





!

3, %&\$%&#&d

"#\$%&'()\*+,-./012"3456(789'6! ! ! ! ! ! ! ! 9!  
9#: 7&8,!( ' ;!\$%' ;\*6%' ,! ! ! ! ! ! ! ! ! ! <!  
<#!=>( ; 78\*>! =???7(@! ! ! ! ! ! ! ! ! ! ! ! A!  
B#!=>>7?6(C@7!D,7!%E!0: !F%@>G! ! ! ! ! ! ! ! ! ! ! ! "<!  
H#!=; 8\* , ,%' ,!F%@>G! ! ! ! ! ! ! ! ! ! ! ! 9"!  
I#!= ' 6\*2J+@G\* K

!

: A 36B672C\*BD/!E36C\*4F: GH!/I 2I " 5 " 7I !!

!

: Q7!D' \*)7&,\*6G!\*,!%?7&(6\*\* K!+' ; 7&!?(&6\*>+@(&!&7,6&\*>6\*\*%' ,!(&\*,\*\* K!E&%8!6Q7!\$%&&' )\*&+,!  
787&K7' >G#!T7K+@(&!+?; (67,!E%&! ,6+; 7' 6,!>(' !C7!E%+' ; !%' !6Q7!D' \*)7&,\*6G![ 7C,\*67!+' ; 7&!56+; 7' 6!  
V=\,!(!\$%&&' )\*&+,!:=; )>7!#!

Z 7![ \*@>% ' 6\*\* +7!6%!Y77?l6Q\*,![ 7C?(K7!+?; (67; #!5Q%+@ !6Q7&7!C7!( ' G!8 (!%&!>Q(' K7,[ 7![ \*@\*\*' E%&8!  
6Q7!D' \*)7&,\*6G!>%88+' \*6G!; \*&7>6@G#!

56+; 7' 6,! ,Q%+@ !%C, 7&)7!(@K+\*; (' >7!\* , , +7; !CG!6Q7!D' \*)7&,\*6G!>% ' >7& \*\* K!6Q7!Q7( @Q!( ' ; !, (E76G!%E!  
,6+; 7' 6,!(' ; !,6(E#!!

56+; 7' 6,! ,6(G\*\* K!\*' !D' \*)7&,\*6G!&7,\*; 7' 6\*( @(>>%88%; (6\*\*' !Q()7!C77' !?&%) \*; 7; ![ \*6Q!,?>E\*>!  
K+\*; (' >7'^6%![ Q\*>Q!6Q7G!,Q%+@ !(' ; Q7&7#!

=!,6+; 7' 6![ Q%!E(\*@!6%!( ; Q7&7!6%!&7(, %' (C@7!\*' ,6&+>6\*\*%' ,!E&%8!6Q7!D' \*)7&,\*6G!( &\*, \*\* K!E&%8!6Q7!

!

8A! "B5!/274!3674\*I\*67/!

0# S)7&G!7EE%&6!Q(!C77' !8(; 7!6%!7' , +&7!6Q(6!6Q7!\*' E%&8(6\*%' !>% ' 6(\*' 7; !\*' !6Q\* , !; %>+87' 6!\* , !  
(>>+&(67!(6!6Q7!6\*87!%E! ?+C@>(6\*%' #: Q7!D' \*)7& , \*6G! [ \*@+ , 7!(@&7( , %' (C@!7' ; 7() %+& , !6%!  
?&%) \*; 7! ?&%K&(887 , !%E! , 6+; G!@ , 67; !\*' !6Q7! ?&% , ?7>6+ , !(' ; !6%!; 7@)7&!6Q78!\*' !(>>%&; (' >7!  
[ \*6Q!6Q7!; 7 , >&\*?6\*%' , !%E! ?&%K&(887 , ! , 76!%+6#!L% [ 7)7&! ( , !6Q7!D' \*)7& , \*6G! , !>%88\*667; !6%!  
7' , +&\*' K!6Q(6! ?&%K&(887 , !&78(\*' !+ ?!6%!; (67!( ' ; !&7@) (' 6^\*6!&7 , 7&)7 , !6Q7!&\*KQ6!6%!

000# = ' !%EE7&!%E!(!/?@>7!(6!6Q7!D' \*)7&,\*6G!\*;!8(; 7!%' !6Q7!+' ; 7&,6(' ; \*\* K!6Q(6!4\*\* !(>>7?6\*\* K!6Q7!  
%EE7&^!6Q7!,6+; 7' 6!+' ; 7&6(Y7,!6%!%C,7&)7!( ' ; !>%8?@G![ \*6Q!6Q7,7!: 7&8,!(' ; !'\$%' ; \*6%' ,!( ' ; !

\$%; 7,!%E!\$%' ; +>6^!(,!(87' ; 7; !E&%8!6\*87!

\$%; 7,!%E!\$%' ; +>6!(&7!,76!%+6!'' !E+@[\*6Q\*\* !6Q7!D

T7K+@6\*%' ,^!

F%@>\*7,!( ' ; !F&%>7; +&7,#!

6\*87!E%&!%' 7!%&!8%&7!%E!6Q7!E%@[\* \*\* K!&7(, '% ,R!6%!&7F@>6!>Q(' K7, !6%!6Q7!,6(6+6%&G!  
&7` +\*&787' 6,![\*6Q![ Q\*>Q!6Q7!D' \*)7&,\*6G!\*;!&7` +\*&7; !6!>%8?@G!6%!&7F@>6!C7,6!?!&(>6\*>7!  
&7K+@6\*%' !(>&% ,!6Q7!Q\*KQ7&!7; +>(6\*%' !,7>6%&!( ' ; !8%&7!C&%(; @G!6%!7' ,+&7!6Q(6!6Q7!

[ \*6Q\*\* !6Q7!D' \*)7&,\*6G!( ' ; !(>&% ,!6Q7!Q\*KQ7&!7; +>(6\*%' !,7>6%&#!Z Q7&7!6Q7!D' \*  
T7K+@6\*%' ,!(&7!>Q(' K7; !( ' ; !6Q7!%?7&(6\*%' !%E!(! 7[ !&7K+@6\*%' ![ %+@ !/?@>7!(,6+; 7' 6!'' !(!  
@7,,!E() %+&(C@7!?'%,\*6\*%' !6Q(' !6Q7G![ %+@ !%6Q7&[ \*,7!Q()7!C77' !+' ; 7&!6Q7!%@ !&7K+@6\*%' ,^!  
6Q(6!,6+; 7' 6!8(G!&7@G!%' !6Q7!%@ !&7K+@6\*%' !(,!\*E!6!>% 6\*\* +7; !6%!(??@#Z Q76Q7&!(,6+; 7' 6!  
[ %+@ !C7!'' !(!@7,,!E() %+&(C@7!?'%,\*6\*%' !,!(!8(667&!6%!C7!; 767&8\*\* 7; !CG!6Q7!D' \*)7&,\*6G!%' !(!  
>(,7!CG!>(,7!C(,\*,^!; 7?7' ; \*\* K!%' !6Q7!E(>6,!( ' ; !>\*8>+8,6(' >7,!%E!(!?(&6\*>+@&! ,6+; 7' 6#!: Q\*,!  
[ %+@ !' %6!(??@G!6%!(,)\*6+(6\*%' ![ Q7&7!6Q7! 7[ !&7K+@6\*%' ,!,77Y!6%!( ; ; &7,,!(!7&7)\*%+, @G!  
+' &7K+@67; !8(667&#!=@?%@>\*7,!( ' ; !?&%>7; +&7,!(&7!,+C]7>6!6%!&7K+@67)\*7[ !( ' ; !E%&8(@  
(??&%) (@CG!6Q7!(??&%?&\*(67!>%88\*6677#!: Q7!D' \*)7&,\*6G!\$%+&6!Q(,!(K&77; !6Q(6!6Q7!D' \*)7&,\*6G!  
&7>%K' \*,\* K!6

\*! >&7(, 7,!\* !6Q7!>% ,6,!%E!; 7@)7&\* K!( ' ; !(: 8\*\* \*, 67&\* K!6Q7!?!&%K&(887#!: +\*6\*%' !E77, !E%&!6Q7!  
E%&6Q>%8\*\* K!(>(: 78\*>!, 7, , \*%' !(&7!?!+C@, Q7; !%' !6Q7!\dD![ 7C, \*67![ 7@\*\* !(:) (' >7!%E!6Q7!

,\*K' \*E>(' 6!' E%&8(6\*' !Q(,!C77' !%8

0h#

=; 8\* , ,%' !6%!,%87!; 7K&77!?!%K&(887,!%EE7&7; !CG!6Q7!D' \*)7&, \*6G^(' ; !6%!,%87!%E!6Q7!  
?&%E7, ,%' ,!E%&![ Q\*>Q!\*6!?!&%)\*; 7,!6&(\*\* \*\* K^!8(G!C7!?!&7>@; 7; !CG!>7&6(\*' !87; \*>(@>%' ; \*6\*' ,#!  
56+; 7' 6,!(&7!%C@K7; !6%!'>@; 7!' E%&8(6\*' !&7K(&; \*' K!(' G!87; \*>(@>%' ; \*6\*' ^!?(, 6!%&!  
?&7, 7' 6^![ Q\*>Q!8(G!(EE7>6!6Q7\*!?!(&6\*>?(6\*' !%' !(!?&%K&(887![ Q7' !>%8?@76\*' K!6Q7\*!D\$=5!





,+C8\*667; !6%!6Q7!S\$!F(' 7@CG!6Q7!?!+C@,Q7;!; 7(; @' 7^(' ; !6Q7!,6+; 7' 6!Q(,! ' %!K&%+' ; ,!E%&! ' %6!  
,+C8\*66\*' K!CG!6Q(6!; 7(; @' 7#!

OAO!

?&%)\*; 7!(!) (@; !K&%+' ; !E%&! (??7(#!

OAO!



D' \*% !SU7>+6\*)7!\$%88\*6677#\$(&7![ \*@C7!6(Y7' !6%!7' ,+&7!( ' ! (??&%?&\*(67!K7' ; 7&IC(@' >7!' !  
6Q7!>%8?%, \*6\*' !%E!6Q7!F(' 7@! : Q7!D' \*)7&, \*6G!57>&76(&G! [ \*@(>6!(, !67>Q' \*(>@(; )\*, 7&!6%!6Q7!  
F(' 7@(' ; ! [ \*@' %8\* (67!(!>@&Y!6%!6Q7!>%88\*6677#!!!

!

SAB! : Q7!>=>( ; 78\*>! =???(@!F(' 7@, Q(@>%' ; +>6!\*6, !?&%>77; \*\* K, !(>>%&; \*\* K!6%!6Q7!?'&\* >?\*@, !%E!  
' (6+&(@] +, 6\*>7!' !6Q(6!6! [ \*@\*6! [ \*@, 77Y!6%!(>6!E(\*&@Y' %!?'7&, %' !8(G!C7!(!]+; K7!' !6Q7\*&!% [ ' !  
>(, 7!( ' ; !(@?(&6\*7, !, Q(@Q()7!(>>7, , !6%!(@6Q7!7)\*; 7' >7!+, 7; !CG!6Q7!\$%88\*6677!' !&7(>Q\* K!6, !  
; 7>\*, %' #!

!

SAJ! : Q7!>???(@!F(' 7@, Q(@8776'Y' %&8(@G! [ \*6Q\* !%' 7!>(@' ; (&!8%' 6Q!-7U>@; \*\* K!D' \*)7&, \*6G!  
)(>(6\*%' , 4!%E!6Q7!&7E7&&(@E&%8!F(&6!0'(' ; !>%88+' \*(>67!'6, !>%' >@, %' , !6%!6Q7!, 6+; 7' 6!( ' ; !6Q7!  
, +C]7>6!(&7(P; 7?(&687' 6!>%' >7&' 7; ! [ \*6Q\* !%' 7!>(@' ; (&!8%' 6Q!%E!\*6, !C7\* K!>%' )7' 7; #! : Q7!  
D' \*)7&, \*6G!57>&76(&G! [ \*@Y77?!(@?(&6\*7, !\* E%&87; !%E!?'&%K&7, , !(' ; ! [ \*@(' ; )\*, 7!%E!( ' G! 7>7, , (&G!  
7U67' , %' !%E!6Q7!6\*87, >(@Y'E%&!7U(8?@Y'E!( ' !(' ; ]%+&' 87' 6!\* !6Q7!?'&%>77; \*\* K, !, !' 7>7, , (&G#!

!

SAO! : Q7!(???)@' 6!, Q(@Q()7!6Q7!&\*KQ6!6%!(???)(&!C7E%&7!6Q7!\$%88\*6677!( ' ; !6%!C7!(>>%8?' \*7; !CG!  
% ' 7!%6Q7&!?'7&, %' !%E!6Q7\*&!>Q%\*>7#T7?&7, 7' 6(6\*%' !7U67&' (@6%!6Q7!D' \*)7&, \*6G! [ \*@' %6!C7!  
?7&8\*667; !' !6Q7!>%' 67U6!%E!6Q\*, !?'&%>7; +&7#!!

SAQ! : Q7!>=>( ; 78\*>! =???(@!F(' 7@8(G!' \*67)\*7 [ !, 6(EE!( ' ; P%&! , 6+; 7' 6, !&7@)(' 6!6%!6Q7!(???)(@!6Q7!  
(???)@' !%' !6Q7!K&%+' ; !%E!6Q7!(>6\*%' , !%E!( ' !\* ; \*) ; +(@!6Q(6!\* ; \*) ; +(@Q(, !6Q7!&\*KQ6!6%!C7!  
\*\* E%&87; !%E!6Q7!, +C, 6(' >7!%E!6Q7!(???)@!( ' ; !6%!(667' ; !6Q7!(???)@Q7(&\* K!( ' ; !C7!  
(>>%8?' \*7; !CG!(!E&\*7' ; !%&!, +??%&67&#!

SAR

!



TAQ! : Q7!5>%66\*, Q!F+C@>!57&)\*>7,!. 8C+; , 8(' !Q(,!( ' !%' @' 7!>%8?@(' 6!E%&8!(>>7,, \*C@!6Q&%+KQ!6Q7!  
[ 7C,\*67^!(Q%+KQ!?(?7&,\*' !, +??%&6!%E!6Q7!>%8?@(' 6! [ %+@ !, 6\*Q()7!6%!C7!, +??@7; !6%!6Q7!  
. 8C+; , 8(' !CG!?, 6!%&!%6Q7&!87(' , #: Q7!5>%66\*, Q!F+C@>!57&)\*>7,!. 8C+; , 8(' !>(' !(@%!, +??@!  
?(?7&!>%8?@(' 6!E%&8, !; \*&7>6!6%!>%8?@(' 6, #!

TAR! V+&6Q7&!\*' E%&8 (6\*' !8 (G!C7!(>>7,, 7; !6Q&%+KQ!6Q7!5>%66\*, Q!F+C@>!57&)\*>7,!. 8C+; , 8(' !

OA! 233"<I 2XK"!D/"!6V!\*I!<6K\*3\!

!  
\*%&- , 10N&' , %!  
!  
\+77' !d (&K(&7!D' \*) 7& , \*6G! ?&%) \* ; 7 , !\*6 , !+ , 7& , ! [ \*6Q! (>>7 , , !6% ! , 6(672%E26Q72 (&6!0' E%&8 (6\*%' !(' ; !  
\$%88+ ' \* >(6\*%' ! : 7>Q' %&KGI-0\$: 4!7 ' +\*87' 6!(' ; !(! [ \* ; 7!&(' K7!%E!7@>6&% ' \* >!&7 , % +&>7 , #! = @+ , 7& , !' 77 ; !  
6%!C7!( [ (&7!%E! [ Q(6!>% ' , 6\*6+67 , !6Q7! =>>7?6(C@!D , 7!%E!6Q7 , 7!&7 , % +&>7 , !6% ! 7' (C@!6Q78!6%!C7!+ , 7 ; !\* ' !  
(! , (E7!(' ; ! , 7>+&7!8 (' ' 7&#: Q\* , ! ; %>+87' 6!%+6@' 7 , !6Q7! ?%&>7 , !&7@6\* K!6%!C%6Q!0\$: !(' ; !72&7 , % +&>7 , !  
( ' ; !E(>\*@6\*7 , #!!

!  
V%&! (@%+&!+ , 7& , a! , 6(EE! , 6+ ; 7' 6 , !)' \* , \*6%& , !(' ; !(' G!%6Q7& , !+ , \* K!%+&!67>Q' %&KGI\* E& ( , 6&+>6+&7!  
>% ' , 6\*6+67 , !(' !+ ' ; 7&6(Y\* K!6%! (C\* ; 7!CG!6Q\* , !(>>7?6(C@!+ , 7! ?%&>G!(' ; !6Q7!@7K (@&7` +\*787' 6 , !\*8?@>\*6!  
( ' ; !7U?@>\*6@!>% ' 6(\*' 7 ; ! [ \*6Q\* #!

!  
V%&!6Q7! ?&?% , 7 , !%E!6Q\* , ! ; %>+87' 6! ; 7 , \*K' (6\*%' , !\* >@+ ; 7! , 6(EE!(' ; ! , 6+ ; 7' 6 , ! (6!>%@ (C%&(6\*) 7! ? (&6' 7& , #!  
k%+! (&7!&78\* ; 7 ; !6Q(6! (>>7 , , \* K!\dD!0\$: ! , G , 678 , !(' ; !&7 , % +&>7 , !)' \* ( !6Q7!T78%67!17 , Y6%? , ! , 7& ) \* >7!  
G%+! (&7!C%+ ' ; !CG!6Q7!@ [ , !(' ; !&7K+@6\*%' , !\* !6Q7!Df! ( , ! [ 7@ [ , !(' G! (??@> (C@!@ [ , !\* !6Q7!>%+ ' 6&G!  
E&%8! [ Q\*>Q!G%+! (&7!>% ' ' 7>6\* K#!

!  
2NN\$?& (=)\$!D#\$!< , )'NP!  
!  
: A <0-? , # \$!!  
!  
: Q\* , !?%&>G!%+6@' 7 , !6Q7!D  
  
+ , 7!%C]7>6\*) 7 , ! (&7!876#!  
!

!  
 , !6% ! (>>7?6!>7&6(\*' !  
&7 , ?%' , \*C\*@6\*7 , !(' ; !%C@K(6\*%' , #! = @+ , 7& , !8 + , 6!C7!( [ (&7!%E!(' ; !>%8?@G! [ \*6Q!6Q7! ! = eS : !  
=>>7?6(C@!D , 7!F%&>G\*! [ Q\*>Q!>% ) 7& , ! (@Df!LS! (> ; 78\* >!(' ; !&7 , 7 (&>Q! ' 76 [ %&Y! (>6\*) \*6G#!  
!  
D , 7!%E!0: !(' ; ! ( , %>\* (67 ; !&7 , % +&>7 , ! , Q%+@ ! (@ [ (G , !C7!@7K (@(' ; !76Q\*> (@(' ; !&7E@>6! (> ; 78\* >!  
\* 67K\*6G!(' ; !6Q7! , 6(' ; (& ; !%E!6Q7!D' \*) 7& , \*6G!>%88+ ' \*6G#!

!  
8A B\$#? , % #' = )' &P!  
!  
: Q7!0' E%&8 (6\*%' !57>+&\*6G!5677&\* K!N&%+?^!055N!\* , !&7 , ?%' , \*C@!E%&!7' , +&\* K!6Q7!+? ; (6\* K!%E!  
6Q\* , !?%&>G!(' ; !8%' \*6%&\* K!6 , !7EE7>6\*) 7' 7 , #! : Q7!D' \*) 7& , \*6G!&7 , 7& ) 7 , !6Q7!&\*KQ6!6%!+? ; (67!6Q\* , !  
?%&>G!\* !@' 7! [ \*6Q! ' 7 [ !%&!+? ; (67 ; !@7K\* , @6\*%' !%&!&7` +\*787' 6 , #!

!  
JA /N , ?\$!  
!  
: Q\* , !?%&>G! , ! (??@> (C@! (>&% , !6Q7!D' \*) 7& , \*6G!(' ; ! (??@7 , !6%R!  
!  
(@\*' ; \*) \* ; + (@ ! [ Q%!Q() 7! (>>7 , , !6% !D' \*) 7& , \*6G!\* E%&8 (6\*%' !(' ; !67>Q' %&K\*7 , a!  
(@E (>\*@6\*7 , !67>Q' %&K\*7 , !(' ; ! , 7& ) \* >7 , !6Q(6! (&7!+ , 7 ; !6% !?&%>7 , , !D' \*) 7& , \*6G!\* E%&8 (6\*%' a!  
(@\*' E%&8 (6\*%' !?&%>7 , , 7 ; ! (>>7 , , 7 ; !8 (' \*?+@67 ; !%&! , 6%&7 ; !-\* !(' G!E%&8 (6!CG!6Q7!  
D' \*) 7& , \*6G! ?+& , + (' 6!6% !\*6 , !%?7&(6\*%' (@>6\*) \*6\*7 , a!  
\* 67& ' (@(' ; !7U67& ' (@?&%>7 , , 7 , !+ , 7 ; !6% !?&%>7 , , !D' \*) 7& , \*6G!\* E%&8 (6\*%' a!  
7U67& ' (@? (&6\*7 , !6Q(6! ?&% ) \* ; 7!\* E%&8 (6\*%' !?&%>7 , , \* K! , 7& ) \* >7 , !6% !6Q7!D' \*) 7& , \*6Ga!  
!

: Q7! ?% @> G! [ \* @ C7! > % 8 8 + ' \* > ( 6 7 ; ! 6 % ! + , 7 & , ! ( ' ; ! & 7 @ 7 ) ( ' 6 ! 7 U 6 7 & ' ( @ ? ( & 6 \* 7 , #





!  
=' G%' 7!E%+' ; !(C+,\*\* K!\cdD!0\$:,G,678,[ \*@+, +( @G!C7!>(+6%' 7; !\* !6Q7!E\*&,6!\* ,6(' >7#!  
\$%' 6\* +7; !(C+,7! [ \*@@ ( ; !6%!G%+&! (>>%+' 6!C7\*\* K!; \*, (C@; #: Q\*,!87(' ,!6Q(6!G%+![ \*@C7!+' (C@!  
6%!(>>7,,!( ' G!%E!

k%+! [ \*@7' , +&7!6Q(6!(@6Q7!&7` +\*&787' 6,!%E!6Q7!(K&7787' 6,!'>%' 6&(>6,!(' ; !@>7' >7,!  
+' ; 7&! [ Q\*>Q!6Q7!F&% ; +>6!\*,!Q7@ !CG!6Q7!0' ,6\*6+6\*%' ! [ \*@C7!8 (' 6 (' 7 ; #- \$%? \*7, !%E!6Q7!  
&7@7) (' 6!(K&7787' 6,!'>%' 6&(>6,!(' ; !@>7' >7, !8 (G!C7!, 77' !CG! (??@> (6\*%' !6%!6Q7!5>Q%%@%&!  
17? (&687' 6! [ Q\*>Q!8 ( ; 7!6Q7!F&% ; +>6! () (\*@C@74#!  
k%+! [ \*@ ( ; Q7&7!6%!6Q7!&7K+@6\*

!

k%+!8+,6!+' ; 7&6(Y7!6%(C\*; 7!CG!(@@>7' >7!(K&7787' 6,!E%&!,%E6 [ (&7!7' 67&7; !\*' 6%!CG!6Q7!  
D' \*)7&,\*6G![ \*6Q!%6Q7&!?(&6\*7,!-,77!C7@[ 4!

!

k%+!8(G!%' @!+, 7!,%E6 [ (&7!(' ; P%&!\*' E%&8(6\*' !?&%)\*; 7; !CG!6Q7!D' \*)7&,\*6G!E%&!  
7; +>(6\*' (4?+&?%, 7,!(!878C7&!%E!6Q7!D' \*)7&,\*6G!

!

!

: 8A 3, 1\$!, +!3, %10N&!Z>\$%!O#'%M!, O-!+(N!)&'\$#!

!

=@+ , 7& ,!(6!\dD!,Q(@!

!

!

T7K+@(&!6&(' \*' K!( ' ; !67,6\*' K![ \*@C7!>(&&\*7; !%+6!CG!6Q7!D' \*)7&, \*6G!\*' )%@)\*' K!(@+ , 7&, !6%!7' , +&7!

?@(>787' 6R!

!

: (Y7!(!' %67!%E!6Q7!DXTI-[ 7C!(; ; &7, , 4!%E!6Q7!, \*67!( ' ; !6Q7!6\*87!G%+!(>>7, , 7; !\*6!  
: 7@, %87%' 7!\*887; \*(67@#!0E!?, , \*C@'!, Q%[ !6Q78![ Q(6!Q(???' 7; #

-k%+!>( ' !; %!6Q\*, !CG!?'&7, , \*\* KI6Q7!\$: TX2=X: 21SX!Y7G, !(6!6Q7!, (87!6\*87!6Q7' !>@>Y\*\* KI%' !  
Y7!, +&7!G%+!Q()7!6Q7!; 76(\*@!%E!6Q7!, \*67!

G%+!(>>7, , 7; ^!6Q7' !@%K!%EE#4!  
: 7@G%+&!?'@(>787' 6!, +?7&)\*, %&!(!, !%' !(!, !?%, , \*C@'!  
: 7@>(@0\$: !, 6(EE!-( ' G!(@&6, !&7K(& ; \*\* K!'' (??&%?&(67!'! 67&' 76!+, 7![ \*@K%!6%!6Q78!E\*&, 64!  
: 7@G%+&! \dDI, +?7&)\*, %&!6%!(; )\*, 7!6Q78!%E![ Q(6!Q(, !Q(???' 7; !

!

: Q7&7!8(G!C7!( ' !\*' )7, 6\*K(6\*' !\*' 6%!G%+&!%' @' 7!(>6\*)\*6\*7, ^!C+6!\*E!6Q7!(>>\*; 7' 6! [ (, !@K\*6\*8(67!  
( ' ; !6Q7, 7!, 67?, !( &7!E% [ 7; ^\*6! [ \*@C7!&7, %@)7; !` +>Y@#!

!

: RA B\$N, -1%M!, +!)\$N&O-\$#!

!

\dDI&7>%K' \* , 7, !6Q(6!E&%8!6\*87!6%!6\*87!, 6+; 7' 6, !8(G! [ \* , Q!6%!&7>%&; !@7>6+&7, ^!, 78\*\* (&, !( ' ; !  
6+6%&\*(@ !E%&!6Q7\*!% [ ' !?7&, %' ( @+, 7!6%! , +??%&6!6Q7\*!@ (&' \*\* K#! =, !( !8(667&!%E!>%+&67, G!  
, 6+; 7' 6, !, Q%+@ !'' E%&8!6Q7!@7>6+&7&!?'&%&!6%!6Q7!>%887' >787' 6!%E!6Q7!&7>%&; \*\* K#!0E!6Q7!

!

; \*, 78\* (6%' !CG!6Q7!D' \*)7&, \*6G#!0' >@; 7; !\* !6Q\*, !\*, !(' G!8 (67&\* (66Q(6!>%+@ !@7 (; !6%!@7K(6

D#-\$-#(!&7!&7` +\*&7; !6%!>%8?@767!\* E%&8 (6\*' !, 7>+&\*6G! ( [ (&7' 7, , !6& (\*' \*\* K! (' ; !(&7!&7, ?%' , \*C@7!  
E%&!8 (Y'' K!'' E%&87; !; 7>\*, '%', !6%! ?&%67>6!6Q7!\* E%&8 (6\*' !6Q(6!6Q7G! ?&%>7, , #!

!

: GA B\$^'\$Z!(%1!4\$^\$), ?. \$%&!

!

: Q\*, !?%@>G^! (' ; !(' G!, +??%&6\* K!, 7>+&\*6G!, +C2?%@>\*7, ^! [ \*@C7!&7)\*7 [ 7; !(' ; !+?; (67; !CG!6Q7!  
\*//L!(, !' 7>7, , (&G!%' !(, >Q7; +@7; !C(, \*, !6%!7', +&7!6Q(6!6Q7! ?%@>GP?%@>\*7, !!

!

&78 (\*' !%?7&(6\*' ( @G!E\*6!E%&! ?+&?%, 7a!

!



QA!!245\*//67/!<6K\*3\!

!

3, %&\$%&#@

"# 0' 6&%; +>6\*%' !

9# =; 8\*, ,%' ,!F&\* '>?\*@7,!

<# 57&)\*>7!; 7@)7&G!

B# :7&8,!(' ;!\$%' ;\*6\*%' ,!

H# T%@7,!( ' ;!T7,?'% ,\*C\*@6\*7,!

I# =; 8\*, ,%' ,!F&%>7,,!

A# S' 6&G!&7` +\*&787' 6,!!

A#"

!

9#< \+77' !d(&K(&76!D' \*)7&, \*6G!\* ,!>%88\*667; !6%!7` +( @6G! %E! %??%&6+ ' \*6G# Z 7! , 77Y!6%! ?&%8%67!  
;\*)7&, \*6G! (8%' K, 6! %+&! ,6+; 7' 6, ^! ,6(EE! (' ;! (??@>(' 6, #! Z 7! &7>%K' \*, 7! 6Q7! ?(&6\*>+@(&  
>% ' 6&\*C+6\*%' ,!6Q(6!(&7!8( ; 7!CG!\*' ; \*)\* ; +(@!E&%8!( ![\* ; 7!&(' K7!%E!C(>YK&%+' ; ,!( ' ; !7U?7&\*7' >7, ^!  
6%!6Q7!(>Q\*7)787' 6!%E!%+&!)\* ,%' !( ' ; !, 6&(67K\*>!%C]7>6\*)7, #! Z 7! (\*8!6%! ?&%8%67!7' 6&G!6%!( ' ; !  
?&%)\* ; 7!7; +>(6\*%' !(6^!+' ; 7&K&( ; +(67!(' ; !?%, 6K&( ; +(67!@)7@6%!( !; \*)7&, 7!&(' K7!%E! ,6+; 7' 6, ^!  
[ Q(67)7&!6Q7\*!C(>YK&%+' ; #! . +&!7` +( @%??%&6+ ' \*6\*7, !?%@>G!\* ,!() (\*@C@7!%' !%+&![ 7C, \*67#!

!

9#B S(>Q!(??@>(6\*%' !&7>7\*)7; !CG!6Q7!D' \*)7&, \*6G!\* ,!>%' ; \* ; 7&7; !>(&7E+@G!%' !\*6, !%[ ' !87&\*6, ^!6(Y\*\* K!  
\*\* 6%!(>>%+' 6!7; +>(6\*%' (@!??&%E7, , \*%' (@(' ; !?7&, %' (@7U?7&\*7' >7#!

!

0' !(, , 7, , \*\* K!>(' ; \* ; (67, !E%&! ( ; 8\*66(' >7!6%!6Q7!D' \*)7&, \*6G\*! [ 7!(&7!>%88\*667; !6%!6Q7!E%@% [ \*\* K!  
?&\* ' >\*?@, R!

!

V('-%\$##! !6Q7!D' \*)7&, \*6G!, 6&\*)7, !6%!+, 7!( ; 8\* , , %' ,!(, , 7, , 87' 6!876Q%; ,!6Q(6!(&7!&7@C@7!  
( ' ; !)(@; #!

I-(%#?(-\$%NP! !; 76(\*@!%E!%+&!7' 6&G!&7` +\*787' 6, !(&7!?+C@, Q7; !\*\* !%+&!?&%, ?7>6+, !( ' ; !%' !  
%+&![ 7C, \*67^!( ' ; !(&7!>@7 (&!(' ; !6&(' , ?(&7' 6!6%!(??@>(' 6, !(' ; !6Q7\*!&(! ; )\*, 7&, #!

