**	**26.3**	-1.0%
08YEM01_20	0.49	2.8686	2.21	0.2403	1.78	0.89	1373.72	16.52	1388.14	22.19	1351.38	19.83	**1351.4**	**19.8**	-1.0%
08YEM01_91	0.27	2.6195	3.09	0.2203	2.06	0.83	1306.13	22.46	1283.33	23.94	1343.88	34.20	**1343.9**	**34.2**	1.8%
08YEM01_34	0.22	2.6870	1.81	0.2284	1.26	0.90	1324.88	13.29	1326.08	15.08	1323.12	16.76	**1323.1**	**16.8**	-0.1%
08YEM01_80	0.46	2.2826	2.22	0.2064	1.38	0.88	1206.93	15.58	1209.42	15.23	1202.64	23.74	**1202.6**	**23.7**	-0.2%
08YEM01_4	0.34	1.7884	3.69	0.1675	2.65	0.78	1041.23	23.78	998.18	24.48	1132.85	45.61	**1132.8**	**45.6**	4.2%
08YEM01_137	0.31	1.7853	2.66	0.1725	1.63	0.80	1040.11	17.14	1025.66	15.45	1070.83	33.26	**1070.8**	**33.3**	1.4%
08YEM01_31	0.25	1.7339	2.05	0.1705	1.35	0.85	1021.18	13.13	1014.72	12.69	1035.25	23.23	**1035.3**	**23.2**	0.6%
08YEM01_79	0.23	1.6691	2.23	0.1653	1.40	0.88	996.83	14.03	985.93	12.81	1021.03	24.05	**1021.0**	**24.1**	1.1%
08YEM01_6	0.17	1.8044	2.09	0.1795	1.69	0.92	1047.05	13.56	1063.99	16.57	1011.91	17.47	**1011.9**	**17.5**	-1.6%
08YEM01_25	0.29	1.6063	1.88	0.1614	1.32	0.89	972.68	11.71	964.76	11.80	990.81	18.79	**990.8**	**18.8**	0.8%
08YEM01_68	0.26	1.6303	2.40	0.1682	1.88	0.86	981.99	15.02	1002.35	17.44	936.85	24.98	**936.9**	**25.0**	-2.1%
08YEM01_19	0.11	1.4637	2.09	0.1530	1.73	0.91	915.53	12.53	918.04	14.77	909.50	18.15	**909.5**	**18.1**	-0.3%
08YEM01_136	0.37	1.3611	2.46	0.1464	1.49	0.81	872.34	14.30	880.80	12.25	851.15	31.33	**880.8**	**12.2**	-1.0%
08YEM01_135	0.63	0.8662	2.65	0.1002	1.65	0.80	633.49	12.41	615.69	9.70	697.75	34.71	**615.7**	**9.7**	2.8%
MOR0612094, Oligocene Carbonera Formation, C7 member (N=82). 5.443°N 72.478°W															
MOR0612094-91	0.48	14.4186	1.21	0.5225	1.13	0.93	2777.65	11.51	2709.74	25.03	2827.36	7.07	**2827.4**	**7.1**	4.2%
MOR0612094-56	0.47	6.8980	4.96	0.3774	4.93	0.99	2098.40	44.04	2064.01	87.12	2132.28	9.65	**2132.3**	**9.7**	3.2%
MOR0612094-66	0.31	6.9732	1.59	0.3882	1.34	0.84	2108.02	14.08	2114.36	24.07	2101.83	15.00	**2101.8**	**15.0**	-0.6%
MOR0612094-38	0.39	6.2334	5.27	0.3620	3.40	0.65	2009.14	46.15	1991.46	58.30	2027.35	71.30	**2027.3**	**71.3**	1.8%
MOR0612094-25	0.96	5.5409	4.58	0.3254	4.35	0.95	1906.97	39.38	1816.28	68.91	2007.10	25.01	**2007.1**	**25.0**	2.5%
MOR0612094-82	0.53	5.0854	1.99	0.3099	1.80	0.90	1833.68	16.91	1740.37	27.38	1941.30	15.46	**1941.3**	**15.5**	10.4%
MOR0612094-79	1.23	4.8316	4.10	0.3106	2.37	0.58	1790.41	34.49	1743.46	36.15	1845.56	60.55	**1845.6**	**60.5**	5.5%
MOR0612094-93	0.68	4.9865	2.25	0.3216	1.85	0.82	1817.04	19.06	1797.36	28.94	1839.66	23.41	**1839.7**	**23.4**	2.3%
MOR0612094-31	0.69	4.7741	2.17	0.3102	1.60	0.74	1780.36	18.18	1741.55	24.37	1826.15	26.54	**1826.1**	**26.5**	4.6%
MOR0612094-33	0.56	5.0323	1.51	0.3279	1.33	0.88	1824.77	12.81	1828.40	21.17	1820.61	13.05	**1820.6**	**13.1**	-0.4%
MOR0612094-87	0.55	4.9532	1.58	0.3230	1.17	0.74	1811.38	13.35	1804.16	18.39	1819.68	19.31	**1819.7**	**19.3**	0.9%
MOR0612094-94	0.47	5.0601	1.79	0.3300	1.67	0.94	1829.45	15.14	1838.39	26.77	1819.27	11.30	**1819.3**	**11.3**	-1.1%
MOR0612094-72	0.61	5.1223	1.81	0.3351	1.54	0.85	1839.81	15.38	1863.26	24.93	1813.37	17.26	**1813.4**	**17.3**	-2.8%
MOR0612094-115	0.60	4.1915	2.23	0.2747	2.14	0.96	1672.36	18.28	1564.83	29.66	1810.06	11.67	**1810.1**	**11.7**	3.5%
MOR0612094-102	0.64	4.4760	2.30	0.2935	0.82	0.35	1726.53	19.10	1658.97	11.93	1809.41	39.11	**1809.4**	**39.1**	3.3%

MOR0612094-45	0.41	5.0816	3.43	0.3333	3.30	0.96	1833.05	29.09	1854.49	53.21	1808.76	16.73	**1808.8**	**16.7**	-2.5%
MOR0612094-101	0.63	4.8481	1.30	0.3189	1.02	0.78	1793.29	10.97	1784.24	15.85	1803.82	14.81	**1803.8**	**14.8**	1.1%
MOR0612094-83	0.35	4.5439	2.66	0.2991	2.63	0.99	1739.05	22.17	1686.71	39.09	1802.56	7.20	**1802.6**	**7.2**	6.4%
MOR0612094-60	0.67	4.9207	3.14	0.3254	3.06	0.98	1805.81	26.47	1816.24	48.42	1793.77	12.61	**1793.8**	**12.6**	-1.3%
MOR0612094-54	0.32	4.9433	5.25	0.3279	5.14	0.98	1809.68	44.37	1828.09	81.87	1788.52	19.21	**1788.5**	**19.2**	-2.2%
MOR0612094-15	0.94	4.5594	5.47	0.3031	5.46	1.00	1741.89	45.60	1706.69	81.86	1784.39	7.13	**1784.4**	**7.1**	4.4%
MOR0612094-97	0.79	4.7685	1.53	0.3177	1.28	0.83	1779.38	12.88	1778.58	19.84	1780.29	15.53	**1780.3**	**15.5**	0.1%
MOR0612094-51	0.68	4.6664	2.84	0.3167	2.62	0.92	1761.24	23.76	1773.46	40.64	1746.75	20.08	**1746.7**	**20.1**	-1.5%
MOR0612094-70	0.71	4.6434	6.26	0.3201	0.65	0.10	1757.11	52.33	1790.35	10.21	1717.79	114.52	**1717.8**	**114.5**	-4.2%
MOR0612094-48	0.92	3.2789	2.83	0.2334	1.45	0.51	1476.06	22.02	1352.11	17.64	1659.09	45.03	**1659.1**	**45.0**	8.5%
MOR0612094-18	0.78	3.5104	1.68	0.2607	1.06	0.63	1529.56	13.29	1493.17	14.18	1580.25	24.37	**1580.3**	**24.4**	5.5%
MOR0612094-105	0.58	3.5683	3.50	0.2673	2.22	0.64	1542.51	27.74	1526.87	30.21	1564.00	50.63	**1564.0**	**50.6**	2.4%
MOR0612094-92	0.93	3.7076	2.47	0.2786	1.91	0.77	1573.01	19.73	1584.17	26.81	1558.06	29.30	**1558.1**	**29.3**	-1.7%
MOR0612094-47	0.64	3.8072	3.94	0.2864	2.99	0.76	1594.26	31.67	1623.43	42.86	1555.89	48.16	**1555.9**	**48.2**	-4.3%
MOR0612094-62	0.86	3.5639	2.61	0.2696	1.94	0.74	1541.52	20.69	1538.76	26.53	1545.30	32.81	**1545.3**	**32.8**	0.4%
MOR0612094-34	0.18	3.5772	2.68	0.2707	2.63	0.98	1544.48	21.25	1544.58	36.14	1544.33	9.34	**1544.3**	**9.3**	0.0%
MOR0612094-65	0.31	3.6534	2.09	0.2771	2.02	0.97	1561.25	16.67	1576.71	28.24	1540.39	10.21	**1540.4**	**10.2**	-2.4%
MOR0612094-32	0.46	3.6575	3.75	0.2774	3.65	0.97	1562.14	29.90	1578.29	51.11	1540.37	16.02	**1540.4**	**16.0**	-2.5%
MOR0612094-26	0.79	3.4967	2.56	0.2662	1.69	0.66	1526.47	20.25	1521.30	22.84	1533.62	36.37	**1533.6**	**36.4**	0.8%
MOR0612094-24	1.06	3.5486	3.55	0.2701	3.38	0.95	1538.12	28.12	1541.54	46.30	1533.40	20.54	**1533.4**	**20.5**	-0.5%
MOR0612094-61	0.57	3.6259	2.23	0.2761	2.11	0.95	1555.24	17.75	1571.84	29.45	1532.75	13.49	**1532.8**	**13.5**	-2.5%
MOR0612094-119	1.04	3.2909	2.05	0.2507	1.22	0.59	1478.90	16.00	1441.86	15.74	1532.44	31.15	**1532.4**	**31.1**	5.9%
MOR0612094-99	1.39	3.3177	1.22	0.2527	1.01	0.83	1485.22	9.52	1452.46	13.20	1532.31	12.75	**1532.3**	**12.7**	5.2%
MOR0612094-11	1.22	3.5074	4.99	0.2673	4.63	0.93	1528.88	39.41	1527.08	62.94	1531.35	34.83	**1531.4**	**34.8**	0.3%
MOR0612094-78	0.61	3.7020	2.44	0.2822	1.65	0.68	1571.80	19.48	1602.37	23.36	1530.99	33.81	**1531.0**	**33.8**	-4.7%
MOR0612094-58	0.94	3.6356	1.50	0.2772	1.23	0.82	1557.35	11.92	1577.09	17.16	1530.67	16.14	**1530.7**	**16.1**	-3.0%
MOR0612094-42	1.13	3.5610	2.05	0.2718	1.58	0.77	1540.89	16.25	1550.17	21.81	1528.16	24.52	**1528.2**	**24.5**	-1.4%
MOR0612094-44	0.77	3.5122	2.65	0.2683	2.27	0.86	1529.96	20.92	1532.16	30.90	1526.91	25.76	**1526.9**	**25.8**	-0.3%
MOR0612094-13	0.75	3.5547	3.60	0.2721	2.09	0.58	1539.49	28.57	1551.60	28.76	1522.87	55.43	**1522.9**	**55.4**	-1.9%
MOR0612094-22	0.76	2.5901	7.79	0.1983	4.94	0.63	1297.85	57.15	1166.18	52.65	1522.73	113.78	**1522.7**	**113.8**	13.4%
MOR0612094-20	0.81	3.5737	4.06	0.2736	3.15	0.78	1543.70	32.19	1559.12	43.57	1522.63	48.24	**1522.6**	**48.2**	-2.4%
MOR0612094-49	0.64	3.6482	3.74	0.2799	2.89	0.77	1560.12	29.84	1591.03	40.78	1518.50	44.81	**1518.5**	**44.8**	-4.8%
MOR0612094-12	0.19	3.5080	2.34	0.2694	2.32	0.99	1529.01	18.48	1537.96	31.68	1516.64	6.13	**1516.6**	**6.1**	-1.4%
MOR0612094-95	0.16	3.3563	2.56	0.2582	2.49	0.97	1494.27	20.02	1480.65	32.96	1513.63	11.00	**1513.6**	**11.0**	2.2%
MOR0612094-96	0.78	3.2992	2.68	0.2542	1.89	0.71	1480.87	20.85	1459.97	24.69	1510.93	35.76	**1510.9**	**35.8**	3.4%
MOR0612094-81	0.34	3.0986	2.25	0.2485	1.67	0.74	1432.36	17.26	1430.96	21.44	1434.41	28.70	**1434.4**	**28.7**	0.2%
MOR0612094-14	0.53	3.1163	4.42	0.2508	2.15	0.49	1436.73	33.98	1442.66	27.84	1427.95	73.70	**1427.9**	**73.7**	-1.0%
MOR0612094-109	0.45	2.9691	3.06	0.2414	1.07	0.35	1399.74	23.23	1393.97	13.36	1408.53	54.87	**1408.5**	**54.9**	1.0%

MOR0612094-38	0.68	3.0728	2.41	0.2506	2.29	0.95	1425.94	18.44	1441.36	29.58	1402.98	14.18	**1403.0**	**14.2**	-2.7%
MOR0612094-103	0.38	3.1088	2.92	0.2537	1.09	0.37	1434.87	22.43	1457.48	14.17	1401.48	51.92	**1401.5**	**51.9**	-4.0%
MOR0612094-57	0.85	2.7667	1.91	0.2309	1.09	0.57	1346.59	14.22	1339.35	13.22	1358.10	30.11	**1358.1**	**30.1**	1.4%
MOR0612094-108	0.45	2.0823	7.39	0.1741	7.25	0.98	1142.98	50.71	1034.54	69.31	1355.02	27.08	**1355.0**	**27.1**	3.7%
MOR0612094-28	0.26	2.7525	1.98	0.2324	1.33	0.67	1342.77	14.73	1347.05	16.14	1335.94	28.35	**1335.9**	**28.4**	-0.8%
MOR0612094-77	0.44	2.6283	1.80	0.2238	1.38	0.76	1308.60	13.25	1302.17	16.25	1319.13	22.50	**1319.1**	**22.5**	1.3%
MOR0612094-63	0.81	2.6001	2.74	0.2225	2.35	0.86	1300.66	20.10	1295.26	27.56	1309.56	27.41	**1309.6**	**27.4**	1.1%
MOR0612094-84	0.46	2.7467	2.96	0.2356	2.56	0.87	1341.21	22.01	1363.66	31.47	1305.54	28.72	**1305.5**	**28.7**	-4.5%
MOR0612094-68	0.81	2.6049	1.77	0.2237	1.10	0.62	1302.03	12.98	1301.16	12.98	1303.45	26.88	**1303.4**	**26.9**	0.2%
MOR0612094-50	0.28	2.2858	1.80	0.2040	0.94	0.52	1207.92	12.70	1196.87	10.29	1227.72	30.06	**1227.7**	**30.1**	2.5%
MOR0612094-75	0.54	2.3156	3.09	0.2096	2.33	0.75	1217.06	21.89	1226.44	26.01	1200.50	39.95	**1200.5**	**40.0**	-2.2%
MOR0612094-53	0.19	1.9217	2.88	0.1814	2.51	0.87	1088.66	19.25	1074.48	24.85	1117.16	28.23	**1117.2**	**28.2**	3.8%
MOR0612094-89	0.30	1.7249	2.24	0.1690	1.33	0.59	1017.85	14.40	1006.40	12.37	1042.55	36.41	**1042.5**	**36.4**	3.5%
MOR0612094-107	0.29	1.8035	4.02	0.1784	2.12	0.53	1046.74	26.25	1058.33	20.73	1022.62	69.05	**1022.6**	**69.0**	-3.5%
MOR0612094-36	0.36	1.6957	4.59	0.1682	3.94	0.86	1006.91	29.34	1002.22	36.61	1017.10	47.63	**1017.1**	**47.6**	1.5%
MOR0612094-88	0.13	1.7351	2.63	0.1733	1.13	0.43	1021.65	16.97	1030.29	10.77	1003.17	48.32	**1003.2**	**48.3**	-2.7%
MOR0612094-43	0.27	1.6976	2.40	0.1699	2.33	0.97	1007.64	15.33	1011.61	21.84	999.00	11.34	**999.0**	**11.3**	-1.3%
MOR0612094-71	0.14	0.8119	2.89	0.0984	2.54	0.88	603.50	13.15	605.13	14.69	597.39	29.68	**605.1**	**14.7**	-1.3%
MOR0612094-69	0.52	0.6231	7.25	0.0757	4.22	0.58	491.78	28.26	470.45	19.14	592.33	127.88	**470.5**	**19.1**	0.6%
MOR0612094-117	0.67	0.4816	3.70	0.0591	3.30	0.89	399.20	12.20	370.36	11.89	569.74	36.12	**370.4**	**11.9**	5.0%
MOR0612094-30	0.55	0.4085	4.10	0.0549	2.39	0.58	347.81	12.09	344.60	8.03	369.27	75.13	**344.6**	**8.0**	6.7%
MOR0612094-110	1.08	0.2238	2.34	0.0313	1.00	0.43	205.08	4.34	198.58	1.96	280.47	48.37	**198.6**	**2.0**	9.2%
MOR0612094-100	0.91	0.2352	2.86	0.0311	1.69	0.59	214.50	5.53	197.58	3.29	404.53	51.67	**197.6**	**3.3**	1.2%
MOR0612094-76	0.98	0.2144	10.60	0.0306	2.19	0.21	197.21	19.00	194.29	4.18	232.22	239.96	**194.3**	**4.2**	6.3%
MOR0612094-55	0.74	0.2194	9.47	0.0304	1.77	0.19	201.43	17.31	193.27	3.36	298.07	212.73	**193.3**	**3.4**	5.2%
MOR0612094-39	0.83	0.2237	15.18	0.0302	7.44	0.49	204.97	28.19	191.93	14.07	357.65	299.89	**191.9**	**14.1**	6.3%
MOR0612094-118	0.17	0.1872	10.58	0.0266	9.21	0.87	174.28	16.94	169.45	15.41	240.32	119.79	**169.5**	**15.4**	9.5%
MOR0612094-80	0.60	0.0987	27.38	0.0140	7.71	0.28	95.58	24.98	89.57	6.86	248.29	614.06	**89.6**	**6.9**	3.9%
MOR0612094-29	0.75	0.0747	30.73	0.0137	1.91	0.06	73.17	21.69	87.50	1.66	-373.54	811.34	**87.5**	**1.7**	3.4%
MOR0613094, lower Miocene Carbonera Formation, C5 member (N=91). 5.467°N 72.428°W															
MOR0613094-101	0.51	4.7655	2.70	0.2948	2.60	0.96	1778.85	22.70	1665.42	38.15	1914.64	13.42	**1914.6**	**13.4**	3.0%
MOR0613094-107	0.74	5.4026	1.33	0.3358	1.20	0.90	1885.27	11.41	1866.55	19.52	1905.94	10.21	**1905.9**	**10.2**	2.1%
MOR0613094-49	0.27	5.7581	2.78	0.3593	2.67	0.96	1940.13	24.04	1979.03	45.54	1898.84	13.68	**1898.8**	**13.7**	-4.2%
MOR0613094-90	0.49	5.2626	5.54	0.3290	2.90	0.52	1862.82	47.34	1833.52	46.27	1895.66	85.02	**1895.7**	**85.0**	3.3%
MOR0613094-2	0.57	5.5759	3.48	0.3514	3.21	0.92	1912.39	29.97	1941.15	53.83	1881.33	24.16	**1881.3**	**24.2**	-3.2%
MOR0613094-9	0.84	5.2767	2.35	0.3329	2.34	0.99	1865.10	20.09	1852.32	37.65	1879.37	4.62	**1879.4**	**4.6**	1.4%
MOR0613094-7	0.28	5.2882	2.30	0.3338	2.27	0.99	1866.96	19.68	1856.63	36.68	1878.47	6.70	**1878.5**	**6.7**	1.2%
MOR0613094-51	0.64	4.0333	2.33	0.2600	1.85	0.79	1640.93	18.97	1489.69	24.60	1840.51	25.70	**1840.5**	**25.7**	9.1%

