

GAGTGTTCGGTGAAGCCTCGGGATTGTAGTTGGGTTCCTTTATTGGATCCTGACCGCGA
GAACCTGTCTAAACCTTATCACTGAGAGGAAGGTGAAGTCGTAACAAGGTTTCCGTAGGGG
AACCTGCAGAAGG

HIGGGGG<DGGGEHIIIIHHGGEGDEGGDFGEFGGGGBGGHIHEFHICCDAAAGEB4>D>FFA
;BFFFC@GD@?All

CCTTCTGCAGGTTCACCTACCGAAACCTTGTTACGACTTTTACTTCCTCTAAACGCTACAGT
TTGGTCGTCTTCCCGCAACCCAAGCTGAGTAACCAGCCAGGATCACAGTCCGAGGACCTC
ACTAAAACGTTCAATCGGTAGTAGCGACGGGCGGTGTGTACAA

CCTTCCGCAGGTTCACCTACGGAAACCTTGTTACGACTTCACCTTCCTCTAAATGATGAGGT
TAAATAACTTCCCACTGTCTAGTCGCCCGAAGGTGTCTTGACTGCGGTCCGAGAGTTTCA
CCGAATCATTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA

```
IIIGIIIIIIIHIGGGG<GGGGGGGGEGGG:'<'>>5BBB@<C@@@8EBFBFIIIEE@EGCEFC@  
E@GGGGGGGGIHHHDHEGGDBB8DGDDBEHHIHHGE GDGDGGGBGGGCCCAAHDIHHIH  
GIIGIGIEIGHFIHHIIIIIIHHIHI
```

TTGTACACACCGCCCGTCACACCATGGGAGTGGATTGCACCAGAAGTGGATAGTCTAACCT
TCGGGAGGACGTTTACCACGGTGTGGTTCATGACTGGGTTGAAGTCGTAACAAGGTAGCC
GTAGGGGAACCTGCCGAAGG

CCTTCTGCAGGTTACCTACGGAAACCTTGTTACGACTTCTCCTTCTAAATGTAAAGGT
TCAATCAACTTCTCGCAACCAAAGCACGTGAATGCAAAGGTCAGCAATCCGAAGATTTACA
GGACCATTC AATAGGTAGGAGCGACGGGCGGTGTGTACAA

5=G6DGGGGIHGIHIHIHIHIEDGBGBIHHIHHGEGGGGGCIIGFHGGGBDGFHCGIEIHIIIIIIIGHIH
GIIIIHHIIIIIIIIIGIDIII

CCTTCTGCAGGTTACCTACGGAAACCTTGTTACAACCTTCACCTTCCTCTAAACGATGAGGA
 TTACACAAGTTCCACGGAAAGCGCATCCAATAAAGGACGCGCAGCCACGGTCCCGAGTTTT
 CACAGAAGCGTTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA

GGGGGGGGGGDEGGGGGGGGGBGGEGGGGGDFFF,F*:+,*54/4DBB?
BB@BBD3BBABCAEC>B;A?AA,>AB=?B;9D8BDDD-<DD>C2BFDDD<E:=9:?
BG>2B:B44+29:<2511.51);?>(0*4;4B?-8IIIIIDDEBDA@@@EF:GGGEGGBG=EH
@G3:64TC8AAXX:5:67:17319:14648/1

CCTTCCGCAGGTTACCTACGGAAACCTTGTTACGCCTATTACTTCCTCTAAGTGATAAGAT

+

AFE GEGGAEGGGGGDGG>GGGGGDGHIG<GGHHHFH@BE?

@G3:64TC8AAXX:5:67:16437:14650/1

TTGGGTTCTTTATTGGATCCTGACCGCGAGAACCTGTCTAAACCTTATCACTTAGAGGAAG

+

C>ABDBGB=BGIGEIGGGHGIHGIHHHGF!@HIIIIIGHIIIIGFIGGGGGDGGGGGGGGGGDIIIFGF

@G3:64TC8AAXX:5:67:2255:14651/1

TTACCTGACTTTCCGCGAAAACTCGAGGCCTTCCACAGTCCGAAAGATTACCTGACCAC

+

HHH@FH>GGDGC5CCCEHGGEHHAHHHEGHEFIGIHFFIGHGIHHHGIIIEF<GF>@CAA

@G3:64TC8AAXX:5:67:18036:14651/1

TCGGGAGGACGATCACCACGGTGTGGTTCATGACTGGGGTGAAGTTGTAACAAGGTAGCC

+

48BCBBEEDCCCCA@C1=D?B=<<<::GGGGGECGC7ABB>?

@G3:64TC8AAXX:5:67:1216:14653/1

+

@G3:64TC8AAXX:5:67:1216:14653/2

CCGTTTAGAGGAAGTAAAAGTCGTAACAAGGTATCCGTAGGTGAACCTGCGGAAGG

+

@>A=<BBB@BDBD@D><8GBHDDHDDIIHGGGDG;DDBGIBHIIIBHIIHIGHIHIIIIHIGIG>IIH8II

@G3:64TC8AAXX:5:67:16328:14655/1

TCAATCAACTTCTCGCAACCAAAGCACGTGAATGCAAAGGTCAGCAATCCGAAGATTTCACA

+

CB:=<@8;:<:<3868:<?<ACIFFIGCCAC?:?B8@=/317?83B?GGGG@||||||||||||||||||||

TTTTCCACACCGCCCGTCGCCCTACCGATTGAGTGTTCCGGTGAAGCCTCGGGATTGTAG

GTGAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCAGAAGG

+

A@>CB@BBD9;8588<E==EECE@>CEEEH@IHIIDGGGEG@BIIIGIIIIHHBIHHIDGGGGG

@G3:64TC8AAXX:5:67:18706:14659/1

+

@G3:64TC8AAXX:5:67:18706:14659/2

GTAGGTGAACCTGCGGAAGG

+

+5>><@C<@83;81<8GGGDGGBGGAEEEG8@GGIIGIIGGGDEH<IEIIIIHHHHIIIIII

CGCCCGTCGCACCTACCGATTGAGTGTTCCGGTGAAGCCTCGGGATTGTAGTTGGGTTC

GTAACAAGGTTTCCGTAGGTGAACCTGCGGAAGG

+

E2IFHIIIFIIDIFIHBGIIIIHIIIIIEGHGEIHIHHGGGDG;BGGGIFGIIGIGIGGFIIHIIIIIGGGGGFDGGGI

@G3:64TC8AAXX:5:67:11010:14664/1

TTACACAAGTTCCCACGGAAGCGCATCCAATAAAGGACGCGCAGCCACGGTCCCGAGTTTT

III

GGDGGGGGG@GGGEGGCC7<;8<<:7;?