B\$+)\$N&%M!, O-IN, . . 0%'&P! ! [ 7!(&7!>%88\*667; !6%!( ; 8\*66\*\* K!(, ! [ \* ; 7!(!&(' K7!%E!(??@>(' 6, !  
(, !?%, , \*C@7!6%!&7E@>6!%+&!>%88+ ' \*6G#!

!





(??@>(' 6, !6%!; 78%' ,6&(67!( ' !7U?@&(6\*' !%E!6Q7!?&%E7, , \*%' ![\*6Q\*! 6Q7\*!&!&?7&, %' (d  
,6(6787' 6#! !

!  
!

A#"#B! 0E(' !(??@>(' 6!; %7, !' %6!Q()7!6Q7!' %&8 (@7' 6&G!&7` +\*&787' 6, ^!C+6!Q(, !&7@) (' 6!  
7U?7&\*7' >7!( ' ; !>(' !; 78%' ,6&(67!6Q(6!6Q7&7!\*, !(!&7(, %' (C@7!7U?7>6(6\*' !6Q(6!6Q7G!  
[\*@>%8?@7!6Q7!>%+&, 7^!6Q7' !\*6!8 (G!, 6\*@C7!?, , \*C@7!6%!>% ' , \*; 7&!6Q78#!!!

!  
!

! !

!

A#9#A!

A#9#"H! Z 7! (@%! (>>7?6! (! [\*; 7! &(' K7! %E! %6Q7&! `+(@E\*>(6\*' ,^! \*\* >@+; \*\* K! ; \*?@%8(, ! (' ; !  
>7&6\*E\*>(67, !6Q(6!7` +(67!6%!5\$\V!@7)7@A!%&M!E%&! (; ) (' >7; !7' 6&G#L% [ 7)7&'!6Q7!>% ' 67' 6!  
( ' ; !@7)7@8+, 6! 8(6>Q!6Q(6!%E!%+&!>%+&, 7, !, +EE\*>7' 6@E!E%&!+, !6%!C7!, (6\*, E\*7; !6Q(6!6Q7!  
@7 (&' \*\* K!%+6>%87, !Q() 7!C77' !(>Q\*7)7; #!

!

A#9#"! ! Z 7! (&7! (C@7!6%!>% ' , \*; 7&! (>>&7; \*6(6\*' !%E! ' %' 2>7&6\*E\*7; !@7 (&' \*\* K!-=FX4! (' ; ! [ 7!Q() 7! (!  
&\*K%&%+, !?&%>7, , !\* !?@(>7!E%&! (, , 7, , \*\* K! =FX# Z 7! (&7! (@%! (C@7!6%!\*; 7' 6\*EG^!7U?@%&7! (' ; !  
>@\*8! (> ; 78\*>!>&7; \*6!E%&! ?&7) \*%+, !>7&6\*E\*>(67; ! (' ; P%&! 7U?7&\*7' 6\* (C@7 (&' \*\* K!6Q&%+KQ!  
6Q7!T7>%K' \*6\*' !%E!F&\*%&!X7 (&' \*\* K!-TFX4! ?&%>7, , #!V%&!@7 (&' \*\* K!6%!C7! ( [ (& ; 7; ! (& ; !>&7; \*6!  
6% [ (& ; !G%+&! ?&%K&(887!%E! , 6+; G^!6!' 77; , !6%! 8(6>Q!@7 (&' \*\* K!%+6>%87, ! (' ; !6%!C7!  
7)\*; 7' >7; #!!!

!

k%+! . (P! C7! (C@7! 6%! K(\*\* ! TFX! >&7; \*6! E%&! ?&7) \*%+, !>7&6\*E\*>(67; ! , 6+; G^! + ' ; 7&6(Y7' !  
7@ 7 [ Q7&7#k%+! (@%! 8(G!C7! (C@7!6%!K(\*\* ! (> ; 78\*>!>&7; \*6!E%&! 7U?7&\*7' >7a!E%&! 7U(8?@7!  
7U?7&\*7' >7! K(\*\* 7; ! 6Q&%+KQ!)%@-' 677&\* K^! %&! \*\* ! G%+&! [ %&Y?@(>7# F@7(, 7!, 77! 6Q7!  
T7>%K' \*6\*' !%E!F&\*%&!X7 (&' \*\* K!N+\*; (' >7!%' !

!

OE!(!,6+; 7' 6! [ \*,Q7,!6%&!&7K\*,67&!%' !(!' (87; !( [ (& !\*' !(!, \*8\*@( &! (&7!(E67&! ,6+; G\*' K!(,!( ' !  
767; !8(G!C7!K\*)7' !(,!  
>&7; \*6!6% [ (& ; ,!6Q7\* &! ' (87; !( [ (& ; #!  
: Q7!>%887' >787' 6! ; (67!E%&!6Q7! ?7& \*%; !%E!&7K\*,6&(6\*' !E%&!6Q7!' (87; !( [ (& ; ! [ % + @ ; !  
!

(!56+; 7' 6!) \* , (!\*' !%& ; 7&!6%!,6+; G! (!E+@6\*87!  
' (87; !( [ (& ; !6Q7G! [ \*@C7!&7` +\* &7; !6%!>%8?@67!( ' !(??@>(6\*' !( ' ; !?&%) \*; 7!7)\*; 7' >7!  
%E!S' K@, Q!@(' K+(K7! ?&%E\* >7' >G!(6!6Q7!@7) 7@&7` +\* &7; !E%&!6Q7!' (87; !( [ (& ; ^C7E%&7!6Q7G!  
>(' !C7! , , +7; ! [ \*6Q!(!\$%' E\*8(6\*' !%E! =>>7?6(' >7!E%&!56+; \*7, !-\$=54#!

!  
A#B! F%,6K&(; +(67!T7,7(&>Q!7' 6&G!&7` +\* &787' 6,!  
!

!



TA D`C\*!-\$a0'-\$.\$%&#!

!

M#'' \dD!\*,!(!@>7' >7;! ,6+; 7' 6!,?%' ,%&#\dD!>('!\* , +7!\$%' E\*&8(6\*' !%E! =>>7?6(>7!E%&!56+; \*7,!  
-\$=54! (@%[ \*\* K! (??@>(' 6,! 6%! (??@! E%&! \*88\*K&(6\*' ! (,! (! ,6+; 7' 6#\dD! Q(,! &7?%&6\*' K!  
&7,?' ,\*C@6\*7,!6%!6Q7!L%87!. EE\*>7!(' ; !Df/0!(,!(!,6+; 7' 6!,?' ,%&







SL9"! DD!!  
! : 7@!oBB!-04"<"!BAB!0000!  
! S8(\*@!(; 8\*,,%' ,\_`8+#(>#+Y!!  
!  
!  
!  
5(&(QIJ(\*@7G^!L7(; !%E! =; 8\*,,%' ,!( ' ; !T7>&+\*687' 6! !  
T7)\*7[ 7; !=+K+, 6!909"!  
! !

RA!27I \*FXDKK\\*7L!b!Y2B2//5 "7I!<6K\*3\!274!<B63"4DB"!V6B!/I D4"7I /!

!

"# <-'%N'?)\$#!

\+77' !d (&K(&76!D' \*)7&, \*6G!\*, ! [ Q%@G!>%88\*667; !6%!E%, 67&\* K!( ' !7' ) \*%&' 87' 6!\*' ! [ Q\*>Q!( @  
, 6+; 7' 6, ^!&7K(& @7, , !%E!6Q7\*&!C (>YK&%+' ; !(' ; !?7&, %' ( @>\* &>+8, 6(' >7, !, Q%+@, !C7!6&7(67; ! [ \*6Q!  
; \*K' \*6G^!&7, ?7>6!( ' ; !E(\*&' 7, , #!!!

: Q7!D' \*)7&, \*6G!&7>%K' \*, 7, !6Q(6!C+@G\*\* K!( ' ; !Q(&(, , 87' 6!>(' !Q()7!(!, 7&\*%+, !; 76&\*87' 6(@7EE7>6!  
%' !6Q7!>% ' E\*; 7' >7^!8%&(@^! ?7&E%&8 (' >7!( ' ; !Q7( @Q!%E!6Q%, 7!(EE7>67; ^!( ' ; !8(G!\*' !7U6&787!  
>\* &>+8, 6(' >7, !+ @\*8(67 @7( ; !6%! , 6+; 7' 6, ! [ \*6Q; &([ \*\* K!E%&8!, 6+; \*7, #!: Q7!D' \*)7&, \*6G!C7@7)7, !  
6Q(6!6Q\*, !, \*6+(6\*' !, Q%+@, !' 7)7&C7! ?7&8\*667; !6%!8(67&\*( @, 7!( ' ; ! [ \* @6&7(6!( @&7?%&6, !%E!  
C+@G\*\* K!( ' ; !Q(&(, , 87' 6!, 7&\*%+, @G#!!!!

: Q7! ?+&?%, 7!%E!6Q\*, !?% @>G!\* , !6%! ?&%8%67!( !>+ @+&7! [ Q7&7!C+@G\*\* K!( ' ; !Q(&(, , 87' 6!( &7!  
(>Y' % [ @7; K7; !6%!C7!+' (>>7?6(C @7!( ' ; !(&7!' %6!6% @7&(67; !+' ; 7&!( ' G!>\* &>+8, 6(' >7, #!Z Q7&7!

!

QA! 4 (&!<-, &\$N&', %!

=@\*\* E%&8 (6\*' !K(6Q7&7; !%' !\*' ; \*)\*; +( @!(, !? (&!%E!6Q7!=' 6\*2J+@G\*\* K!( ' ; !L(&(, , 87' 6!F%@>G!( ' ; !  
F&%>7; +&7![ \*@C7! ?&%>7, , 7; !' !(>>%&; (' >7![ \*6Q!6Q7!1 (6(!F&%67>6\*' !=>6!90''M#!

QA

"\_(. ?)\$#!, +!?, &\$%&'()!>(-##. \$%&!N, 0)1!=\$@

D' [ (' 67; !?QG,\*>(d>% ' 6(>6!%&!?QG,\*>(d(66(>Y#

. EE7' ,\*)7^!, +KK7,6\*)7!%&!; 7&%K(6%&G!&78 (&Y, ^K7, 6+&7, ^8%>Y7&G^6(+ ' 6, ^!?'&(' Y, ^!]%Y7, ^!



\$%' >7?6!

17E\*\* \*6%' !

!

1\*&7>6!1\*,>&'8\*\* (6\*%' !

!

F+C@>!Q+S\*(6%' a



; \*,>@/,\*\* K!( ' G!&7@) (' 6!; %>+87' 6,!6%!6Q7!'\*) 7,6\*K(6\*\* K!%EE\*>7&!( ' ;!(667' ; \*\* K!\*\*) 7,6\*K(6\*)7!  
\*\* 67&)\*7 [ ,!\*E!&7` +\*&7; #!

: Q7!'\*) 7,6\*K(6\*%' !8(G!'\*) )%@ 7!'\* 67&)\*7 [ \*\* K!( ' ;!6(Y\*\* K!,6(6787' 6,!E&%8!6Q7!,6+; 7' 6-,4!( ' ;!( ' G!  
,6(EE!878C7&- ,4!'\*) )%@ 7; !( ' ;!( ' G! [ \*6' 7 , ,7,^( ' ; P%&!&7)\*7 [ \*\* K!&7@) (' 6!; %>+87' 6,#!

Z 7C,\*67!ZZZA#?#, A, -MAO[!

!

. '@' 7!>% ' 6(>6!E%&8!ZZZA#?#, A, -MAO[;N, %&(N&F+, -. !

!

K%+!>(' !E\*@@\* !6Q7!>%8?@(' 6,!E%&8!%' '@' 7!(6!ZZZA#?#, A, -MAO[;N, . ?)(%;+, -. !

!

V(U!9T99!JSS!SJJ:!

!

!

!





TA!364"!6V!3674D3I!

!

:A \*7IB64D3I\*67!

!

!







JAO! /?\$N'+N!3, 1\$#!

: Q7!X\*C&(&G!\$%; 7!%E!\$%' ; +>6!\* ,!+' ; 7&?' ' 7; !CG!6Q7!X\*C&(&G!T7K+@6\*' ,!( ' ; !6Q7! =>>7?6(C@7!  
+, 7!?'@>G!E%&!\* E%&8 (6\*' !( ' ; !>%88+' \*>(6\*' !67>Q' %@%KG!( ' ; !7@>6&%' \*>!&7, %+&>7, #!: Q7!





N, %'1\$-(&\$!, +!>\$!%\$1#!, +!, &>\$-#!+, -(?!(??-, ?-'(&\$!#&O1P!\$%^'-, %. \$%&!(!1!#>(-\$!(  
N, . . , %!M, ()!%)\$(-%'%MA!

D"\*'. -8)\*'2. %#48\*/'"; "8\*%" "\$, 3', \*8=. /A''"). 403'\$0=\$; ""<\*0\*?0'\$, 3'\*8):2\$09'\$, 3'  
/\*-0\*28'\$2\$3\*%:2':, 8\*?/:8; '\$, 3'8)\*''8\$, 3\$/3'''. -8)\*'D, :B\*/":8; '2. %%4, :8; 6+(-\$2:0:8: ""  
%4"8', \*B\*/<\*4"\*3'8. '2\$4"\*'. --\*, 2\*9'= //; '. /':, 2, B\*, :\*, 2\*8. '\$, ; . , \*6'  
D\*\*/'"). 403'\$22\*#8'8)\*', \*\*3'8. '<\*/"8/\$; \*3':, '8)\*'4"\*'. -'\$B\$:0\$<0\*"/"'. 4/2\*\*"6'E0\*28/. , :2'  
/"'. 4/2\*\*"\$/\*#/. B:3\*3'8. '-\$2:0:8\$8\*8)\*'=. /A'. -"843\*, 8"9""#\*2:-:2\$00; '-. /'\*342\$8:. , \$09'  
8/\$; ; , ?9/\*""\*(2)'. /'\$3%:, : "8/\$8:B\*'#4/#. ""6'7, ; '. 8)\*'/4""""\$/\*'\$#/:B:0\*?'\*\$, 3', . 8'\$'  
/:(?)89'\$, 3'%4"8', . 8'8\$A\*#/:. /:8; '. B\*/'8)\*', \*\*3""'. -8). ""'=). '/\*>4:/\*'8)\*'- \$2:0:8: ""'-. /'  
3:/\*28\*3'\$2\$3\*%:2'=. /A6'

!

RAJAB! 2NN\$?&!%1'^10()!(%1!N, ))\$N&'^\$!-\$#?, %#=')'&P!+, -![\$\$?'%M!(!N)\$(%!(%1!#(+!\$Z, -['%M!(%1!  
#&O1P'%M!\$%^'-, %. \$%&W\$%#O-'%M!?\$-#, %()!MO\$#&#!(N&!%!(?!(??-, ?-'(&\$!. (%%\$-A!

!

RAJAJ! Y(^\$!(!. O&O()!-\$#?\$N&!+, -!, &>\$-#!\$#?\$N'())P!Z'&>!-\$M(-1&, !1'++\$-'%M!NO)&O-\$#A!

!

!

!

RAJAO! ""#O-\$!&>(&!&>\$!D%'^\$-#&P!#1%, &!=-, OM>&!%&, !1'#-\$?O&\$A!

=@?7&, %' , !+, \*\* K!\dD!0: !E(>\*@6\*7, !, Q%+@, !(: Q7&7!6%!(??&%?&\*(67!, 6(6+6%&G!@([ !7KR!6Q7!  
\$%8?+67&!d\*, +, 7! =>6!" 330^!6Q7!1 7E(8(6\*"! !=>6!90" <^!\$%?G&\*KQ6!17, \*K' ,!( ' ; !F(67' 6, !=>6!  
"3MM!( ' ; !6Q7!7&%)\*, %'  
F&%67>6\*"! !=>6!90" B!( ' ; !@>7' >7!(K&7787' 6, !E%&!, %E6[ (&7#!=@?7&, %' , !+, \*\* K!\dD!0: !E(>\*@6\*7, !  
, Q%+@, !(@%&!7, ?7>6!6Q7!\*" 67@7>6+ (@?&%?7&6G!&\*KQ6, ^!>%?G&\*KQ6!( ' ; !8%&(@&\*KQ6, !%E!(+6Q%&, #!

!

!

!

!

RAO! /?\$N'+!N!3, 1\$#!

: Q7!0: !V(>\*@6\*7, !\$%; 7!%E!\$%' ; +>6\*, !+' ; 7&?\*'' 7; !CG!6Q7!! =eS: !=>>7?6(C@!D, 7!F%@>G!  
?+C@, Q7; !CG!105\$4![ Q\*>Q!>% )7&, !( @DF!( >(: 78\*>!( ' ; !&7, 7(&>Q! 76[ %&Y!( >6)\*6G#!

!

SA /3\*''73"!K2X6B2I6B\!364"!6V!3674D3I!

!

SA: I>'#!/N'\$%N\$!K(=, -( &, -P!3, 1\$!, +!3, %10N&!>(#!=\$\$%!1\$^\$), ?\$!1!&, !#0???, -&!&>\$!M\$%\$- ()!  
D%'^\$-#'&P!3, 1\$!, +!3, %10N&!

!

SA8 L\$%\$- ()!<-'%N'?)\$#!

!

SAJ 2))!#&01\$%&#! (&!c5D!#>())@

!

SAJA:

!





GA!365<K2\*7I /!<B63"4DB"!-!2!LD\*4"!V6B!/ID4"7I /!

!

\+77' !d (&K(&76!D' \*)7&, \*6G!\*, !>%88\*667; !6%!?&%)\*; \*\* K!( ' !7U>7@7' 6!7; +>(6\*' !(' ; !Q\*KQ2` +( @6G!  
, 7&)\*>7, !6%!%+&! , 6+; 7' 6, !E&%8!7' &%@87' 6!6%!K&(; + (6\*' #!!

U\$!^()0\$!N, . ?)( '%&#!(%1!0#\$!'%+, -. (&' ,%!+-, . !&>\$ . !&, !>)\$?!0#!. ?-, ^\$!, 0-!#\$-^'N\$#A!!

"# 0E!, %876Q\*\* K!K%7, ! [ &% ' K!%&!G%+!( &7!; \*, , (6\*, E\*7; ! [ \*6Q!%+&! , 7&)\*>7, '1?@7 ( , 7!67@+ , #: Q\* , !@7 (E@7!  
; 7, >\*C7, !%+&!>%8?@(' 6, !?&%>7; +&7!( ' ; !Q% [ !6%!8 (Y7!(!>%8?@(' 6#06! (@, !67@, !G%+!(C%+6!Q% [ !  
[ 7! [ \*@Q( ' ; @7!G%+&!>%8?@(' 6!( ' ; ! [ Q(6!G%+!>( ' !7U?7>6!E&%8!+, #!!

U>(&!#!( !N, . ?)( '%&d!!

9# Z 7!&7K (& ; !(>%8?@(' 6!(, !(' G!7U?&7, , \*% ' !%E! ; \*, , (6\*, E(>6\*' !(C%+6!%+&! (>6\*' !%&!@(>Y!%E! (>6\*' ' %&!  
(C%+6!6Q7!, 6( ' ; (& ; !%E!, 7&)\*>7!?&%)\*; 7; !CG!+, !%&!% ' !%+&!C7Q( @#!

U>(&!N(%!\*!N, . ?)( '%!(=, O&d!!

<# k%+!>( ' !>%8?@(' !(C%+6!6Q\*\* K, !@Y7R!!

!

E(\*@&7!%&!&7E+, (@6%!?&%)\*; 7!(!, 7&)\*>7!!  
\*\* ( ; 7` +(67!` +( @6G!%&! , 6( ' ; (& ; !%E!, 7&)\*>7!%&!(' !+ ' &7(, %' (C@7!; 7@G!'' !?&%)\*; \*\* K!(  
, 7&)\*>7!!  
6Q7!` +( @6G!%E!E (>\*@6\*7, !%&!@7 (&' \*\* K!&7, %+&>7, !!  
; \*, , (6\*, E(>6\*' ! [ \*6Q!% ' 7!%E!%+&!?%@>\*7, !%&!\*6, !\*8? (>6!% ' !6Q7!'' ; \*)\*; + (@- (@Q%+KQ!\*6! , !  
&7>%K ' \*, 7; !6Q(6!?'@>G! , !, 76!(6!6Q7!; \*, >6\*% ' !%E!6Q7!'' , 6\*6+6\*' 4!!  
E(\*@&7!6%!?&??7&@!(??@G!@ [ ' !?&%>7; +&7!%&!K+\*; (' >7! [ Q7' !; 7@)7&' K!, 7&)\*>7, !!  
E(\*@&7!6%!E%@ [ !6Q7!(??&%?&\*(67!(; 8\*\* , 6&(6\*)7!?'&%>7, , !!

!

!(!&%+6\* 7!E\*&,626\*87!&7` +7,6!E%&!(!,7&)\*>7!!  
(!&7` +7,6!E%&!>%8?7' , (6\*%' !%' €!!  
( ' !\*' , +&( ' >7!>@(\*8!!  
!\* , , +7, !6Q(6! (&7!\* !>%+&6!%&!Q()7!(@&7(; G!C77' !Q7(&; !CG!(!>%+&6!%&!(!6&\*C+' (@- \*E!G%+!; 7>\*; 7!  
6%!6(Y7!@7K(@(>6\*%' ^!G%+!, Q%+@, !@76!+, !Y' % [ !(!, !6Q7!>%8?@(\*' 6!>( ' ' %6!6Q7' !C7!>% ' , \*; 7&7; !  
+' ; 7&!6Q\* , !?&%>7 , , 4!  
; \* , (K&7787' 6! [ \*6Q!(!; 7>\* , \*%' ! [ Q7&7!6Q7&7!\* , !(!, 6(6+6%&G! ?&%>7; +&7!E%&!>Q(@@7' K\*' K!6Q(6!  
; 7>\* , \*%' !-, +>Q!(, !E%&!E&77; %8!%E!\* E%&8(6\*%' !( ' ; !, +C]7>6!(>>7 , , !&7` +7, 6, 4!%&!(' !  
7, 6(C@, Q7; !(??7(@! ?&%>7 , , !E%&@ [ 7; !6Q&%+KQ%+6!6Q7!, 7>6%&!-, +>Q!(, !(' !(?77(@C%+6!(' !  
(>; 78\*>!; 7>\* , \*%' !%' !(, , 7, , 87' 6!%&!(; 8\* , , \*%' 4!!

"0##! Z Q7' !>%8?@(" K!?'@7(, 7!67@+, R!!

G%+&!E+@(' (87!( ' ; !>% ' 6(>6!; 76(\*@!!  
(, !8+>Q!(, !G%+!>(' ! (C%+6!6Q7!>%8?@(" 6!!  
![ Q(6!Q(, !K%' 7! [ &%' Ka!( ' ; !!  
![ Q(6!%+6>%87!G%+!(&7!, 77Y" K##!

60-IN, %&(N&!1\$&(')##!

<>, %\$@0" <"!BABI0000!- (, Y!E%&!>%8?@(" 6, ! [ Q7' !?&%8?67; 4a!!  
". (' )@>%8?@(" 6, \_ `8+#(>#+Ya!!  
<, #&R!\$%8?@(" 6, ^!1\*)\*, %' !%E!N%)7&' (' >7!( ' ; !\+ (@6G!S' Q(' >787' 6!\+77' !d (&K(&76!  
D' \*)7&, \*6G!d+, , 7@+&KQ!S(, 6!X%6Q(' ^!SL9"!! DD!!

Y, Z!), %M!1, !!>(^\$!&, !. ([\$(!N, . ?)('%&d!!

""# e%&8 (@G!G%+!8+, 6!8 (Y7!G%+&!>%8?@(" 6! [ \*6Q" !, \*U!8%' 6Q, !%ER!!  
!

6Q7!7)7' 6!G%+! [ (' 6!6%!>%8?@(" ! (C%+6a!%&!!  
E\* ; \* K!%+6!6Q(6!G%+!Q()7!(!&7(, %' !6%!>%8?@(" #!!

!

"9# 0' !7U>7?6\*" ( @>\*&>+8, 6(' >7, ^! [ 7!8 (G!C7!(C@7!6%!(>>7?6!(!>%8?@(" 6!(E67&!6Q7!6\*87!@8\*6#!0E!G%+!  
E77@6Q(6!6Q7!6\*87!@8\*6!, Q%+@ !' %6!(??@!6%!G%+&!>%8?@(" 6!?'@7(, 7!67@+, ! [ QG##!

U>(&!>(??\$%#!Z>\$%!\*!>(^\$!N, . ?)('%\$1d!!

"<# Z 7! [ \*@(@ [ (G, !67@G%+! [ Q%!, !; 7(@' K! [ \*6Q!G%+&!>%8?@(" 6#!. +&!>%8?@(" 6, !?&%>7; +&7!Q(, !6 [ %!  
, 6(K7, ##!

/&(M\$!: @V-, %&)%\$!-\$#?, %#\$!!

"B##!

!

/&(M\$!8@\*% ^\$#&'M(&' , %!!

"M#156(K7!9!; 7(@! [ \*6Q!6 [ %!6G?7 , !%E!>%8?@\*\* 6R!6Q%, 7! [ Q7&7!6Q7!>%8?@\*\* (' 6!&78(\*\* , !; \* , , (6\* , E\*7; !  
(E67&! , 6(K7!"(' ; !6Q%, 7!6Q(6!>@ (&G!&7` + \*&7!" ) 7 , 6\*K(6\*" ' ^(' ; ! , %!( &7!Q(' ; @7; !; \*&7>6G!(6!6Q\* , ! , 6(K7#10E!  
G%+!; %!' %6! [ \* , Q!G%+&!>%8?@\*\* 6!6%!C7!Q(' ; @7; !(6! , 6(K7!" ^!G%+!>(' ! ( , Y!+ , !6%!Q(' ; @7!\*6!(6! , 6(K7!9!  
\* , 67( ; #!!

"3#Z Q7' !+ , \*' K! , 6(K7!9R!!

[ 7! [ \*@ (>Y' % [ @7; K7!&7>7\*?6!%E!G%+&!>%8?@\*\* 6! [ \*6Q\*\* !6Q&77! [ %&Y\*\* K!; (G , !!  
[ 7! [ \*@>% ' E\*8!%+&!+ ' ; 7& , 6(' ; \*\* K!%E!6Q7!>%8?@\*\* 6! [ 7! [ \*@\*\* ) 7 , 6\*K(67!(' ; ! [ Q(6!  
%+6>%87!G%+!( &7!@%Y\*\* K!E%&!  
[ 7! [ \*@6&G!6%!&7 , %@ 7!G%+&!>%8?@\*\* 6! [ Q7&7! [ 7!>(' !-\*' ! , %87!>( , 7 , ! [ 7!8(G! , +KK7 , 6!+ , \*\* K!  
( ' ! ( @7&' (6\*) 7!>%8?@\*\* 6!&7 , %@+6\*% ' ! (??&% (>Q^ , +>Q! ( , !87; \* (6\*% ' 4a!(' ; !!  
[ Q7&7! [ 7!>(' ' %6!&7 , %@ 7!G%+&!>%8?@\*\* 6^! [ 7! [ \*@K\*) 7!G%+!( !E+@&7 , ?%' , 7! ( , ! , %%' ! ( , !  
?% , , \*C@7^! %&8 (@G! [ \*6Q\*\* !90! [ %&Y\*\* K!; (G , #!!

90#10E!%+&!\*' ) 7 , 6\*K(6\*" ' ! [ \*@6(Y7!@% ' K7!6Q(' !90! [ %&Y\*\* K!; (G , ^! [ 7! [ \*@67@G%+#!Z 7! [ \*@67@G%+!%+&!  
&7)\* , 7; !6\*87!@8\*6 , !(' ; !Y77?!G%+!+?; (67; !% ' !?&%K&7 , , #!!

What if I'm still dissatisfied?!!

9""#1=E67&[ 7!Q(C)7!K\*)7' !G%+!%+&!E\*\* ( @; 7>\* , %\* ' ^!E!G%+!( &7! , 6\*@; \* , , (6\* , E\*7; ! [ \*6Q!%+&!; 7>\* , %\* ' !%&!6Q7! [ (G!

L\$&&'%M!>\$)?!&, !. ([!\$!P, O-IN, . ?)('%&!!

99#Z 7!+' ; 7&, 6(' ; !6Q(6!G%+!8(G!C7!+' (C@7!%&!&7@>6(' 6!6%!8(Y7!(!>%8?@(' 6!G%+&, 7@#Z 7!(>>7?6!  
>%8?@(' 6, !E&%8!6Q7!&7?&7, 7' 6(6\*)7!%E!(!7&, %' ! [ Q%! , !, \* , , (6\*, E\*7; ! [ \*6Q!%+&! , 7&)\*>7#!Z 7!>(' !6(Y7!  
>%8?@(' 6, !E&%8!(!E&\*7' ; ^!&7@6\*)7^!%&!(' !(; )%>(67^!E!G%+!Q()7!K\*)7' !6Q78!G%+&!>%' , 7' 6!6%!  
>%8?@(' !E%&!G%+#!

9<#D, 7E+d>%' 6(>6!; 76(\*@R!!

56+; 7' 6!57&)\*>7, !-, 6+; 7' 6, 7&)\*>7, \_ ` 8+#(>#Y4!!  
1\*, (C\*6G!57&)\*>7, !-1\*, (C\*6G=;)\*, 7&, \_ ` 8+#(>#Y4!!  
!-Q7@m%' 7 \_ ` 8+#(>#Y4!!  
5>%66\*, Q!0' ; 7?7' ; 7' 6!:=; )%>(>G!=@(' >7!!!  
\$\*6m7' , !:=; )>7!5>%6@(' ; !

9B#Z 7!(&7!>%88\*667; !6%!8(Y\*\* K!%+&! , 7&)\*>7!7(, G!6%+ , 7!E%&!(@878C7&, !%E!6Q7!>%88+' \*6G#0' !@' 7!  
[ \*6Q!%+&! , 6(6+6%&G!7' +(@6\*7, !; +6\*7, ^! [ 7! [ \*@(@ (G, !7' , +&7!6Q(6!&7(, %' (C@7!(; )+, 687' 6, !(&7!8(; 7!  
6%!Q7@7!G%+!(>>7, , !(' ; !+, 7!%+&! , 7&)\*>7, #!OE!G%+!Q()7!6&%+C@7!7?+66\*\* K!G%+&!>%8?@(' 6!'' ! [ &\*6' K^!%&!  
[ (' 6!6Q\*, !'' E%&8(6\*%' !'' !(' %6Q7&!@(' K+(K7!%&!E%&8(6^!, +>Q!(, !@&K7!E%' 6^!%&!J&(\*@7!7?@7(, 7!67@+, !  
\*\* !?7&, %' ^!7?Q%' 7!+, !%' !0'' <'!BAB!0000!-(, Y\*\* K!E%&!\$%8?@(' 6, ! [ Q7' !?&%8?67; 4^!%&!CG!78(\*@' K!+, !  
(6R!>%8?@(' 6, \_ ` 8+#(>#Y4!!