MOR0613094-71	0.59	4.8908	3.19	0.3171	2.86	0.90	1800.68	26.93	1775.38	44.45	1830.08	25.61	**1830.1**	**25.6**	3.0%
MOR0613094-89	0.85	5.0678	2.42	0.3294	1.82	0.75	1830.73	20.54	1835.29	29.14	1825.52	28.89	**1825.5**	**28.9**	-0.5%
MOR0613094-68	0.30	4.8910	1.91	0.3184	1.50	0.79	1800.70	16.07	1781.82	23.36	1822.63	21.31	**1822.6**	**21.3**	2.2%
MOR0613094-76	0.44	5.1091	2.22	0.3341	2.14	0.97	1837.62	18.84	1858.06	34.59	1814.54	10.44	**1814.5**	**10.4**	-2.4%
MOR0613094-100	0.67	4.9728	1.16	0.3259	0.89	0.77	1814.71	9.77	1818.56	14.06	1810.29	13.44	**1810.3**	**13.4**	-0.5%
MOR0613094-102	0.47	5.0140	2.94	0.3289	2.87	0.97	1821.68	24.92	1832.87	45.77	1808.89	11.95	**1808.9**	**11.9**	-1.3%
MOR0613094-44	0.66	4.1818	2.36	0.2744	2.26	0.96	1670.45	19.37	1563.25	31.38	1807.90	12.56	**1807.9**	**12.6**	3.5%
MOR0613094-55	0.50	4.9345	2.54	0.3240	1.51	0.59	1808.18	21.41	1809.03	23.74	1807.19	37.10	**1807.2**	**37.1**	-0.1%
MOR0613094-116	1.28	4.8311	1.19	0.3182	0.86	0.72	1790.33	9.97	1780.89	13.35	1801.33	14.88	**1801.3**	**14.9**	1.1%
MOR0613094-95	0.68	4.7319	1.96	0.3118	1.91	0.97	1772.90	16.45	1749.51	29.25	1800.55	8.28	**1800.5**	**8.3**	2.8%
MOR0613094-74	0.32	4.8826	2.36	0.3221	2.32	0.98	1799.26	19.85	1799.87	36.36	1798.54	7.87	**1798.5**	**7.9**	-0.1%
MOR0613094-11	0.61	4.9143	2.30	0.3267	2.11	0.92	1804.72	19.40	1822.15	33.53	1784.62	16.53	**1784.6**	**16.5**	-2.1%
MOR0613094-29	0.23	4.4119	3.64	0.2993	3.61	0.99	1714.57	30.13	1687.75	53.54	1747.47	8.97	**1747.5**	**9.0**	3.4%
MOR0613094-6	0.38	4.7341	3.23	0.3212	2.68	0.83	1773.29	27.10	1795.57	41.98	1747.15	33.13	**1747.2**	**33.1**	-2.8%
MOR0613094-52	0.82	3.4972	10.09	0.2427	4.07	0.40	1526.58	79.82	1400.85	51.22	1705.46	170.33	**1705.5**	**170.3**	7.9%
MOR0613094-46	0.40	4.0684	1.68	0.2847	1.29	0.77	1648.00	13.72	1614.81	18.46	1690.58	19.90	**1690.6**	**19.9**	4.5%
MOR0613094-54	0.69	3.7497	6.64	0.2631	5.06	0.76	1582.06	53.31	1505.94	67.91	1685.06	79.59	**1685.1**	**79.6**	0.6%
MOR0613094-69	0.67	3.7832	5.13	0.2750	4.11	0.80	1589.19	41.20	1566.29	57.10	1619.70	57.15	**1619.7**	**57.2**	3.3%
MOR0613094-34	0.44	3.9506	1.37	0.2892	1.15	0.84	1624.12	11.11	1637.33	16.66	1607.04	13.86	**1607.0**	**13.9**	-1.9%
MOR0613094-57	0.61	3.3371	6.86	0.2463	6.43	0.94	1489.77	53.67	1419.46	81.96	1591.31	44.68	**1591.3**	**44.7**	0.8%
MOR0613094-80	1.28	3.4866	3.27	0.2598	0.83	0.25	1524.18	25.79	1488.93	10.99	1573.45	59.22	**1573.4**	**59.2**	5.4%
MOR0613094-50	0.64	3.6590	3.97	0.2750	2.96	0.75	1562.48	31.64	1565.93	41.17	1557.80	49.50	**1557.8**	**49.5**	-0.5%
MOR0613094-67	0.35	3.5788	2.77	0.2696	1.69	0.61	1544.85	22.02	1538.99	23.08	1552.86	41.38	**1552.9**	**41.4**	0.9%
MOR0613094-92	0.36	3.0034	2.59	0.2270	2.52	0.97	1408.48	19.72	1318.99	30.02	1546.57	11.39	**1546.6**	**11.4**	4.7%
MOR0613094-33	1.05	3.5745	3.15	0.2703	1.75	0.56	1543.88	25.00	1542.14	24.05	1546.25	49.20	**1546.3**	**49.2**	0.3%
MOR0613094-97	0.93	3.6090	3.40	0.2729	1.17	0.34	1551.52	27.04	1555.41	16.15	1546.21	60.01	**1546.2**	**60.0**	-0.6%
MOR0613094-72	0.60	3.6406	3.47	0.2766	3.15	0.91	1558.45	27.67	1574.16	44.00	1537.20	27.51	**1537.2**	**27.5**	-2.4%
MOR0613094-32	0.62	3.6990	2.01	0.2821	1.69	0.84	1571.16	16.09	1601.71	23.96	1530.34	20.61	**1530.3**	**20.6**	-4.7%
MOR0613094-117	0.65	3.6331	1.95	0.2777	1.79	0.92	1556.82	15.56	1579.52	25.05	1526.14	14.81	**1526.1**	**14.8**	-3.5%
MOR0613094-93	0.68	3.6091	2.08	0.2759	1.51	0.73	1551.53	16.57	1570.58	21.12	1525.67	26.95	**1525.7**	**27.0**	-2.9%
MOR0613094-16	0.72	3.5099	1.95	0.2691	1.60	0.82	1529.45	15.38	1536.05	21.92	1520.32	20.78	**1520.3**	**20.8**	-1.0%
MOR0613094-20	0.69	3.5752	2.11	0.2744	1.62	0.77	1544.04	16.75	1562.89	22.48	1518.33	25.52	**1518.3**	**25.5**	-2.9%
MOR0613094-115	0.75	3.4526	3.38	0.2652	2.48	0.73	1516.45	26.64	1516.63	33.46	1516.19	43.49	**1516.2**	**43.5**	0.0%
MOR0613094-59	0.68	3.3553	2.35	0.2581	2.14	0.91	1494.02	18.36	1480.27	28.30	1513.57	18.18	**1513.6**	**18.2**	2.2%
MOR0613094-99	0.72	3.5356	4.22	0.2725	3.77	0.89	1535.21	33.45	1553.52	52.05	1510.07	35.97	**1510.1**	**36.0**	-2.9%
MOR0613094-104	1.06	3.5392	2.47	0.2728	1.68	0.68	1536.01	19.56	1555.02	23.19	1509.92	34.22	**1509.9**	**34.2**	-3.0%
MOR0613094-4	0.69	3.5171	2.40	0.2713	2.24	0.94	1531.06	18.95	1547.55	30.85	1508.32	15.96	**1508.3**	**16.0**	-2.6%
MOR0613094-35	0.62	3.4603	3.43	0.2684	3.00	0.88	1518.22	26.99	1532.51	40.88	1498.32	31.36	**1498.3**	**31.4**	-2.3%

MOR0613094-36	0.78	3.4727	3.46	0.2694	2.64	0.76	1521.03	27.29	1537.52	36.14	1498.15	42.30	**1498.2**	**42.3**	-2.6%
MOR0613094-82	0.44	3.2165	5.97	0.2496	5.12	0.86	1461.15	46.30	1436.65	65.94	1496.94	58.18	**1496.9**	**58.2**	4.0%
MOR0613094-39	0.64	3.2749	3.73	0.2612	3.53	0.95	1475.10	29.01	1495.99	47.12	1445.16	22.91	**1445.2**	**22.9**	-3.5%
MOR0613094-31	0.25	2.9272	2.36	0.2346	2.22	0.94	1388.97	17.86	1358.79	27.15	1435.63	15.47	**1435.6**	**15.5**	5.4%
MOR0613094-48	0.45	2.9435	1.59	0.2370	1.39	0.88	1393.17	12.04	1370.86	17.16	1427.50	14.67	**1427.5**	**14.7**	4.0%
MOR0613094-66	0.88	2.8238	2.89	0.2344	2.82	0.98	1361.88	21.67	1357.51	34.53	1368.73	12.09	**1368.7**	**12.1**	0.8%
MOR0613094-62	1.09	2.7775	1.94	0.2309	0.94	0.48	1349.50	14.50	1339.32	11.33	1365.64	32.75	**1365.6**	**32.8**	1.9%
MOR0613094-45	1.03	2.7410	3.60	0.2308	2.53	0.70	1339.65	26.79	1338.66	30.64	1341.21	49.42	**1341.2**	**49.4**	0.2%
MOR0613094-112	0.36	2.2916	5.83	0.1937	5.28	0.91	1209.69	41.22	1141.59	55.21	1333.36	47.82	**1333.4**	**47.8**	4.4%
MOR0613094-42	0.39	2.6238	2.72	0.2221	2.21	0.81	1307.33	20.03	1293.01	25.93	1330.89	30.73	**1330.9**	**30.7**	2.8%
MOR0613094-103	0.43	2.6904	3.93	0.2279	3.17	0.81	1325.81	29.08	1323.67	37.98	1329.26	44.77	**1329.3**	**44.8**	0.4%
MOR0613094-21	0.15	2.7247	2.22	0.2315	2.19	0.99	1335.21	16.48	1342.40	26.58	1323.67	6.40	**1323.7**	**6.4**	-1.4%
MOR0613094-23	0.48	2.5858	3.59	0.2215	3.40	0.95	1296.62	26.27	1289.99	39.75	1307.59	22.16	**1307.6**	**22.2**	1.3%
MOR0613094-91	0.40	2.6248	2.13	0.2257	1.71	0.81	1307.60	15.63	1311.68	20.31	1300.90	24.50	**1300.9**	**24.5**	-0.8%
MOR0613094-111	0.75	2.7099	5.27	0.2330	4.19	0.80	1331.17	39.09	1350.36	51.10	1300.41	61.94	**1300.4**	**61.9**	-3.8%
MOR0613094-56	0.54	2.2631	4.03	0.2028	3.44	0.85	1200.89	28.41	1190.29	37.36	1219.98	41.45	**1220.0**	**41.4**	2.4%
MOR0613094-63	0.38	2.1997	3.71	0.1985	2.77	0.75	1180.95	25.92	1167.01	29.59	1206.60	48.66	**1206.6**	**48.7**	3.3%
MOR0613094-98	0.18	1.9062	7.32	0.1730	7.31	1.00	1083.25	48.82	1028.86	69.49	1194.32	9.97	**1194.3**	**10.0**	3.9%
MOR0613094-3	0.07	2.2090	1.89	0.2008	1.00	0.53	1183.91	13.23	1179.55	10.76	1191.87	31.73	**1191.9**	**31.7**	1.0%
MOR0613094-13	0.58	2.2452	4.84	0.2048	4.23	0.88	1195.27	34.00	1200.81	46.39	1185.29	46.28	**1185.3**	**46.3**	-1.3%
MOR0613094-53	0.31	2.2215	3.55	0.2038	2.92	0.82	1187.85	24.89	1195.70	31.85	1173.59	40.16	**1173.6**	**40.2**	-1.9%
MOR0613094-24	0.52	1.5725	7.57	0.1443	7.36	0.97	959.43	47.02	869.12	59.86	1172.62	34.86	**1172.6**	**34.9**	5.9%
MOR0613094-1	0.61	1.7408	3.93	0.1681	2.15	0.55	1023.74	25.38	1001.58	19.91	1071.45	66.29	**1071.5**	**66.3**	6.5%
MOR0613094-77	0.43	1.7959	3.10	0.1749	0.61	0.20	1043.95	20.20	1039.07	5.81	1054.21	61.20	**1054.2**	**61.2**	1.4%
MOR0613094-17	0.53	1.7237	3.53	0.1687	1.69	0.48	1017.40	22.70	1004.93	15.69	1044.33	62.61	**1044.3**	**62.6**	3.8%
MOR0613094-73	0.20	1.7857	3.04	0.1751	2.50	0.82	1040.26	19.79	1040.41	24.00	1039.93	35.04	**1039.9**	**35.0**	0.0%
MOR0613094-12	0.26	1.7069	4.03	0.1688	2.25	0.56	1011.12	25.78	1005.63	20.91	1023.01	67.63	**1023.0**	**67.6**	1.7%
MOR0613094-87	0.11	1.7848	1.81	0.1768	1.72	0.95	1039.92	11.76	1049.29	16.65	1020.26	11.20	**1020.3**	**11.2**	-2.8%
MOR0613094-114	0.16	1.7023	1.42	0.1698	1.29	0.91	1009.40	9.07	1010.80	12.07	1006.35	11.94	**1006.3**	**11.9**	-0.4%
MOR0613094-15	0.66	1.5115	1.65	0.1540	1.28	0.78	935.07	10.09	923.22	11.04	963.11	21.19	**923.2**	**11.0**	4.1%
MOR0613094-110	0.17	1.4648	2.22	0.1523	2.15	0.97	916.00	13.38	913.60	18.29	921.79	11.43	**913.6**	**18.3**	0.9%
MOR0613094-79	0.43	1.2689	4.21	0.1370	1.70	0.40	831.90	23.92	827.64	13.18	843.29	80.26	**827.6**	**13.2**	1.9%
MOR0613094-25	0.11	0.6363	3.07	0.0764	2.79	0.91	499.99	12.14	474.89	12.78	616.58	27.86	**474.9**	**12.8**	3.0%
MOR0613094-8	0.69	0.6466	8.21	0.0755	1.21	0.15	506.39	32.76	468.95	5.50	679.26	173.80	**468.9**	**5.5**	1.0%
MOR0613094-109	0.63	0.5346	3.22	0.0674	3.14	0.98	434.83	11.39	420.51	12.80	511.37	15.27	**420.5**	**12.8**	7.8%
MOR0613094-26	0.61	0.2984	16.50	0.0459	4.38	0.27	265.15	38.53	289.21	12.38	57.61	381.38	**289.2**	**12.4**	-2.1%
MOR0613094-22	1.01	0.3322	11.68	0.0420	2.58	0.22	291.24	29.59	265.41	6.71	503.96	251.43	**265.4**	**6.7**	7.3%
MOR0613094-5	0.57	0.3065	3.90	0.0418	1.25	0.32	271.46	9.30	264.09	3.23	335.52	83.86	**264.1**	**3.2**	1.3%