@G3:64TC8AAXX:5:67:10991:14666/1

ATTCCACAAGATCCCACGGAAGCGCATCCAATCAAGGACGCGCAGCCACGGTC

+

6<9GE@GGGFG8F2767=?8348EA?EADGGB.673*0@@=9:@C>.<ADG=GDDGBDB@E@>E=/

@G3:64TC8AAXX:5:67:10991:14666/2
ATGAGGTTTACACAAGTTCCACGGATGGGCAGTCAATAAGGGACGCGCAGCCACGGTCC
CGAGTTTTTACCGAATCGTTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA

CCTTCCGCAGGTTCACCTACGAAACCTTGTTACGACTTTTACTTCCTCTAAACGCTTCAGT
TTGGTCGTCTTCTCGCAAACAGTCAGCGTGAACCAGCTGAATCACAAATCCGAGGACCTCA
CTAAAACGTTCAATCGGTAGTAGCGACGGGCGGTGTGTACAA

CCTTCCGCAGGTTACCTACGGAAACCTTGTTACAACCTTCCTTCCTCTAAATAATCTAGTT
TGCAAATTTTAATCGTAATGTTGTCTATCAGTAAGTTAACTCCTCATCTAATTCATCACTAAC
TTATCCGATCGGTAGGAGCGACGGGCGGTGTGTACAA

CCTTCCACACCGCCCGTCGCTACTACCGATTGAAAGTATTAGTCCGGTCCTCGGACTGTTT
GCCTGGCGGATTACTCTGCCTGGCTGGCGGGCAGACGACCAAAGTGTAGCGTTTAGAGGA
AGTAAAAGTCGTA

GATTGAACGTTGTAGTGAGGTCCTCGGACTGTTTGCCTGGCGGATTACTCTGCCTGGCTGG
CGGGAAGACGACCAAACTGTAGCGTTTAGAGGAAGTGAAAGTCGTAACAAGGTTTCCGTAG
GTGAACCTGCGGAAGG

CCTTCTGCAGGTTACCTACGGCTACCTTGTTACGACTTCACCCCAGTCATGAACCACACC
GTGGTGATCGTCCTCCCGAAGGTTAGACTAACCATTCTGGTGCAATCCACTCCCATGGTG
TGACGGGCGGTGTGTACAA

IIIIIGIIIIIIIIIIHIIIIIIIIHIIIGGGGG@DGGG7EBBBC>@@?

AA@<FBDCBHGGEGBEHEEFC>CDCGDDGEFIIIEIIIEGHFCGGCECCECD@@GGFGGGGEG
GGHIGIII@IIIIIIIIIIIEIII
@G3:64TC8AAXX:5:67:15267:14669/1
CCTTCTGCAGGTTACCTACGGAAACCTTGTTACAACATCACCTTCCTCTAAGTGATAAGGT
TTAGACAGGTTCTCGCGGTCAGGATCCAATAAAGGAACCCAACTACAATCCCGAGGCTTCA
CCGGAACACTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA
+
HHHHGHHHHHGGGGGGGGGGHHHHHHHHGHEEF8='<%9<(3<
7>=>3AGGGBGGGBGGGEDGCGGGDGGEDCCGBGDGDGBCFGGGFBHHEEHHBEHGDGD
EGBEGGHHHHIIFICAB>DBG>>=A=DEDIIHFIIIIIDHIIHHGIIIIIIIGIIII
@G3:64TC8AAXX:5:67:17010:14669/1
CCTTCTGCAGGTTACCTACGGAAACCTTGTTACGCCTTCTCCTTCCTCTAAGTGTCAGAT
TCACCAAACCTTCCGCAGCAATATTCAGGAAGTAAAATTGCAGCAGTCCGAATTATTCATC
GGGACACTCAATCGGTAGGAGCGACGGGCGGTGTGTACAA
+
HHHHHHHHHHGGGGGHHHHHHHHHHHHHHHHEGGA2'<&?
B>CCBBGGGFDFEFDFDGDGBB=?
C5FEECFG>DEGGIGGFHHHGHGGEGA@AGEGAGGBHHGHHHHHHHHHHHBBBEGDGD
DBGGGC@7CCIIHDGIIHIFCE<FI;IIIIIIIIHII
@G3:64TC8AAXX:5:67:12189:14670/1
CCTTCTGCAGGTTACCTACCGAAACCTTGTTACGACTTCTCCTTCCTCTAAATGATAAGGT
TTGGACAGCTTCCCGCGGCATCGCGGATGGCGAACCACCTGCATTGCCACAGTCCGGGG
GCCTCACCGGATCATTCAATCGGTAGGAGCGACGGGCGGTGTGTACAA
+
DD>GGGGGGGGGGGGGGDGGGG<DGGGGGGDGBB9*(-
<%<;6B@8BGGGBGGGGGGDGDGGFAGD<DDDDDG<DGGDDGE@DBBEFBDCDEEEAAA>
CB=?
BABDAGDHGEFIBBBDDGDGBGG>G8DGGIHIEDIDFGGGGGGEE@GIFIBIHIGIEIIIIIIHII
@G3:64TC8AAXX:5:67:10664:14670/1
TTGTACACACCGCCCGTCACGTCATGGGCGCTCCACGAGCCCGACGTCACCTCGTTTCAG
GAGTCCCTACGGCAAGAGTGGTGACTIONGGAC
+
HHFHHHHHHHHHHHHHDEE@G*0=98><(&385.&4,4%590'44375>)1?B??<C>:>?.8(8=@<1=?
1B>A219*:=:=3A=>3?<?
@G3:64TC8AAXX:5:67:10664:14670/2
GGTGCCTACGGCAAGAGTGTTGACTGTGGCGAAGTCGTAACAAGGTAGCCGTAGGTGAAC
CTGCGGAAGG
+
?A6=<68;3AGBD;B??@C=A=;;6<;?3CFGDF@GGDGDDD>GGB-GIHHHGG8GGCGG@GEIIII
@G3:64TC8AAXX:5:67:10110:14671/1
TTGTACACACCGCCCGTCGCACCTACCGATTGATAGTTCCGGTCAAGCCTCGGGATTGTAG
TTGGGTTCTTTATTGGATCCTGACCGCGAGAACCTGTCTAAACCTTATCACTTAGAGGAAG
GTGAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCGGAAGG
+