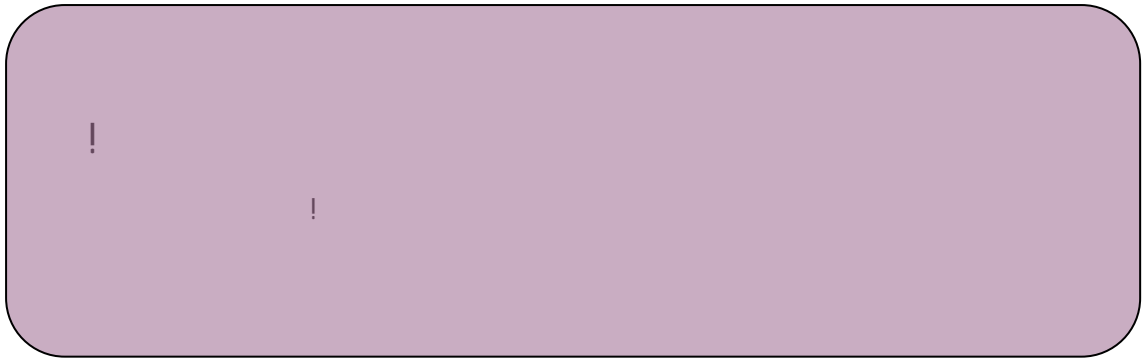
6O-IN, %&(N&!1\$&(')#!

9H#F@7(, 7!>%' 6(>6!+, !CG!6Q7!E%@@ [ \*\* K!87(' , R!!

<>, %\$@0'' <'!BAB!0000!-(, Y!E%&!>%8?@(' 6, ! [ Q7' !?&%8?67; 4a!  
". (')@>%8?@(' 6, \_ ` 8+#(>#Y4!  
<, #&@ \$%8?@(' 6, ^! 1\*)\*, %' ! %E! N%)7&' (' >7! (' ; ! \ + (@6G! S' Q(' >787' 6^! \ + 77' ! d (&K (&76!  
D' \*)7&, \*6G^!d+, , 7@

!

## Quick guide to our complaints procedure



!

!

!

: 9A!!!365<K2\*7I /!Y274K\*7L!<B63"4DB"!b!D7233"<I 2XK"!X"Y2C\*6DB!!  
!

V6B"U6B4!

: Q7!(>6\*%' ,!%E!>%8?@\*' (' 6,[ Q%!( &7!( ' K&G!; 78(' ; \*' K!%&! ?7& , \* ,67' 6!8(G!&7,+@!'! !+' &7(,%' (C@7!

D' \*)7& ,\*6G! [ \*@!6Q7&7E%&7! ?+6!\*' 6%! ?@(>7! ?%@>\*7,!( ' ; !?&%>7; +&7,!6%! ?&%67>6!,6(E!E&%8!, +>Q!







: : A!! 42I 2!<B6I "3I \*67@/I D4" 7I!<B\*C23\!/I 2I "5" 7I!

!

U>, !Z\$!(-\$!

: Q\*, !\*, !6Q7! ?&\*) (>G!, 6(6787' 6!%E!\ +77' !d (&K(&76!D' \*) 7&, \*6G#: Q\*, !?&\*) (>G!, 6(6787' 6!7U?@(\*, !Q%[ [ 7!  
>%@7>6!( ' ; !+, 7! ?7&, %' (d\* E%&8 (6\*%' !(C%+6!G%+#!

\ +77' !d (&K(&76!D' \*) 7&, \*6G!-\ dD4!\*, !(1 (6(!\$%' 6&%@7&!\*' !67&8, !%E!6Q7!N7' 7&(d1 (6(!F&%67>6\*%' !

!





: Q7I56+; 7' 6!=[ (& ; !=K7' >G!E%&!5>%6@(' ; !-5==54#!  
L%87!. EE>7PDF!/\* ,!( ' ; !088\*K&(6%' !-Df/04#!  
: Q7!. EE>7IE%&!56+; 7' 6, #!  
DfT0!'>@; \* K!(K7' 6,!8 (' (K\* K!6Q7!T7, 7 (&Q!SU>7@' >7!V&(87 [ %&Y!-TSV4!!!  
Ld!T7)7' +7!W!\$+, 6%8, !-LdT\$4#!  
X%>(@(+6Q%&6G!E%&!\$%+ '>\*@: (U!7U78?6%' !?+&?%, 7, #!  
S@>6%&(@T7K\*, 6&(6%' !. EE>7!' !(>>%&; (' >7![ \*6Q!6Q7!T7?&7, 7' 6(6%' !%E!6Q7!F7?@!-5>%6@(' ; 4!  
T7K+@('6%' ,!900"#!  
F&%E7, , \*% (' @C%; \*7, ^!E%&!7U(8?@!L\$F\$^!ed\$^!N: \$5#!  
S8C(, , \*7,!( ' ; !%6Q7&!N%)7&' 87' 6, #!  
X([ !7' E%&>787' 6!(K7' >\*7,!( ' ; !; 7C6!>% ' 6&%@7&, #!  
F%67' 6\*(@78?@G7&, !%&!7; +>(6%' !(' ; !?@(>787' 6!/?&%) \*; 7&, #!  
T7, 7 (&>Q!, +&)7G,!(??&%)7; !CG!6Q7!D' \*)7&, \*6G!>%)7&\* K!, 6+; 7' 6!/?&%K&7, , ^!(66\*6+; 7, ^!, %>\*(@(' ; !  
E' (' >\*(@>\*&+8, 6(' >7, !' >@; \* K!6Q7!e(6%' (@56+; 7' 6!5+&)7G!-e554!(' ; !6Q7!0' 67&' (6%' (' @  
56+; 7' 6!J (&%8767&!-05J4#!  
T7@) (' 6!(+6Q%&6\*7, !; 7(@' K![ \*6Q!787&K7' >G!, \*6+(6%' ,!(6!6Q7!D' \*)7&, \*6G#!

?+&?%, 7!%E!(> ; 78\*>!&7?&7, 7' 6(6%' ^!&+ ' ' \* K!%E!7@>6\*' , ^!( ; 8\*\* \* , 67\*\* K!>@C, ^!, %>\*76\*7,!( ' ; !  
, ?%&6, !>@C,!( ' ; !, %>\*(@8 (&Y76\*\* K!(>6\*)\*6\*7, #!  
!

\*%&\$-% (&' , % ()!1 (&!&- (%#+\$-!

=,!( ' !" 67&' (6%' (@%&K(' \* , (6%' ^!6Q7!D' \*)7&, \*6G!8 (G! 77; !6!/?&%>7, , !G%+&!/?7&, %' (@\*\* E%&8 (6%' !" !(!  
>%+ ' 6&G!%6Q7&!6Q(' !6Q7!%' 7!G%+!(&7!, 6+; G\* K!'' ^! [ Q7' !6Q, !, !' 7>7, , (&G!6%!/?&%) \*; 7!G%+! [ \*6Q!(>(; 78\*>!  
( ' ; !, +?/?%&6!, 7&)\*>7, ^!8776!(!@7K(@%C@K(6\*' ^!E+@\*@(!>% ' 6&(>6! [ \*6Q!G%+^!%&! [ Q7&7! [ 7!Q()7!G%+&!  
>% ' , 7' 6#!

F7&, %' (@; (6!8 (G!C7!6&(' , E7&&7; !%+6, \*; 7!6Q7!S+&%?7(' !D' \*% ' ^!6!>%+ ' 6&\*7, ! [ Q\*>Q!8 (G! %6!Q()7!  
7`+\*) (@' 6!; (6!/?&%67>6\*' !@ [ , #!SU(8?@, !%E!>\*&+8, 6(' >7, ! [ Q7' !/?7&, %' (@; (6!8 (G!C7!6&(' , E7&&7; !  
%+6, \*; 7!6Q7!SD!" >@; 7R!!

d(' (K\* K!>%@C%&(6%' , ! [ \*6Q!%)7&, 7(, !7; +>(6\*' (@\*\* , 6\*6+6\*' , !" >@; \* K!, 6+; 7' 6!7U>Q(' K7, !  
( ' ; !? (&6' 7&, Q\*?/?&%K&(887, #!  
Z%&Y\*\* K! [ \*6Q!%)7&, 7(, !&7>&+\*687' 6!(K7' >\*7, #!  
0' E%&8 (6%' !?%, 67; !% ' !%+&! [ 7C, \*67! [ Q\*>Q!, !(>>7, , \*C@7!%+6, \*; 7!6Q7!SS=#!  
5%87!%E!6Q7!, G, 678, !(' ; !, 7&)\*>7, !6Q7!D' \*)7&, \*6G!+, 7, !6%! , 6%&7!; (6(!" !6Q7!\$@%+; ! [ Q\*>Q!8 (G!  
\*\* >@; 7!, 6%&(K7!E(>@\*6\*7, !C(, 7; !%+6, \*; 7!6Q7!SS=#!

<\$-#, % ()!%+, -. (&' , %!/?-, N\$##\$1!=PIN, %#\$%&!!

Z Q7&7!6Q7!/?&%>7, , \* K!%E!/?7&, %' (@\*\* E%&8 (6\*' !E(@, !%+6 [ \*6Q!6Q7!, >%?7!%E!G%+&!>% ' 6&(>6! [ \*6Q!6Q7!  
D' \*)7&, \*6G!-#7#!6Q7!" E%&8 (6\*' !6Q(6!6Q7!D' \*)7&, \*6G!, !&7`+\*&7; !6!/?&%>7, , !6%!8 (' (K7!( ' ; !(; 8\*\* \* , 67&!  
G%+&!6\*87!(6!D' \*)7&, \*6G!6Q7' ! [ 7! [ \*@&7`+\*&7!( ' %6Q7&!@7K(@&7(, %' !6!/?&%>7, , !G%+&!; (6(!: Q\* , !8 (G!  
&7`+\*&7!+, !6!(!, Y!E%&!G%+&!>% ' , 7' 6!E%&!/?&%>7, , \* K#!\$%' , 7' 6! [ \*@C7!, %+KQ6! [ Q7' !'6!, !&7`+\*&7; #!!!!

!

<- , +' )%M! , -(O& , . (&\$1!1\$N'#' , %!. ([ '%M!

Z 7!; %!' %6!+ , 7! ?&%E\* '@' K!%&! (+6%8 (67; !; 7>\* , %' 28 (Y\*' K! ?&%>7 , , 7, #!5%87! ?&%>7 , , 7, !(&7! , 78\*2  
(+6%8 (67; !C+6!(!Q+8 (' !; 7>\* , %' !8 (Y7&[ \*@ (@ (G, !C7!' )%@)7; !C7E%&7! (<' G!; 7>\* , %' !\* , !&7 (>Q7; !\*' !  
&7@('6\*' !6%!G%+#!!!!

L- (10(&' , %!N\$-\$ . , %'\$#!!

4\$)\$&' , %!, +!P, O-!'%+, -. (&' , %!

\, O!>(^\$!&>\$!- 'M>&!&, !(#[!O#!&, !1\$)\$&\$!?\$-\$-#, %()!'%+, -. (&' , %!(=, O&!P, O!Z>\$-\$@  
!

k





: 8A!B"LDK2! \*67/!L6C"B7\*7L!4\*/3\*<K\*7"!!

!

:! <-)\$'. '%(-P!. (&&\$-#!

!

"#!" =@,6+; 7' 6,!%E!6Q7!D' \*)7&,\*6G!(&7!,+C]7>6!6%!6Q7!] +&\* ; \*6\*%' !%E!6Q7!F&\* >\*?(@\*' !&7,?7>6!%E!6Q7\*&!  
,6+; \*7,!(' ; !6Q7\*&!>%' ; +>6#!06!\* !(!>%' ; \*6\*%' !%E!7' 6&G!6%!6Q7!D' \*)7&,\*6G!6Q(6!7(>Q!,6+; 7' 6!,Q(@  
>%! E%&8!6%!6Q7!?!+C@,Q7; !&+@7,!(' ; !&7K+@6\*%' ,#!

!

"#9! D' ; 7&!6Q7,7!&7K+@6\*%' ,!6Q7!D' \*)7&,\*6G!Q(,!6Q7!?!%[ 7&!6%! ; \*,>\*?@' 7!,6+; 7' 6,!(' ; !6%! ,+ ,?7' ; !%&!  
7U?7@(' G!,6+; 7' 6!E%&!K%%; !>( , 7#!

!

"#<! . '>7! ; \*,>\*?@' (&G!?!&&>77; \*\* K,!Q()7!C77' !" ,6\*6+67; !(K(\*\* ,6!(!,6+; 7' 6!+' ; 7&!6Q7,7!&7K+@6\*%' ,^!  
' %! ; \*,>\*?@' (&G!(>6\*%' ! [ \*@' %&8(@G!C7!6(Y7' !(K(\*\* ,6!6Q7!,6+; 7' 6!+' ; 7&!%6Q7&! ; \*,>\*?@' (&G!&+@7,!

!

Q4 : Q7E6^!8\*, (??&%?& (\*%' !%&!8\*, +, 7!%E!D' \*) 7&, \*6G! ?&%?7&6G^!%&!6Q7! ?&%?7&6G!%E!6Q7!

O! /O#?\$\$%#, %!, -!\$\_N)O#, %!

B#''! =!, 6+; 7' 6! [ Q%!\* ,!6Q7!, +C]7>6!%E!(!>%8?@(\* 6!%E!8\* ,>% ' ; +>6!%&! (K(\* , 6! [ Q%8!(!>&\*8\*\* (Q>Q(&K7!  
\* ,!?' ; \*\* K!%&! [ Q%!\* ,!6Q7!, +C]7>6!%E!?'%>7!'' )7, 6\*K(6\*%' ^!8 (G!C7!, +, ?7' ; 7; !%&!7U>@; 7; !E&%8!  
6Q7!D' \*)7&, \*6G!CG!6Q7!F&\* >\*(?!?' ; \*\* K!; \* ,>\*@' (&G!Q7(&\* K!%&!6&\*(#!

!

B#9! =!, 6+; 7' 6! [ Q%!\* ,!, +, ?7' ; 7; !\* ,!?'&%Q\*C\*67; !E&%8!7' 67&\* K!D' \*)7&, \*6G!?'&78\* ,7,!( ' ; !E&%8!  
?(&6\*>\*(6\*\* K!\*' !D' \*)7&, \*6G!(>6\*)\*6\*7, #!5+, ?7' , \*%' !8 (G!C7!, +C]7>6!6%!\` + (@E\*>(6\*%' ^!, +>Q!(, !  
?7&8\* , , \*%' !6%!6(Y7!( ' !7U(8\*\* (6\*%' #: Q7!67&8, !%E!6Q7!, +, ?7' , \*%' ! [ \*@C7!' %6\*E\*7; !\* ! [ &\*6\*\* K!6%!  
6Q7!, 6+; 7' 6#!=' !%&; 7&!%E!, +, ?7' , \*%' !8 (G!'' >@; 7!(!&7` +\*&787' 6!6Q(6!6Q7!, 6+; 7' 6!, Q(@@Q())7!' %!  
>%' 6(>6! [ \*6Q!(!' (87; !?7&, %' !%&!?7&, %' , #!

!

B#<! =!, 6+; 7' 6! [ Q%!\* ,!7U>@; 7; !E&%8!6Q7!D' \*)7&, \*6G!Q(, !&7, 6&>67; !&\*KQ6, !6%!7' 67&!D' \*)7&, \*6G!  
?'&78\* ,7,!( ' ; !6%!6(Y7!?'(&6!\*' !D' \*)7&, \*6G!(>6\*)\*6\*7, #: Q7!67&8, !%E!6Q7!7U>@, \*%' ! [ \*@C7!' %6\*E\*7; !\* !  
[ &\*6\*\* K!6%!6Q7!, 6+; 7' 6#!=' !%&; 7&. 04. !' 4578328!!

!

Q! /O. . (-P!?- , N\$10-\$!!

!

H#''! =@7K(6\*' ,!%E!8\* ,>% ' ; +>6!+' ; 7&!6Q7 , 7!&7K+@(6\*' ,!, Q%+@ !C7!8 (; 7!6%!6Q7!D' \*) 7& , \*6G!57>&76(&G^!  
[ Q%! [ \*@&7E7&!6Q78!6%!6Q7!F&\* '>?(@! : Q7!F&\* '>?(@8(G!; \* , 8\* , ,!6Q7!(@7K(6\*' !\*887; \*(67G!E!  
6Q7G!C7@7)7!6Q(6!6Q7&7! ,!' %!>( , 7!E%&!6Q7! ,6+; 7' 6!6%!( ' , [ 7&^!%&!6Q(6!\*6! ,!E%&! ,%87!%6Q7&!&7( ,%' !  
(??&%?&\*(67!6%!; %! ,%#!!!

!

H#9!

!

I#<! : Q7!, 6+; 7' 6!8(G!(667' ; !6Q7!; \*, >?@' (&G!Q7(&\* K'!( ' ; !8(G!C7!(>>%8?(' \*7; !CG!( ' !(; )\*, 7&Y  
E&\*7' ; !%&!%6Q7&!&7?&7, 7' 6(6\*)7#0E!(!, 6+; 7' 6!\*, !(>>%8?(' \*7; !( ' ; !%?6!6%!Q(C)7!6Q7\*&! ( ; )\*, 7&Y  
E&\*7' ; !%&!&7?&7, 7' 6(6\*)7!, ?7(Y!%' !6Q7\*&!C7Q(ϕY, Q%+@, !\*6!C7>%87!' 7>7, , (&G!6%!7' , +&7!K%%; !  
%&; 7&!\*! !6Q7!Q7(&\* K'Y6Q7!\$%88\*6677!8(G!, 6\*?+@67!6Q(6!6Q7!, 6+; 7' 6!8(G!, ?7(Y!%' ϕ! [ Q7' !  
>(@7; !+?%' !6%!K')7!7)\*; 7' >7!CG!6Q7\*&!&7?&7, 7' 6(6\*)7#X7K(ϕ&7?&7, 7' 6(6%' !, !' %6!7?7&8\*667; #!  
!

I#B! : Q7!\$%88\*6677![ \*ϕ&7ϕ!%' ϕ!%' !7)\*; 7' >7!7?&7, 7' 67; !(6!6Q7!Q7(&\* K#: Q7!; 7@C7&(6\*' ,!( ' ; !  
; 7>\*, \*%' , !%E!( ' G%' 7!7?&7)\*+, ϕ!>'%' , \*; 7&\* K!6Q7!8(667&!, Q(ϕC7!\*&&7@7)(' 6!E%&!6Q7!\$%88\*6677b, !  
?+&?%, 7, #!  
!

I#H! : Q7!\$%88\*6677![ \*ϕE\* ; !(!, 6+; 7' 6!K+\*ϕG!%E!8\*, >% ; +>6!%' ϕ!E'Y%' !6Q7!7)\*; 7' >7!C7E%&7!6'Y6!\*, !  
, (6\*, E'7; !%E!6Q7!, 6+; 7' 6b, !K+\*ϕ#0E!6Q7!878C7&, !%E!6Q7!\$%88\*6677!>(' ' %6!(K&77'Y6Q7!)7&; \*>6!%E!  
6Q7!\$%88\*6677![ \*ϕC7!6Q(6!%E!6Q7!8(1%&\*6G!%E!\*6, !878C7&, #!= ' G!; 7>\*, \*%' !%E!6Q7!\$%88\*6677!  
, Q(ϕC7!C(, 7; !%' !6Q7!C(ϕ' >7!%E!7?&%C(C\*6\*7, #!  
!

I#I! 5+C]7>6!6%!6Q7!7?&%)\*, \*%' , !%E!6Q7, 7!&7K+@6\*' , Y6Q7!%&; 7&!%E!7?&%>77; \*\* K, !, Q(ϕC7!(6!6Q7!  
; \*, >&76\*' !%E!6Q7!\$%88\*6677#d78C7&, !%E!6Q7!\$%88\*6677!8(G!(, Y!` +7, 6\*' , !%E!( ' G! [ \*6' 7, , !  
>(@7; !C7E%&7!6#: Q7!\$%88\*6677!8(G!(, Y!E%&! ( ; ; \*6\*' (ϕ7' ` +\*7, !6%!C7!+ ; 7&6(Y7' Y!( ' ; !8(G!  
>(@E%&! ( ; ; \*6\*' (ϕ [ \*6' 7, , 7, !6%!(667' ; #!  
!

I#A! 0E!6 [ %!%&!8%&7!, 6+; 7' 6, !(&7!'' )%@7; !'' !&7@67; !8\*, >% ; +>6'Y6Q7!\$%88\*6677!8(G!(6!6, !  
; \*, >&76\*' !; 7(ϕ [ \*6Q!6Q7\*&!>(, 7, !6%K76Q7&#!  
!

I#M! : Q7!7)\*; 7' >7!7?&7, 7' 67; !(6!6Q7!Q7(&\* K! [ \*ϕ' %&8(ϕG!C7!%&(ϕ7)\*; 7' >7'YK\*)7' !CG! [ \*6' 7, , 7, !  
(??7(&\* K!'' !7?&, %' #! : Q7!\$%88\*6677!8(G!(>>7?6!( [ \*6' 7, , b, ! [ &\*667' !, 6(6787' 6!'' !7)\*; 7' >7!  
[ Q7&7!6!(K&77, !6Q(6!6Q7! [ \*6' 7, , !' 77; !' %6!(667' ; Y!%&! [ Q7&7!6!\*, !\*8?&( >6>(C@7!E%&!6Q7! [ \*6' 7, , !  
6%!(667' ; Y!%&! [ Q7&7!'' !6Q7!%?'\* \*%' !%E!6Q7!\$%88\*6677!6!\*, !E%&!, %87!%6Q7&!&7(, %' !'' !6Q7!'' 67&7, 6, !  
%E!]+, 6>7!6%!, %!, %#!  
!

I#3!

!





T 5\$%&(!'))%\$##!

!

0E!6!(??7(&,!6%!6Q%,7!>%',\*;7&\*K!( '@7K(6\*%'!%E!8\*,>%';+>6!6Q(6!6Q7!,6+;7'6!\*!'`+7,6\*%'!\*,!  
+,EE7&\*K!E&%8!87'6(4\*7,,!%&!87'6(4\*',6(C\*6G^!6Q7!??&%>77; \*\*K,!8(G!C7!(; ]%+&'7; !E%&!6Q7!  
?&7?(&(6\*%'!%E!(!87; \*>(4&7??%&6#!

!

0E!6Q7&7!\*,!87; \*>(47)\*; 7' >7!6Q(6!6Q7!,6+; 7'6!\*!,+EE7&\*K!E&%8!87'6(4\*7,,!%&!87'6(4  
\*\* ,6(C\*6G^!6Q%,7!; 7(@'K! [ \*6Q!6Q7!>(,7!8(G!,+,??'; !%&!67&8\*\* (67!6Q7!??&%>77; \*\*K,^!E!6!\* ,!E74!  
(??&%?&\*(67!6%!; %!,%#!06!8(G!C7!8(; 7!(!>%'; \*6\*%'!%E!,+,??', \*%'!%&!67&8\*\* (6\*%'!%E!6Q7!  
??&%>77; \*\*K,!6Q(6!6Q7!,6+; 7'6!,77Y,!87; \*>(46&7(687'6#!

!

G 2??\$( )#!

!

3#"! =!,6+; 7'6!8(G!(??7(4(K(\*\*,6!(!E\*\* ; \*\*K!%E!K+\*4#!: Q7!(??7(48+,6!C7!8(; 7!6%!6Q7!D'\*)7&,\*6G!  
57>&76(&G! [ \*6Q\*\*!6 [ 7'6G27\*KQ6!; (G,!%E!6Q7!>% '>4, \*%'!%E!6Q7!??&%>77; \*\*K,^ [ Q\*>Q!\*\* >4; 7,!6Q7!  
\*8?%,\*6\*%'!%E!(!77' (4G#!: Q7!,6+; 7'6!8+,6!,76!%+6!\*\* ! [ &\*6\*\*K!6Q7!K&%+' ; ,!%'! [ Q\*>Q!6Q7!(??7(4\*,!  
C(,7; #!!!

!

3#9! : Q7&7![ \*4C7!' %!7'6\*6787'6!6%!(!&7Q7(&\*K!%E!6Q7!>(,7^[ Q\*>Q! [ \*4C7!(4% [ 7; !%'4G!\*\*!  
7U>7?6\*%' (4>\*4>+8,6(' >7, #!!!

!

3#<! : Q7!(??7(4 [ \*4C7!,+C8\*667; !6%!6Q7!F&\* >?(4! [ Q%! [ \*4]; K7! [ Q76Q7&!%&! '%!(!?'&\*8(IE(>\*7!>(,7!  
7U\*,6,!%'!6Q7!C(,\* ,!6Q(6R!

!

6Q7&7!Q(,!C77'!; 78%' ,6&(C4('!&&7K+@(6G\*\*!6Q7!; \*,>\*?4' (&G!??&%>7; +&7a!

!

!



3#A! =!,6+; 7' 6!8 (G!(??7(4(K(\*' ,6!(!77' (4G!\*8?%, 7; !E%44[ \*' K!(IE\*' ; \*' K!%E!K+\*4#: Q7!(??7(48+,6!  
C7!8(; 7!6%!6Q7!D' \*)7&, \*6G!57>&76(&G![ \*6Q\*' !6[ 7' 6G27\*KQ6!; (G, !%E!6Q7!>%' >4, \*%' !%E!6Q7!  
?&%>77; \*' K, #: Q7!,6+; 7' 6!8+,6!, 76!%+6!\*' ![ &\*6\*' K!6Q7!K&%+' ; , !%' ![ Q\*>Q!6Q7!(??7(4\*, !C(, 7; #!!!  
!

3#M! : Q7!>%88\*6677!Q7(&\*' K!( ' ! (??7(4(K(\*' ,6!77' (4G!8 (G!\*8?%, 7!(!7, , 7&!%&!K&7(67&!77' (4G!  
Q() \*' K!>%' , \*; 7&7; ![ Q76Q7&!6Q7!%&\*K\*' (477' (4G!\*8?%, 7; ![ (, !E(\*&!( ' ; !&7(, %' (C@7!\*' !6Q7!@KQ6!%E!

. '@' 7!>% ' 6(>6!E%&8!ZZZA#?#, A, -MAO[;N, %&(N&F+, -. !

!

k%+!>(' !E\*@@\*! !6Q7!>%8?@(\*' 6,!E%&8!%' '@' 7!(6!ZZZA#?#, A, -MAO[;N, . ?)('%;+, -. !

V(U!9T99!JSS!SJJ:!

!

!

!

: JA!B"/"2B3Y!"IY\*3/!LD\*4"K\*7"/M<B63"4DB"/!274!B"LDK2I\*67/!  
/"3I\*67!:

"&>'N()!<-'%N'?)\$#!&, !MO'1\$!-\$#\$(-N>!%^(,)^'%M!>O. (%!?(-&'N'?(%&#!

: A ! \*%&- , 1ON&', %!  
!

S6Q\*>,!?7&87(67,!(@&7,7(&>Q!,%!' @!CG!K766\*\* K!\*6!&\*KQ6!>(' !&7,7(&>Q!7U>7@' >7!C7!(>Q\*7)7; #!  
06!\*,!7,,7' 6\*(@E%&!&7,7(&>Q7&,!6%!K(\*\* !(' !+' ; 7&,6(' ; \*\* K!%E!76Q\*>(@?&\* \*?@,^!C7>(,+7! \*\* !?&(>6\*>7!  
76Q\*>(@\* ,,+7,!(&7!%E67' !>%8?@U^!&7@6\*)7!6%!6Q7!?(&6\*>+@(&!&7,7(&>Q!?!&%)7>6^!&7@6\*)7!6%!6Q7!  
>%8?767' >7!%E!6Q7!&7,7(&>Q!67(8!(' ; !&7` +\*7!6Q7!&7(,%' (C@7!(' 6\*>?(6\*%' !%E!@Y7@E!+6+&7!&\*,Y,!  
( ; !?&%C@78,#!: Q7!>%7!%E!76Q\*>(@&7,7(&>Q!\*,!6Q7!76Q\*>(@,7' ,6\*)\*6G!%E!6Q7!&7,7(&>Q!67(8^!  
[ Q\*>Q!\*,!( ' !(&6!C(,7; !%' !?&\* \*?@,!&(6Q7&!6Q(' !(!&+@72K%)7&' 7; !?&%>7,,^!%&!(!,76!%E!6\*>Y!C%U!  
C(&&\*7&,!6%!C7!%)7&>%87!C7E%&7!6Q7!&7(@[ %&Y!>(' !C7K\*\* #!!

S6Q\*>(@&7,7(&>Q!7` +\*7,!(!C(@' >7!6%!C7!,6&+>Y!C76[ 77' !8\*\* \*8\*,\*\* K!?&%C(C@7!Q(&8!(' ; !  
(; )(' >\* K!(>C; 78\*>!Y' %[ @; K7^!C7\*\* K!(??&%?&\*(67!'' !67&8,!%E!Q+8(' !; \*K' \*6G^(' ; !'' !,%>\*(@  
( ; !>+@+&(@\*8?(>6#T7,7(&>Q7&,!,Q%+@ !+,7!6Q7!C(,\*>!76Q\*>(@?&\* \*?@,!%+6@' 7; !Q7&7!6%!K+\*; 7!  
6Q7&!; 7>\*,%' ,!(C%+6!Q%[ !6%!>%' ; +>6!&7,7(&>Q^!Q%[ !6%!6&7(6!6Q7\*!&7,7(&>Q!?(&6\*>?(' 6,!(' ; !  
Q%[ !6%!Q(' ; @!6Q7!; (6(!6Q(6!6Q7G!K(6Q7&!(C%+6!6Q78#V%&!8+>Q!&7,7(&>Q!6Q7!&7@)(' 6!  
; 7>\*,%' ,!(&7!,6&(\*KQ6E%&[ (& !%&!Q()7!,%+' ; !?&7>7; 7' 6,#!!

0

!

! e! 7, %F. ()\$+'N\$%N\$f!1, !%, !>(-. !

! e!

6Q7G!Q()7!,%876Q\*\* K!6%!Q\*; 7q!!

=!6Q\*&; ^!&(&7&^!@8\*6(6\*% ' !, ! [ Q7' !&7, 7(&>Q!%EE7&, !8%' 7G!%&!%6Q7&!C7' 7E\*6, !6Q(6!(&7!, %!@&K7!(, !  
6%!7(, \*G!??7&, +(; 7!??7%?@!6%!?(&6\*>?(67!E%&!6Q7!C7' 7E\*6, !(G% 7#: Q\*, !, !K7' 7&(G!>%', \*, 7&7; !6%!  
7U>@; ; 7!8%; 7, 6!?(G87' 6, !6%!>%) 7&!6Q7!>, 6, !%E!6&( ) 7Q(' ; !' >%' ) 7' \*7' >7#F(G!( ' ; !%6Q7&  
C7' 7E\*6, !%EE7&7; ; !, Q%+@; !C7!8%; 7, 6!'' !?&%?%&6\*% !6%!6Q7!7EE%&6!&7` +\*&7; !6%!?(&6\*>\*(67#!

8A: AJ! U>, !/>, 0)1!3, %#%\$&d!!