MOR0613094-60	0.41	0.2948	4.70	0.0393	1.93	0.41	262.31	10.87	248.67	4.70	386.02	96.45	**248.7**	**4.7**	5.6%
MOR0613094-84	0.91	0.1826	78.53	0.0326	6.06	0.08	170.31	123.73	206.59	12.31	-308.29	2407.64	**206.6**	**12.3**	7.0%
MOR0613094-119	1.13	0.2336	5.12	0.0318	1.90	0.37	213.20	9.86	201.61	3.77	343.18	107.74	**201.6**	**3.8**	1.3%
MOR0613094-30	1.36	0.2028	7.28	0.0305	2.14	0.29	187.52	12.47	193.86	4.09	108.40	164.58	**193.9**	**4.1**	-8.8%
MOR0613094-41	1.33	0.2161	6.63	0.0299	4.94	0.75	198.63	11.97	190.22	9.27	299.68	100.93	**190.2**	**9.3**	6.5%
MOR0613094-43	0.47	0.0565	20.78	0.0081	9.13	0.44	55.84	11.29	52.00	4.73	223.97	434.85	**52.0**	**4.7**	6.8%
MOR0613094-105	1.00	0.0307	78.02	0.0047	3.49	0.04	30.73	23.63	29.91	1.04	95.93	2232.04	**29.9**	**1.0**	8.8%
08YEM03, lower Miocene Carbonera Formation, C2 member (N=78). 5.43793°N 72.44912°W															
08YEM03_72	0.44	4.3168	3.54	0.2791	1.53	1.00	1696.57	28.77	1586.72	21.43	1835.03	36.19	**1835.0**	**36.2**	6.7%
08YEM03_79	0.31	4.9076	3.43	0.3196	1.29	1.06	1803.56	28.54	1787.61	20.04	1821.97	36.02	**1822.0**	**36.0**	0.9%
08YEM03_70	0.28	4.7007	1.51	0.3068	1.08	0.86	1767.37	12.59	1725.17	16.38	1817.72	14.37	**1817.7**	**14.4**	2.4%
08YEM03_95	0.28	4.7407	2.25	0.3114	1.80	0.92	1774.46	18.68	1747.43	27.48	1806.58	16.74	**1806.6**	**16.7**	1.5%
08YEM03_18	0.44	4.6298	0.87	0.3044	0.74	0.91	1754.66	7.25	1712.98	11.05	1804.77	6.61	**1804.8**	**6.6**	2.4%
08YEM03_54	0.44	4.6732	1.24	0.3080	0.90	0.85	1762.45	10.30	1730.80	13.70	1800.27	12.15	**1800.3**	**12.2**	1.8%
08YEM03_28	0.10	4.7896	1.14	0.3170	1.09	0.96	1783.07	9.56	1775.25	16.94	1792.35	5.68	**1792.4**	**5.7**	0.4%
08YEM03_78	0.38	4.2643	3.52	0.2827	1.50	1.00	1686.51	28.52	1605.17	21.30	1789.11	36.10	**1789.1**	**36.1**	4.9%
08YEM03_11	0.39	4.3356	1.07	0.2878	0.94	0.92	1700.16	8.82	1630.45	13.56	1787.30	7.56	**1787.3**	**7.6**	4.2%
08YEM03_92	0.21	3.9812	2.23	0.2652	1.84	0.94	1630.38	17.93	1516.52	24.80	1780.74	14.85	**1780.7**	**14.8**	7.2%
08YEM03_57	0.48	4.5043	0.92	0.3005	0.69	0.90	1731.77	7.60	1693.87	10.29	1777.97	7.62	**1778.0**	**7.6**	2.2%
08YEM03_15	0.31	4.7003	0.74	0.3137	0.60	0.90	1767.29	6.18	1758.65	9.15	1777.61	6.09	**1777.6**	**6.1**	0.5%
08YEM03_32	0.32	4.5630	3.35	0.3054	2.37	0.91	1742.54	27.52	1717.83	35.65	1772.23	27.58	**1772.2**	**27.6**	1.4%
08YEM03_45	0.68	4.0133	3.26	0.2689	2.22	0.91	1636.90	26.18	1535.35	30.22	1769.76	28.28	**1769.8**	**28.3**	6.4%
08YEM03_51	0.28	4.3232	0.98	0.2916	0.74	0.89	1697.79	8.09	1649.57	10.78	1757.94	8.53	**1757.9**	**8.5**	2.9%
08YEM03_67	0.36	4.6443	1.84	0.3169	1.50	0.91	1757.26	15.26	1774.46	23.21	1736.98	14.38	**1737.0**	**14.4**	-1.0%
08YEM03_9	0.46	4.4653	2.89	0.3074	1.12	1.04	1724.55	23.67	1727.94	16.92	1720.65	30.76	**1720.7**	**30.8**	-0.2%
08YEM03_6	0.31	3.5421	2.94	0.2525	1.23	1.00	1536.66	23.02	1451.33	15.90	1656.39	31.26	**1656.4**	**31.3**	5.7%
08YEM03_96	0.56	3.3214	2.46	0.2381	2.03	0.92	1486.09	19.05	1376.62	25.16	1646.18	17.91	**1646.2**	**17.9**	7.6%
08YEM03_19	0.55	3.5078	1.54	0.2589	1.10	0.79	1528.97	12.06	1484.24	14.53	1591.52	17.54	**1591.5**	**17.5**	3.0%
08YEM03_36	0.28	3.4017	3.30	0.2511	2.29	0.91	1504.79	25.60	1444.35	29.52	1590.83	28.66	**1590.8**	**28.7**	4.1%
08YEM03_84	1.06	3.2634	3.25	0.2419	2.69	0.92	1472.38	24.91	1396.32	33.73	1583.90	24.17	**1583.9**	**24.2**	5.3%
08YEM03_44	0.31	3.3270	3.88	0.2473	2.96	0.91	1487.40	29.82	1424.40	37.68	1578.25	31.20	**1578.3**	**31.2**	4.3%
08YEM03_64	0.71	3.1251	2.58	0.2327	2.12	0.89	1438.90	19.62	1348.76	25.78	1574.88	21.64	**1574.9**	**21.6**	6.5%
08YEM03_25	1.26	3.3443	1.27	0.2491	1.18	0.94	1491.47	9.88	1433.99	15.21	1574.26	7.91	**1574.3**	**7.9**	3.9%
08YEM03_81	1.22	3.5045	2.90	0.2613	2.15	0.88	1528.23	22.63	1496.69	28.60	1572.28	27.00	**1572.3**	**27.0**	2.1%
08YEM03_1	1.16	3.2621	3.83	0.2440	2.56	0.90	1472.07	29.34	1407.56	32.27	1566.59	35.04	**1566.6**	**35.0**	4.5%
08YEM03_90	0.37	3.3865	2.89	0.2538	2.30	0.91	1501.28	22.40	1457.79	29.95	1563.32	23.01	**1563.3**	**23.0**	2.9%
08YEM03_91	0.42	3.3332	2.55	0.2504	2.11	0.92	1488.87	19.76	1440.44	27.17	1558.72	19.15	**1558.7**	**19.1**	3.3%
08YEM03_30	0.33	3.2598	1.38	0.2462	1.25	0.92	1471.52	10.69	1418.72	15.89	1548.65	10.15	**1548.6**	**10.2**	3.7%

08YEM03_7	0.64	3.3562	2.87	0.2546	1.07	1.06	1494.24	22.20	1462.19	14.01	1540.25	31.49	**1540.2**	**31.5**	2.2%
08YEM03_41	0.24	3.2879	3.47	0.2494	2.48	0.91	1478.20	26.67	1435.47	31.90	1539.93	29.68	**1539.9**	**29.7**	2.9%
08YEM03_24	0.91	3.4316	1.23	0.2611	1.08	0.90	1511.66	9.64	1495.41	14.43	1534.61	10.08	**1534.6**	**10.1**	1.1%
08YEM03_21	0.84	3.4080	1.40	0.2598	1.17	0.87	1506.24	10.95	1488.74	15.58	1531.03	13.09	**1531.0**	**13.1**	1.2%
08YEM03_49	0.87	3.2560	3.19	0.2487	2.15	0.91	1470.60	24.47	1431.63	27.53	1527.15	28.34	**1527.1**	**28.3**	2.7%
08YEM03_83	0.45	3.4794	2.56	0.2658	1.99	0.92	1522.55	19.97	1519.57	26.91	1526.79	20.10	**1526.8**	**20.1**	0.2%
08YEM03_80	0.55	3.4926	3.46	0.2672	1.30	1.06	1525.54	26.93	1526.37	17.63	1524.31	37.90	**1524.3**	**37.9**	-0.1%
08YEM03_16	0.56	3.3297	0.89	0.2548	0.66	0.84	1488.05	6.94	1463.37	8.64	1523.50	9.30	**1523.5**	**9.3**	1.7%
08YEM03_88	0.38	3.3287	2.61	0.2548	2.06	0.92	1487.81	20.20	1463.08	26.91	1523.33	20.17	**1523.3**	**20.2**	1.7%
08YEM03_56	0.58	3.2946	1.20	0.2522	0.84	0.83	1479.78	9.31	1449.67	10.90	1523.33	12.84	**1523.3**	**12.8**	2.1%
08YEM03_50	0.43	3.2739	3.12	0.2506	2.09	0.91	1474.86	24.02	1441.41	26.98	1523.17	27.56	**1523.2**	**27.6**	2.3%
08YEM03_17	0.33	3.3346	0.99	0.2553	0.77	0.85	1489.19	7.70	1465.86	10.08	1522.68	9.74	**1522.7**	**9.7**	1.6%
08YEM03_77	0.88	3.4760	3.52	0.2661	1.37	1.03	1521.79	27.35	1521.20	18.54	1522.52	38.65	**1522.5**	**38.6**	0.0%
08YEM03_42	0.41	3.3199	3.24	0.2544	2.20	0.91	1485.74	24.97	1461.15	28.65	1520.85	28.94	**1520.8**	**28.9**	1.7%
08YEM03_34	0.47	3.2876	3.36	0.2523	2.36	0.91	1478.12	25.82	1450.14	30.53	1518.42	29.09	**1518.4**	**29.1**	1.9%
08YEM03_87	0.30	2.7829	3.50	0.2137	3.02	0.94	1350.95	25.79	1248.69	34.17	1516.85	23.40	**1516.8**	**23.4**	7.9%
08YEM03_47	0.44	3.2265	3.13	0.2487	2.10	0.91	1463.55	24.01	1431.63	26.93	1510.02	27.72	**1510.0**	**27.7**	2.2%
08YEM03_8	0.43	3.3706	2.83	0.2607	1.03	1.08	1497.60	21.91	1493.21	13.66	1504.04	31.08	**1504.0**	**31.1**	0.3%
08YEM03_33	0.44	3.2494	3.37	0.2513	2.36	0.91	1469.02	25.81	1444.99	30.46	1503.83	29.38	**1503.8**	**29.4**	1.6%
08YEM03_98	0.80	3.3523	2.44	0.2594	1.93	0.90	1493.33	18.88	1486.68	25.64	1502.95	20.16	**1503.0**	**20.2**	0.4%
08YEM03_31	0.84	3.2641	3.45	0.2534	2.39	0.90	1472.55	26.46	1455.89	31.12	1496.54	31.15	**1496.5**	**31.2**	1.1%
08YEM03_53	0.42	3.1195	0.87	0.2450	0.57	0.85	1437.50	6.65	1412.84	7.18	1474.29	9.13	**1474.3**	**9.1**	1.7%
08YEM03_22	0.60	3.0299	1.27	0.2450	1.08	0.88	1415.19	9.62	1412.59	13.68	1419.22	11.47	**1419.2**	**11.5**	0.2%
08YEM03_94	0.31	2.6943	2.45	0.2232	1.90	0.89	1326.90	17.99	1298.53	22.33	1373.18	21.90	**1373.2**	**21.9**	2.2%
08YEM03_43	0.25	2.6759	3.22	0.2221	2.16	0.91	1321.83	23.52	1292.81	25.29	1369.03	29.62	**1369.0**	**29.6**	2.2%
08YEM03_76	0.46	2.2366	3.58	0.1892	1.62	0.98	1192.61	24.79	1116.81	16.64	1332.64	38.43	**1332.6**	**38.4**	6.6%
08YEM03_39	0.35	2.4646	3.42	0.2116	2.33	0.90	1261.71	24.39	1237.20	26.22	1303.63	32.34	**1303.6**	**32.3**	2.0%
08YEM03_14	0.22	2.3708	1.55	0.2074	1.26	0.86	1233.85	10.98	1215.07	13.93	1266.90	15.21	**1266.9**	**15.2**	1.5%
08YEM03_69	0.24	2.2665	1.42	0.2066	0.85	0.81	1201.93	9.95	1210.89	9.37	1185.98	17.44	**1186.0**	**17.4**	-0.7%
08YEM03_63	0.19	1.8315	2.10	0.1741	1.37	0.79	1056.81	13.69	1034.64	13.09	1103.01	26.16	**1103.0**	**26.2**	2.1%
08YEM03_40	0.18	1.6464	3.22	0.1628	2.22	0.92	988.17	20.12	972.59	20.05	1022.83	29.53	**1022.8**	**29.5**	1.6%
08YEM03_100	0.25	1.6221	2.63	0.1616	2.12	0.90	978.79	16.41	965.73	19.01	1008.39	23.27	**1008.4**	**23.3**	1.3%
08YEM03_61	0.16	1.6149	2.66	0.1612	1.53	0.73	976.01	16.56	963.23	13.63	1004.97	37.61	**1005.0**	**37.6**	1.3%
08YEM03_62	0.27	1.4244	3.22	0.1409	2.74	0.91	899.21	19.02	849.53	21.79	1023.50	27.20	**849.5**	**21.8**	5.7%
08YEM03_59	0.19	1.2127	1.87	0.1239	1.50	0.87	806.41	10.35	752.98	10.65	957.07	18.59	**753.0**	**10.7**	6.9%
08YEM03_13	0.34	0.8885	2.56	0.1025	1.43	0.68	645.54	12.17	628.83	8.59	704.56	39.90	**628.8**	**8.6**	2.6%
08YEM03_75	0.42	0.8942	3.85	0.0991	1.63	0.94	648.60	18.30	608.91	9.44	789.22	49.16	**608.9**	**9.4**	6.3%
08YEM03_20	0.82	0.1994	3.27	0.0273	1.44	0.62	184.65	5.51	173.63	2.46	328.18	58.64	**173.6**	**2.5**	6.2%

08YEM03_27	0.42	0.1660	2.31	0.0247	1.37	0.69	155.93	3.34	157.23	2.12	136.37	39.27	**157.2**	**2.1**	-0.8%
08YEM03_37	0.50	0.1667	4.23	0.0236	2.50	0.80	156.59	6.13	150.63	3.72	247.57	60.34	**150.6**	**3.7**	3.9%
08YEM03_26	0.20	0.1657	1.82	0.0236	1.20	0.73	155.72	2.62	150.37	1.78	238.06	28.39	**150.4**	**1.8**	3.5%
08YEM03_55	0.46	0.1449	3.18	0.0216	1.62	0.67	137.40	4.08	137.73	2.21	131.86	55.89	**137.7**	**2.2**	-0.2%
08YEM03_52	0.21	0.1372	3.30	0.0215	1.60	0.66	130.52	4.04	136.91	2.16	16.82	59.47	**136.9**	**2.2**	-4.8%
08YEM03_12	0.43	0.0761	3.05	0.0116	1.50	0.64	74.45	2.19	74.35	1.11	77.55	55.64	**74.4**	**1.1**	0.1%
08YEM03_85	0.19	0.0674	3.15	0.0094	2.05	0.81	66.27	2.02	60.41	1.23	283.56	43.29	**60.4**	**1.2**	9.3%
08YEM03_58	0.18	0.0609	4.02	0.0089	1.91	0.65	60.06	2.34	57.19	1.09	176.30	71.60	**57.2**	**1.1**	4.9%
08YEM03_4	0.14	0.0629	4.66	0.0089	1.97	0.78	61.97	2.80	57.17	1.12	251.67	75.55	**57.2**	**1.1**	8.1%
08YEM03_48	0.15	0.0530	6.22	0.0077	3.35	0.73	52.46	3.18	49.74	1.66	178.65	100.04	**49.7**	**1.7**	5.3%
TO2170, lower Miocene Carbonera Formation, C1 member (N=114). 4.77121°N 73.17302°W															
T02170_85	0.55	4.3190	1.48	0.2760	1.05	0.87	1697.00	12.14	1571.06	14.61	1856.38	13.71	**1856.4**	**13.7**	7.7%
T02170_46	0.47	5.4287	0.59	0.3479	0.49	0.84	1889.39	5.03	1924.79	8.08	1850.82	5.76	**1850.8**	**5.8**	-1.9%
T02170_99	0.43	5.2039	3.08	0.3450	1.66	0.88	1853.25	25.90	1910.81	27.43	1789.69	32.31	**1789.7**	**32.3**	-3.1%
T02170_77	0.40	4.4369	1.41	0.2971	0.94	0.86	1719.26	11.63	1677.14	13.88	1771.07	13.98	**1771.1**	**14.0**	2.5%
T02170_11	0.46	5.0628	1.90	0.3399	0.82	0.92	1829.90	15.98	1886.07	13.44	1766.66	21.48	**1766.7**	**21.5**	-3.0%
T02170_47	0.45	4.6828	0.91	0.3209	0.86	0.94	1764.16	7.61	1794.24	13.42	1728.85	5.65	**1728.8**	**5.6**	-1.7%
T02170_5	0.36	4.7409	1.75	0.3253	1.30	0.89	1774.51	14.54	1815.71	20.52	1726.54	15.38	**1726.5**	**15.4**	-2.3%
T02170_93	0.36	4.4592	2.33	0.3083	1.61	0.88	1723.42	19.18	1732.45	24.34	1712.76	21.71	**1712.8**	**21.7**	-0.5%
T02170_22	0.35	4.5076	1.77	0.3181	1.39	0.91	1732.38	14.60	1780.67	21.59	1674.59	13.92	**1674.6**	**13.9**	-2.7%
T02170_105	0.25	3.9594	3.37	0.2948	1.38	0.94	1625.91	26.98	1665.57	20.29	1575.34	39.42	**1575.3**	**39.4**	-2.4%
T02170_56	0.25	3.6160	0.99	0.2699	0.94	0.96	1553.06	7.88	1540.20	12.89	1570.72	5.19	**1570.7**	**5.2**	0.8%
T02170_7	0.16	3.9093	1.81	0.2927	0.71	0.98	1615.60	14.51	1654.79	10.41	1564.99	20.84	**1565.0**	**20.8**	-2.4%
T02170_9	0.66	3.6950	2.30	0.2776	1.14	0.81	1570.29	18.22	1579.34	15.90	1558.24	28.43	**1558.2**	**28.4**	-0.6%
T02170_24	0.26	3.9185	1.79	0.2959	1.42	0.91	1617.51	14.42	1670.95	20.82	1548.71	14.29	**1548.7**	**14.3**	-3.2%
T02170_112	0.30	3.8799	1.89	0.2930	0.97	0.87	1609.50	15.17	1656.74	14.09	1548.42	21.50	**1548.4**	**21.5**	-2.9%
T02170_81	0.51	3.8361	1.48	0.2898	0.94	0.82	1600.35	11.84	1640.55	13.57	1547.94	16.52	**1547.9**	**16.5**	-2.5%
T02170_110	0.55	3.7087	2.47	0.2803	1.59	0.81	1573.25	19.56	1592.66	22.38	1547.51	27.89	**1547.5**	**27.9**	-1.2%
T02170_113	0.52	3.7337	2.64	0.2822	1.51	0.86	1578.63	20.90	1602.49	21.40	1546.89	28.63	**1546.9**	**28.6**	-1.5%
T02170_52	0.38	3.5127	1.30	0.2669	1.20	0.93	1530.08	10.22	1525.13	16.25	1537.05	8.83	**1537.1**	**8.8**	0.3%
T02170_19	0.39	3.6431	1.93	0.2777	0.84	0.93	1559.01	15.23	1579.62	11.77	1531.33	22.19	**1531.3**	**22.2**	-1.3%
T02170_97	0.40	3.8701	3.11	0.2963	1.69	0.88	1607.47	24.80	1672.87	24.86	1523.26	33.88	**1523.3**	**33.9**	-4.0%
T02170_69	0.47	3.9123	1.76	0.2996	0.97	0.85	1616.22	14.12	1689.12	14.37	1522.72	20.09	**1522.7**	**20.1**	-4.4%
T02170_106	0.21	3.7528	1.95	0.2882	1.01	0.85	1582.70	15.53	1632.28	14.50	1517.45	22.70	**1517.4**	**22.7**	-3.1%
T02170_74	1.35	3.2164	1.95	0.2483	1.09	0.86	1461.11	15.00	1429.76	13.92	1507.23	21.69	**1507.2**	**21.7**	2.2%
T02170_88	0.37	3.5220	2.42	0.2739	1.66	0.87	1532.17	18.98	1560.64	22.99	1493.39	24.02	**1493.4**	**24.0**	-1.8%
T02170_61	0.30	3.6401	1.46	0.2831	0.85	0.83	1558.35	11.60	1606.80	12.07	1493.38	16.72	**1493.4**	**16.7**	-3.1%
T02170_15	0.38	3.6746	1.95	0.2858	0.91	0.91	1565.88	15.47	1620.61	12.99	1492.99	22.23	**1493.0**	**22.2**	-3.4%