IIHIGIIIIIGGGGDDGGGG@FECEEDFEBD??*8+993:6/=2?
>80@B>BBEIEBBEDBGEDDDEAABDEEDEHDEEEGHEGEGDDDDA>AGDCDEEEGDEGE
HHBGEEEEEDGD?GIEIFHIIFFHHIIIIIFIIIIIGGBGGEGGGGIIIIII
@G3:64TC8AAXX:5:67:16247:14674/1
TTGTACACACCGCCCGTCGCTACTACCGATTGATTGAACCGTTGCGGCCCGCGGACTGTG
+
BBBC:=@?6CGEGFDGGGAGHHHHHGGDGG<:B:)24'7614:65:<84:0@>>BGGG<G
@G3:64TC8AAXX:5:67:16247:14674/2
CGGGAAGTTGTCCAAACCTTATCATTGAGAGGAAGGAGAAGTCGTAACAAGGTTTCCGTAG
GTGAACCTGCGGAAGG
+
GGGGG5@4163GGGG<A5A?>9@1;G+GGGGGGEGGG8GGGDBGEEIIIIIIIIIIIDIIIGIIIGIIII
@G3:64TC8AAXX:5:67:11510:14678/1
CCTTCTGCAGGTTACCTACGACTACCTTGTACGACTTCACACCCGTTAGACACCACACC
GTGGCCAGCTCTAAAAAATCGAAGTATAAAAAATTTGGTTCAACTAAATAGAAACATAGCTT
CAAGTGGACCTCCTTCAGGCGTGTGACGGGCGGTGTGTACAA
+
IIIIHIIIIIIHIGGGGG?GGGGGGGGGA@A@A?
@==@=B9BDBBC@@@B@B=B>=D>CEEBBGBEFGBDDECEHBHHFGIFHIHGFFGDDDACCG
CGDEGEEGIIIDGEEE@AA:=?=?;8GCGIIFIFGGGCGHIGIIIIHIGDGIIHIGIIIIIGIIII
@G3:64TC8AAXX:5:67:3662:14678/1
TTGTACACACCGCCCGTCGCACCTACCGATTGAATGGTCCGGTGAGGAGTCGAGATTGTG
GCTTGGTTCTTTATTGGGACTTGGCCGCGAAACTTTTCCGAACCTTATCATTTAGAGGAA
GGTGAAGGCGTAACAAGGTTTCCGTAGGTGAACCTGCAGAAGG
+
GGGCBECEFCDFGFGDFEGGBDGGGGGGGBEGGGGGEEEE?
AF<A==7<5BBBFDIIIIHHIGIEGGBGIIIFIIHFHIBIIIEIIGIDIGGGGFBEEEFHFIIGIIDGGGG>GAI
HGGGBGI:IIII@HIIIIIGGIIIIHIDIGIHI=IIIIIIHIEIIII
@G3:64TC8AAXX:5:67:16272:14681/1
CCTTCTGCAGGTTACCTACGGAAACCTTGTACAACTTCTCCTTCCTCTAAATGATAAGGT
TCAATCAACTTCTCGCAACCAAAGCACGTGAATGCAAAGGTCAGCAATCCGAAGATTTAC
CGGACCATTCAATCGGTAGGAGCGACGGGCGGTGTGTACAA
+
GGGGGEHHHHHHHHHHHHHEHHHHHHHHHHHHHGGGEG?
C9CCAFFAFGGGBFGEGGEGG<GDA5ACCC?BC@C?
CECGDDGHHHFFBFEEBA@B>DHHDGHBEBEEHHHEHHGHBFAAE>?D@B?B><B?3B?
HIDGHIIBGHIHIGIHHIIIIIIIGG2GGII
@G3:64TC8AAXX:5:67:7690:14683/1
CCTTCTGCAGGTTACCTACCGAAACCTTGTACGACTTCACCTTCCTCTAAATGATAAGGT
TTAGACAAGATCTCGCGACACACTCCCAATAAAGGCAACTCGCCACAATCCCGAGGCTTCA
CCGGACCATCCAATCGGTAGGTGCGACGGGCGGTGTGTACAA
+
HHHHHHHHHHHHHHHHHHHHHDHGFHHHHHHHFFF>1,>(>(<):<:@=*=@=B=B?
E:B>=5==5AEE<B?,??>GDGGDEC2BGB8FA<CA?>=>83CAE>CEBC?CCCCGEB?<;??