. ' G!??7&, %', !(C@!6%!E&77G!+' ; 7&, 6(' ; ^! +7, 6\*% ' !(' ; !&7E+, 7! [ \*6Q%+6!E7(&!%E!, (' >6\*% ' !%&!  
&7?&\*, (G>' !K\*)7!'' E%&87; !>%', 7' 6#!V%&!&7, 7(&>Q!'' )%@\*\* K!?(&6\*>\*( ' 6, ! [ Q%!8(G!@>Y!6Q7!  
>( ?(>\*6G!E%&!+' ; 7&, 6(' ; \*\* K!(' ; !` +7, 6\*% ' \*\* K^!, +>Q!(, !>Q\* @ &7' ^!??7%?@! [ \*6Q!87' 6(G%&!  
\*\* 67@>6+ (G; \*EE>+G\*7, ^!%&!??7%?@! (, 7) 7&7G! \*%&!Q7( ) \*G!87; \*>(67; ^!>%', 7' 6!, Q%+@; !C7!C6(\* 7; !  
E&%8!( !?(&7' 6^!>(&7!%&!%6Q7&!??7&, %' !, 7&)\* K!'' !( !&7, ?%' , \*C@!>( ?(>\*6G! =e !E&%8!6Q7!  
?(&6\*>\*( ' 6!6Q78, 7@7, ^!6%!6Q7!7U67' 6!6Q(6!6Q7G!(&7!>( ?(C@!%E!+' ; 7&, 6(' ; \*\* K!(' ; !%EE7&\* K!  
>%', 7' 6#0' K7' +\*6G! 77; ; !6%!C7!7U7&>\*, 7; !'' !?&%)\*, \*\* K!, (6', E(>6%&G!>%', 7' 6!??&%>7; +&7, !'' !, +>Q!  
>(, 7, #!\$%' , 7' 6!E&%8!6Q7!?(&7' 6!%&!>(&7&! (G% 7!\*, !&(&7G!(' ; 7` + (67#!

: Q7!E&77; %8!6%&!&7E+, 7!6%!?(&6\*>\*(67!'' !&7, 7(&>Q!'' !?%67' 6\*(G!6Q&7(67' 7; ! [ Q7&7!6Q7&7!\*, !(!  
?% [ 7&!8C(@>7!C76 [ 77' !6Q7!??&%, ?7>6\*)7!?(&6\*>\*( ' 6!(' ; !6Q7!&7, 7(&>Q7&^! (G% K! [ \*6Q!6Q7\*  
?7&>7\*)7; !(G@7, #!V%&!7U(8?@^!, 6+; 7' 6, !8(G!C7@7)7!6Q(6!&7E+, \*\* K!6%!?(&6\*>\*(67!'' !, 6(E!  
&7, 7(&>Q! [ \*G! %6!>%+ ' 6! [ 7@E%&!6Q78! [ Q7' !6Q7G!(&7!C7\*\* K!7; +>(6\*% (G! (, , 7, , 7; #: Q\*, !>(' !

876Q%; , !%E!7' , +&\* K!6&+7!&7E+, (G(&7R!

6%!7' , +&7! [ Q7' 7)7&!??%, \*C@!6Q(6!6Q7!&7, 7(&>Q!67(8!\*, !>%8?@767G!'' ; 7?7' ; 7' 6!%E!( ' GC%; G!  
\*\* !( !?%, \*6\*% ' !%E!??% [ 7&!%) 7&!6Q7!??%67' 6\*(G?(&6\*>\*( ' 6, ^!(' ; !  
6Q(6!6Q7!??&%>7; +&7, !6%!7' , +&7!'' ; 7?7' ; 7' >7!(&7!7U?@>6!; +&\* K!6Q7!'' E%&87; !>%', 7' 6!  
?&%>7, , #!V%&!7U(8?@^!, Q%+@; !6Q7!87; \*>(G>%', +G(' 6!C7!% 7!%E!6Q7!&7, 7(&>Q!67(8!-, !, !%E67' !  
6Q7!>(, 74^!6!, Q%+@; !C7!>@7 (&!6Q(6!6Q7G! [ \*G!Q( ) 7! %!Y' % [ @7; K7!%E! [ Q76Q7&!(' !'' ; \*)\*; + (G  
?(6\*7' 6!Q(, !?(&6\*>\*(67; !%&! %6#!Z Q7&7!6Q\*, !, !'8?%, , \*C@!%6Q7&!87(' , !%E!7' (C@' K!6&+7!  
&7E+, (G, Q%+@; !C7!(>6\*)7G! [ &\*667' !'' 6%!6Q7!&7, 7(&>Q!??&%6%>%#!

!  
06!\*, !(@%!\*8?%&6(' 6!6%&!&7878C7&!6Q(6!&7, 7(&>Q!%' !K&%+?, ^!, %>\*76\*7, ^!%&K(' \*, (6\*% ' , ^!'' , 6\*6+6\*% ' , !

!

! : Q7!E%@[ \*\* K!,6&(67K\*7,!8(G!Q7@!6%!,(E7K+(;&!\*' E%&87;!>%',7' 6R!

\$@%,7!(667' 6\*' !6%!6Q7!@' K+(K7!( ' ;!&7(; (C\*6G!%E![ &\*667' !8(67&\*(@![ Q\*>Q!'>@; 7,!  
6&(' ,@6\*' !?&%>7; +&7,!E%&' %' 2' (6\*)7!@' K+(K7!,?7(Y7&,#!  
L%' 7,6!7U?@(' (6\*' !%E!6Q7!?,,\*C@!&\*,Y,!( ' ;!C7' 7E\*6,!%E!?(&6\*>\*(6\*' #F(&6\*>+@(&!>(+6\*' !

+ ' ?@7(, (' 6!%&!,\*8?@G!@7' K6QG^!6\*!,!C7,6!6%!8(Y7!6Q\*,!>@7(&#!  
: Q7!%??%&6+' \*6G!E%&!?%67' 6\*(@?(&6\*>\*( ' 6,!6%!; \*,>+, ,!6Q7!?&%]7>6!( ' ;!(,Y!' +7,6\*' ,![ \*6Q!







L% [ 7) 7&!6Q\*, !, \*6+ (6\*% !', !&7@ (6\*) 7@!& (&7#!D, + (@@!76Q\* > (@&7, 7 (&>Q!\*\*) %@)\*\* K!Q+8 (' !  
? (&6\* >? (' 6, !\*, ! (C%+6!8\*\* \*8\*, \* K!Q (&8!& (6Q7&!6Q (' !\*\* >&7 (, \* K!@Y7@!C7' 7E\*6, #!!

8AO!! gO#&'N\$!

06!\*, !\*8?%&6 (' 6!6%!6&7 (6!7?%?@!7` + (@@! (' ; !E (\*&@! (' ; !7' , +&7!6Q (6!6Q7G! (&7! (>>%& ; 7; !6Q7\*!E+@  
&\*KQ6, #!0' !&7, 7 (&>Q!?)& (>6\* >7!8 +>Q!%E!6Q\*, !%>>+&, !+ ; 7&!\*, , +7, !%E!6&+@! \*\* E%&87 ; !>' , 7' 6!-, 77!  
9#B#94#106!\*, ! (@, %! [ %&6Q!87' 6\*%' \*\* K!6Q7! 77 ; !6%!>' , \* ; 7&!\*, , +7, !%E!? (&6\* >? (' 6!, 7@ >6\*%' !>&\*67&\* (#!  
: Q7&7! (&7!%E67' !@7K\*6\*8 (67!&7 (, %' , !E%&!&7, 6&\*>6\* K! (!, 6+ ; G!6%! (!, ??>\*E\*>K7' ; 7&7!%&! (K7!K&%+?7!%&!  
7U>@ ; \*\* K! ' %' 2' (6\*)7! , ?? (Y7&, !%E!6Q7!?)&7 ; %8\*\* (' 6!@ (' K+ (K7!%&!7U>@ ; \*\* K!, ?7>\*E\*>!76Q' \* >\*6\*7, #!  
L% [ 7) 7&! , %876\*87, !6Q7, 7!>Q%>7, ! (&7!8 ( ; 7!8 (\*\* @!E%&!>' ) 7' \*7' >7! [ Q\*>Q!8 (G!C7!76Q\*> (@@!  
; 7C (6C@7! (' ; !> (' !&7` +\*&7!]+, 6\*E\*> (6\*%' #: Q7&7! (&7!8 (' G!\*\* , 6 (' >7, ! [ Q7&7!>' ) 7' \*7' 6!, (8?@' K!  
>&\*67&\* (!Q!)7!&7, +@7 ; !\* ! (!>' , 7` +7' 6!@ (>Y!%E!Y' % [ @7 ; K7!%E! [ Q76Q7&!E\*\* ; \* K, ! (??@!6%!7U>@ ; 7 ; !  
K&%+? , #! = ' G!\*\* >@ , \*% ' !%&!7U>@ , \*% ' !>&\*67&\* (!6%!C7!78?@G7 ; !\* !6Q7!&7, 7 (&>Q!, Q%+@, !C7!>@7 (&@!  
&7>%K' \* , 7 ; !CG!&7, 7 (&>Q!>%+ '>@! (' ; !6Q7!eL5!%E!6Q7!7U67' 6!6%! [ Q\*>Q!&7, 7 (&>Q!?) (&6\* >? (' 6, ! (&7!  
7' 6\*6@ ; !6%!Q7@? !E%&8!6Q7!&7, 7 (&>Q! (K7' ; (#F (&6\* >? (' 6!\*\*) %@) 787' 6!\*\* !&7, 7 (&>Q! ; 7, \*K' ! , !K% ; !  
?& (>6\* >7#!

8AOA: ! 3, %+1\$%&' ()&P!

=, ! [ 7@ (' !C7\*\* K! (IC (, \* >!&+@7!%E!&7, 7 (&>Q!76Q\*>, ' !>' E\* ; 7' 6\* (@6G!\*, ! (@, %!6Q7!, +C]7>6!%E!  
>% ' , \* ; 7& (C@7!@67& (6+&7! (' ; !@7K\*, @ (6\*%' !\*\* >@ ; \* K!6Q7!1 (6 (!F&%67>6\*%' !=>6!90''M#106!\*, !\*8?%&6 (' 6!  
6%!Y77? !>' E\* ; 7' 6\* (@6G! ; \* , 6\*\* >6!E&%8! (' %' G8\*6G#!

= ' %' G8\*6G!\*\*) %@) 7, !6Q7!??&%67>6\*%' !%E!6Q7!?) (&6\* >? (' 6!, %!6Q (6!7) 7' !6Q7!&7, 7 (&>Q!67 (8!> (' ' %6!  
@' Y!6Q78!6%!6Q7! \*\* E%&8 (6\*%' !?&%)\* ; 7 ; #!e% [ ( ; (G, ^!6Q\*, !' %6!%' @!&7` +\*&7, !6Q7! ()) \* ; (' >7!%E!  
' (87, ^!C+6! (@, %!%6Q7&! ; 7' 6\*E\*7&! \*\* E%&8 (6\*%' !, +>Q! (, !?%, 6>% ; 7, ^!%&!eL5!\$L0!' +8C7&, #!  
d (%&7%) 7&7? (&6\* >+@ (@@! \*\* !, 8 (@@, > (@7!8%&7!` + (@6 (6\*) 7!, 6+ ; \*7, ^!, %87!?) (&6\* >? (' 6, !8 (G!C7!  
\* ; 7' 6\*E\* (C@7!, %@7@!CG!6Q7! ; (6 (!6Q7G!?)&%) \* ; 7#!\$%' , 7` +7' 6@^!6&+7! (' %' G8\*6G!E&%8!, 6 (&6!6%!E\*\* \* , Q!

; (6(!8+,6!C7!; 78%' ,6&(67; #: Q\*,!\* >@; 7,!())%\*; \*\* K!6Q7!+' ' 7>7,, (&G!; +?@>(6\*%' !%E!7@>6&%' \*>! ; (6(!, 76,^[ Q\*>Q!\*' >&7(, 7,!6Q7!>Q(' >7,!%E!6Q7\*!&!C7\*\* K!8\*, +, 7; #!

8AOABA!4 (&!/&, -(M\$!

! : Q7!; (6(!?&%67>6\*%' !(>6!(' ; !>% ' E\*; 7' 6\*(@6G!&7` +\*&787' 6, !-, 77!(C%)74!?'%, 7!(!; \*@788(!E%&!; (6(! ,6%&(K7^[ Q\*>Q!\* ,!( ' %6Q7&!76Q\*>(@&7` +\*&787' 6!%E!&7, 7(&>Q#0E!&7, 7(&>Q!\* ,!' %6!K%\*' K!6%!C7! ?+C@, Q7; !\*' !6Q7!?!+C@>!; %8 (' ^!C+6! [ (, !>% ' ; +>67; !?&\*8 (&\*G!E%&!7; +>(6\*%' (@?+&?'%, 7, ^!6Q7' !





8AJ!!

F \*'-.; 3'8):""\$##0:2\$8:.. , '\$22\*#8\$<0\*\$ , 3'\$, '\$##0:2\$8:.. , '-. /'\*8):2\$0'\$##/. B\$0'

". 403', . = '<\*'

6Q&77!878C7&, !%E!6Q7!F(' 7@(' ; !6Q7!\$%' )7' 7&#0E!, (6\*,E\*7; !6Q(6!6Q7!&7` +\*&7; !(87' ; 87' 6,!

!

JAO!! : Q7!6Q\*&; !%?6\*%' !() (\*@C@!6%!6Q7!F(' 7@\*,!'The Panel invites the a##0:2\$, 8'8. '/'\*4<-%:8'\$/'\*B:"\*3'  
application to its next meeting#!: Q\*,!%?6\*%' ![\*@C7!>Q%, 7' ! [ Q7' !6Q7!F(' 7@ (K&77, !6Q(6!6Q7!  
?&%?%, 7; !&7, 7 (&>Q!\*' )%@7, !, \*K' \*E>(' 6!76Q\*>(@\*, , +7, !6Q(6!Q()7!' %6!C77' !(; 7` + (67@G(; ; &7, , 7; !  
CG!6Q7!(??@>(' 6!' !6Q7!(??@>(6\*%' !E%&!76Q\*>(@ (??&%) (@! : Q7!\*' , , +7, !&(\*, 7; !CG!6Q7!F(' 7@ [ Q7' !  
>%' , \*; 7&\* K!6Q7!(??@>(6\*%' ! [ \*@C7!' %6\*E\*7; !6%!6Q7!(??@>(' 6!' ! [ &\*6\*\* K!CG!6Q7!57>&76(&G^(@' K!  
[ \*6Q!6Q7!, +C8\* , , %' !; 7(; @' 7!( ' ; !; (67!%E!6Q7!' 7U6!8776\* K#: Q7!&7)\*, 7; !(??@>(6\*%' !, Q%+@, !C7!  
, +C8\*667; !6%!6Q7!57>&76(&G!E%&!&7)\*7 [ !CG!6Q7!F(' 7@878C7&, !6Q(6!&7)\*7 [ 7; !6Q7!%&\*K\*' (@  
(??@>(6\*%' #10E!6Q7!(??@>(' 6!>Q%%, 7, !6%!&7, +C8\*6!%' !(' %6Q7&!6%?\*>^!(' ! (??@>(6\*%' !, Q%+@, !C7!  
, +C8\*667; !6%!6Q7!1\*) TS\$!" !6Q7!E\*&, 6!" , 6(>7!( ' ; !, Q%+@, !C7!&7(67; !(!' 7 [ ! (??@>(6\*%' #

JAO!! Z Q7&7!(??@>(' 6, !&7` +\*&7!( ' !+&K7' 6!; 7>\*, %' !%' !6Q7\*&!(??@>(6\*%' ^!(, ??>\*(@&7` +7, 6!E%&!E(, 6!  
6&(>Y!(??&%) (@, Q%+@, !C7!@6; K7; ! [ \*6Q!6Q7!57>&76(&G#IV(, 6!6&(>Y!" )%@7, !6Q7!&7)\*7 [ !?&%>7, , !  
!6Q7!\$%' )7' 7&!E%&!; 7>\*, %' #!  
: Q7!F(' 7@&7, 7&)7, !6Q7!&\*KQ6!6%!; 7@G!E(, 6!6&(>Y7; !(??@>(6\*%' , !6%!6Q7!' 7U6!(??@>(6\*%' !>G>@^!  
, Q%+@, !6Q7!\$%' )7' 7&!; 778!6Q\*, !' 7>7, , (&G#!

JAR!! F@7(, 7!' %67!6Q(6!E(, 6!6&(>Y\*\* K!, Q%+@, !%' @!C7!&7` +7, 67; !\* !7U>7?6\*%' (@>\*&>+8, 6(' >7, #!  
T7, 7 (&>Q7&, !, Q%+@, !(@% [ !, +EE\*>7' 6!6\*87!\*' !6Q7!@(' ' \* K!%E!6Q7\*&!&7, 7 (&>Q!E%&!>%8?@76\*\* K!6Q7!  
76Q\*>(@ (??&%) (@?&%>7, , ^!" >@; \*\* K^!E! 7>7, , (&G^!&7)\*, %' , !6%!6Q7!(??@>(6\*%' !%&!&7, +C8\* , , %' !  
6%!6Q7!F(' 7@!

OA!! 211 "74273"!6V!Y"!2<<K\*3271!2!2!<27"K!5""I\*7L!

OE!6Q7!(??@>(6\*%' !Q(, !C77' !

!

RA

!

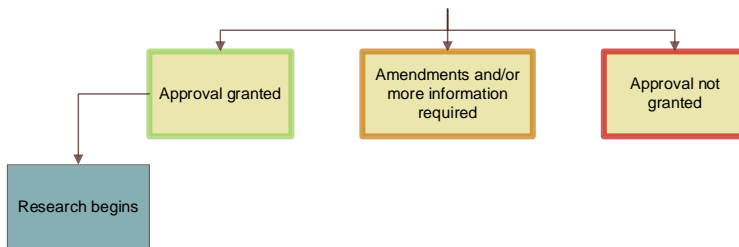
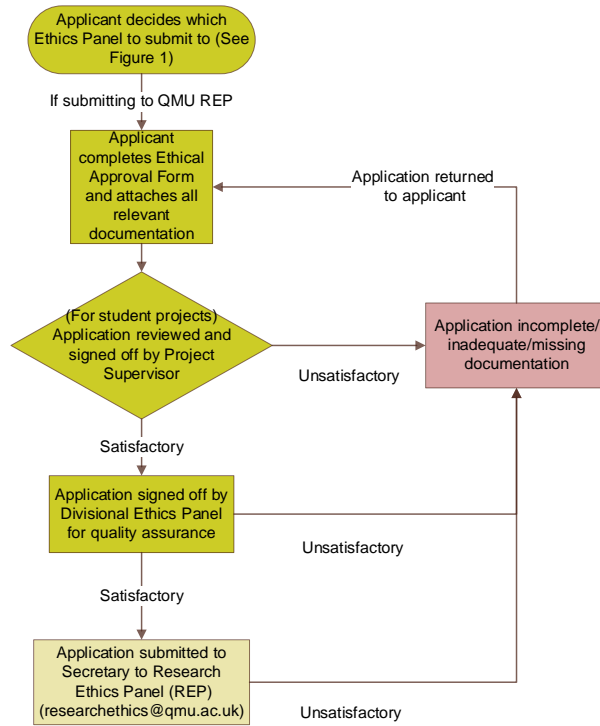
RAO!!



2??\$%1' \_!: !

F&%>7,,IE%&! . C6(\*' \*' KIS6Q\*>(@. ?\*' \*%' !(6!\dD2[ \*; 7!T7,7(&>Q!S6Q\*>,!F(' 7@7)7@ !K+\*; (' >7!%' !  
; 7>\*; \*' K! [ Q\*>Q!>%88\*6677!-\*' 67&' (@%&!7U67&' (@!,Q%+@,!K&(' 6!(??&%)(@\*,!()(\*@C@7!E&%8!  
&7,7(&>Q76Q\*>, \_`8+#(>#+Y!

!  
!



Submit Notification

!

2??\$%1'\_!8!

B\$#\$(-N>!'&>'N#!<(%\$)B\$. '!(%1!5\$. =-\$-#>'?!'

B\$. '&!

:%!7' , +&7!6Q(6!6Q7!&7,7(&>Q!>%'; +>67; !\* !6Q7!D' \*)7&, \*6G!>%8?@7, ![\*6Q!(??&%?&\* (67!76Q\*>(@,6(' ; (& ; ,!  
( ' ; !6%!8 (Y7!&7>%887' ; (6\*' , !6%!6Q7!T7,7(&>Q!56&(67KG!(,!,76!%+6!C7@[ #!

: Q7!F(' 7@[ \*@Q()7!; 7@7K(67; !(+6Q%&\*6G!6%R!

(4 ; 767&8\*' 7!6Q7!76Q\*>(@?&%?&\*76G!%E!, +>Q!&7,7(&>Q!??&%]7>6,!(,!(&7!&7E7&&7; !6%!\*6a!  
C4 ?&%)\*; 7!(; )\*>7!6%!&7,7(&>Q7&,!( ' ; !, +?7&)\*, %&, !%' !6Q7!76Q\*>(@?&%?&\*76G!%E!6Q7\*!&7,7(&>Qa!  
>4 &7)\*7[ !%' !(!&7K+@(&!C(, \*, !6Q7!D' \*) !

!

5\$. =-\$-#>'?!'

3, %^\$%\$-! e%8\*\* 77!%E!6Q7!T7,7(&>Q!56&(67KG!\$%88\*6677!

7, . '%(&\$1!

!

2??\$%1'\_!J!

"\_(. ?)\$!3, %#\$%&!V, -. !  
,

G. 8\*H'():''!''\$, '\*@\$%#0\*'. - '\$!2. , '\*, 8'-. /%b''l. 4'=:00', \*\*3'8. '\$3\$#8':8'-. /';. 4/'. =, '''843;6'

!

733'B\*/"'. , ', 4%<\*/!?'J\*/"'. , 'K&'\$, 3'3\$8\*!'\*?'KLMKKMNLNK&'

!

□!0!Q()7!&7(; !(' ; !+' ; 7&,6%%; !6Q7!?(&6\*>\*( ' 6!' E%&8 (6\*%' !, Q776!-( ; !)7&, \*%' !(' ; !; (67!%E!

!

"\_(. ?)\$!\*%+, -. (&!, %!/>\$&!+, -!<, &\$%&'!)<(-&'N'?(%&#!  
!  
G. 8\*H'():''''\$ , '\*@%#0\*' . -'\$ , ': , - . /%\$8: . , '') \*\*8' - . /# . 8\* , 8:\$0#\$/8:2:#\$, 8''6''I . 4'=:00' , \*\*3'8 . '\$3\$#8':8'  
- . /'; . 4/ . = , ''843;6'  
!  
733'B\*/'':. , ' , 4%<\*/!'\*?'J\*/'':. , 'K&'\$, 3'3\$8\*'!'\*?'KLMKKMNLNK&  
  
dG!' (87!' ,!5(8!56+; 7' 6!( ' ; !0!(8!( ' !+' ; 7&K&( ; +(67!, 6+; 7' 6!E&%8!6Q7!5>Q%#@%E!UUUUUUUUUU!(6!\ +77' !  
d (&K (&76!D' \*) 7& , \*6G!' !S; \*\* C+&KQ#! = , !? (&6!%E!8G! ; 7K&77!>%+& , 7^!0! (8!+' ; 7&6(Y\*\* K!(!&7, 7 (&>Q! ?&%) 7>6!  
E%&!8G!L%' %+&, !; \* , , 7&6(6\*%' #! : Q7!6\*6@7!%E!8G! ?&%) 7>6!' , R!UUUUUUUUUU!  
!  
: Q\* , !, 6+; G! [ \*@\*\* ) 7, 6\*K(67!P! , ! (C%+6!P! , !@6%Y\*\* K! \* 6!UUUUUUUUUU#  
!  
i+ '\$##0:2\$<0\*H': Q7!E\*' ; \* K, !%E!6Q7! ?&%) 7>6! [ \*@C7!+ , 7E+@P! ) (@ (C@7!C7>( + , 7!UUUUUUUUUU#j!  
!  
i+ '\$##0:2\$<0\*H': Q\* , !&7, 7 (&>Q! , !C7\*\* K!E+' ; 7; !CG!UUUUUUUUUU#j!  
!  
0! (8!@6%Y\*\* K!E%&!)%@+ ' 677&, !6%! ? (&6\* >? (67!\* !6Q7! ?&%) 7>6#! : Q7&7! (&7!' %!>&\*67&\* (!-7#K#! K7' ; 7&^! (K7^!%&!  
Q7 (Q4!E%&!C7\*\* K! \* >@; 7; !%&!7U>@; 7; ! !7) 7&G%' 7!' , ! [ 7@%87!6%!6(Y7! ? (&6#! !i+ '8) \*/\* '\$/\*; , 204":. , 'M'  
\*@204":. , '2/:8\*/:\$'8) \* , '8) \*""\*"). 403' < \*""8\$8\*36j!  
!  
!

!





6Q7!&7(,%',!C7Q\*\* ;!(!&7` +7,6!E%&!(!&7,6&\*>6\*\*' !,Q%+@ !C7!(, >7&6(' 7; !(' ; !(' !(!, , 7, , 87' 6!%E!  
6Q7!]+,6'E\*>(6\*\*' !E%&!(' G!&7,6&\*>6\*\*' ,!,Q%+@ !C7!(, , 7, , 7; ^!(@%' K![ \*6Q!( ' !7,6\*8(67!%E!6Q7\*&!  
?&(>6\*>(@7EE7>6, a!  
; +7!&7K(&;!,Q%+@ !C7!K\*)7' !6%!; \*EE7&7' 6!7EE7>6,!%E!&7,6&\*>6\*\*' ,!%' !; \*EE7&7' 6!(&7(,!%E!&7,7(&>Qa!  
[ Q7&7!&7,6&\*>6\*\*' ,!(&7!(K&77; ^!6Q7G!,Q%+@ !C7!?'&7>\*,7@G!; 7E\*\* 7; ^!'>@; \*\* K!,?7>\*E\*>(6\*\*' !%E!  
C7K\*\* ' \* K!( ' ; !7' ; !?%\*\* 6,!%E!6Q7!6\*87!,>(@!'\*\* )%@)7; !(' ; !6Q7!?'&>7; +&7!( ' ; !6\*87!,>(@7!E%&!  
&7(>Q\*\* K!(; 7>\*,%' !C76[ 77' !E+' ; 7&!( ' ; !&7,7(&>Q7&!%' !,+C8\*, ,%' !E%&!?+C@>(6\*\*' a!  
[ Q7&7!&7,6&\*>6\*\*' ,!(&7!(K&77; ^!6Q7!D' \*)7&, \*6G!,Q%+@ !?&%67>6!\*6,7@!(K(' ,6!6Q7!?'%, , \*C\*6G!%E!  
C7\*\* K!@7K(@G!&7,6&(' 7; !E%&8!; \*,>@%, \*\* K!&7, +@, ! [ Q\*>Q!%+KQ6!+&K7' 6@G!6%!C7!; \*,>@%, 7; !E%&!6Q7!  
?+C@>!K%%; a!  
[ Q7&7!&7,6&\*>6\*\*' ,!(&7!(K&77; ^!(!@)7@%E!E+' ; \*\* K![ Q\*>Q!&7E@>6,!6Q7\*&E\*\* (' >\*(@\*8?(>6!,Q%+@ !  
C7!' 7K%6\*(67; a!  
\*\* !6Q7!>(,7!%E!&7,7(&>Q!@(; \*\* K!6%!(!?'%,62K&(; +(67!( [ (&; ^!E%&! [ Q\*>Q!&7,6&\*>6\*\*' ,!(&7!(K&77; ^!  
6Q7!(&&(' K787' 6,!E%&!7U67&' (@7U(8\*\* (6\*\*' !%E!6Q7!6Q7,\*,!,Q%+@ !C7!(K&77; !\*\* !(; )(>7a!  
\dD![ \*@' %6!(>>7?6!( ' G!>%' 6&(>6! [ Q\*>Q!>%' 6(' ,!&7,6&\*>6\*\*' ,!%' !?+C@>(6\*\*' ! [ Q\*>Q!>(' ' %6!C7!  
]+,6'E\*7; !%' !76Q\*>(@K&%+' ; ,#!

!  
!  
!  
!  
!  
!  
!  
!  
!  
!  
!  
!

!

!





0A9! 2BB27L"5"7I!6V!"h25\*72I\*67/!6DI U\*I Y!!Y"!D7\*C"B/\*I\!!  
!  
B#!

QA9! \*7/IBD3I\*67/II 6!3274\*42I "/!V6B!"h25\*72I\*67/!

QA: ! L"7"B2K!

!

H#"#! \$( ' ; \* ; (67, !8+, 6!7' , +&7!6Q(6!6Q7G!(&7!( [ (&7!%E!6Q7!?!?+C@, Q7; !7U(8\*\* (6\*%' , !6\*876(C@7!E%&! C%6Q!E\*&, 6!( ' ; !, 7>% ' ; !; \*76!7U(8\*\* (6\*%' , !( ' ; !6Q7\*&!&7` +\*&787' 6!6%!(667' ; #!

!

!

Q(' ; !Q7@ !?7&,%' (d67>Q' %e%KG^!^\* >@; \*\* K!, 8 (&6 [ (6>Q7, ^!7&,%' (d%&K(' \*, 7&, ^!7@>6&% ' \*>! ; \*>6\*' (&\*7,!( ' ; !8%C\*7!7?Q%' 7,!\* ,!' %6!7?7&8\*667; #!=d8%C\*7!67@7?Q%' 7,!8+, 6!C7!, [ \*6>Q7; !%EE!

6Q7!7U(8\*\* (6\*' !&%%8#: Q7!+, 7!%E!7&%K&(88(C@7!>(e+@6%&,!( ' ; !6Q%, 7! [ \*6Q!67U6^!, G8C%e>! %&!K&(7Q>!>(C\*6\*7,!\* ,!' %6!7?7&8\*667; !+' @, ,!6Q7\*!+, 7!\*, !7U?67, ,@!(+6Q%&\*, 7; !CG!6Q7! 7U(8\*\* 7&,^!(,!, 6(67; !%' !6Q7!E&% ' 6!>%)7&!%E!6Q7!7U(8\*\* (6\*' !?(7&#!

!

H#<#9! \$( ' ; \*; (67,!(7!(!; )\*, 7; !6Q(6!6Q7G!, Q%+@ !>%8?767!6Q7!E&% ' 6!>%)7&-, 4!%E!7U(8\*\* (6\*' !( ' , [ 7&! C%%Y-, 4!C7E%&7!6Q7!, 6(&6!%E!6Q7!7U(8\*\* (6\*' #!\$( ' ; \*; (67,!, Q%+@ !7' , +&7!6Q(6!6Q7G!Q() 7! >%8?767; !( ' ; !, 7(@; !6Q7!E%e 2; % [ ' !7; K7!6%!8 (" 6(" !( ' %' G8\*6G#!k%+!8+, 6!(@!7' , +&7!6Q(6! G%+&! (87!\*, !' %6!, Q% [ ' !( ' G [ Q7&7!7@, 7!%' !6Q7!7U(8\*\* (6\*' !( ' , [ 7&!C%%Y#!

!

H#<#<! \$( ' ; \*; (67,!, Q%+@ !7' , +&7!6Q(6!6Q7G!Q() 7!C77' !\*, , +7; ! [ \*6Q!6Q7!>%&&7>6!` +7, 6\*' !?(7&!( ' ; ! ' %67!6Q7!; +&(6\*' !%E!6Q7!7U(8\*\* (6\*' #!

!

H#<#B! . ' >7!6Q7!7U(8\*\* (6\*' !Q(,!, 6(&67; ^!>%88+\* \*>(6\*' !%&!( ' G!%6Q7!&&7K+@(&!7&(>6\*>7!\*, !' %6! (@% [ 7; !C76 [ 77' !>( ' ; \*; (67, #!

!

H#<#H! V%&!6Q7!; +&(6\*' !%E!&7(; \*\* K!6\*87!- [ Q7&7!(@%>(67; !6Q\*, ! [ \*d' %&8 (@G!@, 6!H!8\*\* +67, 4^! >( ' ; \*; (67,!, Q%+@ !' %6!>%887' >7! [ &\*6\*\* K!\*\* !6Q7!( ' , [ 7&!C%%Y, ^!C+6!8(G!C7!7?7&8\*667; !6% [ &\*67!%' !6Q7!` +7, 6\*' !?(7&!-+ @, ,!6Q7G!(&7!&7` +\*&7; !6%!( ' , [ 7&!%' !6Q\*, !?(7&4!%&!%' !, >&(7! ?(7&#!: Q7!\*\*) \*K\*@(6%& [ \*d\*\* , 6&+>6!>( ' ; \*; (67, ! [ Q7' !6%!>%887' >7! [ &\*6\*\* K!\*\* !6Q7!( ' , [ 7&! C%%Y, #!