T02170_66	0.95	3.4611	1.73	0.2718	1.28	0.88	1518.40	13.55	1549.82	17.68	1474.95	15.94	**1475.0**	**15.9**	-2.0%
T02170_118	0.28	3.3625	2.57	0.2658	1.44	0.87	1495.72	19.94	1519.28	19.42	1462.48	28.26	**1462.5**	**28.3**	-1.6%
T02170_73	0.37	3.4326	1.93	0.2723	1.00	0.85	1511.90	15.03	1552.69	13.79	1455.47	22.45	**1455.5**	**22.4**	-2.7%
T02170_103	0.27	3.4311	3.32	0.2740	1.26	0.97	1511.54	25.77	1561.19	17.50	1443.03	39.98	**1443.0**	**40.0**	-3.2%
T02170_108	0.25	2.8929	2.04	0.2320	1.19	0.85	1380.05	15.27	1344.86	14.43	1435.12	22.59	**1435.1**	**22.6**	2.6%
T02170_43	0.59	3.3685	1.72	0.2704	0.74	0.86	1497.11	13.35	1542.82	10.09	1433.07	21.79	**1433.1**	**21.8**	-3.0%
T02170_55	0.32	3.2055	1.12	0.2597	0.94	0.86	1458.49	8.67	1488.43	12.46	1415.26	11.08	**1415.3**	**11.1**	-2.0%
T02170_64	0.31	2.9915	1.64	0.2431	1.13	0.86	1405.45	12.38	1402.71	14.25	1409.70	16.66	**1409.7**	**16.7**	0.2%
T02170_107	0.62	3.0604	1.88	0.2509	0.92	0.87	1422.84	14.27	1443.27	11.89	1392.60	22.15	**1392.6**	**22.1**	-1.4%
T02170_39	0.49	2.8664	1.67	0.2355	0.78	0.88	1373.14	12.49	1363.32	9.60	1388.52	20.07	**1388.5**	**20.1**	0.7%
T02170_96	0.37	2.9755	3.10	0.2461	1.70	0.88	1401.38	23.32	1418.13	21.58	1376.43	34.20	**1376.4**	**34.2**	-1.2%
T02170_62	0.26	3.0228	1.55	0.2504	1.07	0.88	1413.38	11.78	1440.33	13.76	1373.09	15.37	**1373.1**	**15.4**	-1.9%
T02170_31	0.20	3.1266	1.60	0.2591	0.64	0.92	1439.25	12.25	1485.26	8.52	1371.97	19.94	**1372.0**	**19.9**	-3.1%
T02170_65	0.45	2.9606	1.31	0.2455	0.68	0.87	1397.58	9.87	1415.35	8.65	1370.67	15.09	**1370.7**	**15.1**	-1.3%
T02170_6	0.34	2.9171	1.63	0.2439	1.20	0.90	1386.36	12.28	1407.14	15.12	1354.71	14.88	**1354.7**	**14.9**	-1.5%
T02170_83	0.26	2.9702	1.65	0.2490	1.01	0.77	1400.03	12.48	1433.35	12.94	1349.78	20.81	**1349.8**	**20.8**	-2.4%
T02170_102	0.28	2.9115	3.33	0.2484	1.25	0.96	1384.91	24.87	1430.28	16.01	1316.05	41.16	**1316.1**	**41.2**	-3.2%
T02170_23	0.31	2.8351	1.91	0.2424	1.55	0.91	1364.87	14.26	1399.38	19.41	1311.30	15.44	**1311.3**	**15.4**	-2.5%
T02170_40	0.35	2.9997	1.70	0.2567	0.86	0.87	1407.53	12.90	1473.01	11.35	1309.82	20.18	**1309.8**	**20.2**	-4.5%
T02170_33	0.32	2.7246	1.88	0.2359	1.13	0.85	1335.18	13.86	1365.49	13.84	1286.98	21.04	**1287.0**	**21.0**	-2.2%
T02170_13	0.32	2.5409	2.03	0.2207	1.06	0.89	1283.84	14.69	1285.40	12.30	1281.38	23.02	**1281.4**	**23.0**	-0.1%
T02170_80	0.25	2.4247	1.48	0.2170	0.96	0.83	1249.94	10.57	1265.85	10.98	1222.76	16.90	**1222.8**	**16.9**	-1.3%
T02170_34	0.49	2.5093	1.58	0.2250	0.60	0.94	1274.73	11.44	1308.04	7.08	1219.10	20.38	**1219.1**	**20.4**	-2.6%
T02170_86	0.35	2.3185	2.37	0.2082	1.62	0.87	1217.96	16.65	1219.11	17.92	1216.24	24.11	**1216.2**	**24.1**	-0.1%
T02170_38	0.36	1.9316	1.62	0.1754	0.61	0.92	1092.08	10.78	1041.91	5.83	1193.61	21.33	**1193.6**	**21.3**	4.7%
T02170_16	0.71	2.2995	2.46	0.2098	1.38	0.81	1212.12	17.25	1227.79	15.44	1184.48	30.41	**1184.5**	**30.4**	-1.3%
T02170_119	0.62	1.8582	2.95	0.1709	1.72	0.81	1066.36	19.28	1017.32	16.18	1168.10	36.08	**1168.1**	**36.1**	4.7%
T02170_27	0.30	2.2623	1.85	0.2083	1.45	0.90	1200.63	12.93	1219.93	16.09	1166.12	16.20	**1166.1**	**16.2**	-1.6%
T02170_30	0.53	2.0308	2.45	0.1887	1.83	0.83	1125.90	16.53	1114.31	18.72	1148.37	26.93	**1148.4**	**26.9**	1.0%
T02170_21	0.21	2.0542	1.86	0.1922	1.50	0.92	1133.68	12.65	1133.55	15.56	1134.00	15.29	**1134.0**	**15.3**	0.0%
T02170_101	0.14	1.9405	3.38	0.1822	1.31	0.94	1095.19	22.41	1079.17	12.97	1127.56	43.08	**1127.6**	**43.1**	1.5%
T02170_68	0.33	1.9309	2.05	0.1871	1.23	0.81	1091.84	13.61	1105.59	12.51	1064.71	25.54	**1064.7**	**25.5**	-1.3%
T02170_67	0.26	1.9586	1.77	0.1903	0.98	0.84	1101.41	11.85	1123.25	10.12	1058.73	21.65	**1058.7**	**21.7**	-2.0%
T02170_94	0.28	1.9503	3.29	0.1897	0.00	1.78	1098.55	21.82	1119.60	18.25	1057.58	40.11	**1057.6**	**40.1**	-1.9%
T02170_14	0.17	1.8605	2.14	0.1812	1.11	0.86	1067.16	14.02	1073.75	11.00	1053.87	26.06	**1053.9**	**26.1**	-0.6%
T02170_63	0.22	1.9282	0.03	0.1879	0.00	0.83	1090.90	11.66	1109.96	12.01	1053.15	20.37	**1053.1**	**20.4**	-1.7%
T02170_100	0.26	1.8115	3.48	0.1766	1.38	0.91	1049.61	22.55	1048.15	13.34	1053.07	45.68	**1053.1**	**45.7**	0.1%
T02170_78	0.20	1.6743	2.44	0.1632	1.10	0.57	998.82	15.39	974.38	9.94	1053.00	40.14	**1053.0**	**40.1**	2.5%

T02170_37	0.18	1.9172	0.03	0.1870	0.00	0.92	1087.08	10.78	1104.84	6.16	1051.77	21.90	**1051.8**	**21.9**	-1.6%
T02170_120	0.27	1.8540	2.80	0.1809	1.58	0.83	1064.87	18.27	1071.98	15.59	1050.34	34.47	**1050.3**	**34.5**	-0.7%
T02170_49	0.21	1.9007	0.94	0.1860	0.81	0.87	1081.35	6.26	1099.86	8.19	1044.37	9.38	**1044.4**	**9.4**	-1.7%
T02170_36	0.33	1.8057	1.67	0.1768	0.61	0.90	1047.51	10.83	1049.32	5.88	1043.85	23.07	**1043.8**	**23.1**	-0.2%
T02170_109	0.24	1.8371	2.06	0.1801	1.07	0.82	1058.82	13.44	1067.27	10.54	1041.65	26.44	**1041.6**	**26.4**	-0.8%
T02170_84	0.21	1.7472	1.75	0.1719	1.10	0.77	1026.13	11.23	1022.70	10.41	1033.58	22.87	**1033.6**	**22.9**	0.3%
T02170_111	0.31	1.8334	2.08	0.1805	1.08	0.82	1057.52	13.55	1069.48	10.66	1033.11	26.88	**1033.1**	**26.9**	-1.1%
T02170_98	1.38	1.7434	3.19	0.1717	1.77	0.87	1024.73	20.37	1021.53	16.68	1032.07	37.40	**1032.1**	**37.4**	0.3%
T02170_117	0.48	1.7858	2.63	0.1759	1.48	0.86	1040.31	16.96	1044.37	14.28	1031.79	31.00	**1031.8**	**31.0**	-0.4%
T02170_42	0.25	1.7628	1.80	0.1740	0.97	0.85	1031.86	11.57	1033.92	9.24	1027.58	22.11	**1027.6**	**22.1**	-0.2%
T02170_51	0.33	1.8013	1.20	0.1781	1.03	0.88	1045.94	7.78	1056.38	10.05	1024.34	11.42	**1024.3**	**11.4**	-1.0%
T02170_25	0.28	1.8730	2.00	0.1858	1.56	0.89	1071.58	13.18	1098.51	15.77	1017.25	19.15	**1017.3**	**19.1**	-2.5%
T02170_1	0.19	1.8187	1.72	0.1805	1.25	0.88	1052.21	11.23	1069.66	12.35	1016.36	17.38	**1016.4**	**17.4**	-1.6%
T02170_87	0.26	1.7243	2.71	0.1713	1.81	0.82	1017.62	17.26	1019.08	17.01	1014.82	32.04	**1014.8**	**32.0**	-0.1%
T02170_53	0.17	1.8663	1.73	0.1854	1.46	0.86	1069.21	11.39	1096.48	14.75	1014.10	17.84	**1014.1**	**17.8**	-2.5%
T02170_8	0.33	1.7978	2.11	0.1786	0.97	0.85	1044.66	13.69	1059.53	9.47	1013.77	27.83	**1013.8**	**27.8**	-1.4%
T02170_58	0.29	1.8167	1.32	0.1808	1.16	0.89	1051.50	8.60	1071.56	11.43	1010.18	12.03	**1010.2**	**12.0**	-1.9%
T02170_82	0.22	2.0035	1.63	0.1995	0.99	0.78	1116.69	10.97	1172.63	10.64	1009.50	21.39	**1009.5**	**21.4**	-4.9%
T02170_29	0.31	1.8202	1.96	0.1815	1.55	0.90	1052.74	12.77	1075.36	15.31	1006.18	18.00	**1006.2**	**18.0**	-2.1%
T02170_60	0.13	1.8711	0.95	0.1867	0.84	0.91	1070.94	6.25	1103.23	8.51	1005.88	8.01	**1005.9**	**8.0**	-3.0%
T02170_95	0.36	1.8672	3.27	0.1865	0.00	1.74	1069.53	21.40	1102.49	17.60	1003.41	40.61	**1003.4**	**40.6**	-3.0%
T02170_48	0.21	1.7866	0.88	0.1785	0.72	0.84	1040.60	5.69	1058.99	7.06	1002.31	9.67	**1002.3**	**9.7**	-1.8%
T02170_41	0.24	1.7482	1.60	0.1749	0.65	0.92	1026.50	10.26	1038.81	6.28	1000.44	20.76	**1000.4**	**20.8**	-1.2%
T02170_44	0.29	1.8333	0.78	0.1836	0.58	0.76	1057.46	5.11	1086.73	5.76	997.64	10.26	**997.6**	**10.3**	-2.7%
T02170_116	0.20	1.7801	2.64	0.1788	1.50	0.86	1038.23	17.02	1060.38	14.65	991.89	31.24	**991.9**	**31.2**	-2.1%
T02170_20	0.22	1.7804	2.12	0.1790	0.94	0.86	1038.33	13.66	1061.75	9.22	989.47	28.03	**989.5**	**28.0**	-2.2%
T02170_4	0.25	1.6649	1.77	0.1681	1.29	0.87	995.25	11.16	1001.53	11.95	981.62	18.13	**981.6**	**18.1**	-0.6%
T02170_35	0.34	1.8396	1.74	0.1858	0.72	0.85	1059.72	11.37	1098.84	7.29	980.09	24.00	**980.1**	**24.0**	-3.6%
T02170_2	0.25	1.8005	1.91	0.1821	1.30	0.83	1045.65	12.38	1078.61	12.92	977.58	22.42	**977.6**	**22.4**	-3.1%
T02170_17	0.24	1.6538	2.08	0.1674	0.97	0.87	991.00	13.07	997.64	8.94	976.47	26.73	**976.5**	**26.7**	-0.7%
T02170_75	0.31	1.7400	1.96	0.1765	1.02	0.84	1023.47	12.58	1047.98	9.83	971.66	24.98	**971.7**	**25.0**	-2.4%
T02170_114	0.34	1.6135	2.65	0.1643	1.51	0.86	975.48	16.49	980.63	13.73	963.91	31.59	**963.9**	**31.6**	-0.5%
T02170_59	0.25	1.6847	1.02	0.1718	0.83	0.83	1002.77	6.51	1021.96	7.81	961.20	11.50	**961.2**	**11.5**	-1.9%
T02170_18	0.24	1.6931	2.27	0.1728	1.12	0.82	1005.95	14.42	1027.61	10.60	959.20	30.24	**959.2**	**30.2**	-2.1%
T02170_50	0.30	1.7299	1.37	0.1770	1.13	0.84	1019.71	8.75	1050.64	10.99	954.01	14.96	**954.0**	**15.0**	-3.0%
T02170_72	0.20	1.7851	2.25	0.1827	1.25	0.79	1040.05	14.56	1081.77	12.44	953.63	29.95	**953.6**	**30.0**	-3.9%
T02170_70	0.40	1.7536	2.07	0.1797	1.14	0.83	1028.50	13.28	1065.49	11.21	950.91	26.20	**950.9**	**26.2**	-3.5%
T02170_90	0.27	1.6615	3.03	0.1706	1.96	0.78	993.95	19.02	1015.68	18.38	946.65	39.21	**946.7**	**39.2**	-2.2%

T02170_91	0.33	1.6129	2.50	0.1659	1.64	0.84	975.24	15.58	989.36	15.04	943.89	29.29	**943.9**	**29.3**	-1.4%
T02170_12	0.76	1.6458	1.91	0.1702	0.77	0.93	987.93	11.99	1012.95	7.19	932.84	25.08	**932.8**	**25.1**	-2.5%
T02170_10	0.15	1.3802	1.93	0.1369	0.92	0.91	880.54	11.31	827.01	7.14	1017.70	23.40	**827.0**	**7.1**	6.3%
T02170_26	0.83	1.0467	2.00	0.1203	1.45	0.84	727.27	10.34	732.34	10.01	711.71	23.22	**732.3**	**10.0**	-0.7%
T02170_3	0.23	0.9127	1.65	0.1099	1.21	0.89	658.47	7.96	672.43	7.70	611.14	16.97	**672.4**	**7.7**	-2.1%
T02170_79	0.54	0.9244	2.16	0.1072	1.25	0.69	664.66	10.50	656.23	7.77	693.52	33.62	**656.2**	**7.8**	1.3%
T02170_92	0.46	0.8570	2.53	0.1038	1.75	0.86	628.47	11.78	636.47	10.59	600.14	29.21	**636.5**	**10.6**	-1.3%
T02170_45	0.66	0.8380	0.91	0.1014	0.54	0.63	618.04	4.21	622.35	3.20	602.40	15.22	**622.4**	**3.2**	-0.7%
T02170_28	0.14	0.6435	2.12	0.0764	1.69	0.89	504.48	8.38	474.83	7.73	641.31	20.85	**474.8**	**7.7**	6.1%
T02170_32	0.52	0.4950	2.08	0.0642	1.26	0.82	408.34	6.98	401.17	4.90	449.21	28.15	**401.2**	**4.9**	1.8%
T02170_89	0.45	0.1825	2.88	0.0273	1.75	0.77	170.24	4.50	173.58	3.00	124.37	44.31	**173.6**	**3.0**	-1.9%
08YEM05, upper Miocene lower Guayabo Formation (N=109). 5.40968°N 72.43605°W															
08YEM05_69	0.23	9.5806	7.11	0.4383	6.35	0.92	2395.31	63.32	2342.85	123.45	2440.42	46.40	**2440.4**	**46.4**	2.2%
08YEM05_16	0.27	6.5398	2.18	0.3758	1.38	0.89	2051.28	19.03	2056.75	24.29	2045.92	19.95	**2045.9**	**19.9**	-0.3%
08YEM05_15	0.36	6.2586	3.10	0.3629	2.48	0.92	2012.69	26.80	1996.05	42.46	2030.19	21.89	**2030.2**	**21.9**	0.8%
08YEM05_36	0.36	4.7945	1.41	0.2997	1.18	0.92	1783.93	11.81	1689.87	17.50	1895.90	10.04	**1895.9**	**10.0**	5.4%
08YEM05_82	0.45	5.5385	1.32	0.3471	1.17	0.93	1906.59	11.31	1920.64	19.39	1891.43	8.63	**1891.4**	**8.6**	-0.7%
08YEM05_81	0.54	5.4067	1.32	0.3394	1.13	0.91	1885.92	11.21	1883.91	18.38	1888.24	9.84	**1888.2**	**9.8**	0.1%
08YEM05_117	0.47	5.1308	1.64	0.3242	1.19	0.84	1841.22	13.85	1810.18	18.70	1876.63	16.14	**1876.6**	**16.1**	1.7%
08YEM05_43	0.53	5.1024	1.44	0.3317	1.15	0.89	1836.50	12.15	1846.82	18.44	1824.91	11.93	**1824.9**	**11.9**	-0.6%
08YEM05_19	0.39	4.2059	2.18	0.2741	1.38	0.89	1675.16	17.72	1561.82	19.05	1820.36	20.56	**1820.4**	**20.6**	7.0%
08YEM05_28	0.32	4.7708	2.19	0.3123	1.38	0.89	1779.78	18.24	1752.05	21.11	1812.60	20.89	**1812.6**	**20.9**	1.6%
08YEM05_101	0.57	4.7600	0.77	0.3122	0.57	0.86	1777.87	6.45	1751.50	8.80	1809.08	7.37	**1809.1**	**7.4**	1.5%
08YEM05_54	0.77	5.0641	1.32	0.3348	1.07	0.91	1830.11	11.12	1861.74	17.29	1794.44	9.96	**1794.4**	**10.0**	-1.7%
08YEM05_72	0.36	4.7273	1.78	0.3134	1.17	0.89	1772.08	14.77	1757.49	17.97	1789.53	16.53	**1789.5**	**16.5**	0.8%
08YEM05_102	0.30	4.7404	0.96	0.3146	0.73	0.84	1774.41	8.03	1763.34	11.30	1787.57	9.51	**1787.6**	**9.5**	0.6%
08YEM05_46	0.42	4.8285	1.35	0.3210	1.10	0.91	1789.88	11.32	1794.65	17.22	1784.45	10.33	**1784.4**	**10.3**	-0.3%
08YEM05_24	0.25	4.7138	2.22	0.3164	1.40	0.88	1769.69	18.43	1771.92	21.72	1767.20	21.38	**1767.2**	**21.4**	-0.1%
08YEM05_68	0.40	3.7990	1.83	0.2553	1.26	0.89	1592.53	14.60	1465.62	16.46	1765.03	16.40	**1765.0**	**16.4**	8.3%
08YEM05_118	0.35	4.7323	1.52	0.3190	1.12	0.87	1772.98	12.68	1784.92	17.37	1759.11	14.30	**1759.1**	**14.3**	-0.7%
08YEM05_71	0.69	4.2214	3.02	0.2858	2.66	0.95	1678.19	24.51	1620.65	38.07	1751.10	18.08	**1751.1**	**18.1**	3.5%
08YEM05_79	0.29	4.9133	1.57	0.3355	1.40	0.93	1804.54	13.16	1864.91	22.70	1735.58	10.49	**1735.6**	**10.5**	-3.3%
08YEM05_22	0.45	4.3738	2.16	0.2990	1.33	0.89	1707.39	17.70	1686.25	19.70	1733.57	21.05	**1733.6**	**21.0**	1.2%
08YEM05_95	0.35	4.1622	0.89	0.2900	0.70	0.87	1666.62	7.24	1641.65	10.18	1698.32	8.01	**1698.3**	**8.0**	1.5%
08YEM05_85	0.32	4.0381	1.23	0.2877	1.07	0.93	1641.91	9.97	1630.11	15.41	1657.14	8.61	**1657.1**	**8.6**	0.7%
08YEM05_25	0.19	3.8041	2.29	0.2760	1.46	0.87	1593.60	18.25	1571.40	20.34	1623.23	22.80	**1623.2**	**22.8**	1.4%
08YEM05_10	0.44	3.4297	3.11	0.2507	2.49	0.92	1511.23	24.16	1442.03	32.07	1610.02	23.19	**1610.0**	**23.2**	4.7%
08YEM05_94	0.67	3.6499	1.41	0.2668	0.96	0.75	1560.49	11.17	1524.46	13.09	1609.69	17.38	**1609.7**	**17.4**	2.3%