@>=AA?>>GG8@GIIHFIIIIIIHIIIIIIIIHIGIII
@G3:64TC8AAXX:5:67:10511:14683/1
CCTTCCACACCGCCCGTCGCCCCTACCGATTGATACTATTGGTGAGGAGCTCGGATTGGCA
ACAGTTGGTGATTGCGCACCGGCTATTGCTGAGAAGTCCTCCCAACCGCCCCCTTTCGAGG
AAGGAGAAGTCG
+
>;,2,.*:2.122515007@@@7@52A12)(7-)?-@D?21831:0/<82)67,/+,);:7/?
=====6B27B12*.;,6714,@,8@==;;,8172.:EA54=E@:*4B?:BB:E::8A3>?,@;@@
@G3:64TC8AAXX:5:67:10511:14683/2
GATTGAATGTGTGGGTGAGGAGCTCGGATTGGCAGCAGTGGGTGGTTCGCCACCTGCTAT
TGCTGAGAAGTCCTCCAAACCGCCCCATTTAGAGGAAGGAGAAGTCGTAACAAGGTTTCCG
TAGGTGAACCTGCAGAAGG
+
B1* @A8==9255,A<9<<@B@B?7=A@=3BG<D@@;>;D;D>BGBB>@GBD=DC?C<?
GE@>GDDGAG=BBDGDDDBDBCi9IEGGGGE3GDGGGGG2GGEIIIBGHIIIGIIIIHIIIIIGIIIIIIHIIII
FIIII
@G3:64TC8AAXX:5:67:18126:14684/1
TTGTACACACCGCTCGTCGCACCTACCTATTGGTTGTTCCGTTGAAGCCTCGGGATTGTAG
ATGGGTTCTTTATTGGATCCTGACCGCGAGAACCTGTCTAAACCTTATCACTT
+
GGGDDB9BA<)B8?BB?:E??@CECFEE@E95),%)
3%.5AA=>;=B42ACC@>GAGB3104<.@@CE@?
(?:=;;,9BBBD@B<BB@2+;;,3BB@BDD@C@BD@@B7@BBB
@G3:64TC8AAXX:5:67:18126:14684/2
TTGAGTGTTCCGGTGAAGCCTCGGGATTGTAGTTGGGTTCTTTATTGGATCCTGACCGCG
AGATCCTGTGCGAAACCTTATCACTGAGAGGAAGTTGAAGGCGTAACAAGGTCTCAGTAGGG
GAACCTGCGGAAGG
+
A:B945526;4;%B3=<B,8GGGGGGD3EDGGGGAA?B9?;@FFEB-
@@@DBGGGBG=IDGGGB4D<EGGGBEG<GDEEGG:GDG@?
=GBD=BB:=;=;F4C=D=E;<A;=A'FEE@BCDG<7=IEHEIGD8B=@D
@G3:64TC8AAXX:5:67:3995:14686/1
TTGTATGCAGGTTACCTACGGAAACCTTGTTAC
+
BBCA?96@@:EECG>AAAAE>???BGGGD3BB?B
@G3:64TC8AAXX:5:67:3995:14686/2
CCACGGTACCGAGTTTTTACCGAATGGTTCAATCGGTAGGTGCGACGGGCGGTGTGTACA
A
+
B2FABBB-:4EBDB?EB+BG-GGGDBDBD4FF<DGGGGG@3>=A;9*98BAB===34C?II
@G3:64TC8AAXX:5:67:8791:14691/1
CCTTCTGCAGGTTACCTACGGAAACCTTGTTAC
+

H H H H H H H H H H H G G G G B B G B G G G G G E G G @
@G3:64TC8AAXX:5:67:8791:14691/2
ACTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA
+
CGAECEED@>DGIGIIIIIIIIIGG:GGII
@G3:64TC8AAXX:5:67:14023:14692/1
CCTTCCGCAGGTTACCTACGGAAACCTTGTTCCACCATCACCTTCCTCTAAACGATGAGG
TTTCCACAAGATCCCACGGAAGCGCATCCACTAAAGGACGCGCAGCCACGGTCC
+
HHHHGH HH HGEGGGGGGGG,FEFEGDGGGCE2>F49&9<)99)
5EEC<@GDGGGHHBFC>2??D=,@;/A1<E=CEE?><;1@;B=:?:61;.:A><CA?E@CA>DDBG;;7;?
@G3:64TC8AAXX:5:67:14023:14692/2
GAGGTTTTACACAAGTTCCCACGGAAGCGCATCCAATAAGGGACGCGCAGCCACGGTCCCG
AGTTTTTACC GAATCGTTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA
+
@1=E<@;@B@=@@::83'0-/2:9@>D@DDB<DC??
AA;%9828@7:6:GDDCEIIEFEDDDDDGDEBEIIIIFHIIIFHHIGIFGGGGGGGGG@GHIIIGIIIIIGIIII
@G3:64TC8AAXX:5:67:5331:14692/1
TTGTACACACCGCCCCGTCGCTCCTACCGAT
+
>>7)/.&//*>B>=99<?@?>:>:@A@:@
@G3:64TC8AAXX:5:67:5331:14692/2
CGTTTAGAGGAAGTAAAAGGCGTAACAAGGTTTCCGTAGGTGAACCTGCGGAAGG
+
DBBEC?ECGGGAGG2DDGG>IGDGDGGGGGE-GIIIIIIIIIFGGDGIDIIII
@G3:64TC8AAXX:5:67:5349:14693/1
TTGTCCACACCGCCCGTCGCTCCTACCGATTGAATGGTCCGGTGAAATCTTCGGATTGCTG
ACCTTTGCATTACAGTGCTTTGGTTGCGAGAAGTTGATTGAACCTTATCATTTAGAGGAAGG
AGAAGTCGTAACAAGTTTCCGTAGGTGAACCTGCAGAAGG
+
BB:815?95CG@g@29GG@@@EGBBAEEBGA>
GGB@EGFCBFGGDDG@CAGG>FFGGGECEAE@GGGEBCEABAGG@AGHIHIGHHG GGG
GGGGGGGGGGEGGIHIIIEGGGGDCGGGGG@GGGGDGIGIIGFIIIIIIGHIIIIIBIGIHIIIDI IIII
@G3:64TC8AAXX:5:67:16475:14694/1
TTGTACACACCGCCCGTCGCTCCTACCGATTGAATGATTGGTGAACTCTCGGACCGCAG
TCAAGACACCTTCGGGCGACTAGACAGTGGGAAGTTATTTAACCTCATCATTTAGAGGAA
GGTGAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCGGAAGG
+
GGGG:FDFEFHHHHHHHHHHHHHHHHHHHHHB BEA@@?;?
EFCCB>CB BBEBFBHEGGHGG EFEDDDBD@EECEFIIHHGEHHIIIIIGHGGFFGEGGGGHH
GHHHHHHHHHHHHHGGIIIFIGGGGGGGEGGGIIIIIIIEIIDIIIIIIIIIIIIIIIIII
@G3:64TC8AAXX:5:67:11739:14694/1
TTTTCCACACCGCCCGTCGCTCCTACCGATTGAATGGTCCGGTGAAATCTTCGGATTGCTG
ACCTTTGCATTACAGTGCTTTGGTTGCGAGAAGTTGATTGAACCTTATCATTTAGAGGAAGG

+

EHE@EDEEGGEFEEFIFEFBEEFDIDEEBEEHHHHGHEHIIHDHDGEGDBDDDGBD:EGBEEII

[illegible]

CCTTCTGCAGGTTACCTACGGAAACCTTGTTACGGCTTCTCCCTCCTTTAAATGATAAGGT

+

CAC;166<??=A=A??