!

!

QAO! "74!6V!Y!"h25\*72I\*67!  
!  
H#B#! \$( ' ; \* ; (67,!. 0#&!  
+' 6\*@( ' , [ 7&C%%Y,!(&7!>%@

>4 0' E%&87;! 6Q(6! 7U(8\*\* (6\*'! &7K+@6\*'! ,! ,6\* (??@ (' ;! 6Q(6! >(' ;\* ; (67,! ,Q%+@! ' %6!  
>%88+' \*>(67![ \*6Q!%' 7!( ' %6Q7&#!  
; 4 (, Y7; !6%!>Q7>Y!6Q(6!6Q7\*!' (87!\* ,!' ! (6!@7(, 6!%' 7!( ' , [ 7&!C%%Ya!!  
74 \*\* ,6&+>67; !6%!7) (>+ (67!6Q7!&%%8^@ ( ) \*\* K!` +7,6\*' !?(?7&,^( ' , [ 7&!C%%Y,!( ' ;! ?7&,%' (@  
!!!!!!! C7@%' K\*\* K,!\* !6Q7!7U(8\*\* (6\*' !&%%8!  
E4 (, Y7; !6%!?&%>77; !(,!(!K&%+?!6%!6Q7!' 7(&7,6!6Q7!(, ,78C@!?'\* 6#!  
!  
H#I #<! : Q7!\*' ) \*K\*@(6%&![ \*@C7!6Q7!@ (, 6! ?7&, %' !6%!@ ( ) 7!6Q7!7U(8\*\* (6\*' !&%%8!( ' ; ! [ \*@&7>%& ; !6Q7!6\*87!  
%E!6Q7!E\*7!( @(&8!(>6\*) (6\*' ! ( ' ; !7) (>+ (6\*' !%E!6Q7!7U(8\*\* (6\*' !&%%8#!  
!  
H#I #B! 0' ) \*K\*@(6%&,[ \*@&76+&' !6%!6Q7!7U(8\*\* (6\*' !&%%8![ Q7' !(+6Q%&\* ,7; !CG!6Q7!57>+&\*6G!Z (& ; 7' ,!( ' ; !  
[ \*@&72( ; 8\*6!6Q7!>(' ; \* ; (67,#!  
!

>Q7(6\*\* K!\*' !(' G!E%&8#k%+!(&7!(@%!7U?7>67; !6%!&7)\*, 7!( ' ; !?&7?(&7!(, !G%+! [ %+@ !E%&!(!  
6&(; \*6\*%' (@7U(8!  
: Q7!7U(8! [ \*@C7!6\*872@8\*67; ^!C+6!&(6Q7&!6Q(' !Q()\*\* K^!E%&!7U(8?@7^6 [ %!%&!6Q&77!Q%+&, !C, !E%&!  
(!,6(' ; (& !7U(8^!,%87!7U(8,![ \*@Q()7!9B!Q%+&, !C76 [ 77' !6Q7!7U(8!?(?7&!C7\*\* K!8(; 7!















>\*8>+8,6(' >7,!% ' !6Q7\*&! [ %&YP?7&E%&8 (' >7#0E!6Q\*,!\*,!' %6!7U?@(' 7;!,+EE\*>7' 6G^!6Q7' !6Q7!,6+; 7' 6!8 (G!

5\*' >7!, +>Q!7)\*; 7' >7!; %7, !' %6!&7E7&!6%!6Q7!\*8?(>6!%E!6Q7!7)7' 6!  
%' !6Q7!, 6+; 7' 6^!E+&6Q7&!7)\*; 7' >7!8 (G!(@%!C7!&7` +\*&7; !E%&!  
S\$, !>@(\*87; !6%!Q()7!(EE7>67; !6Q7!, 6+; 7' 6!

\*@ 7,,! [ Q7&7! ?%, , \*C@7#!V%&! ?7&\*%; , !%E! \*@ 7,, !@ , 6\*\* K!8%&7!6Q(' !H!; (G, ^!6Q7!,6+; 7' 6!,Q%+@ , !, +C8\*6!(!  
87; \* > ( @ > 7&6\*E\* > (67!i, 77!C7@6 [ j#!

57@2>7&6\*E\* > (6\*\*' !-, Q%&6!\*@ 7,, !@ , 6\*\* K!''!2!H!>%', 7>+6\*)7!; (G, 4!8 (G!C7! (>>7?67; !6%!, +??%&6!(C, 7' >7!  
E&%8!@7>6+&7, ^!>@ ( , , 7, !(' ; !7U(8\*\* (6\*\*', #!06!\*, !' %6!' %&8 (@G! (>>7?67; !\*' !&7, ?

6Q7!, 7)7&\*6G!%E!6Q7!?!&%C@78!( ' ; !6Q7!@' K6Q!%E!6\*87!\*' )%@7; a!

(' G!, +??%&6\* K!; %>+87' 6(&G!7)\*; 7' >7a!

[ Q76Q7&!(@ [ %&Y!\*' !6Q7!, (87!?!7&\*%; !(??7(&, !6%!Q()7!C77' !7` +(@G!(EE7>67; a!

[ Q76Q7&!\*6!\* , !?%, , \*C@7!6%!K(+K7!6Q7!7EE7>6!%E!6Q7!7U67' + (6\* K!>\*8>+8, 6(' >7, !+?%' !  
(>(; 78\*>!7&E%&8(' >7a!

[ Q76Q7&!(>Q\*7)787' 6!, !>%', \*, 67' 6! [ \*6Q!?(, 6!?!7&E%&8(' >7a!

6Q7!6G?7!%E!(, , 7, , 87' 6!(EE7>67; ^!( ' ; !Q% [ !6Q7!, 6+; 7' 6!Q(; !6%!>%8?@767!6Q7! [ %&Y!-#7!  
; (67! [ Q7' ! [ %&Y!, 76!( ' ; !; 7(; @' 7!E%&! , +C8\* , , \*%' 4#!

: Q7!SU67' + (6\* K!\$\*>+8, 6(' >7, !F(' 7d

(EE7>67; !CG!7U67' + (6\* K!>\*8>+8, 6(' >7, ^!' %&! [ \*@6Q7G!(87' ; !8 (&Y, !E&%8!?!&7)\*%+, !G7 (&, !%E!, 6+; G^!%&!





!

!

J! 3, %'#1\$- (&', %!, +!V'&%\$##!&, !<- (N&'#\$!(&!&>\$!#&(M\$!, +(1. '&&'%M!(?!(??)'N(%&!&, !(!>\$ ()&>N(-\$!  
-\$)(&\$1!?- ,M-(. . \$!!

!

2??)'N(%&#!1\$N)(-'%M!(!1'#(=)'&P!

!

<#''!

=; 8\*,,\*' ,!&7K+@('6\*%' ,#!

!

<#9! Z Q7&7!(??@>(' 6,!8776!6Q7!(>(; 78\*>!&\*67&\*(^! ,6(E!%E!6Q7! =; 8\*,,\*' ,!; 7?(&687' 6! [ \*@; \*,>+, ,!

!

!

<#<! 0E!(; ; \*6\*' (d, +??%&6! ,!\*; 7' 6'E\*7; !(, !C7\*' K!@Y7@!6%!C7!&7` +&7; ^!6Q7! =; 8\*,,\*' ,!; +6%&![ \*@

!





!  
B#''! 0' !6Q%, 7!>(, 7, ! [ Q7&7!6Q7!>% ' ; +>6!&7?%&67; ! (, !K\*) \*\* K!&\*, 7!6%!>% ' >7&' !\*, !@' Y7; !6%! (!87' 6( @  
Q7( @Q!>% ' ; \*6\*%' ^!6Q7!>(, 7! [ \* @' %&8 ( @C7!&7E7&&7; !6%!6Q7!V\*6' 7, , !6%!F&(>6\*, 7!F (' 7 @ (, ! ( !Q7 ( @Q!  
8 (667&#!

!  
B#''9! Z Q7&7! (!8 (667&!Q (, !C77' !&7E7&&7; !6%! (!V\*6' 7, , !6%!F&(>6\*, 7!F (' 7 @!6Q7!F (' 7 @ [ \* @C7!>% ' , 6\*6+67; !  
(, !, 76!%+6!\*' !57>6\*%' !9! (C%) 7#!: Q7! ?&%>77; \*\* K, !%E!6Q7!F (' 7 @ [ \* @C7!K%) 7&' 7; !CG!6Q7!  
?&%>7; +&7, !, 76!%+6!\*' !57>6\*%' !! !%E!6Q\*, !?&%>7; +&7#!

!  
B#''<! X7K( @7?&7, 7' 6(6\*%' ! [ \* @' %6!C7! ?7&8\*667; ! (6!6Q7!F (' 7 @Q7 (&' K#!!!

!  
B#''B! : Q7!, 6 (' ; (& !%E! ?&%%E! (?? @7; !\*' !>% ' , \*; 7&\* K!6Q7!>(, 7! [ \* @C7!6Q7!>\*) \* @, 6 (' ; (& !%E! ?&%%E! \*7!6Q7!  
C( @ (' >7!%E! ?&%C (C \* @6\*7, #!

!  
B#''H! =!V\*6' 7, , !6%!F&(>6\*, 7!F (' 7 @Q (, !; 7 @7K (67; ! (+6Q%&\*6G!6%&7 (>Q!6Q7!E% @ [ \*\* K!; 7>\*, %' , ^\*7!6Q (6R!!

!  
\*4 : Q7!, 6+; 7' 6!>% ' 6\*\* +7, !%' !6Q7! ?&%K& (887!  
\*\*4 : Q7!, 6+; 7' 6!>% ' 6\*\* +7, !%' !6Q7! ?&%K& (887!C+6!\*, !> (+6\*%' 7; ^!87 (' \*\* K!6Q (6! \*E! (' G!  
E+&6Q7&!E\*6' 7, , !6%! ?& (>6\*, 7!\*, , +7, ! (&\*, 7!'' !6Q7!E% @ [ \*\* K!6 [ 7 @7!8%' 6Q, ^!6Q7!, 6+; 7' 6!  
[ \* @C7!; 7 ( @ [ \*6Q!E%&!C%6Q!8 (667&, !  
\*\*\*4 : Q7!, 6+; 7' 6!>% ' 6\*\* +7, !%' !6Q7! ?&%K& (887!, +C]7>6!6%!E+ @ \* @37' 6!%E!>7&6 (' !>% ' ; \*6\*%' , !  
(, !, ??>\*E\*7; !CG!6Q7!F (' 7 @ - [ Q\* >Q!>% ' ; \*6\*%' , !> (' !\*' > @; 7!6Q7!&7` +&787' 6!6%! (667' ; !  
, ??>\*E\*7; !>%+&, 7, !%&!>%+' , 7 @ \* K!E!; 7787; ! (??&%?&\*(674!  
)4 : Q7!, 6+; 7' 6!\*, !&7` +\*&7; !6%! , +, ?7' ; !, 6+; G!6%! ( @ [ !6\*87!E%&!87; \* > ( @\*' ) 7, 6\*K (6\*%' , !  
-E%&!>(, 7, ! [ Q7&7!+' (>>7?6(C @7!C7Q()) \*%+&!\*, !@' Y7; !6%! (!87' 6( @Q7 ( @Q!>% ' ; \*6\*%' 4!  
)4 : Q7!, 6+; 7' 6!\*, !&7` +\*&7; !6%! , +, ?7' ; !, 6+; G!E%&! (!?7&\*%; !+ ?!6%!6 [ 7 @7!8%' 6Q, !  
)4 : Q7!, 6+; 7' 6!\*, ! ( ; ) \* , 7; !6%!6& (' , E7&!6%! (' ! ( @7&' (6\*) 7! ?&%K& (887!  
)\*\*4 : Q7!, 6+; 7' 6!\*, ! (, Y7; !6%!7U\*6! [ \*6Q! (' ! ( @7&' (6\*) 7! ( [ (& ! [ Q\* >Q!; %7, !' %6! ?7&8\*6!6Q7!  
, 6+; 7' 6!6%!&7K\*, 67& [ \*6Q! (!&7K+ @ (6%&G!C%; G!  
)\*\*\*4 : Q7!, 6+; 7' 6!\*, !&7` +\*&7; !6%! [ \*6Q; & ( [ !

!  
B#''I! 5Q%+ @, !6Q7!, 6+; 7' 6! %6!>%8? @G! [ \*6Q! (' G!>% ' ; \*6\*%' , !, ??>\*E\*7; !+' ; 7&!57>6\*%' !B#''H-\*\*\*4! (C%) 7^! (!  
E+&6Q7&!V\*6' 7, , !6%!F&(>6\*, 7!F (' 7 @8 (G!C7!>% ' ) 7' 7; !\*887; \* (67 @!6%!&7)\*7 [ !6Q7!>(, 7! (' ; !\*8?%, 7!  
( ' G!E+&6Q7&!>% ' ; \*6\*%' , !%&!&7 (>Q! (!; \*E7&7' 6!; 7>\*, %' ! (, !6Q7!F (' 7 @; 778, !' 7>7, , (&G#!

!

!

H#<!

?&

,6+; 7' 6!( ' ; !6Q7! =>( ; 78\*>!1\* , (C@7 ; !56+; 7' 6!\$%2%&; \*\* (6%&!6%!7U?@&7! [ Q(6!7U6&(!, +??%&6!8 (G!  
C7!&7` +\*&7 ; !E&%8!C%6Q!6Q7!D' \*) 7&, \*6G!( ' ; P%&! ?@(>787' 6! ?&%) \*; 7&, #!56+; 7' 6, ! [ \*6Q! , +, ?7>67 ; !  
; \* , (C\* @6\*7, !( ' ; P%&! , ?7>\*E\*! @ (&' \*\* K! ; \*EE\* >+ @\*7, ! [ \* @C7!( ; ) \* , 7 ; !6% !>% ' 6 (>6!56+; 7' 6!57&)\* >7, !6%!  
(&&( ' K7!6%!8776!6Q7!1\* , (C\* @6G! = ; ) \* , %&!E%&!E+&6Q7&! ( , , 7 , , 87' 6!E%&!7U(8?@7!!CG!( ' !7U67&' (@  
(K7' >G!7#K#!T%G (@e(6\*%' (@0' , 6\*6+67!E%&!6Q7!J@' ; !%&! ( ' !S ; +>(6\*%' (@F, G>Q% @%K\* , 6#

!

H#B! Z O7&7!6Q7&7!\*, !; % +C6!(C%+6! [ O76Q7&!7EE7>6\*) 7!, +??%&6!>( ' !C7! ?&%) \*; 7 ; !CG!C%6Q!6Q7!D' \*) 7&, \*6G!  
( ' ; P%&!6Q7! ?@(>787' 6! ?&%) \*; 7&^!6Q7!8 (667&! [ \* @C7! ; \* , >+ , , 7 ; !CG!6Q7!F&%K& (887!\$%88\*6677!  
+ ' ; 7&!T7, 7&) 7 ; !J+ , \*\* 7 , , #! : Q7!F&%K& (887!\$%88\*6677!8 (G!&7E7&!6Q7!>( , 7!6%!6Q7!V\*6' 7 , , !6%!  
F& (>6\* , 7!F( ' 7@!)\* (!6Q7!D' \*) 7&, \*6G!57>&76 (&G#!

!

H#H! L7 (@Q!>% ' ; \*6\*%' , !8 (G! ; 7) 7@%? !6Q(6!(EE7>6!E\*6' 7 , , !6%! ?& (>6\* , 7#!5Q%&6!67&8!>% ' ; \*6\*%' , ! [ \* @C7!  
; 7 (@! [ \*6Q!CG!6Q7!F&%K& (887!X7( ; 7&!6Q&%+KQ!6Q7!' %&8 (@7U67' + (6\* K!>\* & >+8, 6( ' >7, !  
?&%>7 ; +&7, #!Z O7&7!( , 6+; 7' 6!Q( , !8\* , , 7 ; !?7&\*% ; , !%E! ?@(>787' 6! ; +7!6%! @Q7 (@Q^!6Q7!  
F&%K& (887!X7( ; 7&! [ \* @ ; \* , >+ , , !(!&7)\* , 7 ; !?&%K& (887!%E! , 6+; G! [ \*6Q!6Q7! , 6+; 7' 6!6%! (@@ [ !Q\*8!%&!  
Q7&!6%!>(6>Q!+?!% ' !8\* , , 7 ; ! [ %&Y#10' ! , %87!>( , 7 , ^!6!8 (G!C7!' 7>7 , , (&G!6%! ; 7E7&! , 6+; G!E%&!+?!6%! (!  
G7 (&#!

!

H#!!

!

H#''<! =!V\*6' 7,,!6%!F&(>6\*,7!F(' 7@[\*@' %6!' %%8(@6!C7!>%')7' 7;!+' 6\*4&7?%&6,!(&7!()(\*@C@7#!L%[7)7&!  
[Q7&7!(!,6+;7' 6!&7E+,7,!6%!(667' ;!( ' !%>>+?(6\*' (4Q7(4Q!(,,7,,87' 6!6Q7!F(' 748(G!?!&%>77;!  
%' !6Q7!C(,\*,!6Q(6!6Q7!,6+;7' 6!Q(,!&7E+,7;!6%!?!&%)\*;7!7)\*;7' >7!%E!6Q7\*!E\*6' 7,,!6%!?!&(>6\*,7#!

!

H#''B! :Q7!E%@%[\*' K!;7>\*,\*%' ,!(&7!?!%,,\*C@7R!

!

\*4 :Q7!,6+;7' 6!>%' 6\*\* +7,!%' !6Q7!?!&%K&(887!

\*\*4 :Q7!,6+;7' 6!>%' 6\*\* +7

!



I#I! :Q7!,6(' ; (& ; !%E!??&%%E! [ \*@C7!6Q7!>)\*@,6(' ; (& ; ^!#

7)\*; 7' >7!Q(, !C7>%87!() (\*@C@7!6Q(6!\*6! [ (, !' %6!&7(, %' (C@7!6%! ?&7, 7' 6!; +&\*' K!6Q7!%&\*K\*\* (@  
Q7(&\*' K#!

!

A#H! 0' !6Q7!7)7' 6!6Q(6!(!&72

!

A#<! : Q7!; 7>\*, %' !%E!6Q7!(??7(d?(' 7d, Q(@C7!E\* (d[ \*6Q\* !6Q7!D' \*)7&, \*6G#!

!

T! \*%1\$?\$%1\$%&!-\$^\$Z!

!

M#''!

6Q7\*&!>(, 7!CG!( ' !' ; 7?7' ; 7' 6!7&, %' !6Q7!5>%66\*, Q!F+C@>!57&)\*>7,!. 8C+; , 8(' !i5F5. j#!

!

M#9! : Q7!

!

: SA!V\*I 7"///! 6!/ID4\!!

!

V'&%\$##!&, !/&O1P!<, )'NP!(%1!<-, N\$10-\$!

!

\*%&-, 1ON&', %!

!

06!\*, !7U?7>67; !6Q(6!(@, 6+; 7' 6, !6Q(6!(&7!7' &%@7; !%' !(+ ' \*)7&, \*6G!>%+&, 7!(&7!E\*6!6%!+' ; 7&6(Y7!( ' ; !

!

!  
K\$^\$)J!-!V'&%\$##!&, !/&O1P!<(%\$)!  
!  
17?7' ; \*\* K!% ' !\* ' ; \* ) \* ; + ( @ > \* & > + 8 , 6 ( ' > 7 , ^!6Q\* , !?&%>7 ; + & 7 ! 8 ( G!C7! \* ' ) % Y 7 ; ! ( 6 ! ( ' G!%E!6Q7!6Q&77!@ ) 7 @ !  
(C%)7#!V%&! , 6 + ; 7 ' 6 , !% ' !e+& , \*\* K! ( ' ; !=@7 ; !L7 ( @Q!>%+& , 7 , ^!6Q7!V\*6' 7 , , !6%!F& (>6\* , 7!F%@>G! [ % + @ !  
%& ; \*\* ( & \* @G!C7! \* ' ) % Y 7 ; ! \* ' , 67 ( ; !%E!6Q7!V\*6' 7 , , !6%!56+ ; G!F&%>7 ; + & 7 # !  
!  
56+ ; 7 ' 6 , !8 ( G! ( ???7 ( @ ( K ( \* ' , 6 ! ( ! ; 7 > \* , \*% ' ! + ' ; 7 & !6Q7!V\*6' 7 , , !6%!56+ ; G!F&%>7 ; + & 7 # ! : Q7! ? & % > 7 ; + & 7 ! 6 % ! ; % !  
, % ! \* , ! , 7 6 ! % + 6 ! \* ' ! , 7 > 6 \* % ' ! B ! ( ' ; !6Q7! ( ???7 ( @ , Q ( @C7! ( ; ; & 7 , , 7 ; !6%!6Q7!D ' \* ) 7 & , \* 6 G!57 > & 7 6 ( & G # !  
!  
: ! < - ' % N ' ? ) \$ # ! ( % 1 ! / N , ? \$ ! , + ! < - , N \$ 1 0 - \$ !  
!  
" # " : Q \* , ! ? & % > 7 ; + & 7 ! \* , ! ' % 6 ! ( ' ! ( @ 7 & ' ( 6 \* ) 7 ! 6 % ! ; \* , > \* ? @ ' ( & G ! ( > 6 \* % ' ^ ! % & ! % 6 Q 7 & ! & 7 @ ) ( ' 6 ! D ' \* ) 7 & , \* 6 G !  
? & % > 7 ; + & 7 , ! % & ! ? % @ > \* 7 , ! , + > Q ! ( , ! 6 Q 7 ! T 7 K + @ ( 6 \* % ' , ! N % ) 7 & ' \* K ! 1 \* , > \* ? @ ' 7 ! % & ! = , , 7 , , 8 7 ' 6 !

!

,7&)\*>7,4#156+; 7' 6,! [ \*@C7!7' >%+&(K7; !6%, 77Y!, +??%&6! [ Q7&7!\*6!, !; 7787; !' 7>7,, (&G#

!

?&%>7; +&7, ^!\* >@; \*\* K!6Q(6!E%&!V\*6' 7,, !6%!56+; G!!

!

!

,77Y!Q7@!E&%8!56+; 7' 6!57&)\*>7,'!6Q7\*&!NF!%&!(' %6Q7&!7U67&' (@,7&)\*>7a!  
!,77Y!(;)\*>7!%' !8(667&,!%E!>'>7&' a!  
&7E@>6!%' !>'%' ; +>6a!  
,+C8\*6!( ' !SU67' +(6\*\* K!\$\*&+>8,6(' >7,!E%&8a!  
>%8?@767!&7` +\*&7;! (, , 7, , 87' 6, a!  
(667' ; !>@, , 7, a!  
,+C8\*6!(!; 7E7&&(4%E!,6+; G!(??@>(6\*\*' #!  
!

: Q7!(>6\*\*' !?@(' !, Q%+@ !>@ (67!( ' G!6(, Y, !E%&!6Q7!, 6+; 7' 6!( ' ; !, 76!( ' !7` +(66!>@ (6!  
6\*876(C@# #: Q7!F= : P5!, Q(4Y77?!" !(!>' E\* ; 7' 6\*(4E\*7!(!&7>%&; !-' %6!) 7&C(6\*84!E!6Q7!8776\*\* K!  
\*\* >@; \*\* K!; 76(\*@!%E!6Q7!&%?%, 7; !(>6\*\*' !?@(' !' ; !?&%) ; 7!(!>?G!%E!6Q\*, !6%!6Q7!, 6+; 7' 6#!: Q7!  
, 6+; 7' 6!, Q(4C7!&7` +\*&7; !6%!\* ; \*>(67![ Q76Q7!%&! ' %6!6Q7!(>6\*\*' !?@(' !, !(K&77; #!

!

<#B

8776\*\* K!\*" !( '!(K&77; !  
6\*87!??7&\*% ; '!' %&8(66!%E!' %6!8%&7!6Q(' !%' 7!8%' 6Q# #: Q7!Y7G!?'\* 6, !%E!6Q7!&7)\*7[ !8776\*\* K![ \*4  
C7!K\*)7' !" ! [ &\*6\*\* K!6%!6Q7!, 6+; 7' 6!' %&8(66!A!>(@' ; (&!; (G, !" !(; )(' >7!%E!6Q7!&7)\*7[ !8776\*\* K#!  
!

!

6+; G!Q()7!C77' !, \*K\* \*E>(' 66!&7; +>7; !( ' ; P%&!  
7@8\*\* (67; '!' %E+&6Q7&!(>6\*\*' !, Q(4C7!6(Y7' '!' + @, , !E+&6Q7&!>'>7&' ,!( &, 7!(6!(467&!; (67!" !  
[ Q\*>Q!>(, 7!(!X7)7@9!" 67&)7' 6\*\*' !8(G!C7!(??&%?&\*(67#!  
!  
0E!6Q7!X7)7@!"! 67&)7' 6\*\*' !, !+, +>>7, , E+dC7>(, 7!6Q7!, 6+; 7' 6!Q(, !' %6!(667' ; 7; !(!8776\*\* K!%&!  
E(\*@; !6%!(K&77!6Q7!(>6\*\*' !?@(' '!'&!%6Q7&[ \* , 7!E(\*@; !6%!7' K(K7!" !6Q7!&7>7; +&7!%&!6Q7!>(, 7!, !  
]+; K7; !6%!, 7&\*%+, !6%!C7!(; ; &7, , 7; !(6!X7)7@!"!X7)7@9!%E!6Q7!&7>7; +&7!8(G!C7!" )%Y7; #!

K\$^\$)8!-IV, -. )!'%&&\$-^\$%&&, %!Z'&>'!&>\$!(N(1\$. 'N!?'-, M-(. . \$!

!

<#H

X7)7@9!" !(18%&7!E%&8(4\*\* 67&)7' 6\*\*' !6%!C7!+, 7; ! [ Q7' !X7)7@!"!Q(, !' %6!C77' !, +>>7, , E+d%&!6Q7!  
' %&8(66!C7!" \*6(67; !CG!6Q7!F&%K&(887!X7(; 7&Y[ \*6Q!(K&7787' 6!%E!6Q7!&7@)(' 6!17(' #!06!\* , !  
&7>%887' ; 7; !6Q(6!6Q7!F&%K&(887!X7(; 7&!&7` +7, 6, !, +??%&6!(' ; P%&! (; )>7!E&%8!6Q7!L7( ; !%E!  
6Q7!56+; 7' 6!57&)\*>7,'!E!6Q\*, ! [ (, !' %6!, %+KQ6!; +&\* K!X7)7@!"#  
!!

<#I

=!X7)7@9!" 67&)7' 6\*\*' !' %&8(66!>%8?&\* , 7, !(!E%&8(48776\*\* K!(, !, 76!%+6!C7@% [ !(6?(&(K&(??Q!<#A#  
: Q7!, 6+; 7' 6! [ \*4C7!K\*)7' !&7(, %' (C@7! [ &667' !' %6\*>7!%E!6Q7!8776\*\* K!%6%K76Q7& [ \*6Q!" E%&8(6\*\*' !  
' !6Q7!&7?% , 7!%E!6Q7!8776\*\* K# #: Q7!, 6+; 7' 6!, Q%+@, !C7!&7` +7, 67; !6%!&7%); 7!( ' G! 7>7, , (&G!  
; 76(\*@; !" E%&8(6\*\*' !( ' ; !; %>+87' 6(6\*\*' !" >@; \*\* K!%E!(??&%?&\*(67!87; \*>(47)\*; 7' >7#!

!

<#A

: Q7!8776\*\* K!, Q%+@ !' %&8(66!>@; 7!6Q7!F&%K&(887!X7(; 7&-(, !8776\*\* K!\$Q(\*4!( ' ; !6Q7!  
, Q%+@ !C7!@8\*67; !6%!6Q%, 7!6Q(6!>(' !>' 6&\*C+67!6%!(!?'%, , \*C@7!, %@6\*\*' #!0) \*67; !(667' ; (' >7!8(G!  
\*\* >@; 7!(!&7?&7, 7' 6(6\*)7!E&%8!56+; 7' 6!57&)\*>7, !( ' ; P%&! =>%88%; (6\*\*' !57&)\*>7,'!%&!6Q7&!  
&7@)(' 6!, 7&)\*>7!%E!(??&%?&\*(67#!=! ' %67!6(Y7& [ \*4C7!(??%\* 67; !6%!(667' ; #!

!

<#M!

: Q7!, 6+; 7' 6!8(G!C7!(>%8?(' \*7; !(6!(!X7)7@9!8776\*\* K!CG!(E&\*7' ; !%&!, +??%&67&!(, !%+6@\* 7; !(6!  
?(&(K&(??Q!9#B!(C%)7#!

!

<#3

! : Q7!8776\*\* K![ \*4' %&8(66!&7>77; ! [ Q7&7!6Q7!, 6+; 7' ETQq1. 040011. 04197. 4(7!)-(%)088710595. 32841. 92rev

!





; 7, \*K' (67; !%EE\*>7&! [ \*6Q!(; )\*>7PE%@@% [ \*' K!>%', +@ (6\*%' ! [ \*6Q!(>(; 78\*>!, 6(EE!%&!, 6(EE!%E!56+; 7' 6!  
57&)\*>7, #!

!

!

\*6!,'! 7>7,, (&G!6%!(K&77!( ' !(>6\*%' !?@(' !!  
\*6!,'! 7>7,, (&G!6%!8 (\*\* 6(\*\* !%&!&7)\*, 7!(!7&7)\*%+, !(>6\*%' !?@(' !!  
  
%E!, 6+; G! !F&%K&(887!X7(; 7&!(??&%) ( @ [ \* @ C7!, % + KQ6!!  
?&%?&\* (67!6%!(K&77!( ' !\* 67&&+?6\*%' !E&%8!  
6Q7!??&%K&(887!-@7 () 7!%E!(C, 7' >74! !F&%K&(887!X7(; 7&!(??&%) ( @ [ \* @ C7!, % + KQ6!!  
!  
, 6+; \*7, !!  
  
6Q7!D' \*) 7&, \*6G!  
\*6!,'! 7>7,, (&G!6%!8 (Y7!(!&7E7&&( @6%!%6Q7&!D' \*) 7&, \*6G!??&%>7; +&7, ^!(, !(??&%?&\* (67!E%&!  
7U(8?@7!6Q7!T7K+@ (6\*%' , !N%) 7&' \*\* K!1\* , >\*?@\* 7!%&!\$%; 7!%E!\$%' ; +>6!



H#< : Q7&7!(&7!,%87!&7,6&>6\*' ,!%' ![ Q(6!6Q7!. 8C+; ,8(' !>(' !\*')7,6\*K(67#0E!6Q7!>%8?@('\* 6!,!

I#A

; \*EE7&7' 6!'' !5>%6@(' ; ^!S' K@(' ; ^!Z (@,!( ' ; !e%&6Q7&' !0&7@(' ; 4!,?' , %&^!%&!(' G!%6Q7&!&7@) (' 6!  
?7&,%' PK&%+?!%E!( ' G!, +, ?7' ,%' !

!

7 B\$&O-%!&, !/&O1P!

!