08YEM05_35	0.39	3.6325	5.34	0.2675	5.16	0.98	1556.69	41.66	1528.02	69.88	1595.91	20.65	**1595.9**	**20.7**	1.9%
08YEM05_99	0.08	3.7777	0.78	0.2784	0.54	0.82	1588.03	6.22	1583.14	7.58	1594.64	8.50	**1594.6**	**8.5**	0.3%
08YEM05_78	0.37	3.7409	2.44	0.2769	2.35	0.97	1580.16	19.39	1575.50	32.73	1586.48	10.15	**1586.5**	**10.1**	0.3%
08YEM05_111	0.59	3.4788	1.56	0.2583	1.16	0.87	1522.42	12.27	1481.09	15.37	1580.52	14.89	**1580.5**	**14.9**	2.8%
08YEM05_61	0.31	3.1478	1.80	0.2355	1.18	0.88	1444.46	13.78	1363.47	14.43	1565.99	17.64	**1566.0**	**17.6**	5.8%
08YEM05_97	0.44	3.3405	0.80	0.2510	0.61	0.86	1490.57	6.23	1443.41	7.82	1558.41	7.80	**1558.4**	**7.8**	3.2%
08YEM05_21	0.51	3.5923	2.20	0.2699	1.38	0.89	1547.83	17.33	1540.29	18.91	1558.29	21.77	**1558.3**	**21.8**	0.5%
08YEM05_31	0.44	3.3312	1.61	0.2508	1.26	0.87	1488.39	12.49	1442.58	16.25	1554.37	15.08	**1554.4**	**15.1**	3.1%
08YEM05_37	0.39	3.5874	1.37	0.2704	1.12	0.92	1546.74	10.80	1542.99	15.39	1551.96	10.49	**1552.0**	**10.5**	0.2%
08YEM05_56	0.33	3.5266	1.30	0.2663	1.06	0.92	1533.20	10.26	1522.00	14.41	1548.81	9.93	**1548.8**	**9.9**	0.7%
08YEM05_9	0.50	3.5538	3.08	0.2686	2.46	0.92	1539.28	24.13	1533.49	33.46	1547.65	23.20	**1547.7**	**23.2**	0.4%
08YEM05_98	0.62	3.4686	1.25	0.2628	0.84	0.75	1520.10	9.81	1504.13	11.27	1542.53	15.68	**1542.5**	**15.7**	1.1%
08YEM05_107	0.42	3.2768	1.69	0.2486	1.30	0.87	1475.56	13.05	1431.41	16.62	1539.80	15.74	**1539.8**	**15.7**	3.0%
08YEM05_83	0.42	3.6800	1.39	0.2795	1.16	0.89	1567.04	11.01	1588.64	16.25	1538.17	12.06	**1538.2**	**12.1**	-1.4%
08YEM05_84	0.65	3.5374	1.33	0.2691	1.13	0.90	1535.61	10.49	1536.09	15.39	1535.05	10.93	**1535.1**	**10.9**	0.0%
08YEM05_119	0.38	3.5229	1.62	0.2685	1.20	0.86	1532.36	12.73	1533.00	16.38	1531.64	15.83	**1531.6**	**15.8**	0.0%
08YEM05_5	0.48	3.2514	3.16	0.2478	2.50	0.91	1469.52	24.27	1427.33	31.90	1531.43	25.15	**1531.4**	**25.2**	2.9%
08YEM05_58	0.23	3.5182	1.31	0.2689	1.06	0.91	1531.32	10.27	1535.04	14.41	1526.32	10.28	**1526.3**	**10.3**	-0.2%
08YEM05_33	0.27	3.5802	1.44	0.2737	1.17	0.91	1545.16	11.34	1559.74	16.20	1525.36	11.67	**1525.4**	**11.7**	-0.9%
08YEM05_109	0.39	3.4506	1.50	0.2648	1.10	0.87	1516.01	11.71	1514.31	14.89	1518.54	14.15	**1518.5**	**14.1**	0.1%
08YEM05_2	0.58	3.4059	3.14	0.2618	2.49	0.92	1505.76	24.38	1498.97	33.28	1515.75	24.56	**1515.7**	**24.6**	0.5%
08YEM05_45	0.35	3.3437	1.61	0.2583	1.28	0.88	1491.32	12.50	1481.28	16.89	1505.72	14.68	**1505.7**	**14.7**	0.7%
08YEM05_20	0.50	3.2357	2.20	0.2503	1.36	0.88	1465.76	16.95	1439.92	17.50	1503.54	22.47	**1503.5**	**22.5**	1.8%
08YEM05_49	0.47	3.4089	1.55	0.2638	1.20	0.87	1506.44	12.12	1509.36	16.19	1502.47	14.76	**1502.5**	**14.8**	-0.2%
08YEM05_6	0.08	2.8274	3.19	0.2202	2.54	0.92	1362.84	23.64	1282.75	29.45	1491.19	25.05	**1491.2**	**25.1**	6.1%
08YEM05_76	0.60	3.4433	1.44	0.2682	1.20	0.89	1514.34	11.24	1531.91	16.33	1489.95	12.60	**1490.0**	**12.6**	-1.2%
08YEM05_29	0.33	3.1873	2.22	0.2496	1.38	0.88	1454.08	17.01	1436.26	17.73	1480.36	22.62	**1480.4**	**22.6**	1.2%
08YEM05_112	0.28	3.2665	1.50	0.2595	1.12	0.88	1473.11	11.59	1487.39	14.81	1452.76	14.07	**1452.8**	**14.1**	-1.0%
08YEM05_14	0.42	2.9470	3.18	0.2403	2.54	0.92	1394.08	23.82	1388.03	31.61	1403.79	24.98	**1403.8**	**25.0**	0.4%
08YEM05_115	0.44	3.0641	1.55	0.2521	1.09	0.84	1423.77	11.82	1449.38	14.11	1385.85	16.64	**1385.8**	**16.6**	-1.8%
08YEM05_90	0.58	2.8384	1.30	0.2357	1.08	0.89	1365.75	9.69	1364.47	13.29	1367.87	11.29	**1367.9**	**11.3**	0.1%
08YEM05_48	1.77	2.7106	1.64	0.2263	1.23	0.84	1331.37	12.10	1315.05	14.60	1357.86	17.21	**1357.9**	**17.2**	1.2%
08YEM05_47	0.36	2.8178	1.58	0.2385	1.18	0.85	1360.28	11.75	1378.92	14.65	1331.25	16.42	**1331.3**	**16.4**	-1.4%
08YEM05_106	0.65	2.7522	1.63	0.2331	1.19	0.85	1342.69	12.10	1350.71	14.54	1330.10	16.93	**1330.1**	**16.9**	-0.6%
08YEM05_66	0.40	2.5446	1.79	0.2156	1.13	0.87	1284.89	12.93	1258.63	12.86	1329.26	18.77	**1329.3**	**18.8**	2.1%
08YEM05_53	0.32	2.6376	1.65	0.2240	1.19	0.82	1311.18	12.05	1303.18	14.01	1324.41	18.31	**1324.4**	**18.3**	0.6%
08YEM05_60	0.24	2.8279	1.38	0.2403	1.10	0.90	1362.98	10.27	1388.38	13.76	1323.50	11.82	**1323.5**	**11.8**	-1.8%
08YEM05_32	0.21	2.6986	1.51	0.2301	1.20	0.89	1328.07	11.09	1335.18	14.49	1316.73	13.56	**1316.7**	**13.6**	-0.5%

08YEM05_108	0.10	2.8558	1.40	0.2455	1.03	0.89	1370.34	10.48	1415.26	13.12	1301.16	13.04	**1301.2**	**13.0**	-3.2%
08YEM05_105	0.26	2.7058	1.09	0.2331	0.81	0.81	1330.05	8.06	1350.56	9.82	1297.29	12.46	**1297.3**	**12.5**	-1.5%
08YEM05_100	0.35	2.5268	0.91	0.2190	0.64	0.80	1279.77	6.62	1276.38	7.38	1285.59	10.83	**1285.6**	**10.8**	0.3%
08YEM05_67	0.40	2.5795	1.90	0.2241	1.20	0.85	1294.83	13.81	1303.51	14.18	1280.68	20.85	**1280.7**	**20.8**	-0.7%
08YEM05_113	0.22	2.3494	1.53	0.2082	1.14	0.88	1227.38	10.84	1219.12	12.70	1242.09	14.86	**1242.1**	**14.9**	0.7%
08YEM05_63	0.23	2.1525	1.96	0.1914	1.26	0.85	1165.87	13.51	1129.02	13.01	1235.21	21.76	**1235.2**	**21.8**	3.2%
08YEM05_116	0.75	2.2992	1.99	0.2072	1.36	0.78	1212.03	13.99	1213.91	15.05	1208.83	24.46	**1208.8**	**24.5**	-0.2%
08YEM05_42	0.17	2.3685	1.36	0.2143	1.09	0.90	1233.15	9.68	1251.75	12.35	1200.89	11.97	**1200.9**	**12.0**	-1.5%
08YEM05_34	0.29	2.2564	1.46	0.2067	1.12	0.87	1198.79	10.24	1211.15	12.35	1176.69	14.63	**1176.7**	**14.6**	-1.0%
08YEM05_70	0.10	2.2043	1.78	0.2043	1.15	0.88	1182.39	12.33	1198.27	12.60	1153.68	18.37	**1153.7**	**18.4**	-1.3%
08YEM05_44	0.35	2.0565	1.86	0.1927	1.38	0.82	1134.45	12.64	1136.15	14.34	1131.30	21.08	**1131.3**	**21.1**	-0.1%
08YEM05_104	0.19	1.9463	0.89	0.1835	0.64	0.82	1097.19	5.97	1086.20	6.41	1119.16	10.42	**1119.2**	**10.4**	1.0%
08YEM05_50	0.22	2.0119	2.09	0.1953	1.75	0.89	1119.52	14.10	1150.06	18.38	1060.85	19.04	**1060.9**	**19.0**	-2.7%
08YEM05_92	0.14	1.7617	1.29	0.1736	0.81	0.71	1031.48	8.31	1031.69	7.71	1031.14	18.37	**1031.1**	**18.4**	0.0%
08YEM05_23	0.31	1.7297	2.19	0.1710	1.36	0.88	1019.63	14.01	1017.39	12.82	1024.59	23.54	**1024.6**	**23.5**	0.2%
08YEM05_80	0.16	1.7491	1.32	0.1737	1.14	0.92	1026.85	8.48	1032.33	10.87	1015.27	10.73	**1015.3**	**10.7**	-0.5%
08YEM05_62	0.27	1.6937	1.89	0.1689	1.19	0.85	1006.16	12.01	1006.03	11.12	1006.65	21.65	**1006.7**	**21.6**	0.0%
08YEM05_8	0.27	1.6299	3.19	0.1632	2.50	0.91	981.82	19.89	974.43	22.61	998.86	28.05	**998.9**	**28.0**	0.8%
08YEM05_40	0.23	1.7173	1.49	0.1720	1.14	0.87	1015.00	9.50	1023.06	10.76	997.77	15.35	**997.8**	**15.4**	-0.8%
08YEM05_65	0.15	1.7038	1.74	0.1707	1.12	0.89	1009.97	11.08	1015.78	10.55	997.59	18.29	**997.6**	**18.3**	-0.6%
08YEM05_27	0.22	1.7016	2.36	0.1715	1.47	0.86	1009.12	14.99	1020.21	13.85	985.29	27.00	**985.3**	**27.0**	-1.1%
08YEM05_17	0.21	1.5274	2.40	0.1543	1.49	0.85	941.47	14.63	925.09	12.81	980.15	27.90	**980.2**	**27.9**	1.8%
08YEM05_77	0.76	1.5601	2.61	0.1577	1.86	0.76	954.50	16.05	943.95	16.29	979.00	34.35	**979.0**	**34.3**	1.1%
08YEM05_59	0.47	1.5834	1.76	0.1603	1.23	0.80	963.71	10.89	958.22	10.95	976.41	21.69	**976.4**	**21.7**	0.6%
08YEM05_114	0.27	1.5924	2.10	0.1625	1.56	0.82	967.25	12.99	970.59	14.00	959.83	24.40	**959.8**	**24.4**	-0.3%
08YEM05_74	0.20	1.5023	2.10	0.1549	1.30	0.82	931.34	12.73	928.59	11.22	938.08	26.13	**938.1**	**26.1**	0.3%
08YEM05_91	0.62	0.8423	3.99	0.1031	3.78	0.96	620.39	18.37	632.49	22.74	576.60	25.18	**632.5**	**22.7**	-1.9%
08YEM05_39	0.36	0.8061	2.36	0.0992	1.41	0.70	600.24	10.65	609.96	8.18	563.80	36.62	**610.0**	**8.2**	-1.6%
08YEM05_26	1.28	0.7870	2.42	0.0949	1.43	0.83	589.47	10.76	584.28	7.97	609.64	31.24	**584.3**	**8.0**	0.9%
08YEM05_57	0.19	0.6909	1.57	0.0866	1.14	0.83	533.33	6.48	535.41	5.86	524.57	19.31	**535.4**	**5.9**	-0.4%
08YEM05_93	0.22	0.6241	1.19	0.0814	0.73	0.71	492.42	4.62	504.38	3.54	437.35	18.73	**504.4**	**3.5**	-2.4%
08YEM05_18	0.44	0.6863	3.12	0.0784	2.57	0.92	530.56	12.79	486.86	12.03	723.39	26.59	**486.9**	**12.0**	8.6%
08YEM05_3	0.32	0.5951	3.17	0.0754	2.49	0.91	474.13	11.94	468.70	11.23	500.96	30.01	**468.7**	**11.2**	1.2%
08YEM05_12	0.55	0.5730	3.42	0.0722	2.58	0.88	459.97	12.55	449.18	11.18	514.69	36.79	**449.2**	**11.2**	2.4%
08YEM05_51	0.65	0.3721	1.83	0.0508	1.18	0.76	321.22	5.04	319.45	3.68	334.23	27.37	**319.5**	**3.7**	0.6%
08YEM05_120	0.92	0.2382	1.80	0.0333	1.13	0.76	216.90	3.50	211.10	2.34	280.60	27.03	**211.1**	**2.3**	2.7%
08YEM05_110	0.62	0.2094	1.85	0.0309	1.20	0.77	193.03	3.25	196.25	2.31	153.99	28.16	**196.2**	**2.3**	-1.7%
08YEM05_86	0.39	0.1831	1.97	0.0267	1.22	0.70	170.73	3.09	169.66	2.04	185.63	32.71	**169.7**	**2.0**	0.6%