@G3:64TC8AAXX:5:67:2218:14695/2

CGCGGCTGGAGAACCAGCTGCGGCGCCGCAGTCCGGGGGCCTCACCGGATGATTCAATC

+

+DD@BDBBGGGCGCECAA@FGGFI3IHIIIHHIIIBGIFI>IIIGIDIHHIIIGIII

@G3:64TC8AAXX:5:67:5751:14698/1

CCTTCTGCAGGTTACCTACGGAAACCTTGTTACACCTTCACCTTCCTCTAAACGATGAGGT

TTACACAAGTTCCACGGAAGCGCATCCAATAAAGGACGCGCAGCCACGGTCCCGAGTTTT

CACCGAATCGTTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA

+

7<:1>><<<BBDC@B@<<BFBEEDFDECEEDDBBBGEDDDIIIDIDGDDDEDGDGDGG@AA>IIIIIGG

HHHHHHHH<|BHHHHHHHGIH

@G3:64TC8AAXX:5:67:14203:14698/1

TTGTACACACCGCCCGTCGCACCTACCGATTGATTCTGCCCGTGAAGCCTCGGGATTGTAG

TTGGGTTCTTTATTGGATCCTGACCGCGAGAACCTGTCTAAACCTTATCACTTAGAGGAAG

GTGAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCAGAAGG

+

$$><92493:=?<=?$$

```
>=A=@<>879<88;AB@I;FIF;>B>DEABABIHIIIGGG@GI8IIIIHIIIIHIIIIIIIIIIIIIIIIIIIIHIIII
```

@G3:64TC8AAXX:5:67:8691:14699/1

CCTTCCGCAGGTTACCTACGGCTACCTTGTTACGACTTCACCCCAGTCATGAACCACACC

GTGGTGATCGTCCTCCCGAAGGTTAGACTAACCCTTCTGGTGCAATCCACTCCCATGGTG

TGACGGGCGGTGTGTACAA

+

C6EGEHGDIIHIIIHFIEHHI7998>:IGDIIHIIIDGCGGGEGGIGIIIIIIIIIIIIIIIIIIII

@G3:64TC8AAXX:5:67:11604:14699/1

CCTTCTGCAGGTTACCTACGGAAACCTTGTTCCACCTTCACCTTCCTCTAAATGATAAGGT

TTAGACAAGATCTCGCCAC

+

H H H H H H H H H H H G G G E G > G G E G G G G G G D A G 5 < \$; 4 / : @ - ; F F A 2 ? 6 3 ; , ? / < ! / * 5 * : : 3 ; @ /
1 * - 5 3 * E A ? + A ?
@ G 3 : 6 4 T C 8 A A X X : 5 : 6 7 : 1 1 6 0 4 : 1 4 6 9 9 / 2
C C C A A T C C C G A G G C T T C A C C G G A C C G T T C A A T C G G T A G G T G C G A C G G G C G G T G T G T A C A A
+
B - @ = 7 9 < = 1 . = 5 = 4 4 8 7 : C - 4 ? ? A F 3 E 8 G G G G G F E F E F > + G G G F D G G G G G D = G B G G G G I I
@ G 3 : 6 4 T C 8 A A X X : 5 : 6 7 : 7 6 9 7 : 1 4 6 9 9 / 1
C C T T C T G C A G G T T C A C C T A C C G A A A C C T T G T T A T A C C T T C C C C T T T C T C T A A A T
+
G B 8 G G G G G G A C ? B ? ' > (; , ; 7 > 1 7 . @ ; 7 9 A * > ?
@ G 3 : 6 4 T C 8 A A X X : 5 : 6 7 : 7 6 9 7 : 1 4 6 9 9 / 2
T C A C C A G C T C A T C C A A T C G G T A G G A G C G A C G G G C G G T G T G T A C A A
+
B ? A < -- 1 -- D : B : I I I I I G G D G G D + G D G H I G I H I I I E I E I H I I I I
@ G 3 : 6 4 T C 8 A A X X : 5 : 6 7 : 1 2 4 2 : 1 4 7 0 0 / 1
C C T T C T G C A G G T T C A C C T A C G G A A A C C T T G T T A C G A C T T C A C C T T C C T C T A A A T G A T G A G G T
T T A A A T A A C T T C C C A C T G T C T A G T C G C C C G A A G G T G T C T T G A C T G C G G T C C G A G A G T T T C A
C C G A A T C A T T C A A T C G G T A G G T G C G A C G G G C G G T G T G T A C A A
+
? B < G G G G G G E G E < G G G G 2 @ @ ?
@ D G G @ E G G G G G G G G G G G B G G 6 D D D D ? D ; G G G E G G G H G G G G G G G G G G G G G G C < G C A B ?
B D D G D G G G E F I H G H G G G @ G E B B D E G G G F E G 3 G E E I I H @ I I I I E D I I I D H H H G I H I G I I I B I G I I I
@ G 3 : 6 4 T C 8 A A X X : 5 : 6 7 : 5 7 3 2 : 1 4 7 0 0 / 1
C C T T C T G C A G G T T C A C C T A C G G A A A C C T T G T T A C A A C A T C C C C T T C C T C T A A A C G A T G A G G T
T T A C A C A A G A T C C C A C G G A A C C G C A T C C A C T A A A G G C C G C G C A G C C
+
I I I I B G G G G G G G G G G G G G G G G G @ G E G G E C D F E = ? ? , < . 5 3 5 7 8 5 @ 2 9 + 8 8 3 2 B A B B E A > 6 @ ; @ ; > A 2 1 4
> : 9 8 > @ @ C C C ? ? 3 ; : * B 8 = 8 : < 8 ? + > ; < 5 9 0 2 8 > > ? D 2 @ A C
@ G 3 : 6 4 T C 8 A A X X : 5 : 6 7 : 5 7 3 2 : 1 4 7 0 0 / 2
C G G A A G C G C A G C C A A T A A A G G A C G C G C C G C C A C G G T C C C G A G T T T T C A C C G A A T C G T T C A
A T C G G T A G G T G C G A C G G G C G G T G T G T A C A A
+
@ ? 1 C > @ A A < 8 + 3 9 : < = ; 3 , 7 6 2 8 6 3 B 8 & ? * = < = 0 ; 8 7 = / 0 3 : @ 8 4 B < = > 5 > ; < 8 E E B 5 ? < ; = : < B ? @ ? E + ?
B @ D G A I > B D G G G G G E B B I H
@ G 3 : 6 4 T C 8 A A X X : 5 : 6 7 : 1 4 2 8 : 1 4 7 0 0 / 1
C C T T C T G C A G G T T C A C C T A C G G A A A C C T T G T T A C G A C T T C A C C T T C C T C T A A A T G A T A A G G T
T T A G A C A A G A T C T C G C G A C A A A C T C C C A A T A A A G G G A A C T C G C C A C A A T C C C G A G G C T T C A
C C G G A C C A T T C A A T C G G T A G G T G C G A C G G G C G G T G T G T A C A A
+
H I I I I H I I I G I I I I I I I I I I I I I I I I F G G G G D < G G G G G G G D G G G G 3 G G B G G G G H I I I G @ G G , B B ?
B B G < G E G I H I I I H I I I I I I I I I I C F A D B F E A E @ = = C G F G F F G F E E G F I I I I C E E A A G D G G G G B G G G F I I I H I I I I
I I I I I I G I I I I I I I I I I I I
@ G 3 : 6 4 T C 8 A A X X : 5 : 6 7 : 1 4 5 9 6 : 1 4 7 0 1 / 1
C C T T C T G C A G G T T C A C C T A C G G A A A C C T T G T T A T G A C T T C A C C T T C C T C T A A A T G A T A A G G T