A#'' 0E!6Q7!E%&8 (@%+6>%87!%E!6Q7!V\*6' 7, ,!6%!56+; G!>(, 7!\*,!(?!?7&\*%; !%E!, +, ?7' ,%' P!'' 67&&+?6\*%' !%E!  
,6+; \*7,!-@()7!%E!(C,7' >74^!(!&76+&' !6%! ,6+; G!&7)\*7 [ ! [ \*@' %&8 (@G!C7!'' \*6\*(67; ! [ \*6Q\*'' !(B! [ 77Y!  
?7&\*%; !%E!6Q7!7U?7>67; !&76+&' !6%! ,6+; G#!Z Q7&7!(??&%?&\*(67^!,6+; 7' 6, ! [ \*@%' G!C7!??7&8\*667; !6%!  
&76+&' !E&%8!(?!?7&\*%; !%E!, +, ?7' ,%' P'' 67&&+?6\*%' !%E!,6+; \*7,!-@()7!%E!(C,7' >74^!(E67&!&7>7\*)'' K!  
,+\*6(C@!87; \*(&%&!%6Q7&!7)\*; 7' >7!,6(6\* K!6Q(6!6Q7!,6+; 7' 6! ,!E\*6!6%&76+&' !6%! ,6+; G#!

!

A#9 e%&8 (@G^!(!&76+&' !6%! ,6+; G!?'@(' ! [ \*@' 77; !6%!C7!(K&77; ! [ \*6Q!6Q7!,6+; 7' 6^!6Q7!(+6Q%&\*,7; !  
878C7&!%E!,6(EE!'' !6Q7!(>(; 78\*!?'&%K&(887!( ' ; !(?!&7?&7,7' 6(6\*)7!E&%8!56+; 7' 6!57&)\*>7, #: Q\*,!  
,0%+@ !C7!(K&77; ! [ \*6Q\*'' !%' 7!8%' 6Q!%E!6Q7!?'@(' ' 7; !&76+&' !6%! ,6+; G#!: Q7!?'@(' !,0%+@ !'' >@; 7!  
( ' G!&7@) (' 6!, +??%&6^!'' >@; \*' K^!E%&!7U(8?@^!,??>\*E>!,6+; G!, +??%&6^!56+; 7' 6!57&)\*>7,!, +??%&6!

!

,6+; 7' 6! [ \*@C7!&7` +\*&7; !6%!>%8?@! [ \*6Q!(@ (K&77; !(>6\*%' ,!' !%&; 7&!6%&!&78(\*' !(6!6Q7!D' \*)7&, \*6G#!

!

A#< V%@% [ \*' K!6Q7!&76+&' !6%! ,6+; G^!&7K+@(&!&7)\*7 [ !8776\*'' K,!,0%+@ !6(Y7!?'@(>7! !6Q7,7!,0%+@ !C7!  
\*'' \*6\*(67; !CG!6Q7!(+6Q%&\*,7; !878C7&!%E!,6(EE!'' !6Q7!(>(; 78\*!?'&%K&(887!( ' ; !,0%+@ !'' >@; 7!  
&7?&7,7' 6(6\*)7, !E&%8!6Q7!56+; 7' 6!57&)\*>7, ^!T7,\*; 7' >7!X^E7!'' !=>>%88%; (6\*%' !%&!%6Q7&!,7&)\*>7^!  
(,!(??&%?&\*(67#!06!'' ,!' 67' ; 7; !6Q(6!6Q7!' 77; !E%&!&7)\*7 [ !8776\*'' K, !8(G!>7(C,7!(E67&!( ' !(K&77; !

!

,6+; G#!

!

5\$1'N(Q)W, -!, &>\$-W\$^'1\$%N\$!

!

A#B

!



: TA!





<2BI!2!<6K\*3\!274!<B\*73\* <K" /!

!

: A9! L\$%\$- )!?, ^'#', %!+, -(##\$##. \$%&! (%1!(Z(-1#!!

!!

"#! : Q7!(+6Q%&\*6G!E%&! (??&%)\*\* K! ?&%K&(887,!( ' ; !K&( ' 6\*\* K!( [ (& ; !&7,6,![ \*6Q!6Q7!57' (67!%E!\+77' !  
d (&K(&76!D' \*)7&,\*6G#!57' (67!\* ,!(@,%!&7,?%' ,\*C@!E%&!8 (\*\* 6(\*\* \*\* K!6Q7!(>(; 78\*>! ,6(' ; (& ; ,!%E!  
6Q7,7!( [ (& ; #!. ' 7!%E!6Q7!8 (]!&!87>Q(' \* ,8, !E%&!6Q7!(, , +&(' >7!%E!(>(; 78\*>! ,6(' ; (& ; ,! ,!6Q7!  
(, , 7, , 87' 6!%E!, 6+; 7' 6, #: Q7, 7!&7K+@ (6\*%' ,!( ' ; !?%&>G! ?&%) \*; 7!6Q7!, 6&+>6+&7! [ \*6Q\*\* ! [ Q\*>Q!  
, 6+; 7' 6, !, Q (@C7!(, , 7, , 7; !( ' ; ! [ Q7&7CG!6Q7\*&!(, , 7, , 87' 6!>% ' 6!>C+67, !6%!6Q7!(>Q\*7)787' 6!%E!  
6Q7!( [ (& ; #!

!!

"#9!! : Q7, 7!&7K+@ (6\*%' ,!( ' ; !?%&>G!, Q (@K%)7& ! (@6(+KQ6! ?&%K&(887, ! [ Q\*>Q!@ (; !6%!(!D' \*)7&,\*6G!  
([ (& ; !7U>7?6! [ Q7&7!57' (67!, Q (@; 767&8\*\* 7!%6Q7& [ \*, 7#!!

!

"#<! Z\*6Q\*\* !6Q7!&7K+@ (6\*%' ,!( ' ; !?%&>G!@)7@, !% ' 7^!6 [ %^!6Q&77!( ' ; !E%+&!&7E7&!6%!6Q7!E+@26\*87!G7 (&!%E!  
+' ; 7&K&( ; + (67!, 6+; G#!5\$\V!@)7@, !&7E7&!6%!6Q7!(>(; 78\*>!@)7@%E!, 6+; G!-E%&!+' ; 7&K&( ; + (67!  
?&%K&(887, !6Q\*, !\*, !6G?\*> (@G!5\$\V!@)7@A!6%!" O!( ' ; !E%&! ?%, 6K&( ; + (67! ?&%K&(887, !5\$\V!@)7@  
""4#X7)7@, !% ' 7^!6 [ %^!6Q&77!( ' ; !E%+&! ; %%, &!8 (?! ; \*&7>6@G!% ' 6%!5\$\V!@)7@, ^!C+6!6Q7!E% @ [ \*\* K!  
[ \* @ (??@!6%!6Q7!8 (]!%&\*6G!%E!8%; +@7, R!

!

X7)7@%' 7!-E*&, 6!G7 (&!%E!+' ; 7&K&( ; + (67!, 6+; G4!	5\$\V!@)7@A!
X7)7@6 [ %-!, >% ' ; !G7 (&!%E!+' ; 7&K&( ; + (67!, 6+; G4!	5\$\V!@)7@M!
X7)7@6Q&77!-6Q*& ; !G7 (&!%E!+' ; 7&K&( ; + (67!, 6+; G4!	5\$\V!@)7@3!
X7)7@E%+&!-E%+&6Q!G7 (&!%E!+' ; 7&K&( ; + (67!, 6+; G4!	5\$\V!@)7@''O!
F%, 6K&( ; + (67!	5\$\V!@)7@''''!

!

!V%&!(!? (&626\*87!+' ; 7&K&( ; + (67!, 6+; 7' 6^!(!@)7@6G?\*> (@G!, ?(' , !8%&7!6Q(' !(, \*\* K@!(>(; 78\*>!  
G7 (&#!

!

"#B!! S(>Q!, 6+; 7' 6! , !7' &%@7 ; !% !( !?&%K&(887!( ' ; ! , !, +C]7>6!6%!6Q7!&7K+@ (6\*%' , !%E!6Q(6!  
K+@ (6\*%' ,!( ' ; !?%&>G#!!

!!

"#H!! 56+; 7' 6, ! (&7!, +C]7>6!6%!&7K\*, 6&(6\*%' !?7&% ; , ! [ Q\*>Q!, 6\*?+@ (67!6Q7!8\*\* \*8+8!( ' ; !8 (U\*8+8!

!





B#A!! \dD!, !>%88\*667; !6%!6Q7!?&\* >?\*@7, !%E!7` + (@6G!%E!%??%&6+ ' \*6G#!=, , 7, , 87' 6!&7K+@6\*%' , !(' ; !  
?&%>7; +&7, !(&7!; 7, \*K' 7; !6%!(>6\*)7@!?!&%8%67!7` + (@6G!%E!%??%&6+ ' \*6G^(' ; !6%!C7!>%8?@(' 6!  
[ \*6Q!(@&7@7)(' 6!7` + (@6G!@7K\*, @6\*%' #!!

!!

B#M!! \dD!, +C, >&\*C7, !6%!6Q7!?&\* >?\*@7!%E!(' %' G8%+, !8 (&Y\*\* K#!=' %' G8%+, !8 (&Y\*\* K!, Q(@C7!+, 7; !  
\*\* !(, , 7, , 87' 6, ! [ Q7&7)7&!?!&(>6\*>(C@7#!F&%?%, (@!E%&!7U78?6\*%' !E%&!8%; +@7, !6Q(6!>(' ' %6!C7!









RA9!!

<2BI!X!2U2B4!B"LDK2I\*67/!!

!

SA9!! 5(-[#MM-(1\$#!(%1!)\$^\$)#!, +!?\$-+, -. (%N\$!!!

!!

A#\*!! =,,7,,87' 6!;!?\*8(&\*G!(!8(667&!%E!(>( ; 78\*>!] +; K787' 6!( ' ; !6Q7!>%8?+6(6\*' ( @,6&+>6+&7! ,!  
; 7,\*K' 7; !6%!E(>@6(67!>%' ,\*,67' 6!] +; K787' 6, #!!!

!

: Q7IE+@&(' K7!%E!8 (&Y,!,Q%+@ !C7!+, 7; !\* !(>>%&; (' >7! [ \*6Q!6Q7!K&( ; 7!; 7,>&\*?6%&,!' !=???' ; \*U!S#!

!

A#9!!

%' 7!%E!7\*KQ6!K&( ; 7,!(, !E%@% [ , R!!

!

L-(1\$!	5(-[!	3, --\$#?, %1'%M!)\$^\$)!%!(%! Y, %, 0-#!1\$M-\$N)(##'+N(&', %!
---------	-------	--------------------------------------------------------------------

!

A#A OE!( ' !+ ' ; 7&K&( ; + (67!, +C]7>6! ,!( , , 7 , 7 ; !+ , \*' K!( !K&( ; 7!%' @G^!6Q7' !6Q7!E%@% [ \*' K!K&( ; 726%28 (&Y!  
>% ' )7& , \*%' ! , >Q787! , Q(@C7!+ , 7 ; !E%&!6Q7! ?+&?% , 7 , !%E!>%8?+6(6\*%' R!!

!!

N&( ; 7!!	=t!!	=!!	J!!	\$!!	1!!	S!!	V!!
d (&Y!!	MH!!	AH!	I H!!	HH!			

!

56+; 7' 6,!8 (G!6(Y7!>&7; \*6,!E&%8!6Q7!5\$\VI@)7@; \*&7>6@G!(C%)7!%&!; \*&7>6@G!C7@ [!,+C]7>6!6%!6Q7!  
K+\*; ('>7!,76!%+6!(C%)7!(;' ;!(,!,; 7E\* 7; !\* !&7@) (' 6!; %>+87' 6(6\*% ' #!

!  
: 7' !5\$\VI\$&7; \*6,!(&7!7` +\*) (@' 6!6%!E\*)7!S+&%?7 (' !\$&7; \*6,!-S\$: 54!6Q7&7E%&7!"90!!  
5\$\VI>&7; \*6,!7` +(4! 0!S\$: 5#!!

!  
M#9!! : Q7!>@, , \*E\*>(6\*%' !%E!6Q7!( [ (& !%E!6Q7!17K&77! [ \*6Q!L%' %+&,[ \*@C7!C(, 7; !%' !6Q7!8 (&Y,!  
%C6(\*' 7; !\* !5\$\VI@)7@3!-90g4!( ' ; !5\$\VI@)7@" 0!-M0g4#!!Z 7\*KQ67; !(KK&7K(67!,>%&7,[ \*@C7!  
&%+' ; 7; !6%!%' 7!; 7>\*8 (@?@>7#!: Q7!>@, , \*E\*>(6\*%' ! [ \*@C7!C(, 7; !+?'% !6Q7!()7&(K7!8 (&Y!  
%C6(\*' 7; !CG!>%8C\* \* K!6Q7! [ 7\*KQ67; !&7, +@,!%E!(@8%; +@,!,6+; \*7; !(6!5\$\VI@)7@!3!( ' ; !" 0#!  
=' G!8%; +@,!,+' ; 7&6(Y7' !C7@ [ !5\$\VI@)7@3!( ' ; !(' G!8%; +@,!,6(Y7' ! [ Q\*6!%' !(' !7U>Q(' K7!  
(&&(' K787' 6! [ \*@' %6!C7!>%+' 67; !6% [ (& ,!6Q7!L%' %+&,!>(@+@6\*%' #!

!  
Z Q7&7!(!,6+; 7' 6!Q(,!(>>+8+@67; !8%&7!6Q(' !"90!>&7; \*6,!6!5\$\VI@)7@" 0!(!8 (U\*8+8!%E!  
"90!>&7; \*6,! [ \*@C7!>%+' 67; !(6!5\$\VI@)7@" 0!







=>( ; 78\*>!6&(' ,>&\*?6,!(&7!\* ,,+7; !%' @' 7!E%@% [ \*\* K!J%(&; ,!%E!SU(8\*\* 7&,#!: Q7G!(&7!\* ,,+7; !%' ! ,7>+&7!?(?7&l6%!7U\*6\*\* K!,6+; 7' 6,#!

!!

,!6&(' ,>&\*?6!8776,!6Q7!&7` +\*&787' 6,!%E!6Q7!S+&%?7(' !1\*?@%8(!5+??@787' 6#!

!!

N+\*; (' >7!%' !S+&%?7(' !S&7; \*6!F%\*\* 6,!\*,!?'&%)\*; 7; !E%&!(@@,6+; 7' 6,!&7>7)\*\* K!6&(' ,>&\*?6,!\* !6Q7! (>%8?(' G\*\* K!N+\*; (' >7!e%67,#!!!!

!!!

<2BI!3!2//"/5"7! !B"LDK2! \*67/!!

!

: 0A9!!! I \$- . '%, ), MP!!

!! V%&!6Q7! ?+&?%, 7,!%E!6Q7, 7!&7K+@('6\*\*' ,!6Q7!E%@% [ \*\* K!; 7E\*\* \*6\*\*' ,!, Q(@@??@R!!

: 0A: !! 3, . ? , %\$%&!!!

=!>%8?%' 7' 6!\* ,!; 7E\*\* 7; !(!(' !\*\* ; \*)\* ; +(d?\*7>7!%E!( , , 7 , , 87' 6!E%&!7U(8?@7!(' !7U(8\*\* (6\*\*' !%&! (' !7, , (G#!5%87!8%; +@7, ! [ \*@Q() 7!%' 7!( , , 7 , , 87' 6!>%8?%' 7' 6!%' @#!. 6Q7&, !8 (G!Q() 7! 8+@\*?@7!>%8?%' 7' 6,#!

!!

: 0A8!! B\$(##\$##. \$%&!! !!

T7( , , 7 , , 87' 6!87(' ,!6Q7!%??%&6+ ' \*6G!6%!C7!&7( , , 7 , , 7; !\*\* !(' ! ( , , 7 , , 87' 6!>%8?%' 7' 6! [ Q\*>Q! Q( , !C77' !E(\*@7; #! : Q7!6\*8\*\* K!%E!6Q7!&7( , , 7 , , 87' 6!\* ,!(6!6Q7!; \* ,>76\*\*' !%E!6Q7!J%(&; !%E!

!



F&%K&(887!,?7>\*E>l&7K+@6\*' ,!8(G!>%)7&l6Q7!E%@% [ \*\* K!7?%' 6,R!!

!!

6Q7!&7` +\*&787' 6,!E%&!?(, , \* K!(!8%; +@7a!!

8%; +@7,! [ Q\*>Q!(&7!' %6!7@K\*C@7!E%&!>%'; %' 787' 6!

6Q7!&7` +\*&787' 6,!E%&!?&%K&7,, \*%' a!!

6Q7!>%'; \*6\*' ,!( ' ;!@8\*6,!6%!6Q7!?&%) \* ,%' !E%&!&7(, , 7, , 87' 6!%E!8%; +@7, a!!

6Q7!>%'; \*6\*' ,!( ' ;!@8\*6,!6%!6Q7!?&%) \* ,%' !E%&!&7?7(6\* K!(!@7)7@a!!

6Q7!>%'; \*6\*' ,!+ ' ; 7&! [ Q\*>Q!(!,6+; 7' 6!,Q(@C7!&7` +\*&7; !6%! [ \*6Q; & [ !E%&8!6Q7!

?&%K&(887#!

!

: RA9!! 2##\$##. \$%&! ,!(!. , 10)\$!!

!!

"I#"!! : %!?(, ,!( ' !+ ' ; 7&K&( ; +(67!8%; +@7^!(!,6+; 7' 6!8+,6!%C6(\* ! (6!@7(,6!B0g!)7&( @!( ' ; !(6!@7(,6!  
<0g!" !7(>Q!>%8?%' 7' 6!%E!(, , 7, , 87' 6!+' @7, , !%6Q7& [ \* , 7!, ?7>\*E\*7; !" !6Q7!?&%K&(887!  
; %>+87' 6!%&!8%; +@7!; 7, >&\*?6%&#!: %!?(, ,!(?%,6K&( ; +(67!8%; +@7^!(!,6+; 7' 6!8+,6!%C6(\* ! (6!  
@7(,6!H0g!)7&( @!( ' ; !(6!@7(,6!B0g!" !7(>Q!>%8?%' 7' 6!%E!(, , 7, , 87' 6!+' @7, , !%6Q7& [ \* , 7!

!

(+6Q%&\*6G!6%!8%; 7&(67!( ' ; !>% ' E\*&8!8 (&Y,!( ' ; !K&( ; 7, !E%&!7 (>Q!%E!6Q7!8%; +@, !E%&! [ Q\*>Q!\*6!\*, !  
&7, ?% ' , \*C@^!( ' ; ! ; 767&8\*\* 7!6Q7!E%&8!( ' ; !6\*8\*\* K!%E!( ' G!&7(, , 7, , 87' 6!%EE7&7; #!: Q7!; 7>\*, \*% ' !  
%E!6Q7!d!%; +@!J%(& ; !%E!SU(8\*\* 7&, !8 (G!C7!%) 7&6+&' 7; !CG!6Q7!F&%K&7, , \*% ' P= [ (& ; !J%(& ; !%E!  
SU(8\*\* 7&, !E%& [ \*\* K!>% ' , \* ; 7&(6\*% ' !%E!6Q7!E+@, 6+ ; 7' 6! ?&%E\*@#!

!!

"A#B# J%(& ; !%E!SU(8\*\* 7&, !8 (G!>% ' ; % ' 7!%' 7!E(\*@ ; !90!>&7; \*6!8%; +@! ?7&!@) 7@ (6!6Q7!E\*&, 6! (6678?6!  
E%&! , 6+ ; 7' 6, ! (6!@) 7@%' 7!( ' ; !@) 7@6 [ %!-5\$ \!@) 7@A!( ' ; !M!%E!( ' !+ ' ; 7&K&( ; + (67!  
?&%K&(887! ?&%)\* ; 7; !6Q(6! (!8\*\* \*8+8!%) 7&( @8 (&Y!%E!(6!@ (, 6!<Ag!Q(, !C77' !( >Q\*7) 7; !\*\* !6Q7!  
E(\*@ ; !8%; +@!( ' ; ! '%!\* ' ; \*)\* ; + (d>%8?%' 7' 6!%E!(, , 7, , 87' 6! [ \*6Q\*\* !6Q7!8%; +@!E(@ !C7@ [ !6Q7!  
8\*\* \*8+8!>%8?7' , (6\*% ' !@) 7@! : Q7!&7, +@! [ \*@, Q% [ ! (, !(>% ' ; % ' 7; !E(\*@% ' !6Q7! (> ( ; 78\*>!  
6&( ' , >&\*?6!( ' ; !6Q7!, 6+ ; 7' 6! [ \*@C7!K\*) 7' !>&7; \*6!E%&!6Q7!8%; +@!#56+ ; 7' 6, ! [ Q%!Q( ) 7!E(\*@ ; !  
8%&7!6Q( ' !90!>&7; \*6, !8+ , 6!+ ' ; 7&6(Y7!&7(, , 7, , 87' 6, !%E!( @E(\*@ ; !8%; +@, !\*\* !6Q7!E\*&, 6!  
\* ' , 6( ' >7#!. ' >7!&7(, , 7, , 87' 6!&7, +@, ! (&7!Y' % [ ' !>% ' ; % ' 787' 6!8 (G!, 6\* @C7! (?@?@ ; !6!%' 7!90!  
>&7; \*6!8%; +@! ?&%)\* ; 7; !6Q(6! (!8\*\* \*8+8!%) 7&( @8 (&Y!%E!(6!@ (, 6!<Ag!Q(, !C77' !( >Q\*7) 7; !\*\* !  
6Q7!E(\*@ ; !8%; +@!( ' ; ! '%!\* ' ; \*)\* ; + (d>%8?%' 7' 6!%E!(, , 7, , 87' 6! [ \*6Q\*\* !6Q7!8%; +@!E(@ !C7@ [ !  
6Q7!8\*\* \*8+8!>%8?7' , (6\*% ' !@) 7@ ( ' ; !6Q7!, 6+ ; 7' 6!Q(, !' %!E+&6Q7!E(\*@ ; !8%; +@, !% ' !6Q7\*&!  
?&%E\*@#!

!

F&%K&(887!, ?7>\*E>!&7K+@ (6\*% ' , !8 (G!7U78?6!, %87!8%; +@, !E%&8!7@K\*C\*@6G!E%&!>% ' ; % ' 787' 6#!  
!  
=>% ' ; % ' 7; !E(\*@ [ \*@% ' 6! (EE7>6!( ' G!, +C, 7` +7' 6!8%; +@! , 7@>6\*% ' , #!

!

!

!!

"A#M!!!! : Q7!%' @G!; 7>,\*%' ,!( )(\*@C@!6%!6Q7!J%(&; !%E!SU(8\*\* 7&,!' !?&%K&7,,!( ' ; !([ (& ; !,Q(@C7R!!

!!

\$%' 6\*\* +7! !? (,, 7; !( @ (,, 7,, 87' 6,!!  
T7` +\*&7; !6%!C7!&7(,, 7,, 7; !\* !6Q7!E(\*@; !8%; +@- ,4!C7E%&7!>% ' 6\*\* +\* K!!  
\$%' 6\*\* +7! !C+6!&7` +\*&7; !6%!C7!&7(,, 7,, 7; !\* !6Q7!E(\*@; P; 7E7&&7; !8%; +@- ,4!'' !' 7U6!  
(> ( ; 78\*>!G7 (&!!  
. EE7&7; !%??%&6+ ' \*6G!6%!&7?7(6!6Q7!7' 6\*&7!@)7@\* ' !' 7U6!(> ( ; 78\*>!G7 (&!C7E%&7!>% ' 6\*\* +\* K!!  
. EE7&7; !%??%&6+ ' \*6G!6%!C7!&7(,, 7,, 7; !\* !' 7U6!(> ( ; 78\*>!G7 (&!( ! (? (&62\*87!,6+; 7' 6!  
C7E%&7!>% ' 6\*\* +\* K!!  
\$%' 6\*\* +7!'' !? (&6!6\*87!&7K\*,6&(6\*\*' !-(??@7,!6%!? (&62\*87!,6+; 7' 6,!'% @G4!!  
e%!&7(,, 7,, 87' 6! (@ [ 7; ! !&7` +\*&7; !6%! [ \*6Q; &([ !E&%8!>%+&, 7!!  
17>,\*%' !; 7E7&&7; ! !%+6,6(' ; \*\* K!(,, 7,, 87' 6,!(,!( !E&,6!(6678?6!!  
17>,\*%' !; 7E7&&7; ! !%+6,6(' ; \*\* K!&7(,, 7,, 87' 6,!!  
F&%K&7,, !6%!?@(>787' 6!  
T7>%887' ; (6\*\*' !6%!57' (67!E%&!, ?7>\*E\*>!( [ (& ; ,!!

!!

"A#3 D' ; 7&K&( ; +(67!?!&%K&(887, !%E!, 6+; G!(&7!; 7, \*K' 7; !%' !E%+&!@)7@ ' !' %&8 (@G!>%&&7, ?%' ; \*\* K!!!  
[ \*6Q!5>%66\*, Q!\$&7; \*6!( ' ; !\+(@E\*>(6\*\*' ,!V&(87 [ %&Y!@)7@ !A'!M'!3!( ' ; !''O'! [ \*6Q!>% ' >7?6+( @(' ; !  
8 (67&\*(@?&%K&7,, \*%' !C7\*\* K!; 7, \*K' 7; !\* 6%!6Q7!, 6&+>6+&7!E&%8!@)7@6%!@)7@#!!: Q+, '^!6! ,!  
7U?7>67; !6Q(6!, 6+; 7' 6, ! [ \*@?&%K&7,, !E&%8!@)7@6%!@)7@(' ; !6Q7!, 6&+>6+&7!%E!6Q7!?!&%K&(887!  
(' ; !6Q7!6\*876(C@, !(&7!; 7)7@?7; !(>>%&; \*\* K@G#! = @Q%+KQ!6Q7!(C%) 7!&7K+@6\*\*' ,!8(G! (@% [ !(!  
E+@26\*87!, 6+; 7' 6!6%!, 6(G!'' !E+@26\*87!&7K\*, 6&(6\*\*' !(@7\*6! [ \*6Q%+6! (!>%8?@767; !@)7@6%E!, 6+; G'!6!  
8(G! %6!C7!?!%, , \*C@!6%!>% ' , 6&+>6!(!?&%K&(887!(&%+' ; !6Q7!6\*876(C@! )(\*@C@! [ Q\*>Q! ,!  
,6+; 7' 6, ! [ \*@C7!7U?7>67; !(' ; ! ( ; ) \* , 7; !C+6! %6!&7` +\*&7; !6%!>%8?@767!(!@)7@6%E!, 6+; G!C7E%&7!  
?&%K&7,, \*\* K!6%!6Q7!' 7U6!@)7@#!!

!!

"A#"O V+@26\*87!+' ; 7&K&( ; +(67!, 6+; 7' 6, !8(G! %6!' %&8 (@G!?!&%>77; !6%!@)7@6%E%+&!, 6+; G!+' @, , !6Q7G!!!!  
(&7!7@K\*C@!E%&!6Q7!( [ (& ; !%E!( ' ! . &; \*\* (&G!17K&77#SU>7?6\*\*' (@G'!(, 6+; 7' 6!8(G!C7!(C@!6%!  
?&%K&7,, !6%!@)7@6%E%+&!, 6+; G! [ Q7' !E(@\* K!, Q%&6!CG!%' @G!90!&7; \*6!?'\*\* 6, #!!

!

"A#" =!, 6+; 7' 6!8(G!>7(, 7!6%!C7!&7K\*, 67&7; !E%&!(!?'%, 6K&( ; +(67!( [ (& ; !\*E!6Q7GR!!

!!

- a) E(\*@6%!&7K\*, 67&!%' !( ' G!8%; +@'' !6 [ %!, +>>7, ,\*) 7!, 787, 67&, ! [ \*6Q%+6!?'&%&!(??&%) (@  
-+' @, , !7' &%@; !%' !( ; \* , 7&6(6\*\*' 4!!
- b) (&7!K&(' 67; !6Q7!( [ (& ; !%E!!FK\$7&6^FK1\*?^!d5>^!d=^!dJ=^!SU7>+6\*) 7!d(, 67&, !!&!dV=!!
- c) E(\*@6%!Q( )7!6Q7!; \* , 7&6(6\*\*' !?&%?%, (@(??&%)7; !(E67&!6 [ %!, +C8\* , , \*%' , !!
- d) (>>+8+@67!E(\*@, !, ?7>E\*7; !\* !&7K+@6\*\*' , !"A#"9!( ' ; !"A#"<!!
- e)

!

6 [ %!6Q7G!8 (G!C7!7&8\*667; !(E+&6Q7&!&7(, , 7, , 87' 6!(6678?6!\* !(8(U\*8+8!%E!%' 7!6Q\*&; !%E!  
6Q7!6(+KQ6!8%; +@7, !%' !(?!?&%K&(887#15Q%+@ !(!, 6+; 7' 6!C&7(>Q!6Q7, 7!&7(, , 7, , 87' 6!  
6Q&7, Q%@, !'6Q7G! [ \*@C7!&7` +\*&7; !6%! [ \*6Q; &([ !E&%8!6Q7!?!&%K&(887#!=!8(U\*8+8!%E!6 [ %!  
(6678?6, ! [ \*@C7!7&8\*667; !E&!6Q7!d (, 67&, !?&%)7>6P; \*, , 7&6(6\*%' #!

!!

"A#" < 0' ; \*)\* ; +(Q?%, 6K&( ; +(67!?!&%K&(887, ! [ \*6Q!(!' %' 2, 6(' ; (&; !, 6&+>6+&7!8 (G!; 7E\* 7!?!&%K&(887!  
, ?7>\*E\*>!&7K+@6\*%' , !+' ; 7&! [ Q\*>Q!(!, 6+; 7' 6!8 (G!C7!&7` +\*&7; !6%! [ \*6Q; &([ #: Q7, 7!&7K+@6\*%' , !  
, Q%+@ !C7!C&% ( ; @!\*" !@\* 7! [ \*6Q!6Q7!(C%)7!?!&\* >?@#F&%K&(887!, ?7>\*E\*>!&7K+@6\*%' , !; 7E\* 7; !6!  
8776!6Q7!&7` +\*&787' 6, !%E!F&%E7, , \*%' (@56(6+6%&G!( ; !T7K+@6%&G!J%; \*7, !, Q%+@ !C7!(?!?&%)7; !  
CG!6Q7!)(@; (6\*%' !? (' 7@!%&!6Q&%+KQ!6Q7!&7@7) (' 6!>%88\*6677#!!

!!

: TA9!! B\$(##\$##. \$%&! , +!(. , 10)\$!!!

!!

"M#"!! T7(, , 7, , 87' 6! , !?7&8\*667; !" !%&; 7&!6%!(@% [ !(!, 6+; 7' 6!6%!8 (Y7!K%%; !( ' !" \*6\*(@E(\*@&7#!!: Q\* , !  
(EE&; , !6Q7!, 6+; 7' 6!( ' !%??%&6+' \*6G!6%!; 78%' , 6&(67!6Q7!, 6(' ; (&; !&7` +\*&7; !6%!?( , !8%; +@7, !'  
( ' ; !+@\*8 (67@6!6%K(\*' !(' !([ (&; #!!=!, 6+; 7' 6! [ Q%!Q(, !?( , , 7; !(8%; +@7!(6!6Q7!E\*&, 6!%??%&6+' \*6G!  
, Q(@' %6!C7!7' 6\*6@7; !6%!(E+&6Q7&!( , , 7, , 87' 6!\*" !%&; 7&!6%!%C6(\*' !(!Q\*KQ7&!K&( ; 7#!

!!