08YEM05_1	0.52	0.0935	5.08	0.0142	3.04	0.72	90.77	4.40	91.15	2.75	81.40	82.51	**91.2**	**2.8**	-0.4%
08YEM05_64	0.51	0.0932	3.16	0.0139	1.60	0.68	90.51	2.73	88.93	1.42	132.47	55.15	**88.9**	**1.4**	1.8%
08YEM05_41	0.38	0.0970	1.95	0.0139	1.24	0.74	94.00	1.75	88.75	1.09	229.50	30.18	**88.7**	**1.1**	5.7%
08YEM05_96	0.23	0.0858	2.94	0.0129	1.40	0.56	83.57	2.35	82.37	1.14	118.27	56.68	**82.4**	**1.1**	1.5%
08YEM05_87	0.28	0.0880	3.08	0.0128	1.60	0.61	85.60	2.52	82.23	1.31	180.86	56.32	**82.2**	**1.3**	4.0%
08YEM05_55	0.39	0.0911	3.02	0.0126	1.69	0.67	88.56	2.56	80.45	1.35	313.18	51.05	**80.4**	**1.3**	9.6%
08YEM05_103	0.20	0.0653	2.45	0.0095	1.22	0.58	64.23	1.52	61.20	0.74	178.92	46.11	**61.2**	**0.7**	4.8%
08TAU01, upper Miocene-Pliocene upper Guayabo Formation (N=104).							4.96540°N		72.82360°W						
08TAU01_97	0.19	6.5618	1.70	0.3662	1.62	0.98	2054.23	14.87	2011.71	28.00	2097.25	6.17	**2097.2**	**6.2**	2.1%
08TAU01_62	0.60	5.8625	1.96	0.3468	1.29	0.90	1955.70	16.89	1919.52	21.33	1994.30	17.15	**1994.3**	**17.2**	1.9%
08TAU01_78	0.53	4.0375	2.83	0.2594	2.34	0.94	1641.78	22.81	1486.99	30.99	1846.14	18.52	**1846.1**	**18.5**	9.9%
08TAU01_12	0.33	4.7806	2.38	0.3084	2.07	0.95	1781.50	19.81	1733.01	31.33	1838.88	13.66	**1838.9**	**13.7**	2.8%
08TAU01_73	0.33	4.8565	2.65	0.3143	2.20	0.95	1794.74	22.11	1761.64	33.78	1833.48	16.34	**1833.5**	**16.3**	1.9%
08TAU01_11	0.47	5.1892	2.37	0.3373	2.04	0.95	1850.85	20.00	1873.89	33.04	1825.15	14.28	**1825.2**	**14.3**	-1.2%
08TAU01_94	0.64	4.9762	1.73	0.3259	1.61	0.96	1815.29	14.53	1818.42	25.39	1811.79	8.94	**1811.8**	**8.9**	-0.2%
08TAU01_16	0.34	5.1073	1.17	0.3346	0.98	0.93	1837.31	9.86	1860.75	15.88	1810.94	7.79	**1810.9**	**7.8**	-1.3%
08TAU01_70	0.47	5.0233	1.74	0.3292	1.03	0.92	1823.26	14.61	1834.61	16.35	1810.41	15.94	**1810.4**	**15.9**	-0.6%
08TAU01_71	0.33	4.9200	2.64	0.3250	2.18	0.95	1805.69	22.07	1814.06	34.39	1796.09	16.53	**1796.1**	**16.5**	-0.5%
08TAU01_74	0.32	4.8824	2.69	0.3245	2.22	0.94	1799.23	22.45	1811.73	34.91	1784.83	17.28	**1784.8**	**17.3**	-0.7%
08TAU01_63	0.40	4.0099	1.89	0.2666	1.24	0.91	1636.21	15.26	1523.77	16.80	1783.99	16.52	**1784.0**	**16.5**	7.1%
08TAU01_47	0.42	4.9332	1.98	0.3286	1.58	0.93	1807.95	16.60	1831.78	25.20	1780.76	13.92	**1780.8**	**13.9**	-1.3%
08TAU01_53	0.67	4.6954	3.25	0.3147	2.72	0.94	1766.41	26.86	1763.77	41.88	1769.79	20.47	**1769.8**	**20.5**	0.1%
08TAU01_75	0.47	4.0396	2.70	0.2723	2.21	0.94	1642.20	21.71	1552.37	30.49	1759.24	17.45	**1759.2**	**17.4**	5.6%
08TAU01_116	0.40	4.0951	2.25	0.2777	1.25	0.94	1653.32	18.22	1579.61	17.53	1748.37	21.16	**1748.4**	**21.2**	4.6%
08TAU01_83	0.24	4.2882	2.73	0.2947	2.44	0.96	1691.09	22.21	1664.84	35.76	1723.90	13.67	**1723.9**	**13.7**	1.6%
08TAU01_43	0.18	3.5631	1.99	0.2558	1.58	0.93	1541.36	15.67	1468.42	20.68	1643.06	14.65	**1643.1**	**14.7**	4.8%
08TAU01_66	0.51	3.6254	1.76	0.2608	1.05	0.92	1555.12	13.91	1494.08	13.95	1639.14	16.53	**1639.1**	**16.5**	4.0%
08TAU01_48	0.14	4.0146	1.97	0.2891	1.58	0.93	1637.16	15.87	1636.88	22.77	1637.70	13.78	**1637.7**	**13.8**	0.0%
08TAU01_18	0.78	3.6523	1.27	0.2690	1.03	0.91	1561.01	10.07	1535.54	14.12	1595.71	10.06	**1595.7**	**10.1**	1.6%
08TAU01_52	0.57	3.0755	3.46	0.2268	2.91	0.94	1426.62	26.20	1317.46	34.54	1593.74	23.19	**1593.7**	**23.2**	8.0%
08TAU01_20	0.48	2.9129	1.29	0.2151	1.04	0.90	1385.28	9.67	1255.90	11.81	1590.69	10.56	**1590.7**	**10.6**	9.8%
08TAU01_23	0.24	3.6915	1.01	0.2736	0.58	0.87	1569.54	8.02	1558.83	8.02	1584.07	10.72	**1584.1**	**10.7**	0.7%
08TAU01_37	0.34	3.7403	1.84	0.2795	1.46	0.93	1580.03	14.67	1588.66	20.48	1568.67	13.66	**1568.7**	**13.7**	-0.5%
08TAU01_8	0.23	3.8724	4.92	0.2897	4.72	0.98	1607.95	38.95	1639.91	67.98	1566.68	16.86	**1566.7**	**16.9**	-2.0%
08TAU01_60	0.59	3.2170	3.35	0.2422	2.79	0.94	1461.27	25.61	1398.26	35.03	1554.36	22.48	**1554.4**	**22.5**	4.4%
08TAU01_22	0.34	3.5607	0.95	0.2692	0.50	0.89	1540.81	7.49	1536.58	6.83	1546.74	10.41	**1546.7**	**10.4**	0.3%
08TAU01_14	0.24	3.7590	2.36	0.2849	2.03	0.95	1584.03	18.79	1615.77	28.99	1542.13	14.61	**1542.1**	**14.6**	-2.0%
08TAU01_87	0.50	3.5988	2.69	0.2730	2.41	0.97	1549.27	21.14	1555.97	33.28	1540.26	13.45	**1540.3**	**13.5**	-0.4%

08TAU01_58	0.34	3.4412	3.20	0.2619	2.70	0.95	1513.85	24.89	1499.32	35.99	1534.49	19.99	**1534.5**	**20.0**	1.0%
08TAU01_84	0.27	3.2393	2.76	0.2475	2.46	0.96	1466.62	21.21	1425.48	31.35	1526.81	15.13	**1526.8**	**15.1**	2.8%
08TAU01_107	0.32	3.4738	2.65	0.2672	1.89	0.92	1521.28	20.72	1526.45	25.63	1514.06	21.73	**1514.1**	**21.7**	-0.3%
08TAU01_34	0.63	3.4061	1.39	0.2625	0.53	1.05	1505.81	10.83	1502.52	7.12	1510.55	15.27	**1510.5**	**15.3**	0.2%
08TAU01_57	0.66	3.1595	3.30	0.2436	2.76	0.94	1447.33	25.16	1405.33	34.76	1509.86	21.96	**1509.9**	**22.0**	2.9%
08TAU01_88	0.17	3.0331	2.76	0.2360	2.47	0.96	1415.99	20.83	1365.93	30.32	1492.24	14.42	**1492.2**	**14.4**	3.6%
08TAU01_90	0.23	3.3455	3.11	0.2612	2.67	0.93	1491.74	23.99	1496.20	35.52	1485.50	21.65	**1485.5**	**21.6**	-0.3%
08TAU01_30	0.29	3.2686	0.99	0.2601	0.63	0.90	1473.61	7.70	1490.34	8.33	1449.69	9.76	**1449.7**	**9.8**	-1.1%
08TAU01_35	0.28	3.0734	1.41	0.2501	0.53	1.04	1426.08	10.71	1439.11	6.84	1406.78	15.92	**1406.8**	**15.9**	-0.9%
08TAU01_13	0.18	2.7602	2.41	0.2311	2.04	0.94	1344.85	17.81	1340.43	24.70	1351.98	16.41	**1352.0**	**16.4**	0.3%
08TAU01_103	0.19	2.7757	2.60	0.2325	1.82	0.92	1349.02	19.26	1347.58	22.15	1351.27	22.06	**1351.3**	**22.1**	0.1%
08TAU01_55	0.07	2.5692	3.23	0.2156	2.71	0.95	1291.91	23.36	1258.37	30.92	1348.37	21.28	**1348.4**	**21.3**	2.6%
08TAU01_112	0.55	2.6771	2.22	0.2272	1.12	0.94	1322.16	16.31	1319.56	13.40	1326.44	23.46	**1326.4**	**23.5**	0.2%
08TAU01_98	0.31	2.6575	1.74	0.2262	1.62	0.96	1316.74	12.79	1314.64	19.20	1320.24	9.72	**1320.2**	**9.7**	0.2%
08TAU01_25	0.22	1.9938	1.14	0.1701	0.85	0.91	1113.40	7.68	1012.53	8.01	1316.15	9.73	**1316.1**	**9.7**	9.5%
08TAU01_17	0.06	2.5602	1.16	0.2235	0.96	0.93	1289.34	8.42	1300.17	11.25	1271.44	8.84	**1271.4**	**8.8**	-0.8%
08TAU01_72	0.20	2.4351	2.65	0.2168	2.19	0.95	1253.03	18.89	1264.68	25.05	1233.11	17.85	**1233.1**	**17.9**	-0.9%
08TAU01_64	0.22	2.3187	1.70	0.2065	1.00	0.93	1218.01	11.99	1210.31	11.00	1231.78	16.61	**1231.8**	**16.6**	0.6%
08TAU01_89	0.37	2.3460	2.78	0.2100	2.49	0.96	1226.34	19.61	1228.68	27.84	1222.35	15.08	**1222.4**	**15.1**	-0.2%
08TAU01_120	0.44	2.2768	2.35	0.2045	1.21	0.92	1205.14	16.41	1199.36	13.21	1215.57	25.86	**1215.6**	**25.9**	0.5%
08TAU01_91	0.36	2.2619	1.76	0.2040	1.64	0.96	1200.50	12.35	1196.72	17.91	1207.39	9.72	**1207.4**	**9.7**	0.3%
08TAU01_5	0.32	2.2072	1.37	0.1992	0.96	0.93	1183.32	9.54	1171.01	10.28	1206.01	11.70	**1206.0**	**11.7**	1.0%
08TAU01_24	0.23	2.2616	0.86	0.2055	0.40	0.94	1200.41	6.06	1204.67	4.35	1192.88	10.05	**1192.9**	**10.0**	-0.4%
08TAU01_36	0.18	2.2666	1.89	0.2074	1.48	0.92	1201.95	13.22	1214.75	16.33	1179.15	15.45	**1179.1**	**15.4**	-1.1%
08TAU01_99	0.16	2.2484	1.63	0.2061	1.55	0.98	1196.30	11.36	1208.14	17.04	1175.07	6.76	**1175.1**	**6.8**	-1.0%
08TAU01_81	0.51	2.1020	2.73	0.1961	2.43	0.96	1149.46	18.61	1154.29	25.59	1140.47	15.74	**1140.5**	**15.7**	-0.4%
08TAU01_21	0.40	1.7929	1.22	0.1719	0.69	0.82	1042.86	7.95	1022.38	6.55	1086.17	15.25	**1086.2**	**15.3**	2.0%
08TAU01_10	0.19	1.7937	4.95	0.1732	4.73	0.98	1043.18	31.77	1029.66	44.84	1072.00	19.60	**1072.0**	**19.6**	1.3%
08TAU01_15	0.19	1.8027	2.50	0.1749	2.07	0.93	1046.43	16.17	1039.04	19.85	1061.99	19.51	**1062.0**	**19.5**	0.7%
08TAU01_105	0.25	1.7823	2.63	0.1730	1.83	0.92	1039.03	16.95	1028.48	17.39	1061.25	23.60	**1061.2**	**23.6**	1.0%
08TAU01_68	0.50	1.7051	1.97	0.1659	1.08	0.88	1010.46	12.55	989.23	9.88	1056.89	23.01	**1056.9**	**23.0**	2.1%
08TAU01_4	0.27	1.7053	1.74	0.1670	1.22	0.90	1010.52	11.06	995.68	11.28	1042.96	16.88	**1043.0**	**16.9**	1.5%
08TAU01_121	0.24	1.7610	2.62	0.1725	1.25	0.96	1031.23	16.85	1025.83	11.82	1042.70	29.42	**1042.7**	**29.4**	0.5%
08TAU01_95	0.29	1.7555	1.86	0.1720	1.68	0.94	1029.20	11.97	1022.90	15.84	1042.69	12.99	**1042.7**	**13.0**	0.6%
08TAU01_96	0.32	1.7308	1.94	0.1699	1.69	0.92	1020.03	12.41	1011.46	15.84	1038.56	15.49	**1038.6**	**15.5**	0.8%
08TAU01_9	0.45	1.5665	5.09	0.1539	4.79	0.97	957.03	31.09	922.59	41.03	1037.43	24.98	**1037.4**	**25.0**	3.7%
08TAU01_41	0.18	1.7801	2.13	0.1754	1.60	0.89	1038.22	13.75	1041.81	15.41	1030.87	20.06	**1030.9**	**20.1**	-0.3%
08TAU01_33	0.28	1.6744	1.70	0.1659	0.78	0.89	998.86	10.77	989.66	7.19	1019.21	21.51	**1019.2**	**21.5**	0.9%

08TAU01_86	0.19	1.7084	2.76	0.1695	2.48	0.96	1011.68	17.54	1009.14	23.08	1017.29	15.45	**1017.3**	**15.4**	0.3%
08TAU01_31	0.36	1.6464	1.65	0.1634	0.74	0.91	988.17	10.35	975.78	6.71	1015.89	20.61	**1015.9**	**20.6**	1.3%
08TAU01_26	0.48	1.7156	1.67	0.1708	1.02	0.79	1014.39	10.66	1016.78	9.56	1009.32	21.41	**1009.3**	**21.4**	-0.2%
08TAU01_29	0.33	1.7288	1.17	0.1723	0.73	0.85	1019.31	7.48	1024.85	6.90	1007.55	13.38	**1007.5**	**13.4**	-0.5%
08TAU01_45	0.19	1.7257	2.10	0.1721	1.61	0.90	1018.15	13.39	1023.68	15.19	1006.45	18.96	**1006.5**	**19.0**	-0.5%
08TAU01_56	0.23	1.5906	3.28	0.1587	2.72	0.94	966.52	20.23	949.30	24.01	1006.16	23.74	**1006.2**	**23.7**	1.8%
08TAU01_54	0.35	1.6185	3.40	0.1616	2.81	0.93	977.41	21.13	965.75	25.15	1004.00	25.92	**1004.0**	**25.9**	1.2%
08TAU01_108	0.21	1.7228	2.83	0.1724	1.97	0.90	1017.07	18.03	1025.07	18.64	999.85	27.19	**999.9**	**27.2**	-0.8%
08TAU01_1	0.51	1.6300	1.46	0.1631	1.00	0.91	981.87	9.18	974.23	9.04	999.10	13.89	**999.1**	**13.9**	0.8%
08TAU01_32	0.50	1.5070	1.81	0.1509	0.85	0.86	933.23	10.98	906.01	7.18	998.17	23.36	**998.2**	**23.4**	3.0%
08TAU01_85	0.30	1.6515	2.83	0.1654	2.51	0.96	990.11	17.74	986.62	22.94	997.97	17.26	**998.0**	**17.3**	0.4%
08TAU01_39	0.26	1.7548	1.98	0.1757	1.50	0.90	1028.92	12.72	1043.66	14.46	997.86	18.33	**997.9**	**18.3**	-1.4%
08TAU01_67	0.31	1.6222	1.94	0.1625	1.12	0.89	978.84	12.08	970.89	10.13	996.82	21.59	**996.8**	**21.6**	0.8%
08TAU01_109	0.26	1.6156	2.64	0.1619	1.86	0.92	976.27	16.41	967.50	16.70	996.02	23.49	**996.0**	**23.5**	0.9%
08TAU01_69	0.30	1.7640	2.31	0.1775	1.39	0.85	1032.31	14.84	1053.19	13.48	988.41	27.09	**988.4**	**27.1**	-2.0%
08TAU01_40	0.24	1.6633	1.98	0.1675	1.52	0.91	994.64	12.45	998.21	14.08	986.91	17.67	**986.9**	**17.7**	-0.4%
08TAU01_61	0.40	1.5736	3.40	0.1587	2.83	0.94	959.83	20.92	949.47	24.96	983.93	25.32	**983.9**	**25.3**	1.1%
08TAU01_122	0.32	1.5965	2.54	0.1610	1.13	0.99	968.83	15.73	962.26	10.09	983.78	28.89	**983.8**	**28.9**	0.7%
08TAU01_46	0.22	1.6594	2.10	0.1679	1.62	0.91	993.15	13.21	1000.50	15.01	977.17	18.74	**977.2**	**18.7**	-0.7%
08TAU01_77	0.30	1.6056	2.72	0.1626	2.24	0.94	972.40	16.86	971.38	20.17	974.76	19.44	**974.8**	**19.4**	0.1%
08TAU01_65	0.26	1.6490	1.78	0.1673	0.97	0.91	989.17	11.22	997.05	8.99	971.82	19.95	**971.8**	**19.9**	-0.8%
08TAU01_82	0.38	1.6084	2.68	0.1632	2.40	0.97	973.50	16.62	974.62	21.67	971.08	14.58	**971.1**	**14.6**	-0.1%
08TAU01_7	0.55	1.5963	5.07	0.1622	4.77	0.97	968.77	31.17	969.19	42.74	968.19	25.11	**968.2**	**25.1**	0.0%
08TAU01_51	0.24	1.6004	3.28	0.1634	2.74	0.94	970.36	20.32	975.54	24.74	958.94	23.75	**958.9**	**23.8**	-0.5%
08TAU01_119	0.21	1.6351	2.37	0.1672	1.14	0.92	983.82	14.85	996.70	10.49	955.28	28.55	**955.3**	**28.6**	-1.3%
08TAU01_38	0.24	1.6048	1.91	0.1644	1.47	0.91	972.10	11.91	981.13	13.33	951.90	17.21	**951.9**	**17.2**	-0.9%
08TAU01_123	0.26	1.5971	3.05	0.1636	1.50	0.88	969.08	18.85	977.02	13.57	951.12	37.61	**951.1**	**37.6**	-0.8%
08TAU01_27	0.87	1.6704	1.37	0.1713	0.89	0.84	997.33	8.69	1019.26	8.43	949.53	16.19	**949.5**	**16.2**	-2.2%
08TAU01_124	0.24	1.5319	2.51	0.1576	1.10	1.00	943.25	15.30	943.55	9.68	942.57	28.58	**942.6**	**28.6**	0.0%
08TAU01_106	0.24	1.5037	2.76	0.1554	1.93	0.91	931.87	16.67	931.27	16.70	933.24	26.03	**933.2**	**26.0**	0.1%
08TAU01_125	0.61	1.5304	2.66	0.1592	1.17	0.96	942.64	16.20	952.44	10.31	919.83	31.94	**919.8**	**31.9**	-1.0%
08TAU01_117	0.43	1.4766	2.18	0.1550	0.99	0.97	920.84	13.09	928.98	8.54	901.45	25.45	**901.4**	**25.5**	-0.9%
08TAU01_111	0.36	1.4387	2.24	0.1498	1.12	0.94	905.20	13.35	899.94	9.43	918.12	25.42	**899.9**	**9.4**	0.6%
08TAU01_104	0.32	1.4060	2.99	0.1434	2.12	0.90	891.45	17.58	863.85	17.11	960.53	28.90	**863.8**	**17.1**	3.1%
08TAU01_2	0.65	1.1530	1.75	0.1287	1.12	0.87	778.64	9.49	780.61	8.22	773.11	19.80	**780.6**	**8.2**	-0.3%
08TAU01_113	0.41	0.7908	2.45	0.0954	1.12	0.90	591.61	10.93	587.42	6.26	607.79	32.48	**587.4**	**6.3**	0.7%
CRA 060909, Cravo Sur River sands (N=71). 5.361°N 72.404°W															
CRA060909-93	0.42	13.7348	2.94	0.5270	2.58	0.88	2731.59	27.79	2728.87	57.34	2733.60	23.13	**2733.6**	**23.1**	0.2%