TTAGACAAGTTCTCGCGACAACTCCCAATAAAGGGAACTCGCCACAATCCCTAGGCTTCG
CCGGACCATTCAATCGGTAGGTGCGACTGGCGGTGTGTACAA

+

DDDDDD@DD44;5<7=@=BB<@DDDDDD<DD?B:0'(<(<(38-4?7;'3DBDBDDD@D@?
2BBD8DB8B>BDDDDDDDDDCD>BDBB;954:D@:@DDDDDDDDDDDD>B8B?3=B2350(-
8AE=AA=>5DACED??=??/1<;9=/CBDDDDGG=GEDGB?
@G3:64TC8AAXX:5:67:5298:14704/1
CGCCCGTCGCTACTACCGATTGGATGGTCCGGTGAGAACTCTGGATTGCGGTTGATGTGC
CGGTCTCCGGTGCGATGACTGCGAGAAGTTGATCGAACCTTATCATCTAGAGGAAGTAAAG
TCGTAACAAGGTTTCCGTAGGTGAACCTGCGGAAGG

+

@@@C22C@@@@@@@@@@@@@7776766666*+*+6464677?E?CDGECB???
8BFFIEACEAABBDGGIIFHIDHGHIFGFGEGBGGGGDEBGBDEEGEEGE<IFEIIGIG@II@IIIGD
GDGIIIFIHIGIIIIHIFIIHIGGGGGDIGIHII
@G3:64TC8AAXX:5:67:11621:14706/1
CCTTCTGCAGGTTACCTACCGAAACCTTGTTCCACCATCCCCTTCCTCTACATGATAAGGA
TTAGACAAGATCTCGCGACAACCTCCCAATCCAGGCAACTCGCCAC

+

GGGGGGGGDGGFGGGGGG@GEG@>>GGGGG9<'2/)<*57;:>07GG<GDB3B?D?
D*@1:B;9*70A97(&587C)A>3B>)9>18<7/(-)1'32.22B3B0BB5B
@G3:64TC8AAXX:5:67:11621:14706/2
AAGGATAAGGTTTAGACAAGTTCTCGCGACAAGCTCCCAATAAAGGGAACTCGCCACAATC
CCGAGGCTCCACCGGACCATTCAATCGGTAGGTGCGACGGGCGGTGTGTATAA

+

@?-@A3?=A<;?++</5<<;.+=+=+=A?@C?/;4,<9;;<5'=?
<A@B2GGB<BD3FCFEAGGAGB+8;@HFIFHHIIIIHIIIFII>HIIIGIHHIIHIIIGIGIHIBII
@G3:64TC8AAXX:5:67:12020:14709/1
TTGTCCACACCGCCCCGTGCCCCCTACCGATTGGTAGAATTCGTCAGTTTATTGGAATAAGA
ACTCTTTTCTGACATAGATGGTTGTGGTCTTTAAAAATTTACACACTAGATTATCTAGAGGAA
CGCGAAGTCG

+

;;1./00300:::2,B/7.8',6533,:7,2(*)790<54,6*,447)5@353=28/==@6)='9:7+:4%/167:::6BDD-
DDDD:B*46;5D@7D@B?=B41BB2B277:7)-4;1675;::;7=?>??
@G3:64TC8AAXX:5:67:12020:14709/2
GGATGAGGTGGTGAGTTGATTGGAATAAGAGCTATTTTCTGACATAGATGGTGGTGGTCTT
TAATAATTTACAACTAGAGTATCTAGAGGAAGGAGAAGTCGTAACAAGGTTTCCGTAGGTG
AACCTGCGGAAGG

+

?=1;;905B>8@=@:@@<=6@5@??>8A:?
5.38=8'>8=.53*===.@@@+@<AC??;555=*6;84>21@A;<;8=;)8698A=?=
DDB=GI@EHHHHFIIHHHIGGGGDGBGGFGGBGGEGGGGIIIIII
@G3:64TC8AAXX:5:67:5772:14711/1
CCTTCTGCAGGTTACCTACGGAAACCTTGTTACACCATCACCTTCCTCTAGATGATAAGGT
TCAGACAAGATCTCGCGGCCACGCCCAATAAAGCAGC

EEEEED8GGGGHHHHHGGGGCGGGGGGGGGGG>G:<,@CGGAGAEC+CA:AACGGGGF
?6@3*=9355E<C9CECECC.B<?<5?-9<?CA@>;<*3B

+

+

+

+

+

CCTTCTGCAGGTTACCTACGGAAACCTTGTTACGACTTCCCCTTCCTCTAAATGATAAGGT
TTAGACAAGTTCTCGCGACAAACTCCCAATAAAGGGAACTCGCCACAATCCCAGAGGCTTCA
CCGGACCATTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA

+
HHHHHHDHHDGGBGGBCBCC,FFFFGGGGGCC@<==>8>>1@<;7FEE3BGGGGGGHHHDGD
DGG@BBDDDBGBGGGFFGDHGGGEG>EFBAAAAAFAFF<FFGGGHGHEIHEGHDDGA@EB950
34IEGEIHIHIHIHHEEEEF?4E=DBA9GEIDGIIBIIIDE
@G3:64TC8AAXX:5:67:18423:14722/1
CCTTCCGCAGGTTACCTACGGAAACCTTGTTACAACATCACCTTCCTCTAAATGATAAGGT
TTAGACAAGTTCTCGCGACAACTCCCAATAAAGGGAACTCGCCACAATCCCGAGGCTTCA
CCGGACGTTTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA
+
IIIIIIIIHHIIIIIIIIIIHHIEFF@+(>*:?EFF?FIIIFEGGGDGDGIIIE?
EEDGGGFBE=CGDIIBI>>>E8EADGEDBAA?=D@DDEECDCECEGE@FDEE=9;9??=??
AB;885,B4?IIIIIGG<GGG>G@GEAIIIGHIIIIIIII
@G3:64TC8AAXX:5:67:2556:14723/1
CCTTCTGCAGGTTACCTACGGAAACCTTGTTACGACTTCTCCTTCCTCTAAATGATAAGGT
TCAATCAACTTCTCGCAACCAAAGCACGTGAATGCAAAGGTCAGCAATCCGAAGATTTAC
CGGACCATTCAATCGGTAGGAGCGACGGGCGGTGTGTACAA
+
IIIIIIIIIIIIIIIIIIIIHCGGGGAEF@F@EE?
EIHIIHIIIIIECDGCE@EEBGDGGGIGIIIIIIHIIIBIIHIIHIIIIHIDHHIIIIIIIGGIGGGEGIGIEGGFIG
HGGGIIIFIIIIIIIIIIIIIIIIIIII
@G3:64TC8AAXX:5:67:7544:14723/1
CCTTCTGCAGGTTACCTACGGCTACCTTGTTATAACCTCACCCCAGTTGCTGAGCTCACC
GTGGTCCGCTGCCTCCTCGAAAGGTTGGCGCACGGCCTTCGGGTGAACCCAACTCC
+
IIIIIIIIIIIIIGGGGG3GGGGGGGGGGDDDD2?&8'><.5<-
2.<2(<;5;0<:@88@B9;=8<B?;BE7ECCEEEFEBGDDGBIBII=?<C=;;A;;GADDAIB@FIC@CC?
@@
@G3:64TC8AAXX:5:67:7544:14723/2
CTACCTTGTTACGACTTCCCCCAGTCGCTGAGCTCACCGTGCTCCGCTGCCTCCTCGAAA
GGTTGGCGCACGGCCTTCGGGTGAACCCAACTCCCATGGTGTGACGGGCGGTGTGTACAA
+
?82<@=@=?2@A?
==8;&=@==@>BE@@BBBB9B@BBEBFCBBEEFEGCEB@HGDHGGGIHGFIIIEEBEGHH9=7
;;6-8?:GDGBGCAECFGGGEGH>IHIHGIIIIIIIIHIIII
@G3:64TC8AAXX:5:67:15314:14727/1
TGTTCCACACCGCCCGTCGCTCCTACCAATTGATTGACCGTTGCAATCTTCGGATTGCTG
ACCTTTGCATTCACGTGCTTTGGTTGCGAGAAGTTGATTGAACCTTATCATTTAGAGGAAGG
AG
+
7')-)0'+-)
7775007777:::@@@#@8542('(.--.,5551288888<<<<,*.(,+,*4.44577777@@@@@@@@
@@@@++++.75777<0<:@:@@@@@@@@@:33::@@@@@
@G3:64TC8AAXX:5:67:15314:14727/2
CCGTCGCTCCTACCAATTGAATGGTCCGGTGAAATCTTCGGATTGCTGACCTTTGCATTCAC

+

+

+

+

+

+

@G3:64TC8AAXX:5:67:8898:14735/2

TGGAACATGTGTAAACCTCATCGTTTAGAGGAAGGTGAAGTCGTAACAAGGTTTCCGTAG
GTGAACCAGCAGAAGG

+

A;14<45*84BC,AA:>4,,=@;;B88IIIGGGDGH-IIHIEIIHHIIFHIIIFIIIGIIIGII@IBIGIGEG

@G3:64TC8AAXX:5:67:10589:14736/1

TTGTACACACCGCCCGTCGCTACTACCGATTGC

+

CCB6>=A?/?EEEGCDBBGD/>>C>>>>)>15?

@G3:64TC8AAXX:5:67:10589:14736/2

GATTGCTGAACTTTGCAGTGACGTGTGTTGGGTGCGAGAAGTTGGTTGAACCTTATCATGT
AGAGGAAGGAGAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCAGAAGG

+

A=1@B:6@<,A8?;A=8+>.54829)),5'81*22@@C@,<63<-ACA><>BDD<??A<=>?8=A<?-

=F2FAAF@GG>GDGDBEEBB?DGGCCDE8ED=FE<FIHIIII

@G3:64TC8AAXX:5:67:11506:14738/1

TTTTCCACACCGCCCGTCGCACCTACCGATTGAATGGTCCGGTGAAGCCTCGGGATTGTG
GCGAGTTCCCTTTATTGGGAGTTTGTGCGGAGAACTTGTCTAAACCTTATCATTTAGAGGAA
GGTGAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCGGAAGG

+

?:)++.,+))5533<3<:<==9=@;8;?

CE@EFD>GGBB2DGBGEFGBDEGIIIDGIBII>IIIIHI>FIHDIIIIIIDIIIFIII@IGGGGG@GE>GIIIIHGI

IICCCB@G@GGGGGGDDIIIIIIHIIIIIIIIIG=GGGGG4GGIIIIIIIIII

@G3:64TC8AAXX:5:67:16009:14739/1

CCTTCCGCAGGTTACCTACGGAAACCTTGTTATGACATCTCCTTCCTCTAAGTGATAAGGT
TCACTAAACATTCCGCTGCAACTTCCAGAATCTGAAAAATGCATCAGTCCGAGTTATTCACC
GGATCACTCACTCGGTAGGAGCGACGGGCGGTGTGTACAA

+

HHHHHGAGE@?B>@BEEFFA=>BB8@??=<;B@1;;;A?AFE>FE@FAB=D<5D943:>?