"M#9!! : Q7!J%(&; !%E!SU(8\*\* 7&, !8 (G!(6!6, !; \* , >&76\*%' !( @% [ !( ' !+' ; 7&K&( ; +(67!, 6+; 7' 6!6%!C7!&72  
(, , 7, , 7; !" !+?16%!M0!>&7; \*6, !" !( ' G!%' 7!( > ( ; 78\*>!G7 (&#!!: Q7!J%(&; !%E!SU(8\*\* 7&, !8 (G!(6!6, !  
; \* , >&76\*%' !( @% [ !(?!?%, 6K&( ; +(67!, 6+; 7' 6!6%!C7!&72(, , 7, , 7; !" !+?16%!6 [ %!6Q\*&; , !%E!6Q7!6(+KQ6!  
8%; +@7, !%' !(?!?&%K&(887!(, !(!, 7>% ; !(6678?6!(' ; !%' 7!6Q\*&; !(, !(6Q\*&; !(6678?6#!

!!

"M#<!!!!: Q7!J%(&; !%E!SU(8\*\* 7&, !, Q(@; 7>\*; 7!%' !6Q7!E%&8!%E!6Q7!&7(, , 7, , 87' 6!-7#K# [ &\*667' !  
7U(8\*\* (6\*%' !)\* )(!)%>7!%&!(' ! ( ; ; \*6\*%' (@ ( , , \*K' 87' 64^!6(Y\*\* K!\*" 6%!( >>+' 6!6Q7!' (6+&7!%E!6Q7!  
E(\*@7; !8%; +@7!( ' ; !6Q7!' (6+&7!%E!6Q7!E(\*@&7#!: Q\* , !8 (G!; \*EE7&!E&%8!6Q7!E%&8 (6!%E!6Q7!E\*&, 6!  
(, , 7, , 87' 6!( ' ; !' 77; !' %6!C7!6Q7!, (87!E%&!(@, 6+; 7' 6, !?&%) \*; 7; !7` +\*6G!%E!7U?7&7' >7! , !  
8(\*\* 6(\*' 7; #!!: Q7!J%(&; !%E!SU(8\*\* 7&, !>(' !(@% [ !E%&!E+@%&!?(&6\*(@&7(, , 7, , 87' 6!%E!6Q7!  
>%8?%' 7' 6, ! (, !(?!?&%?&\*(67#T7(, , 7, , 87' 6!>(' !6(Y7!6Q7!E%&8!%E!(!&7 [ %&Y\*\* K!%&!(' 7 [ !  
(, , 7, , 87' 6!(, !; 767&8\*\* 7; !CG!6Q7!J%(&; !%E!SU(8\*\* 7&, #!!!

!!

"M#B!! e%&8 (@G!(!, 6+; 7' 6!8 (G! ' %6!C7!K\*)7' !8%&7!6Q(' !6Q&77!(6678?6, !(6!( ' G!8%; +@7#!!

!!

"M#H!! =!>(' ; \*; (67!E%&!&7(, , 7, , 87' 6! , !' %6!7' 6\*6@7; !6%!C7!&7(, , 7, , 7; !" !>%8?%' 7' 6, !6Q(6!(&7! ' %!  
@%' K7&!?(&6!%E!6Q7!?!&%K&(887#!=!J%(&; !%E!SU(8\*\* 7&, !8 (G!(6!6, !; \* , >&76\*%' !8 (Y7!, +>Q!  
, ?7>\*(@&&(' K787' 6, ! (, !\*m/T!310. 8-3(!' 356(G^ )8 (16(, 0. 04(, !)8)3,) 10(!) (>!0. 000(, !)8-1 (Qq-4)4, 10 [ ((6) 1

!

"M#A!! =!,6+; 7' 6! [ Q%!\* ,!&7(, , 7, , 7; !E%&!(!8%; +@!E(\*@&7!\*' !(' !+' ; 7&K&( ; +(67!8%; +@!^! [ Q7&7!6Q7&7!  
(&7!' %!>@!(&!7U67' + (6\*\* K!>\* &>+8, 6(' >7, ^!, Q(@C7!( [ (& ; 7; !' %!8%&7!6Q(' !B0g!' !? (, , \*' K!6Q7!  
&7(, , 7, , 87' 6#!=! ,6+; 7' 6! [ Q%!\* ,!&7(, , 7, , 7; !E%&!(!8%; +@!E(\*@&7!\*' !(!?%, 6K&( ; +(67!8%; +@!^!  
[ Q7&7!6Q7&7!( &7!' %!>@!(&!7U67' + (6\*\* K!>\* &>+8, 6(' >7, ^!, Q(@C7!( [ (& ; 7; !' %!8%&7!6Q(' !H0g!' !'  
? (, , \*' K!6Q7!&7(, , 7, , 87' 6#!

!!

"M#M!! =@&7(, , 7, , 87' 6!&7, +@, !, Q(@C7!C(, 7; !%' @!+?%' !?7&E%&8(' >7!\*' !&7(, , 7, , 87' 6, a!' %!8 (&Y, !

+ ' ; 7&K&( ; +(67!8%; +@!^(6!&7(, , 7, , 87' 6^!(! ,6+; 7' 6!8+, 6!(>Q\*7)7!(6!@7(, 6!<0g!'\* !7(>Q!  
&7(, , 7, , 7; !>%8?%' 7' 6!(' ; !(! [ 7\*KQ67; !())7&(K7!%E!(6!@7(, 6!B0g#; :%!? (, , !(!?%, 6K&( ; +(67!  
8%; +@!^(6!&7(, , 7, , 87' 6^!(! ,6+; 7' 6!8+, 6!(>Q\*7)7!(6!@7(, 6!B0g!'\* !7(>Q!&7(, , 7, , 7; !>%8?%' 7' 6!  
( ; !(! [ 7\*KQ67; !())7&(K7!%E!(6!@7(, 6!H0g#!

!

"M#3!! =!,6+; 7' 6! [ Q%!Q(, !C77' !(C, 7' 6!E%&8!(' ! (, , 7, , 87' 6^!%&! [ Q%!Q(, !?7&E%&87; !C( ; @! ; +7!6%!  
\*@ 7, , !%&!%6Q7&!>( +, 7^!, Q(@C7!( @ [ 7; !6%!6(Y7!6Q7!(, , 7, , 87' 6^!(' ; !\*6!, Q(@C7!6&7(67; ! (, , !(!  
E\*&, 6!(, , 7, , 87' 6^!, +C]7>6!6%!6Q7!&7(, %' !E%&! (C, 7' >7!%&!?%&?!?7&E%&8(' >7!C7\*\* K!( >>7?6(C@7!6%!  
6Q7!J% (& ; !%E!SU(8\*\* 7&, !%&!6Q7!SU67' + (6\*\* K!\$\*&>+8, 6(' >7, !F(' 7@!!

!!

: GA9!! 2##\$##. \$%&! , !#&O1\$%&#!Z'&>!(!1'#(=)'&P!(%1!, !#&O1\$%&#!Z>, #S!+-#&!)(%MO(M\$!#!%, &!  
"%M)'#>!!

!!

: GA: !! /&O1\$%&#!Z'&>!(!1'#(=)'&P!!

!!

"3#"#!!! 0E^!6Q&%+KQ! ; \* , (C\*6G^!(! ,6+; 7' 6!\* , !+' (C@7!6%!C7!(, , 7, , 7; !CG!6Q7! ?&7, >\*C7; !876Q%; !E%&!6Q7!  
8%; +@!^!&7(, %' (C@7!( ; ]+, 687' 6, !-(, ! (K&77; !CG!6Q7! =>( ; 78\*>11\* , (C@ ; !56+; 7' 6!\$%2%& ; \*\* (6%&!  
[ \*@C7! ; 76(\*@ ; ! [ \*6Q\*\* !(' !0' ; \*) ; + (@X7 (&' \*\* K!F@(' #!!!!

!!

"3#"#9!!

!

!!

!

: GA8!!

!!

=@, 6+; 7' 6, ! [ Q%, 7!E\*&, 6!@(' K+(K7!\* , !' %!6!S' K@, Q! [ \*@' %&8 (@C7! ?7&8\*667; !6%!, 7!@(' K+(K72

!

!

!

!

89A9!!

!!

!

!









F&%K&(887!X7(; 7&,!Q()7!; 7@7K(67; !(+6Q%&\*6G!E&%8!17(' ,^(' ; ![%&Y!\*' !?(&6' 7&,Q\*?![ \*6Q!  
L7(; ,!%E!1\*)\* ,%' ^!6%!%)7&,77!6Q7!8(' (K787' 6!%E!6Q7\*!?!?&%K&(887,#!



[ Q7&7!; \*, , 7&6(6\*%' ,!?'&&]7>6,!%&!>%+&, 7 [ %&Y!(&7!, +C, 6(' 6\*(@7@787' 6,!%E!6Q7!>+&&\*>+@ 8#!  
S)7&G!%??%&6+' \*6G!, Q%+@, !C7!6(Y7' !6%!&7\*\* E%&>7!6Q\*, !87, , (K7!CG!\*\* >%&?%&(6\*\* KI\*6!\*\* !?+C@, Q7; !  
8 (67&\*(@, +>Q!(, !F&%K&(887!%&!, >Q787!K+\*; 7, !(' ; !\*\* !6Q7!>(, 7!%E!?%, 6; %>6%&(@>(' ; \*; (67, !  
CG!6, !\*\* >@+, \*% !\*\* !6Q7!T7, 7 (&>Q!17K&77, !\$%; 7!%E!F&(>6\*>7P1%>6%&(@\$( ' ; \*; (67!L (' ; C%%Y, !  
-FQ1!( ' ; !F&%E7, , \*%' (@1%>6%&(674#!!

!!

9B#<#9!!

<2BI!"!2<<"74\*3"/!

!

c5D!D%1\$-M-(10(&\$!L-(1\$!4\$#N-'?&, -#!

!

2??-, ^\$1!=P!&>\$!D%'^\$-#&P!/\$%(&\$!, %!J9!g0%\$!898: !!

2??)'N(=)\$!&, !())!%\$Z!(%1!\$\_#&'%M!. , 10)\$#!=\$'%M!1\$)'^\$-\$1!+-, . !/\$?&\$\$. =\$-!898:!, %Z(-1#!

L-(1\$!2e!T9i !(%1!(=, ^\$!60&#&(%1'%M!?\$-+, -. (%N\$W\$\_N\$?&', %())P!(=)\$!

!



1\*,?@G,!@66@!%&! '%!(C\*6G!6%!(??&(\*,7!7)\*; 7' >7!( ' ; !,G' 6Q7,\*,7!>% ' >7?6,'Y' %[ @7; K7!( ' ; !6Q7%&G!!  
5Q%[,!@66@!%&! '%!&7E@7U\*)7!( [ (&7' 7,,!%E!)(@+7!)+; K787' 6,!(' ; !(,,+8?6\*' ,!78C7; ; 7; !' !6Q7!  
,+C]7>6!%&!; \*,>\*?@' 7!!

!

!

!

!

c5D!

L-(1\$!X!R9FRGAGi !L, , 1!?\$-+, -. (%N\$!-!?(##!!!

=&6\*>+@67,!(!K%%; !>&6\*>(4+' ; 7&,6(' ; \*\* K!(' ; !\*\* 67&?&76(6\*' !%E!6Q7!&7@7)(' 6!'' E%&8(6\*' ^!  
?&\*' >\*(46Q7%&7, ^!>% ' >7?6,!(' ; !?&\*' >\*@7, !?&7, 7' 67; !CG!6Q7!(, , 7, , 87' 6!  
=&6\*>+@67,!(!K%%; !>&6\*>(4+'



0' , +EE>\*7' 6!(??@>(6\*' !%E!, ?7>\*(@, 6!( ' ; P%&! ?&%E7, , \*%' ( @, Y\* @, ^!67>Q' ^ +7, !%&! ?& (>6\*>7, !(@K' 7; !  
[ \*6Q!6Q7!; \* , >\*?@' 7!!  
178%' , 6&(67, !\* , +EE>\*7' 6!(C\*@6G!6%!>%88+' \*>(67!Y' % [ @7; K7!- [ &\*667' ^!)7&C(@! ?& (>6\*>(@!) \* , +(@!  
178%' , 6&(67, !(!@8\*67; !>&\*6\*>(@ [ (&7' 7, , !%E!6Q7!, >%?7!( ' ; ! (??@>(6\*' !%E!; \* , >\*?@' (&G!( ' ; !  
\*\* 67&; \* , >\*?@' (&G!, >Q% @ (&, Q\*?!!  
50Q [ , !\* , +EE>\*7' 6!&7E@U\*)7!( [ (&7' 7, , !%E!) (@=7!]; +; K787' 6, !(' ; ! (, , +8?6\*%' , !78C%; \*7; !\* !6Q7!  
 , +C]7>6!!  
F (&6\* (@; 78%' , 6&(6\*' !%E!%&\*K\* ( @6G^!>7(6\*)\*6G!%&!\*' ' %) (6\*' !\* !6Q7!(??@>(6\*' !%E!Y' % [ @7; K7!( ' ; !  
P!%&! ?& (>6\*>7!!!  
1\* , ?@G, !@8\*67; !?%67' 6\* (@6%!+ ' ; 7&6(Y7!&7, 7 (&>Q!%&!C7!(!@7 ( ; \*\* K! ?& (>6\*6\*%' 7&! [ \*6Q\* ! ( ! , ?7>\*( @, 6!  
(&7(!  
5+C8\* , , \*%' P ( , , 7 , 87' 6!; %7, !' %6!8776!6Q7!, 6( ' ; (& ; , !%E!5\$ \ V!X7)7@''''!

L- (1\$!'!9FJGAGi !D%# (&#+(N&, -P!?\$-+, -. (%N\$!F!+(')!!!!

X\*66@7!%&! ' %!+ ' ; 7&, 6( ' ; \*\* K!( ' ; !\* 67&?&76(6\*' !%E!6Q7!&7@7) (' 6!'' E%&8 (6\*' ^! ?&\* ' >\*? (@6Q7%&\*7, ^!  
>% ' >7?6, !(' ; !>+&&7' 6!; \* , >\*?@' 7!; 7)7@%?87' 6, !  
X\*66@7!%&! ' %!+ ' ; 7&, 6( ' ; \*\* K!%E!6Q7!C&7( ; 6Q!( ' ; !; 7?6Q!%E!6Q7!; \* , >\*?@' 7!  
0' (>+&(67!(??&(\*, (@%E!, >Q% @ (&, Q\*?!( ' ; !7)\*; 7' >7^(' ; !, G' 6Q7, \* , 7!>% ' >7?6, ^Y' % [ @7; K7!( ' ; !  
6Q7%&G!!  
0' 7EE7>6\*)7!(??@>(6\*' !%E!, ?7>\*( @, 6!( ' ; P%&! ?&%E7, , \*%' ( @, Y\* @, ^!67>Q' ^ +7, !%&! ?& (>6\*>7, !(@K' 7; !

: GA!Y"2KI Y!274!/2V" I \!<6K\*3\!

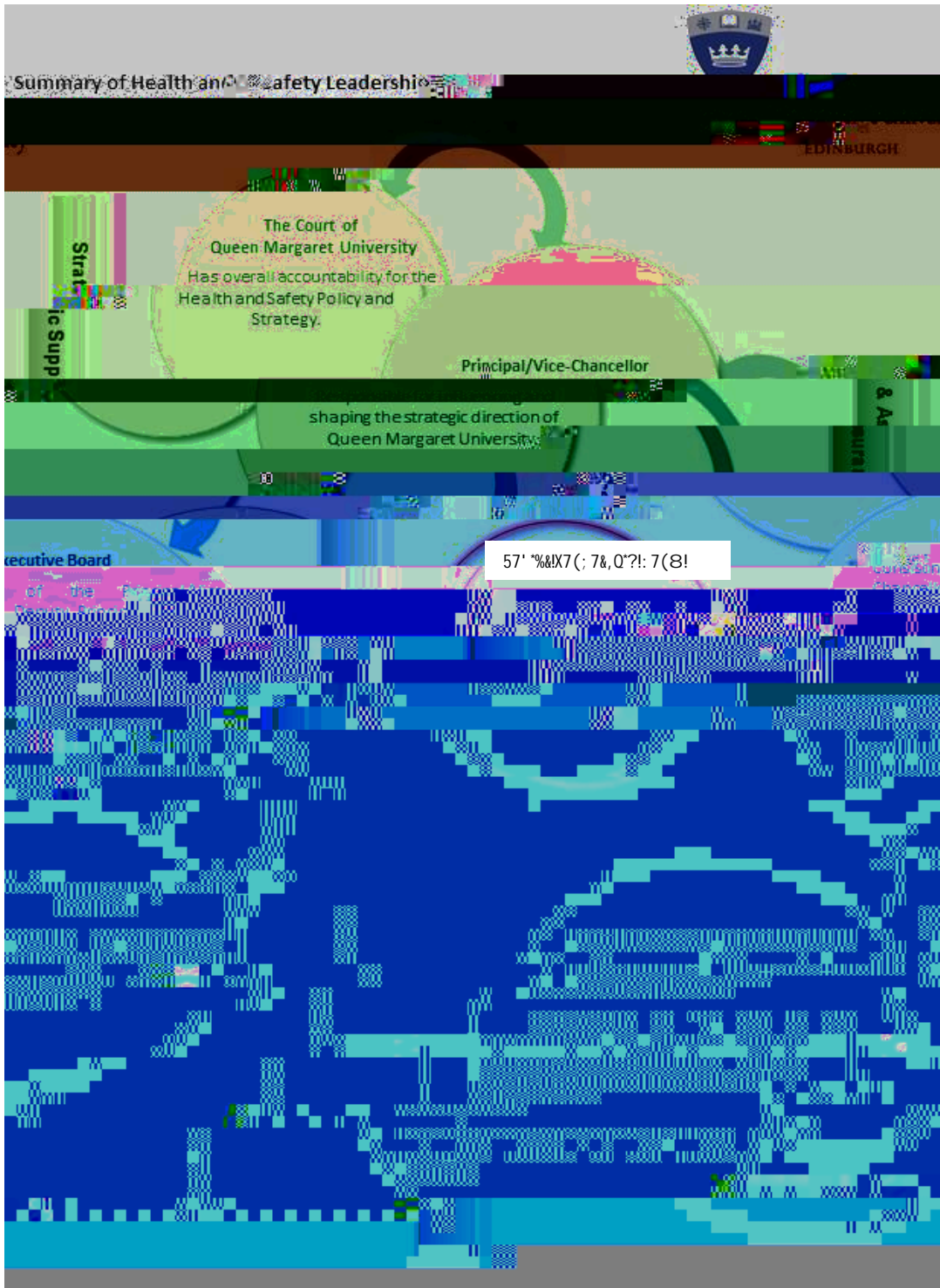
!

0E!G%+!Q()7!( ' G!` +7,6\*%' ,!%&!>% ' >7&' ,!&7@(6\*' K!6%!G%+&!Q7(0Q!( ' ;!, (E76G!%' !>(8?+,^!#@7(,7!>% ' 6(>6!(!  
878C7&!%E!6Q7!L7(0Q!( ' ;!5(E76G!:' 7(8!%' !Q,2,6(EE\_` 8+#(>#Y!

!

0A "a0()&P!2%()P#'#!  
!





!  
!  
!  
!

5:74/\*'N'DCT7'P\*8). 3. 0. ?; '0'"4%\$\$/; '. -%\$, \$?\*%\*, 8'8:\*/"\$, 3'8)\*:/'. 0\*';, ') \*\$08)'\$, 3'  
"\$-\$\*8; '0\*\$3\*/'):#'

!



SA8 <-'%N'?()!(%1!C'N\$F3>(%N\$)), -!

!

!





[ Q7' !?+&>Q(, '' K!7` +\*?87' 6^!>% ' , \*; 7&!6Q7!Q7(6Q!( ' ;!, (E76G!  
&7` +\*&787' 6,P\*8?@>(6\*%' ,!



7' , +&7!6Q(6!6Q7G^!6Q7\*&!67(8!( ' ; !, 6+; 7' 6, ^! [ Q7&7!(??&%?&\*(67^!Q()7!&7>7\*)7; !  
\*' ; +>6\*%' !6&(\*' \*' K!( ' ; !&7@7)( ' 6!6&(\*' \*' K!(??&%?&\*(67!



,7' \*%&!8(' (K7&!(' ; !L7(☉Q!(' ; !5(E76G!\$%88\*6677!(@%' K![ \*6Q!&7>%887' ; 7; !(>6\*' , #: Q7!  
; (6(!%C6(\*' 7; !CG!, +>Q!(+; \*6, ![\*@E%&8!6Q7!(' ' + (@&7?%&6!6%!6Q7!57' \*%&!X7(; 7&, Q\*?!: 7(8!  
( ' ; ! \$%+&6#!

!

: Q\*, !L7(☉Q!(' ; !5(E76G!F%@>G![ \*@C7!&7)\*7 [ 7; !7)7&G!6Q&77!G7(&, !CG!6Q7!L7(☉Q!(' ; !5(E76G!  
\$%88\*66776%!7' , +&7!6Q(6!6!>%' 6\*\* +7, !6%!8776!6Q7!' 77; , !%E!6Q7!D' \*)7&, \*6G!(' ; !6%!  
&7>%887' ; !(' G!>Q(' K7, !>%' , \*; 7&7; !' 7>7, , (&G#!

!

!

!

!

!

!

!

!

!

!

!

!

89A!\*7I "KK"3I D2K!<B6<"BI\

(# 56(EE!

!

=@ 0F! K7' 7&(67; !CG! ,6(EE! ; +&\* K! 6Q7! >%+&, 7! %E! 6Q7\*&! 78?@G87' 6! CG! 6Q7! D' \*)7&, \*6G! (' ; P%&! +, \*' K!

!

!  
JA D%^#\$-#&P!-\$#?, %#=')'&\$#!+, -!\*%&\$))\$N&O(!<- , ?\$-&P!  
!  
: Q7!D' \*)7&, \*6G! , Q( @%' %6!K\*)7!( ' G! [ (&&(' 6\*7, !%&! ( , , +87!@ (C\* @6G!E%&! (' G!+ , 7, !%E'!%&!; 7 (@' K, !' ' 156(EE!0F!  
%&!56+; 7' 6!0F! [ Q^>Q!Q(, !C77' !>&7(67; !(6!6Q7!D' \*)7&, \*6G!C+6!(, , \*K' 7; !6%!( ' G! , 6(EE!878C7&!%&! , 6+; 7' 6!  
+ ' ; 7&!6Q\* , !?%&>G#!  
!  
: Q7!&7@7) (' 6! , 6(EE!878C7&!%&! , 6+; 7' 6! , Q( @C7! , %@7@G!&7 , ?%' , \*C@7!E%&! (' G! ?&%67>6\*%' ' 1>%887&\*> (@ , (6\*%' !  
( ' ; !7U?@%\*6(6\*%' !%E!56(EE!0F!%&!56+; 7' 6!0F!&7 , ?7>6\*)7@G!( ' ; !8+ , 6!8(Y7!>@7 (&!6Q(6R!  
!  
6Q7!D' \*)7&, \*6G!Q(, !' %!% [ ' 7&, Q\*?!'\* 67&7, 6!\*' !6Q7!&7@7) (' 6!0Fa!( ' ; !!  
6Q7G!(&7! !  
!  
=, !' %67; !' !57>6\*%' !9!6Q7!D' \*)7&, \*6G! [ \*@&76(\*' !% [ ' 7&, Q\*?!'%E!0F!'\* !&7@6\*%' !6%!>%+&, 7!%&!67 (>Q\* K!  
8(67&\*(@!K7' 7&(67; !CG! , 6+; 7' 6, !(' ; ! , 6(EE#: Q7!D' \*)7&, \*6G! [ \*@ (@, %!&7K\* , 67&!\*6, !0F! [ Q7&7! (??&%?&\*(67!  
6Q&%+KQ!6&( ; 78 (&Y, !?(67' 6, !(' ; P%&!&7K\* , 67&7; !; 7, \*K' , !6%! ?&%67>6!\*6, !0F'!6&( ; \*\* K! (87, !(' ; !67 (>Q\* K!  
W!&7, 7 (&>Q!%C]7>6\*)7, ! [ Q7&7!6Q\* , !\* , !; 7787; !(??&%?&\*(67#: Q7!D' \*)7&, \*6G! [ \*@8%' \*6%&!6Q7!+ , 7!%E!6Q\* , !  
( ' ; !(' G!%6Q7&!0F!C7@%' K\* K!6%!6Q7!D' \*)7&, \*6G!( ' ; !&7, 7&)7, !6Q7!&\*KQ6!6%! ; 7E7' ; !\*6, !0F!'\* !>\*&>+8, 6(' >7, !  
[ Q7&7!6Q7\*!8\* , + , 7!%&! E\* K787' 6! [ %+@ '!%&! , !@Y7@G!6%!>&7(67!&7?+6(6\*%' @!E\*\* (' >\*(@%&!%6Q7&! ; (8(K7!  
6%!6Q7!D' \*)7&, \*6G#!  
!  
: Q7!D' \*)7&, \*6G! , Q( @>%' 6\*\* +7!6%! , 6%&7!( ' ; !8(Y7! ?+C@>@G! ) (\*@C@7! ; (6(!K7' 7&(67; !CG!&7, 7 (&>Q!'\* !@' 7!  
[ \*6Q!7)%@\*\* K! ?%&>G!%' !6Q\* , !\* , , +7#: Q7!D' \*)7&, \*6G! , Q( @(@%!>%' 6\*\* +7!6%!8(Y7!&7, 7 (&>Q! ?+C@>(6\*%' , !CG!  
, 6(EE! (>>7, , \*C@7!6%! (! [ \*; 7! (+; \*7' >7!6Q&%+KQ!+ , 7!%E!6Q7!'\* , 6\*6+6\*%' (@&7?%, \*6%&G!%E! ?+C@>(6\*%' , !(' ; !  
&7` +\*&7, !6Q(6! , 6(EE! ?@(>7!6Q7\*! ?+C@>(6\*%' , !%' !6Q\* , !&7?%, \*6%&G#!  
!  
0' !&7@6\*%' !6%!( ' G!K&( ' 6!%E!&\*KQ6, !@>7' >7, ! [ (&&(' 6\*7, !%&!+ ' ; 7&6(Y\*\* K, !, %+KQ6!CG!( ' G! ?7&, %' !' !&7@6\*%' !  
6%!0F!% [ ' 7; !CG!%&!@>7' >7; !6%!6Q7!D' \*)7&, \*6G'!6Q7, 7! , Q( @%' @G!C7!K&( ' 67; !  
(??&%)(@?&%>7; +&7, #e%!878C7&!%E! , 6(EE!%&! (' G! , 6+; 7' 6!\* , !(+6Q%&\* , 7; !6%!K\*)7!%&! ?+&?%&6!6%!K\*)7!( ' G!  
!



QA B\$?, -&%M!(%1!4'#N), #O-\$!, +!\*&\$)\$N&O()!<-, ?\$-&P!

!

=@?7&,%',!C%+';!CG!6Q\*,!/?%@>G!(&7!&7,?%' ,\*C@7!6%!6Q7!D'\*)7&,\*6G!E%&! ; \*,>@%,\*\* K!6%!6Q7\*&!L7(;!%E!  
1\*)\*,\*%'!(6!6Q7!%+6,76!%E!6Q7![%&Y!%&!(!,%%'!(,!6Q7G!C7>%87!( [ (&7!%E!\*6R!

!

(' G!/?%67' 6\*(@G!7U?@\*6(C@7!0F!(&\*,\*\* K!E&%8!6Q7\*&![%&Y!  
6Q7!%[ ' 7&,Q\*?!CG!(!6Q\*&!/?(&6G!%E!( ' G!0F!&7E7&&7; !6%!%&!+, 7; !E%&!6

!

VO-&>\$-!\*%+, -. (&', %!

!

/&O1\$%&! (%1!3, %&- (N&O!)!\*<!5 (&&\$-#!

K, -- ('%\$!` \$--W!X7K(=; )\*, 7&!( ' ; !1 (6 (!F&%67>6\*%' !. EE\*>7&R!@7&&9\_`8+#(>#+Y!

!

"\_&\$-%())P!+O%1\$1!-\$#\$ (-N>!(%1!M-(%&#; N, %&- (N&#

!

8: A!! K"2B7\*7L!B"/6DB3"!3"7I B"!EKB3H!B"LDK2I\*67/!!

!

!





B#"O! 06!\*!6Q7!&7,?%' ,\*C\*6G!%E!6Q7!% [ ' 7&,!%E!8 (\*' ,2?% [ 7&7; !7` +\*?87' 6!7#K#!@(?6%?,^!6%!Q()7!\*6!  
67,67; !E%&!7@7>6&\*>(4, (E76G^!( ' ; !6Q7\*&!+,7!\*,!>% ' ; \*6\*%' (4+?%' !6Q7!% [ ' 7&,bl(>>7?6(' >7!%E!  
&7,?%' ,\*C\*6G!E%&!; (8(K7!6%!D' \*)7&, \*6G!?&%?7&6G!>(+,7; !CG!6Q7\*&!7` +\*?87' 6#!!e%!E@%&!  
C%U7,!(&7!6%!C7!+,7; ^!%' 6!6Q7!; 7' B#"O!

8\* %&!C&7(>Q7,!%E!6Q7!X\*C&(&G!T7K+@(6\*' ,#!57&\*%+,!C&7(>Q7,![\*@C7!;7(6![\*6Q!+' ;7!  
6Q7!D' \*)7&,\*6G!T7K+@(6\*' ,!N%)7&' \*\* K!1\*,>\*?@' 7#!!!

A#<!!! = ' G!X T\$!+, 7&!E%+' ;!6%!C7!' !C&7(>Q!%E!X\*C&(&G!T7K+@(6\*' ,![\*@C7!(, Y7; '!' !6Q7!E\*&, 6!







A#l06!(@% [ ,!,6+; 7' 6,!6%!) \*7 [ !,?7>\*E\*>! ,7>6\*' ,!%E!&7>%&; \*\* K,!6%!&7\*\* E%&>7!6Q7\*&!+' ; 7&,6( ' ; \*\* K!%E!  
>%8?@7U!6Q7%&\*7,!(' ; !>% ' >7?6,#i''j!!

X7>6+&7!>( ?6+&7!>( ' !(@% !C7' 7E\*6!,6(EER!!

"#lX7>6+&7!>( ?6+&7!>( ' !C7!+, 7; !E%&! ,7E2&7E@>6\*' !(' ; !7) (@ (6\*' ^!Q7@? K!6Q7!@>6+&7&6%! ( ; (?6!  
?7; (K%KG!( ' ; P%&! \*8?&%) 7!>%88+' \*(>6\*' !, Y\*@,#i''9j!!

9#ld%) \*\* K!@>6+&7!>% 67' 6!%' @' 7!>( ' !%?7' 2+?8%&7!, ?(>7!E%&! (>6\*) 7!@ (&' \*\* K!; +&\* K!@) 7!, 7, , \*' , !%' !  
>(8?+, #!!

<#lX7>6+&7!>( ?6+&7!, %E6 [ (&7!%EE7&, !( !+, 7E+@, 76!%E!6%%@ !6%!7' (C@7!6Q7!@>6+&7&6%! ?&% ; +>7!8%&7!  
7' K(K\*\* K!( ' ; !; G' (8\*>!; \*K\*6(@&7, %+&>7, #!!