CRA060909-13	0.50	6.4403	2.04	0.3619	1.87	0.92	2037.78	17.90	1991.40	32.00	2085.05	14.25	**2085.0**	**14.3**	4.5%
CRA060909-91	0.75	5.7859	2.39	0.3416	2.22	0.93	1944.30	20.65	1894.54	36.47	1997.72	15.41	**1997.7**	**15.4**	5.2%
CRA060909-31	0.57	4.9270	1.52	0.2980	1.28	0.84	1806.90	12.82	1681.36	18.88	1954.94	14.71	**1954.9**	**14.7**	4.0%
CRA060909-30	0.31	5.4070	1.99	0.3397	1.96	0.98	1885.96	17.08	1885.14	31.96	1886.85	6.96	**1886.8**	**7.0**	0.1%
CRA060909-58	0.50	4.8756	2.36	0.3165	2.24	0.95	1798.05	19.92	1772.67	34.75	1827.59	13.59	**1827.6**	**13.6**	3.0%
CRA060909-11	0.69	4.2013	2.49	0.2800	2.40	0.96	1674.28	20.40	1591.36	33.82	1779.82	12.00	**1779.8**	**12.0**	0.6%
CRA060909-47	0.19	4.6457	2.11	0.3127	1.91	0.91	1757.53	17.60	1754.11	29.37	1761.57	16.11	**1761.6**	**16.1**	0.4%
CRA060909-100	0.52	4.1830	2.87	0.2905	2.84	0.99	1670.69	23.55	1643.81	41.19	1704.60	8.23	**1704.6**	**8.2**	3.6%
CRA060909-2	0.28	3.6030	1.99	0.2712	1.92	0.97	1550.19	15.84	1547.04	26.47	1554.48	9.73	**1554.5**	**9.7**	0.5%
CRA060909-54	0.37	3.5793	2.86	0.2710	2.78	0.97	1544.94	22.73	1545.68	38.22	1543.91	12.82	**1543.9**	**12.8**	-0.1%
CRA060909-63	0.71	3.2194	2.78	0.2440	1.69	0.61	1461.84	21.55	1407.70	21.36	1541.41	41.54	**1541.4**	**41.5**	8.7%
CRA060909-33	0.38	3.3600	3.18	0.2595	3.15	0.99	1495.12	24.93	1487.50	41.82	1505.93	9.10	**1505.9**	**9.1**	1.2%
CRA060909-20	0.21	3.1790	2.46	0.2492	2.43	0.99	1452.07	19.02	1434.40	31.20	1478.01	7.93	**1478.0**	**7.9**	3.0%
CRA060909-73	1.02	3.1510	4.07	0.2527	2.08	0.51	1445.24	31.37	1452.33	27.06	1434.79	66.69	**1434.8**	**66.7**	-1.2%
CRA060909-74	0.43	2.8829	3.56	0.2326	2.42	0.68	1377.46	26.85	1347.94	29.46	1423.50	49.88	**1423.5**	**49.9**	5.3%
CRA060909-41	1.18	2.9687	1.65	0.2398	0.70	0.43	1399.64	12.51	1385.48	8.76	1421.25	28.46	**1421.3**	**28.5**	2.5%
CRA060909-83	0.90	2.6685	3.61	0.2183	3.41	0.94	1319.77	26.70	1273.02	39.36	1396.49	23.14	**1396.5**	**23.1**	8.8%
CRA060909-90	0.50	2.7151	3.13	0.2229	1.56	0.50	1332.60	23.20	1297.42	18.30	1389.56	52.04	**1389.6**	**52.0**	6.6%
CRA060909-67	0.60	2.7978	3.66	0.2303	3.40	0.93	1354.95	27.37	1336.00	41.02	1384.95	25.90	**1385.0**	**25.9**	3.5%
CRA060909-62	0.21	2.3942	5.07	0.1996	2.74	0.54	1240.86	36.33	1173.39	29.37	1359.96	82.29	**1360.0**	**82.3**	3.7%
CRA060909-65	1.02	2.4590	3.57	0.2105	2.30	0.64	1260.08	25.79	1231.25	25.77	1309.64	53.03	**1309.6**	**53.0**	6.0%
CRA060909-32	1.36	1.7054	6.99	0.1488	5.48	0.78	1010.56	44.77	894.23	45.73	1272.12	84.74	**1272.1**	**84.7**	9.7%
CRA060909-56	0.31	1.9783	6.58	0.1737	5.25	0.80	1108.15	44.43	1032.48	50.10	1259.84	77.61	**1259.8**	**77.6**	8.0%
CRA060909-12	0.21	2.2275	1.90	0.1976	1.56	0.82	1189.72	13.29	1162.49	16.55	1239.53	21.24	**1239.5**	**21.2**	6.2%
CRA060909-80	0.59	2.1106	1.77	0.1881	1.57	0.89	1152.26	12.17	1110.88	16.02	1230.99	15.87	**1231.0**	**15.9**	9.8%
CRA060909-68	0.33	2.2435	1.66	0.2005	1.53	0.92	1194.75	11.68	1177.99	16.50	1225.17	12.71	**1225.2**	**12.7**	3.9%
CRA060909-75	0.35	2.2499	3.40	0.2012	2.26	0.67	1196.76	23.92	1181.57	24.43	1224.26	49.91	**1224.3**	**49.9**	3.5%
CRA060909-70	0.50	2.2473	2.56	0.2017	2.52	0.99	1195.93	17.97	1184.27	27.29	1217.04	8.24	**1217.0**	**8.2**	2.7%
CRA060909-76	0.39	2.0332	1.02	0.1831	0.83	0.82	1126.67	6.91	1084.02	8.31	1209.85	11.43	**1209.8**	**11.4**	0.4%
CRA060909-72	0.33	1.8206	6.12	0.1640	2.91	0.48	1052.91	40.13	978.91	26.41	1209.75	106.07	**1209.7**	**106.1**	9.1%
CRA060909-85	0.13	2.1774	1.63	0.1966	1.45	0.89	1173.84	11.36	1156.92	15.36	1205.15	14.77	**1205.1**	**14.8**	4.0%
CRA060909-88	0.35	2.2000	3.93	0.1988	2.65	0.68	1181.05	27.43	1169.07	28.37	1203.05	57.11	**1203.0**	**57.1**	2.8%
CRA060909-40	0.37	2.2651	4.48	0.2070	4.13	0.92	1201.49	31.55	1212.71	45.62	1181.39	34.38	**1181.4**	**34.4**	-2.7%
CRA060909-52	0.19	2.2574	7.69	0.2070	7.38	0.96	1199.09	54.17	1212.78	81.57	1174.53	42.99	**1174.5**	**43.0**	-3.3%
CRA060909-17	0.27	1.9527	3.68	0.1825	2.88	0.78	1099.37	24.73	1080.83	28.65	1136.28	45.70	**1136.3**	**45.7**	4.9%
CRA060909-97	0.36	1.9182	4.72	0.1812	4.30	0.91	1087.45	31.51	1073.62	42.49	1115.23	38.97	**1115.2**	**39.0**	3.7%
CRA060909-14	0.28	1.8500	3.40	0.1751	3.26	0.96	1063.41	22.43	1040.00	31.34	1111.75	19.30	**1111.7**	**19.3**	6.5%
CRA060909-48	0.27	1.7816	3.17	0.1723	2.85	0.90	1038.77	20.61	1024.67	26.99	1068.60	27.89	**1068.6**	**27.9**	4.1%

CRA060909-98	0.33	1.6855	5.64	0.1643	3.75	0.67	1003.06	35.94	980.67	34.15	1052.33	84.80	**1052.3**	**84.8**	6.8%
CRA060909-37	0.35	1.6983	2.58	0.1667	2.24	0.87	1007.87	16.48	994.12	20.59	1037.87	25.96	**1037.9**	**26.0**	4.2%
CRA060909-18	0.58	1.7083	5.26	0.1678	2.49	0.47	1011.65	33.71	1000.18	23.10	1036.54	93.64	**1036.5**	**93.6**	3.5%
CRA060909-3	0.19	1.7757	3.23	0.1747	3.06	0.95	1036.60	20.96	1038.18	29.32	1033.24	20.81	**1033.2**	**20.8**	-0.5%
CRA060909-6	0.24	1.7371	3.34	0.1710	2.87	0.86	1022.39	21.56	1017.70	26.98	1032.44	34.88	**1032.4**	**34.9**	1.4%
CRA060909-26	0.28	1.6872	3.27	0.1668	3.10	0.95	1003.71	20.86	994.41	28.61	1024.08	20.89	**1024.1**	**20.9**	2.9%
CRA060909-86	0.35	1.6863	3.86	0.1674	3.36	0.87	1003.38	24.59	997.54	31.05	1016.13	38.39	**1016.1**	**38.4**	1.8%
CRA060909-77	0.40	1.6710	2.51	0.1683	1.90	0.76	997.56	15.92	1002.97	17.66	985.66	33.20	**1003.0**	**17.7**	-1.8%
CRA060909-38	0.38	1.6656	3.92	0.1682	2.67	0.68	995.50	24.87	1002.07	24.80	981.08	58.39	**1002.1**	**24.8**	-2.1%
CRA060909-87	0.21	1.7013	1.49	0.1705	1.06	0.71	1009.01	9.53	1014.66	9.97	996.77	21.23	**996.8**	**21.2**	-1.8%
CRA060909-22	0.37	1.6730	1.62	0.1671	1.26	0.78	998.31	10.28	996.33	11.64	1002.63	20.51	**996.3**	**11.6**	0.6%
CRA060909-4	0.31	1.6824	3.58	0.1687	2.30	0.64	1001.88	22.82	1004.84	21.39	995.44	55.87	**995.4**	**55.9**	-0.9%
CRA060909-69	0.58	1.6453	3.11	0.1651	2.95	0.95	987.74	19.62	985.31	26.99	993.15	19.57	**985.3**	**27.0**	0.8%
CRA060909-51	0.36	1.6200	4.45	0.1645	2.57	0.58	978.00	27.93	982.00	23.41	969.00	74.10	**982.0**	**23.4**	-1.3%
CRA060909-24	0.19	1.6209	3.06	0.1631	2.75	0.90	978.33	19.21	974.05	24.88	987.98	27.12	**974.0**	**24.9**	1.4%
CRA060909-23	0.27	1.5970	2.63	0.1631	1.59	0.60	969.02	16.44	973.94	14.36	957.85	42.91	**973.9**	**14.4**	-1.7%
CRA060909-43	0.45	1.5851	3.93	0.1628	1.37	0.35	964.37	24.50	972.39	12.35	946.11	75.55	**972.4**	**12.3**	-2.8%
CRA060909-66	0.20	1.6427	5.31	0.1617	3.91	0.74	986.74	33.53	966.28	35.06	1032.50	72.73	**966.3**	**35.1**	6.4%
CRA060909-29	0.19	1.6359	3.35	0.1613	2.81	0.84	984.13	21.12	964.25	25.12	1028.74	37.10	**964.2**	**25.1**	6.3%
CRA060909-61	0.36	1.5919	2.66	0.1608	2.06	0.77	967.05	16.61	961.47	18.41	979.73	34.38	**961.5**	**18.4**	1.9%
CRA060909-34	0.49	1.6020	2.78	0.1588	2.14	0.77	970.97	17.35	950.27	18.87	1018.11	35.88	**950.3**	**18.9**	6.7%
CRA060909-64	0.43	1.5765	3.63	0.1567	3.16	0.87	960.98	22.54	938.32	27.62	1013.17	36.01	**938.3**	**27.6**	7.4%
CRA060909-83	0.66	1.5134	1.56	0.1557	1.33	0.86	935.83	9.52	932.87	11.59	942.80	16.41	**932.9**	**11.6**	1.1%
CRA060909-16	0.39	1.4916	2.11	0.1551	2.06	0.98	926.96	12.81	929.46	17.81	921.05	9.43	**929.5**	**17.8**	-0.9%
CRA060909-15	0.23	1.5408	4.27	0.1547	4.13	0.97	946.83	26.29	927.34	35.64	992.42	22.24	**927.3**	**35.6**	6.6%
CRA060909-10	1.15	1.4710	2.87	0.1530	2.24	0.78	918.54	17.37	917.77	19.14	920.41	37.04	**917.8**	**19.1**	0.3%
CRA060909-92	0.14	1.4400	3.15	0.1510	2.03	0.64	905.70	18.90	906.30	17.20	904.23	49.70	**906.3**	**17.2**	-0.2%
CRA060909-99	0.56	1.4334	2.97	0.1509	1.98	0.67	902.96	17.76	905.91	16.74	895.74	45.66	**905.9**	**16.7**	-1.1%
CRA060909-60	0.19	1.5457	4.61	0.1504	2.86	0.62	948.76	28.41	903.25	24.08	1055.91	72.81	**903.3**	**24.1**	4.5%
CRA060909-79	0.37	0.9078	9.92	0.0984	9.52	0.96	655.91	47.96	605.08	55.00	834.92	57.88	**605.1**	**55.0**	7.5%
CRA060909-19	0.49	0.0877	57.21	0.0125	4.12	0.07	85.32	46.85	80.06	3.28	234.94	1431.56	**80.1**	**3.3**	5.9%
CRA060909-7	0.62	0.0718	30.95	0.0085	3.37	0.11	70.44	21.06	54.44	1.83	654.62	674.97	**54.4**	**1.8**	1.7%
CUS 061409, CusianaRiver sands (N=84). 5.001°N 72.629°W															
CUS061409-95	0.81	12.0099	2.26	0.4624	2.18	0.96	2605.18	21.21	2450.13	44.36	2728.01	10.19	**2728.0**	**10.2**	0.2%
CUS061409-5	0.51	7.3930	2.23	0.3923	1.98	0.89	2160.12	19.92	2133.40	35.88	2185.61	17.90	**2185.6**	**17.9**	2.4%
CUS061409-39	0.76	6.5792	2.81	0.3834	2.63	0.94	2056.56	24.74	2092.11	46.94	2021.10	17.47	**2021.1**	**17.5**	-3.5%
CUS061409-24	0.37	6.0450	2.49	0.3573	1.10	0.44	1982.35	21.66	1969.22	18.67	1996.06	39.61	**1996.1**	**39.6**	1.3%
CUS061409-21	0.60	5.6158	1.71	0.3470	1.46	0.85	1918.53	14.73	1920.26	24.25	1916.65	15.93	**1916.7**	**15.9**	-0.2%

CUS061409-85	0.54	5.0317	1.41	0.3146	1.31	0.93	1824.67	11.93	1763.54	20.19	1895.16	9.35	**1895.2**	**9.3**	6.9%
CUS061409-49	0.62	5.0090	2.11	0.3249	1.42	0.67	1820.84	17.88	1813.81	22.43	1828.87	28.36	**1828.9**	**28.4**	0.8%
CUS061409-6	0.40	5.0294	3.39	0.3290	3.24	0.96	1824.29	28.68	1833.56	51.67	1813.72	17.96	**1813.7**	**18.0**	-1.1%
CUS061409-8	0.76	4.9357	3.12	0.3236	3.07	0.98	1808.37	26.36	1807.33	48.43	1809.56	9.98	**1809.6**	**10.0**	0.1%
CUS061409-90	0.75	3.7991	5.81	0.2499	5.80	1.00	1592.56	46.77	1437.85	74.71	1803.82	8.37	**1803.8**	**8.4**	0.3%
CUS061409-45	1.20	4.0775	4.22	0.2790	4.11	0.97	1649.81	34.42	1586.09	57.79	1731.92	17.53	**1731.9**	**17.5**	8.4%
CUS061409-28	0.87	4.3939	3.33	0.3016	3.10	0.93	1711.20	27.58	1699.14	46.35	1725.97	22.37	**1726.0**	**22.4**	1.6%
CUS061409-35	0.84	3.8075	3.19	0.2768	3.04	0.95	1594.33	25.65	1575.07	42.45	1619.88	18.02	**1619.9**	**18.0**	2.8%
CUS061409-67	1.67	3.8279	1.76	0.2806	1.74	0.99	1598.64	14.17	1594.40	24.57	1604.21	4.92	**1604.2**	**4.9**	0.6%
CUS061409-110	1.47	2.6293	5.32	0.1928	5.27	0.99	1308.86	39.13	1136.31	54.94	1603.99	12.57	**1604.0**	**12.6**	9.2%
CUS061409-99	0.49	3.9298	2.64	0.2897	2.21	0.84	1619.83	21.38	1639.81	32.02	1593.95	26.97	**1594.0**	**27.0**	-2.9%
CUS061409-120	0.39	3.6306	2.57	0.2689	1.73	0.67	1556.26	20.43	1535.37	23.58	1584.71	35.50	**1584.7**	**35.5**	3.1%
CUS061409-14	0.50	3.7155	2.79	0.2756	2.73	0.98	1574.72	22.30	1569.07	37.98	1582.29	10.76	**1582.3**	**10.8**	0.8%
CUS061409-60	0.81	3.2940	4.60	0.2452	4.23	0.92	1479.63	35.87	1413.85	53.65	1575.25	34.15	**1575.3**	**34.1**	0.2%
CUS061409-114	0.69	3.4158	1.94	0.2563	1.11	0.57	1508.04	15.24	1470.78	14.60	1560.74	29.84	**1560.7**	**29.8**	5.8%
CUS061409-116	0.54	3.5459	2.77	0.2669	2.65	0.96	1537.53	21.97	1525.07	36.06	1554.69	15.05	**1554.7**	**15.1**	1.9%
CUS061409-66	0.50	3.5561	2.64	0.2681	1.54	0.58	1539.79	20.95	1531.25	20.96	1551.52	40.37	**1551.5**	**40.4**	1.3%
CUS061409-96	1.00	2.8767	1.41	0.2176	1.37	0.97	1375.82	10.65	1269.14	15.73	1545.47	6.86	**1545.5**	**6.9**	7.9%
CUS061409-107	0.61	3.6163	3.45	0.2736	2.70	0.78	1553.13	27.44	1558.88	37.45	1545.31	40.21	**1545.3**	**40.2**	-0.9%
CUS061409-57	0.71	3.3924	1.91	0.2568	1.78	0.93	1502.64	15.00	1473.35	23.43	1544.17	13.21	**1544.2**	**13.2**	4.6%
CUS061409-102	0.37	3.3617	1.31	0.2547	1.25	0.95	1495.51	10.23	1462.68	16.29	1542.34	7.50	**1542.3**	**7.5**	5.2%
CUS061409-71	0.42	3.6446	2.23	0.2766	2.12	0.95	1559.34	17.79	1574.44	29.65	1538.93	13.02	**1538.9**	**13.0**	-2.3%
CUS061409-23	0.36	3.5228	3.40	0.2692	3.21	0.94	1532.35	26.89	1536.71	43.82	1526.31	21.36	**1526.3**	**21.4**	-0.7%
CUS061409-15	0.59	3.5578	3.47	0.2747	3.38	0.97	1540.18	27.54	1564.84	46.99	1506.47	14.98	**1506.5**	**15.0**	-3.9%
CUS061409-78	1.00	3.4624	2.42	0.2674	2.07	0.85	1518.69	19.10	1527.48	28.18	1506.44	23.79	**1506.4**	**23.8**	-1.4%
CUS061409-51	0.40	3.1786	3.11	0.2521	2.95	0.95	1451.97	24.02	1449.10	38.24	1456.15	18.87	**1456.1**	**18.9**	0.5%
CUS061409-92	0.46	3.0317	2.16	0.2418	1.41	0.65	1415.64	16.53	1396.07	17.67	1445.20	31.32	**1445.2**	**31.3**	3.4%
CUS061409-64	0.48	2.9779	2.15	0.2408	1.61	0.75	1401.98	16.35	1390.60	20.20	1419.31	27.16	**1419.3**	**27.2**	2.0%
CUS061409-81	0.24	2.8249	2.99	0.2369	2.91	0.97	1362.18	22.44	1370.48	35.96	1349.15	13.24	**1349.2**	**13.2**	-1.6%
CUS061409-98	0.38	2.6151	3.26	0.2207	3.19	0.98	1304.89	23.92	1285.44	37.19	1337.01	12.52	**1337.0**	**12.5**	3.9%
CUS061409-119	0.32	2.5165	4.48	0.2127	4.30	0.96	1276.81	32.54	1243.10	48.59	1333.98	24.25	**1334.0**	**24.3**	6.8%
CUS061409-33	0.41	2.6722	1.96	0.2277	1.66	0.85	1320.80	14.48	1322.46	19.88	1318.08	20.11	**1318.1**	**20.1**	-0.3%
CUS061409-36	0.47	2.5611	2.80	0.2197	2.35	0.84	1289.61	20.48	1280.18	27.27	1305.32	29.76	**1305.3**	**29.8**	1.9%
CUS061409-111	0.37	2.3366	2.58	0.2068	1.52	0.59	1223.49	18.32	1211.75	16.76	1244.22	40.78	**1244.2**	**40.8**	2.6%
CUS061409-43	0.03	2.2170	4.47	0.1983	4.45	1.00	1186.41	31.28	1166.16	47.46	1223.49	8.19	**1223.5**	**8.2**	4.7%
CUS061409-112	0.66	2.3482	2.45	0.2111	1.55	0.63	1227.00	17.42	1234.73	17.45	1213.45	37.17	**1213.5**	**37.2**	-1.8%
CUS061409-38	0.35	2.1402	3.11	0.1938	2.41	0.78	1161.88	21.50	1142.12	25.22	1198.88	38.69	**1198.9**	**38.7**	4.7%
CUS061409-65	0.31	2.1169	3.48	0.1932	2.73	0.78	1154.32	24.02	1138.84	28.49	1183.54	42.76	**1183.5**	**42.8**	3.8%