B#lX7>6+&7&, lK (\*\* !( >>7, , !6%!+, 7&!( ' (@6\*>, #! : Q\* ,!7' (C@, !6Q7!@>6+&7&6%!, 77! [ Q(6!( ' ; !Q% [ !%E67' !  
, 6+; 7' 6, !(&7!7' K(K\*\* K! [ \*6Q!>%+&, 7!>% ' 67' 6!6Q7&7CG!Q7@? K!6%!K(+K7!\* 67&7, 6!%&! (&7(, !%E!  
; 76(>Q87' 6#

!<6K\*3\!

9#9#<!X7>6+&7!>(76+&7!6(Y7,!7@(>7!%' @!E%&!7)7' 6,!>(67K%&\*,7;!\*! !6Q7!6\*876(C@7!(,!@>6+&7,##

9#9#B!=,!(!8\*\* \*8+8^!(+; \*%!( ' ; !,>&77' !(&7!>(76+&7; ^!&7>%&; \*\* K!)\*; 7%!\*,!%?6\*%' (@!!

<#''#B!17>\*,%' ,!8(; 7!CG!' ; \*)\*; +(4,6(EE!>% ' >7&' \*\* K!@7>6+&7!>( ?6+&7!,Q%+@ !C7!>@ (&6!>%88+' \* >(67;!>





R!B\$+-\$%N\$#!

Q66?,RPP [ [ [ #+>\*, (#(>#+YP7' P!T7,%&>7,P90''MP: 7>Q' %%KG27' Q(' >7; 2@ (&' \*\* K2,+&)7G!(>>7,,7;!''M!  
I+@!9090#!

!

()(\*  
)%#AA!??#BO<2!B9''#

iBj!5%%' K!5#f#=#!\$Q(' !X#f#W!\$Q77&,!\$#!900I #08?(>6!%E!)'; 7%&7>%&; 7;!@>6+&7,!(8%' K!,6+; 7' 6,#!  
0' !F&%>77; \*\* K,!%E!6Q7!9<&; !(' ' +(,@(>,\*@67!  
900I #5G; ' 7G!': Q7!D' \*)7&,\*6G!%E!5G; ' 7G#5G; ' 7G!''?#AM3 A3<#!

%KG!T7,7(&>Q!W!17)7@?87' 6!HM-'4!''?#''3 <A#)=(\*(C@!(6R!  
Q66?RPP [ [ [ #,?&' K7&@' Y#>%8P'' ; 7UP''O#''OOAP, ''B9<200323''9M2A!i=>>7,,7;!+@!'M!9090j#!

i!j!N&%',,7' !F#!/' !J&+KK7' !I#W!I!%>Q78, !Z#!90''9#56+; 7' 6,!(' ; !&7>%&; 7;!@>6+&7,R!,+&)7G!%' !  
>+&&7' 6!+,7!(' ; !; 78(' ; ,!E%&!Q\*KQ7&!7; +>(6\*' #!T7,7(&>Q!' !X7 (&' \*\* K!: 7>Q' %%KG!90!''?#''B< !''H<#!  
=)(\*(C@!(6R!Q66?RPP' 7 [ &7?%#(#@(>#+YPA''AP#!i=>>7,,7;!+@!'M!9090j#!

iAj!J&(' G!d#!Z%' K!T#!W!e7 [ 6%' !N#!-90''<4#!\$Q(&(>67\*m(6\*' !%E!>(6>Q2+?IC7Q()\*)&R!i=>>7,,\*' !%E!  
@>6+&7!>(76+&7!)'; 7%,!E%#@ [ \*\* K!,6+; 7' 6!(C,7' 677\*,8#S; +>(6\*' !5>7' >7,!<-<4!<BB <HM#!

iMj!5(+ ' ; 7&,!V#!W!L+66!0#!-90''H4#S' Q(' >' K!@(&K72>@,,!67 (>Q\*' KR!!=!,G,678 (6\*!>%8? (&,%' !%E!  
&\*>Q87; \*(!8 (67&\*(@#!L\*KQ7&!S; +>(6\*' !T7,7(&>Q!W!17)7@?87' 6!<B-I4!''9<< ''9HO!!

i3j!N&%7' !I#V#!\+\*K@7!J#!W!L7&&G!k#!-90''I4#SU(8\*\*' K!6Q7!+,7!%E!@>6+&7!>(76+&7!67>Q' %%KGR!  
08?@>(6\*' ,!E%&!67 (>Q\*' K!(' ; !@ (&' \*\* K#: Q7!\$ (' ; \*(' !!%+&' (@E%&!6Q7!5>Q%@(&,Q\*?!%E!: 7 (>Q\*' K!(' ; !  
X7 (&' \*\* K!A-'4!M!!

i''Oj!Z%'!f#!N%,?7&!d#!d>e7\*@!d#!F&7,6%' !N#!N&77' !1#!W!FQ\*@?,!T#!-900M4#Z7C2C(,7;!  
@>6+&7!67>Q' %%K\*7,R!J@&&' K!6Q7!C%+' ; (&\*7,!C76 [ 77' !E (>726%2E (>7!(' ; !; \*,6 (' >7!@7 (&' \*\* K#!=X: 2!'  
''I-94!M'' !3<#!

i'''j!f (&' (' !=-90''<4#56+; 7' 6!+,7!%E!&7>%&; 7;!@>6+&7,#!X%' ; %' !5>Q%%@%E!S>% %8\*,>!( ' ; !F%@6\* (&  
5>\*7' >7!X%' ; %' !Df#!

i''9j!/%%&&!F#5#/#!-90''<4#!=!Q7' %87' %%K\*>(@7U?@&&(6\*' !%E!E (>+@G!7U?7&\*7' >7,!+,\*\* K!@>6+&7!  
>(76+&7!,G,678,#!=&\*m%' (R!D' \*)7&,\*6G!%E!FQ%7' \*U#

!

!

!

!

8JA!<>4!274!<B6V"//\*672K!463I 6B2I "!"B"LDK2I \*67/!

!

: Q7, 7!&7K+@6\*' ,!>(' !C7!E%+' ;!\* !E+@%' !6Q7![N&\(;+\(67!5>Q%%@!](#) [ 7C, \*67#!

!

!

!

!



80A! B"L\*/IB2I\*67!!

!

3, %&\$%&#!

"#0 d(6&\*>+@6\*%' !  
 9#0 17>@(&(6\*%' !%E!>8\*\* (q>%' )\*>6\*%' ,!  
 <#0 T7>%K' \*6\*%' !%E!?'&\*%&!@7 (&' \*\* K!  
 B#0 T7K\*, 6&(6\*%' !  
 H#0 \$%' 6\*\* + (6\*%' !%E!&7K\*, 6&(6\*%' !  
 I#0 \$Q(' K7!%E!, 6+; G!?'&%K&(887!  
 A#0 \$Q(' K7!%E!, 6+; G!?'&%K&(887! !?'%, 6K&( ; + (67!, 6+; G!  
 M#0 =667' ; (' >7!  
 3#0 =, , %>\*(67!, 6+; 7' 6, !

!  
 : 52IB\*3DK2I\*67!  
 !

"#" d(6&\*>+@6\*%' !\* ,!6Q7!?'&%>7, , !%E!&7K\*, 67&\* K! [ \*6Q!6Q7!D' \*)7&, \*6G!(, !(!, 6+; 7' 6#!56+; 7' 6, !8+, 6!  
 &7K\*, 67&!E%&!7 (>Q! (> ; 78\*>!G7 (&!%E!6Q7\*&!?'&%K&(887!\*#7#!6Q7G!8+, 6!8 (6&\*>+@67!( ' ' + (@G#!  
 !

"#9 ! : %!C7!?'7&8\*667; !6%!8 (6&\*>+@67!%, 6+; 7' 6, !8+, 6!?'&% ; +>7R!  
 !

(4 , -'M'%)#!%E!>7&6\*E\*>(67, !? (, , 7; !(' ; !%' !6Q7!C(, \*, !%E! [ Q\*>Q\*( ; 8\* , , %' !6%!6Q7!D' \*)7&, \*6G!\*, !  
 C7\*\* K!, %+KQ6a!  
 !

C4 7)\*; 7' >7!%E!E\* (' >\*(q, +??%&6!7#K#!(!@667&!%E!( [ (& ; !!>% ' E\*&8 (6\*%' !E&%8!6Q7!56+; 7' 6, b! = [ (& ; !  
 =K7' >G!E%&!5>%6@(' ; ^!E&%8!(!X%>(qS; +>(6\*%' !=+6Q%&\*6G!%'&!E&%8!(!, ?%' , %&#!56+; 7' 6, !(&7!  
 7U?7>67; !6%!Q()7!(!&7(, %' (C@7!7U?7>6(6\*%' !%E!E\* (' >\*(q, +??%&6!6%!(@% [ !6Q78!6%!>%8?@767!

!

T7>&+\*687' 6!6Q7!&7@7) (' 6!5>Q%%@d (' (K7&! (' ; !6Q7!&7@7) (' 6!L7 (; !%E!1\*)\*, %' ! [ \*@&7)\*7 [ !6Q\*, !  
\*\* E%&8 (6\*' ! (' ; !> (&&G!%+6! (!&\*, Y! (, , 7, , 87' 6!+, \*\* K! (' !7, 6(C@, Q7; !>@, , \*E>(6\*' !6(Y7' !E%8!6Q7!  
L7(@Q! (' ; !\$(&7!F%&E7, , %' , !\$%+' >\*@! : Q7!E%@% [ \*\* K!>&\*67&\* (! [ \*@C7!>%' , \*; 7&7; R!!

!

F%&K&(887!&7` +\*&787' 6, !!  
F%67' 6\* (@&\*, Y!6%!%6Q7&! , 6+; 7' 6, ! (' ; !, 6(EE!!  
T7, ?%' , \*C@6\*7, !6%!78?@%G7&, ! (' ; !6Q7! ?+C@>!!  
: Q7!&\*KQ6, !%E!6Q7!\*' ; \*)\* ; +( @ (' ; !7' 6\*6@787' 6!6%!&7Q(C\*@6(6\*' !!

!

!

57&\*%+, !> (<, 7, !8(G!(@,%!C7!&7E7&&7; !6%!6Q7!17(' !E%&! (> (< ; 78\*>!>%' , \*; 7&(6\*' #!!

!

9#B

!

d5>!F7&,%' !\$7' 6&7; !F&(>6\*7!-?&&E7,,\*' (4?(6Q[ (G,!%' 4!  
FN1S!57>%'; (&G!-L%87!S>% '%8\*>,4!

!  
!

J=!-L%' ,4!1&(8(!(' ; !F7&E%&&8 (' >7P!: Q7(6&7!( ' ; !V\*8!56+; \*7,! ,6+; 7' 6,!8(G!(@%!&7` +\*&7!(!F/N!  
5>Q787!T7>%&; !E%&! [ %&Y\*' K![ \*6Q!\$Q\* @ &7' ^!; 7?7' ; \*\* K!%' !6Q7\*&! ,?7>\*( @, 8P; \* , ,7&6(6\*' !  
?&&]7>6,#!: Q7,7!(&7!' %&&8 (@G!(??@7; !E%&!; +&\*' K!6Q7!,7>%' ; !G7(&!%E!,6+; G!-E%&! ,?7>\*( @, 8,4!%&!  
6Q\*&; !G7(&!E%&!L%' %+&,!?&&]7>6,#!

!  
!

J5>!-L%' ,4!FQG, \*(4=>6\*)\*6G^!L7(4Q!W!Z7@C7\*' K!( ' ; !J5>!-L%' ,4!e+6&6\*' !,6+; 7' 6,!8(G!(@%!  
&7` +\*&7!(!F/N!5>Q787!T7>%&; !E%&! [ %&Y\*' K![ \*6Q!\$Q\* @ &7' ^!; 7?7' ; \*\* K!%' !6Q7\*&!?(>787' 6!

!

! %&!E%&!K(\*\* \*\* K!>&7; \*6!6Q(6!>(' !C7!6&(' ,E7&&7;!(!,!7\*6Q7&!K7' 7&(@%&! ,?7>\*E\*>!>&7; \*6!6%[ (& ,!(!  
?&%K&(887!%E!,6+; G#!  
<#I !! :Q7!(??@>(6\*%' ![\*@C7!(, ,7, ,7; !CG!6Q7!D' \*)7&,\*6G!\*' !67&8 ,!%E!\*6, R!!  
!  
(+6Q7' 6\*>6G!2

! ?%, , \*C@! [ (G, ^!( ' ; !\* !6Q7!E%@% [ \*\* K!%&; 7&!%E! ?&7E7&7' >7#!: Q7!, 6+; 7' 6!>( ' R!

!

?&%) \*; 7!7)\*; 7' >7!%E! ?(, , \*\* K!( ' !7` +\*) (@7' 6!8%; +@7!7@, 7 [ Q7&7a!  
+ ' ; 7&6(Y7!6Q7!' %&&8 (@8%; +@7!(, , 7,, 87' 6a!  
+ ' ; 7&6(Y7!( ' !%&( @7U(8\*\* (6\*%' a!!  
+ ' ; 7&6(Y7!( ' %6Q7&!E%&&8!%E!(, , 7,, 87' 6^!7#K#(!>Q(@7' K7!7,, (Ga!  
>%8?@767!( ' !(??&% )7; !@7 (&' \*\* K!>% ' 6&(>6a!  
, +C8\*6!(! ?%&6E%@% !%E'7)\*; 7' >7#!

!

<#'' I!!!! ZQ7&7!>&7; \*6! , !([ (& ; 7; ^!6!, Q%+@ !C7!E%&!7)\*; 7' >7!%E!6Q7!(>Q\*7) 787' 6!%E!@ (&' \*\* K!( &' \*\* K!E&%8!  
6Q7!7U?7&\*7' >7!( ' ; !' %6!E%&!6Q7!7U?7&\*7' >7!( @%' 7#!

!

<#'' A!!! 878C7&  
[ Q%! [ %+@ !' %&&8 (@G!(, , 7,, !?7&E%&&8 (' >7!%' !6Q(6!8%; +@7^!+' @7,, !6Q(6!878C7&!%E!, 6(EE!Q(, !  
?&7)\*%+, @G!(>67; !(, !( >; 78\*>! (; ) \* , %&!6%!6Q7!, 6+; 7' 6#!

!

<#'' M! : Q7!&7>%&; !%E!6Q7!(, , 7,, 87' 6!%E! ?&\*%&!@7 (&' \*\* K!, Q%+@ !C7!%??7' !6%!\*' ; 7?7' ; 7' 6!, >&+6\*\* G!CG!6Q7!

!

<#9I! J%(&; ,!%E!SU(8\*\* 7&,!,Q%+@ !C7!8(; 7!( [ (&7!E!( ' G!8 (&Y,PK&(; 7,!( &\* ,\*\* K!E&%8!@ (&' \*\* K!  
>% ' 6&(>6,#!

!

<#9A! N7' 7&( @>&7; \*6!8(G!C7!( [ (& 7; !6%! ,6+; 7' 6,![ Q%!>(' !; 78%' ,6&(67!@ (&' \*\* K!6Q&%+KQ!6Q7\*&!  
E+@\* @87' 6!%E!( !E%&8 (@&7?&7, 7' 6(6\*)7!&%@!' \* !\ dD^!, +>Q!(, !6Q(6!%E!(!, 6+; 7' 6!&7?&7, 7' 6(6\*)7^!%&!  
(,!(!?(&6\*>'(' 6!' !(!?&%K&(887!?'@(' ' \*\* K!>%88\*6677!%&!&7)\*7 [ !P!)(@; (6\*%' !7)7' 6#!

!

<#9M! 0' !%&; 7&!6%!K(\*\* !>&7; \*6!E%&!(!&7?&7, 7' 6(6\*)7!&%@!'!, 6+; 7' 6,!8+,6!(K&77!(!@ (&' \*\* K!>% ' 6&(>6! [ \*6Q!  
6Q7!&7@)(' 6!F&%K&(887!X7(; 7&!%&!L7(; !%E!1\*)\* ,%' !(' ; !>8?@767; !' !(>%&; (' >7! [ \*6Q!, 7>6\*%' !  
<#9"2<#9I!(C%)7#!

!

0A! B"L\*/!B2!\*67!

!

B#''! : Q7!8(U\*8+8!6\*87!E%&![ Q\*Q!(!, 6+; 7' 6!8(G!C7!&7K\*, 67&7; !%' !(' !+' ; 7&K&(; +(67!?&%K&(887!  
,Q(@C7!6 [ %!G7(&, !@' K7&!6Q(' !6Q7!?'@(' ' 7; !; +&(6\*%' !%E!6Q7!?'&%K&(887^!7U>7?6!'' !6Q7!>(; 7!%E!(!  
?&%K&(887!%E!%' 7!G7(&b, !?'@(' ' 7; !; +&(6\*%' ^! [ Q7' !6Q7!6%6(@8(U\*8+8!7?7\*%; !%E!&7K\*, 6&(6\*%' !  
,Q(@C7!6 [ %!G7(&, #!= ' G!7U67' ,%' , !6%!+' ; 7&K&(; +(67!(' ; !?%, 6K&(; +(67!?&%K&(887, ! [ \*@C7!  
,+C]7>6!6%!(??&%) (@CG!6Q7! =, , \* 6(' 6!57>&76(&G!-T7K\*, 6&G!(' ; !=>(; 78\*!>=; 8\*\* , 6&(6\*%' 4#!

!

B#9! : Q7!8\*\* \*8+8!(' ; !8(U\*8+8!&7K\*, 6&(6\*%' !?7&\*%; ,!E%&!, 6(' ; (& !6(+KQ6!?'%, 6K&(; +(67!  
?&%K&(887, !(&7!(, !E%&@ [ ,R!

!

<-, M-(. . \$!		5(_'. 0. !?&-' , 1!+, -!	5'%'. 0. !?&-' , 1!+, -!N, . ?)\$&', %!
d(, 67&, !	V: !	B!>(@7' ; (&!G7 (&, !	"!>(@7' ; (&!G7 (&!
	eV: !	A!>(@7' ; (&!G7 (&, !	9v!!>(@7' ; (&!G7 (&, !
FK1*?!	V: !	<!>(@7' ; (&!G7 (&, !	"!>(@7' ; (&!G7 (&!
	eV: !	H!>(@7' ; (&!G7 (&, !	9!>(@7' ; (&!G7 (&, !
FK\$7&6!	V: !	9!>(@7' ; (&!G7 (&, !	"!, 787, 67&!!
	eV: !	B!>(@7' ; (&!G7 (&, t!	"!>(@7' ; (&!G7 (&!!

!

t!V%&!7U(8?@7^!E!8%; +@7, !&+ ' !'' !5787, 67&9!%' @G!(' ; !, 6+; 7' 6!6(Y7, !%' 7!8%; +@7!(!G7 (&^!%&!E!  
8%; +@7, !&+ ' !'' !(@7&' (67!G7 (&, #!

!

L% [ 7)7&!6Q7!<-, +\$##', %Q)!FK1\*?, !8(G!6(Y7!C76 [ 77' !''9!(' ; !9B!8%' 6Q, !; 7?7' ; \*\* K!%' !6Q7!  
&7` +\*&787' 6, !%E!6Q7!?'&%K&(887#!: Q7&7E%&7!, +KK7, 67; !?7&\*%; , !(&7R!

!

<-, M-(. . \$!	5(_'. 0. !?&-' , 1!+, -!
	N, . ?)\$&', %!

!

B#<

RA!

!





1\*)\*,%' !%E!N%)7&' (' >7!( ' ; !\+(\@6G!S' Q(' >787' 6!6%!6Q7!7EE7>6!6Q(6!6Q7!>' ; \*6\*' ,!( ' ; !  
E(>\*@6\*7,!( &7!>' ; +>\*)7!6%!6Q7!??&?7&!?+&, +\*6!%E!6Q7!8%; +@7#!

!

3#A! =, ,%>(67!,6+; 7' 6,! [ \*@' %&8 (@G!C7!>Q(&K7; !6Q7!E77!E%&!6Q7!8%; +@7!6(Y7' !%&!(!?&%2&(6!E77!\*' !  
&7@(' !6%!6Q7!??&6\*' !%E!(!??&%K&(887!C7\*' K!E%@[ 7; ^(' ; !Q()7!(>>7,,!6%!(@6Q7!D' \*)7&, \*6G!

!

80A!! /56`\*7L!<6K\*3\!

QA! /N, ?\$!

!

! : Q\*, !F%>G!(??@7, !6%!(@78?@G77, ^!, 6+; 7' 6, !( ' ; !)\*, \*6%&, !6%!6Q7!D' \*)7&, \*6G!

!

QA! B\$#&-'N&', %!, %!/. , ['%M!

!

58%Y\*\* K!\*, !%' @G!7&8\*667; ![\*6Q\*\* !6Q7!; 7, \*K' (67; !, 8%Y\*\* K!(&7(#!

58%Y\*\* K!\*, !?&%Q^C\*67; !\*\* !( @%6Q7&!(&7(, !%E!6Q7!D' \*)7&, \*6G!( ' ; !E%&!6Q7!()%; ( ' >7!%E!; %+C6!

\*\* >@; 7, !, +>Q!(&7(, !(), R

!







! =8C7&!2!8%&7!,7&\*%+,!@(? ,7!%E!(667' ; (' >7#156+; 7' 6,!E(@@' K!'' 6%!6Q\* ,!>(67K%&G! [ \*@C7!  
,7' 6!(!>%88+' \*>(6\*' !; \*&7>6'' K!6Q78!6%!,?7(Y!6%!6Q7\*&F=: '( ' ; !&7>%887' ; '' K!6Q7&  
(67&' (6\*)7!,%+&>7,!%E!,+??%&6#!!  
!  
! T7; ! !57&\*%+,!@(? ,7!' !(667' ; (' >7#156+; 7' 6,!E(@@' K!'' 6%!6Q\* ,!>(67K%&G! [ \*@C7!,7' 6!(  
>%88+' \*>(6\*' !&7` +\*&' K!6Q(6!6Q7G!,?7(Y!6%!6Q7\*&F=: a!6Q7G! [ \*@C7!&7E7&&7; !; \*&7>6G!  
6%!56(G!' !&7+&,7!( ' ; !C7!&7` +\*&7; !6%!\*8?&%)7!6Q7\*&(667' ; (' >7!C7E%&7!6Q7!' 7U6!>Q7>Y!  
?'\* 6!%&!C7!(6!&\*,Y!%E! [ \*6Q; &([ (#!  
!  
! 56+; 7' 6,!E(@@' K!C7@! [ (' G!%E!6Q7,7!>(67K%&\*7,!-#7#16Q%,7!,6+; 7' 6,! [ Q%!Q()7!HJ!%&  
@7,!(667' ; (' >74!(6!6Q7!E\*&,6!>Q7>Y!?'\* 6! [ \*@C7!' )7,6\*K(67; !6%!( ,>7&6(' !6Q7\*&!%)7&(66  
7' K(K787' 6#! : Q\*,! [ \*@ \*' >@+; 7! @%Y'' K! '' 6%! 6Q7\*&! L+C! (>>7,,' !6Q7\*&! >%' 6(>6! [ \*6Q!  
=>(; 78\*>156(EE!76>#0E!6Q7&7!\*,!' %!, (6\*,E(>6%&G!&7(,%' !E%&!6Q7\*&! ' %' 2(667' ; (' >7!6Q7G!  
[ \*@C7! [ \*6Q; &([ ' !(6!6Q(6!,6(K7#!!!  
!  
! X7)7@B!,6+; 7' 6,! [ \*@ ' %6!C7!>%' 6(>67; !+' @7,,!6Q\*,!\*,!,?7>\*E\*>(@G!&7` +7,67;!CG!6Q7\*&  
F&%K&(887!X7(; 7&!%&!F=: #!  
!  
! \$%' )7&,7G^!C7K'' '' K! ,6+; G!%' ! (!' 7 [ !F&%K&(887!\*,!( !>&+>\*(6\*87!E%&! ,6+; 7' 6,!  
(; ]+,6'' K!6%!D' \*)7&,\*6Ga!6Q\*,!\*,!?(66\*>+@(&G!6&+7!E%&! ' 7 [ !D' ; 7&K&( ; +(67!,6+; 7' 6,#! =,!  
,+>Q^?(&6\*>+@&!

!





8SA!/ID4"7I!2X/"73"!<6K\*3\!!

!

: Q\*,!F%>G!%! !56+; 7' 6!=C,7' >7!(??@7,!6%!(@+ ' ; 7&K&( ; +(67!( ' ; !?%,6K&( ; +(67!6(+KQ6!,6+; 7' 6,#! : Q7!  
D' \*)7&,\*6G!>%' , \*; 7&!,!6+; 7' 6![ 7@(&7!(,!(!?&^%&^6G!( ' ; !  
( ' ; ! [ 7@C7\*' K!\* !&7@6\*%' !6%!6Q7\*&! (>( ; 78\*>!?&%K&7,, \*%' !( ' ; ! [ \*; 7&!+ ' \*)7&,\*6G!7U?7&\*7' >7#!: Q',!?'>G!  
Q(,!C77' !; 7)7@%?7; !6%!?'&%) \*; 7!>@7 (&!K+\*; ( ' >7!%' !,6+; 7' 6!(C,7' >7! [ \*6Q!(!)\*7 [ !6%&7; +>7!6Q7!\*8?(>6!  
%E!(C,7' >7!%' !(;>( ; 78\*>! ,6+; G#!

!

: A 4\$+'%'&', %#!

!

: A: /&O1\$%&#!(-\$!(=#\$%&!\*ER!

!

(# 6Q7G!; %!' %6!(667' ; !(l67(>Q\*\* K!,7,, \*%' !6Q(6!\*,!%' !6Q7\*&!?7&,%' (@,7; !6\*876(C@7!  
C# 6Q7G!; %!' %6!(667' ; !( ' !7U(8\*\* (6\*%' !  
># 6Q7G!; %!' %6!(667' ; !( ' G!?'(&6!%E!(!?'@>787' 6!  
; # 6Q7G!; %!' %6!(667' ; !?'@(' ' 7; !(>6\*)6G!&7@6\*\* K!6%!6Q7!@7 (&' \*\* K!7U?7&\*7' >7,!%E!6Q7!8%; +@7^!E%&!  
7U(8?@7!E\*7@ 6&\*?',!,\*67!)\*,\*6,^!&7Q7(&,(@!( ' ; !>% ' E7&7' >7,#!

!

: A8! !2! I \$(N>'%M! /\$##', %!' \*! ( ' G! 6\*876(C@7; !@7 (&' \*\* K! ( ' ; ! 67(>Q\*\* K!,7,, \*%' #! 06! \*\* >@+; 7,! @7>6+&7,^!  
,78\*\* (&,^!?'&(>6\*>@(' ; !>%8?+67@[ %&Y,Q%?',#!

!

"#B 7, &'+'\$1!2=#\$%N\$A!: Q7!&7(,%' ,!E%&!(C,7' >7!>( ' !\*\* >@+; 7!6Q7!E%@% [ \*\* KR

!



(# =C,7' 6!E%&! (!?7&\*%; !%E! . , -\$!&>(!#^\$%!N, %#\$NO&'^\$!1 (P#! (!d7; \*(&\$7&6^E\*>(67^!%&!%6Q7&!  
(??&%?&\*(67!; %>+87' 6(6^%' <!8+, 6!C7!?'&%)\*; 7; #!  
C# =C,7' 6! E%&! )\$##! &>(!# ^\$%! N, %#\$NO&'^\$! 1 (P#! N, ^\$-%M! ?\$-', 1#! , +!  
(##\$##. \$%&#; \$\_(. '%(&', %#!W! (! d7; \*(&\$7&6^E\*>(67^!%&!%6Q7&! (??&%?&\*(67!; %>+87' 6(6^%' H!  
8+, 6!C7!?'&%)\*; 7; #!!!  
># =C,7' 6!E%&!)\$##!&>(!#^\$%!N, %#\$NO&'^\$!1 (P#! (' ; !67(>Q\*\* K!7)7' 6,!Q()7!C77' !8\*,, 7; ^!6Q7!  
,6+; 7' 6!>(' !, 7&2>7&6^EG!6Q7!(C,7' >7#!  
!  
<#9# F@(' ' 7; !=C,7' >7!  
!  
(# : Q7!' %6^E\*>(6^%' !%E!(C,7' >7!, Q%+@ !C7!?'&%)\*; 7; !' !(!; ) (' >7! [ Q7&7!6Q7!(C,7' >7!', !?@(' ' 7; ^!  
E%&! 7U(8?@7! 6%! (667' ; ! (! E+' 7&(@ %&! &7?&7,7' 6! 6Q7! D' \*)7&, \*6G! \*\*! (' ! %EE\*^\*(@ 7)7' 6#!  
e%6^E\*>(6^%' !%E!(C,7' >7! [ \*@%' @!C7!&7>%&; 7; !+?!6%!H! [ %&Y\* K!; (G,!(E67&!6Q7!@(. 6!; (67!%E!  
(C,7' >7#!  
C# : Q7!,6+; 7' 6!,!7U?7>67; !6%!>%8?@7!6Q7!(+6%8 (67; !%' 2@' 7!56+; 7' 6!=C,7' >7!V%&8!0(T)m/927151Tf11. 0403



RA /0??, -&!2^(')(=)\$!

!

! : Q7!D' \*)7&, \*6G!+' ; 7&, 6(' ; , !6Q(6!, 6+; 7' 6, !8 (G!C7' 7E\*6!E&%8!, +??%&6!(' ; !K+\*; (' >7!6%!Q7@? !6Q78!  
; 7(@ [ \*6Q!(' G!\*, , +7, !>% ' 6&\*C+6\*' K!6%!@% [ !@7) 7@%E! (667' ; (' >7#! : Q7&7! (&7! (!' +8C7&!%E!, +??%&6!  
, 7&)\*>7, !() (\*@C@7!6%!(, , \*, 6!, 6+; 7' 6, #!

!

I#''# "+\$N&'^\$!K\$(-%\*%M! /\$-^'N\$! E''K/H! ?&%)\*; 7, !K+\*; (' >7! (' ; !, +??%&6! E%&! (@@ , 6+; 7' 6, ! [ \*, Q\*' K! 6%!  
; 7) 7@%? !6Q7\* &! , 6+; G! (' ; !@7 (&' \*\* K!, Y\* @, #!

!

I#9# <\$-#, %()!2N(1\$. 'N! IO&, -#!E<2I #H!  
6Q7!D' \*)7&, \*6G! 7' >%+&(K\*' K! 6Q7!, 6+; 7' 6! 6%! %?6\*8\*, 7! 6Q7\* &! @7 (&' \*\* K! %??%&6+ ' \*6\*7, #: Q7!F=: !\*, !

!









8GA!/DX5\*//\*67!<B63"4DB"/!!

/O=. '##', %#!

I > \$!+, ), Z '%M!?- , N\$10-\$!(??)'\$#!&, !&>\$!#O=. '##', %!=P!#&O1\$%&#!, +!Z, -[!+, -!(##\$##. \$%&!, -!-\$F  
(##\$##. \$%&A!

!

k%+!(&7!&7` +\*&7; !6%!, +C8\*6!%' 7!7@7>6&% '\*>!>%?G!%E!(@ (, , 7, , 87' 6!( ' ; !&7(, , 7, , 87' 6![ %&Y#!: O7!

7@7>6&% '\*>!>%?G!, Q%+@ !C7!, +C8\*667; !6Q&%+KQ!6Q7! =, , \*K' 87' 6!1 &%?C%U!\* !6Q7!8%; +@7!, \*67!%' !

LDJ\_\dD#!=' G!(@7&' (6\*)7!, +C8\* , , %' !(&&' K787' 6, ![ \*@C7!>%88+' \*>(67; !6%!G%+!CG!6Q7!8%; +@7!

>%2%&; \*' (6%&#!!!

!

!