CUS061409-46	0.20	2.1426	2.75	0.1956	2.44	0.89	1162.67	19.03	1151.52	25.76	1183.53	24.87	**1183.5**	**24.9**	2.7%
CUS061409-62	0.30	2.0758	3.89	0.1937	2.97	0.76	1140.86	26.69	1141.21	31.04	1140.23	50.15	**1140.2**	**50.1**	-0.1%
CUS061409-97	0.27	1.9249	5.86	0.1813	2.01	0.34	1089.77	39.18	1073.84	19.90	1121.71	109.86	**1121.7**	**109.9**	4.3%
CUS061409-50	0.56	1.8440	3.08	0.1764	2.42	0.79	1061.28	20.30	1047.28	23.39	1090.19	38.26	**1090.2**	**38.3**	3.9%
CUS061409-115	0.23	1.7687	1.10	0.1704	0.96	0.87	1034.04	7.14	1014.17	8.96	1076.31	10.97	**1076.3**	**11.0**	5.8%
CUS061409-58	0.36	1.7856	4.88	0.1724	2.84	0.58	1040.22	31.79	1025.57	26.96	1071.17	79.76	**1071.2**	**79.8**	4.3%
CUS061409-75	0.64	1.7159	4.85	0.1661	1.76	0.36	1014.50	31.12	990.65	16.13	1066.36	90.93	**1066.4**	**90.9**	7.1%
CUS061409-77	0.28	1.7103	2.81	0.1664	1.57	0.56	1012.40	18.00	992.13	14.48	1056.55	46.85	**1056.5**	**46.8**	6.1%
CUS061409-17	0.36	1.6878	2.55	0.1646	1.98	0.78	1003.92	16.25	982.50	18.01	1051.00	32.43	**1051.0**	**32.4**	6.5%
CUS061409-19	0.39	1.7134	2.46	0.1677	2.18	0.88	1013.57	15.80	999.50	20.16	1044.08	23.28	**1044.1**	**23.3**	4.3%
CUS061409-7	0.30	1.7888	2.76	0.1753	1.91	0.69	1041.38	17.97	1041.00	18.34	1042.16	40.22	**1042.2**	**40.2**	0.1%
CUS061409-100	0.42	1.7379	2.70	0.1706	0.55	0.21	1022.70	17.41	1015.28	5.20	1038.61	53.36	**1038.6**	**53.4**	2.2%
CUS061409-68	0.26	1.6740	3.77	0.1653	3.43	0.91	998.71	23.96	986.30	31.34	1026.03	31.72	**1026.0**	**31.7**	3.9%
CUS061409-4	0.24	1.7199	2.37	0.1699	2.21	0.94	1015.98	15.19	1011.72	20.73	1025.15	16.85	**1025.2**	**16.8**	1.3%
CUS061409-25	0.37	1.6955	3.40	0.1681	3.25	0.96	1006.84	21.70	1001.42	30.11	1018.62	20.21	**1018.6**	**20.2**	1.7%
CUS061409-1	0.35	1.7237	2.92	0.1710	1.88	0.64	1017.41	18.77	1017.64	17.66	1016.91	45.36	**1016.9**	**45.4**	-0.1%
CUS061409-27	0.33	1.7014	3.10	0.1689	1.93	0.62	1009.06	19.84	1006.01	17.96	1015.66	49.24	**1015.7**	**49.2**	0.9%
CUS061409-87	0.27	1.6695	1.64	0.1683	1.51	0.92	996.98	10.44	1002.98	14.07	983.80	13.02	**1003.0**	**14.1**	-1.9%
CUS061409-104	0.22	1.7187	4.27	0.1723	2.58	0.60	1015.54	27.41	1024.84	24.40	995.53	69.20	**995.5**	**69.2**	-2.9%
CUS061409-26	0.49	1.6533	4.73	0.1661	1.65	0.35	990.82	29.91	990.38	15.19	991.81	90.05	**990.4**	**15.2**	0.1%
CUS061409-109	0.26	1.6649	3.03	0.1659	2.89	0.95	995.25	19.20	989.44	26.51	1008.06	18.24	**989.4**	**26.5**	1.8%
CUS061409-3	0.45	1.6418	2.54	0.1657	2.32	0.92	986.39	16.01	988.54	21.28	981.63	20.79	**988.5**	**21.3**	-0.7%
CUS061409-61	0.39	1.6019	4.15	0.1648	1.60	0.39	970.95	25.94	983.50	14.60	942.67	78.43	**983.5**	**14.6**	-4.3%
CUS061409-20	0.39	1.5988	5.05	0.1621	1.75	0.35	969.75	31.58	968.53	15.76	972.51	96.71	**968.5**	**15.8**	0.4%
CUS061409-12	0.35	1.5608	2.56	0.1613	1.12	0.44	954.77	15.85	963.81	10.00	933.99	47.30	**963.8**	**10.0**	-3.2%
CUS061409-47	0.64	1.6405	3.81	0.1612	2.47	0.65	985.91	24.05	963.39	22.07	1036.37	58.71	**963.4**	**22.1**	7.0%
CUS061409-103	0.22	1.6145	4.65	0.1611	4.24	0.91	975.85	29.20	962.63	37.87	1005.71	39.22	**962.6**	**37.9**	4.3%
CUS061409-9	0.48	1.6098	5.21	0.1610	2.16	0.42	974.03	32.63	962.54	19.35	1000.02	96.25	**962.5**	**19.3**	3.7%
CUS061409-117	0.36	1.6212	1.74	0.1609	1.39	0.80	978.44	10.95	961.69	12.43	1016.20	21.31	**961.7**	**12.4**	5.4%
CUS061409-63	0.48	1.5621	3.86	0.1590	2.55	0.66	955.28	23.88	951.35	22.54	964.37	59.12	**951.3**	**22.5**	1.4%
CUS061409-113	1.11	1.5867	4.56	0.1583	1.64	0.36	964.99	28.40	947.26	14.42	1005.58	86.35	**947.3**	**14.4**	5.8%
CUS061409-101	0.28	1.5444	2.60	0.1582	1.13	0.44	948.27	16.01	946.60	9.95	952.18	47.86	**946.6**	**9.9**	0.6%
CUS061409-41	0.60	1.5074	5.30	0.1553	3.99	0.75	933.39	32.38	930.75	34.56	939.63	71.66	**930.7**	**34.6**	0.9%
CUS061409-82	0.53	1.5156	3.95	0.1546	2.27	0.58	936.70	24.15	926.69	19.60	960.36	65.94	**926.7**	**19.6**	3.5%
CUS061409-54	0.64	1.3197	3.23	0.1338	3.03	0.94	854.38	18.64	809.24	23.02	973.46	22.79	**809.2**	**23.0**	6.9%
CUS061409-70	0.69	0.8565	2.53	0.1017	0.76	0.30	628.23	11.83	624.16	4.51	642.93	51.81	**624.2**	**4.5**	2.9%
CUS061409-34	0.69	0.6321	2.81	0.0789	1.39	0.49	497.37	11.04	489.34	6.54	534.55	53.46	**489.3**	**6.5**	8.5%
CUS061409-91	0.70	0.6213	5.65	0.0783	3.87	0.68	490.68	21.99	486.26	18.11	511.39	90.57	**486.3**	**18.1**	4.9%

CUS061409-13	0.78	0.6439	13.80	0.0769	6.23	0.45	504.70	54.95	477.53	28.67	629.77	266.29	**477.5**	**28.7**	4.2%
CUS061409-18	0.67	0.5221	4.28	0.0684	3.30	0.77	426.53	14.90	426.60	13.64	426.17	60.60	**426.6**	**13.6**	-0.1%
CUS061409-83	0.58	0.1903	30.58	0.0252	4.62	0.15	176.87	49.68	160.63	7.32	399.94	691.67	**160.6**	**7.3**	9.8%

Table DR5. Detrital zircon (U-Th)/He analytical results.

Analysis ID	Age [Ma]	± [Ma]	U [ppm]	Th [ppm]	Sm [ppm]	Th/U	He [nmol/g]	mass [mg]	Ft
middle Eocene **Mirador Formation** (N=9). 5.45754°N 72.47004°W									
z08YEM01-1	1184.46	94.8	267.6	233.7	6.8	0.9	1603.83	3.7	0.71
z08YEM01-1e	812.42	65.0	121.4	121.0	2.9	1.0	534.49	5.8	0.77
z08YEM01-2	697.72	55.8	266.4	239.1	11.4	0.9	929.75	4.8	0.73
z08YEM01-2e	620.13	49.6	166.8	82.1	5.1	0.5	519.22	8.7	0.80
z08YEM01-3	696.57	55.7	246.4	177.2	11.0	0.7	868.35	6.2	0.76
z08YEM01-4	577.24	46.2	138.1	46.0	3.9	0.3	358.51	3.9	0.74
z08YEM01-4e	16.17	1.3	33.8	12.7	1.6	0.4	2.40	4.7	0.75
z08YEM01-5e	476.20	38.1	147.7	77.8	5.2	0.5	341.91	6.2	0.78
z08YEM01-6e	756.29	60.5	83.1	80.1	1.4	1.0	310.67	2.8	0.71
Oligocene **Carbonera Formation, C7** member (N=9). 5.45539°N 72.46377°W									
z08YEM02-1	584.6	46.8	106.5	75.4	3.2	0.7	306.26	5.1	0.75
z08YEM02-1e	815.7	65.3	88.8	84.0	3.0	0.9	372.86	4.3	0.74
z08YEM02-2	157.0	12.6	170.8	61.6	2.6	0.4	118.09	4.8	0.75
z08YEM02-2e	172.6	13.8	215.4	118.2	1.2	0.5	164.95	3.3	0.72
z08YEM02-3	704.0	56.3	88.6	83.9	2.5	0.9	307.76	3.6	0.71
z08YEM02-3e	551.7	44.1	145.8	95.7	6.6	0.7	405.06	6.1	0.78
z08YEM02-4e	370.4	29.6	140.8	97.5	7.3	0.7	253.09	4.6	0.75
z08YEM02-5e	318.5	25.5	157.1	145.2	7.2	0.9	248.93	4.0	0.74
z08YEM02-6e	666.6	53.3	108.5	51.7	2.3	0.5	339.65	3.9	0.75
lower Miocene **Carbonera Formation, C2** member (N=10). 5.43793°N 72.44912°W									
z08YEM03-1	51.2	4.1	114.0	40.2	1.1	0.4	27.26	9.3	0.80
z08YEM03-1e	596.7	47.7	258.9	92.9	17.5	0.4	752.18	9.4	0.79
z08YEM03-2	83.3	6.7	192.9	89.4	1.1	0.5	76.83	9.4	0.80
z08YEM03-2e	927.0	74.2	17.5	14.0	1.0	0.8	93.27	16.1	0.83
z08YEM03-3	134.1	10.7	28.7	10.5	1.3	0.4	18.26	10.1	0.80
z08YEM03-3e	16.8	1.3	99.8	42.0	0.5	0.4	8.25	15.8	0.83
z08YEM03-4	44.6	3.6	300.6	28.1	1.1	0.1	58.02	10.2	0.78
z08YEM03-4e	18.7	1.5	277.8	77.1	0.5	0.3	23.43	8.1	0.79
z08YEM03-5e	67.3	5.4	221.2	112.0	1.2	0.5	72.05	10.4	0.80
z08YEM03-6e	50.0	4.0	62.9	27.3	0.6	0.4	14.88	8.1	0.79
middle Miocene **León Formation** (N=10).									
08YEM04: 5.41809°N, 72.44385°W. 08YEM08: 5.37489°N, 72.41528° W. 08YEM09: 5.37134°N, 72.41505°W.									
z08YEM04-1	54.2	4.3	102.2	48.8	0.6	0.5	25.63	6.0	0.77
z08YEM04-2	47.2	3.8	278.6	154.9	1.5	0.6	60.55	5.0	0.75
z08YEM04-3	40.8	3.3	250.3	131.4	2.2	0.5	45.99	4.5	0.74
z08YEM04-4	211.7	16.9	171.3	67.6	6.8	0.4	169.20	7.6	0.78
z08YEM08-1	51.9	4.2	76.2	35.4	1.5	0.5	18.01	5.2	0.76
z08YEM08-2	49.9	4.0	162.2	78.5	1.6	0.5	36.58	4.6	0.75
z08YEM08-3	118.3	9.5	387.8	164.2	2.3	0.4	203.53	4.4	0.74
z08YEM08-4	61.7	4.9	67.0	73.3	1.5	1.1	20.36	3.4	0.72
z08YEM09-1	58.6	4.7	52.0	21.8	1.5	0.4	14.17	7.6	0.78
z08YEM09-2	34.2	2.7	605.1	228.9	2.4	0.4	93.24	5.8	0.77
middle-upper Miocene **lower Guayabo Formation** (N=23).									
08YEM05: 5.40968°N, 72.43605°W. 08YEM06: 5.40645°N, 72.43261°W. 08YEM07: 5.38996°N, 72.41866°W.									
z08YEM05-1	50.5	4.0	122.0	42.0	1.5	0.3	27.55	5.9	0.77
z08YEM05-1e	78.5	6.3	132.3	85.1	1.2	0.6	51.33	8.8	0.79
z08YEM05-2e	195.5	15.6	98.9	33.9	0.6	0.3	89.16	6.7	0.78
z08YEM05-3	891.7	71.3	51.7	38.3	2.6	0.7	226.98	4.8	0.73
z08YEM05-3e	1507.4	120.6	48.1	43.1	3.3	0.9	410.64	5.6	0.76

z08YEM05-4	130.3	10.4	389.7	133.3	4.5	0.3	223.74	4.8	0.75
z08YEM05-4e	121.2	9.7	98.8	47.4	0.6	0.5	57.64	8.8	0.80
z08YEM05-5e	704.1	56.3	45.3	44.2	2.2	1.0	177.19	9.4	0.80
z08YEM05-6e	69.3	5.5	98.4	28.3	1.6	0.3	30.54	7.3	0.77
z08YEM06-1	50.9	4.1	159.7	47.3	1.4	0.3	36.63	6.4	0.78
z08YEM06-2	120.8	9.7	84.6	40.6	2.6	0.5	47.01	5.4	0.76
z08YEM06-3	38.0	3.0	552.9	126.1	2.2	0.2	89.09	4.1	0.74
z08YEM06-4	675.7	54.1	151.3	81.3	4.2	0.5	480.42	4.2	0.74
z08YEM07-1	60.4	4.8	305.7	83.8	3.2	0.3	82.51	6.3	0.78
z08YEM07-1e	673.7	53.9	67.8	84.8	9.0	1.3	238.56	3.2	0.72
z08YEM07-2	63.2	5.1	206.5	136.3	2.3	0.7	57.86	2.8	0.71
z08YEM07-2e	127.5	10.2	262.1	119.6	3.0	0.5	155.39	6.0	0.77
z08YEM07-3	96.2	7.7	280.7	194.0	2.2	0.7	132.46	6.8	0.78
z08YEM07-3e	57.9	4.6	156.0	72.4	1.1	0.5	42.07	6.1	0.78
z08YEM07-4	145.4	11.6	139.8	82.7	2.6	0.6	92.29	3.4	0.73
z08YEM07-4e	57.8	4.6	466.3	40.8	1.1	0.1	112.08	4.5	0.75
z08YEM07-5e	69.5	5.6	127.7	63.8	1.5	0.5	40.81	5.9	0.76
z08YEM07-6e	52.7	4.2	537.6	134.0	2.2	0.2	123.73	5.9	0.76
upper Miocene-Pliocene **upper Guayabo Formation** (N=8).									
08TAU01: 4.96540°N, 72.82360°W. 08TAU02: 5.00221°N, 72.79504°W.									
z08TAU01-1	46.8	3.7	86.0	109.4	2.2	1.3	20.26	3.7	0.72
z08TAU01-2	30.8	2.5	142.1	42.6	0.9	0.3	18.62	3.4	0.74
z08TAU01-3	21.9	1.8	161.3	90.6	1.0	0.6	15.40	3.0	0.71
z08TAU01-4	124.4	10.0	86.6	75.5	2.9	0.9	49.44	2.8	0.70
z08TAU02-1	33.4	2.7	204.2	70.1	2.6	0.3	29.51	4.3	0.74
z08TAU02-2	67.5	5.4	112.8	52.3	0.8	0.5	33.41	3.7	0.73
z08TAU02-3	980.3	78.4	199.5	62.0	2.5	0.3	901.10	3.7	0.74
z08TAU02-4	926.0	74.1	121.8	96.4	2.7	0.8	528.77	2.3	0.69