=A=DBFD<EDDBGGECBCEBBCCEFEA:@EA5?A?B8?===ACB<EC<@GGDEDC<BB=A?

=><:@;E8F?EBBAC>EBEBCDAC@>EFDGGDDGG@BBHH

@G3:64TC8AAXX:5:67:5851:14739/1

TTGTACGCAGGTTACCTACGGAAACCTTGTTATA

+

==@:1;;839D@DDDDDDDD:DCDDDDCDD9;;.D

@G3:64TC8AAXX:5:67:5851:14739/2

ATAAAGCGGCAAGAACCACAATCCCGAGGCTTGACGGGACCATCCAATCGGTAGGTGCGG
CGGGCGGTGTGTACAA

+

?97:'?<3EDBEB;;9;7==99A???

D374**=:B;@E3BFGGG@GFF8<EB4B<<;DGDGGDBGEGDEGDD

@G3:64TC8AAXX:5:67:3542:14739/1

TTGTACACACCGCCCGTCGCTACTACCGATTGAGTGTTTTAGTGAGGTCCTCGGATTGCCT
TCCTGGCGGTTAACCCTGCCTCGTTGGCGAAAAGACGACCAAACTGTAGCACTTAGAGGAA
GTAAAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCAGAAGG


```
HHHHGHHHHGDFHHHHEGHGDHHGHHHHGGGGGD:BDDBCBBEBFEBBDEFFHGHGGGG
DEECFEIGEGDDEBAIHIIHGFIIIIHHHIIHEIFIHHEHIIIFIGBIIIGIEIIIEIIFIIIIIIFIIHHIIIIIIIIIGIIIIII
IIHIGIHH
```

CCTTCCGCAGGTTACCTACGGAAACCTTGTTACAACTTCACCTTCCTCTAAGTGATAAGGT
TTAGACAGGTTCTCGCGGTCAGGATCCAATAAAGGAACCCAACTACAATCCCAGAGGCTTCA
CCGGAACACTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA

```
=,8>5<3@ECCAAEBF=FGGEGGEBEGBGGGFGD@FCFFGHHHHHHHHGGGFBDBB@CHE
HHHHGHHEEGHIEHI>EDGGCCA=A>GGGDFCAGEIIIIIIHDIIHHDIIGIIHHIIII
```

TTGTACACACCGCCCGTCGCTACTACCGATTGAAAGACCGAGCGAGGCCTTCGGACCGGT
CGGCTTTGACGACGACTCCTTGTTTCGCGTCTCGTCGGTCGGAAAGATTGCCGAGCTCT
ACCGTTTAGAGGATGTAAAAGTCGTAACAAGGTATCCGTAGGTGAACCTGCAGAAGG

GHHIEGG EDD=DEFFEE@EBBAD@GCGE8IIHHIII>IIHHIIGIHIBIHHHHIIIIIIIIIIIIIIIIIIIIIIII

CCTTCCACACCGCCCGTCGCACCTACCGATTGAATGGTCCGGTGAAGCCTCGGGATTGTG
GCGAGTTCCTTTATTGGGAGTTTGTGCGGAGAACTTGTCTAAACCTTATCATTTAGAGGAA
GGTGAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCGGAAGG

ECF><BFDEGDGBEGIIIFICEEE<BC=8BB<IIHIEDIBIIGIGGDGG=EEEGGIHDIIHHIGDGGD@
GGGGDG@DGGDGGGG8GGGIIGGIEGGG-DEEGGEB4EDIFEII@BBDGII

CCTTCCGCAGGTTCACCTACGGAAACCTTGTTACGACTTCTCCTTCCTCTAAATGATAAGGT
TCAATCAACTTCTCGCAACCAAAGCACGTGAATGCAAAGGTCAGCAATCCGAAGATTTAC
CGGACCATTCAATCGGTAGGAGCGACGGGCGGTGTGTACAA

```
HHHHHHHHHHBEEDFFHHFHHHHHHHHHHHEFF@@@=8@@@3CCBBEEACBHHHHHHHHHH
HEBEHDHEFFDEBEHGHIGHGHHHHHHHHHGDEEGHHHHHEHFEHDHHDHDEHGDGGECBD
GBEBBE@GE=ECHIGIIIIHHGEGGGEDIIIIIIHHIIIDB
```

TCTTCCACACCGCCCGTCGCTACTACCGATTGATACGACCCGTCAAATCTTCGGATTGCTG
ACCTTTGCATACACGTGCTTTGGTTGCGAGACGTTGATTGAACCTTATCATTAGAGGAAGG
AGAAGTCGTAACAAGGTTTCCGT

9DDDDDD:DDB>:BCB>DDDDDDDDDD=DD??>4DDB:D,?=B:BD2?B4=::?588@10=?8?B?

@G3:64TC8AAXX:5:67:15317:14749/2

GCTTTGGTTGCGAGAAGTGGATTGAACCTTATCGTGTAGAGGAAGGAGAAGTCGTAACAAG
GTATCAGTAGGTGACCCTGCGGAAGG

+

B=B:BBB8@B===9*4:78=?;8;,6.7620-&-71.5+212):=-55261'7-8<==785/)

+B<AB<A@=:>*BB=>GGCCAIH

@G3:64TC8AAXX:5:67:6348:14750/1

TTGTATGCAGGTTACCTACCGAAACCTTGTTACAACCTTCACCTTCCTCTAAATGATGAGGT
TTAAATAACATCCCCACTGTCTAGTCGCCCGAAGGTGTCTTGACTGCGGTCCGAGAGTTTCA
CCGAATCATTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA

+

?=DB:DDBBDGEGFGDGGGFDGDGGFFEGG?

EB38&3%98+66,8(84&2B@EBBDDBFEC>CAAAAC=;D:BCDFDDEFEDFEF>FEDGB@@@8?

EAABBBDBGDBGEEEEEDGG<BG@GGEEEG8GDBGDG@DGGEGBIIHGGGG@GGDFIBGGII
IGGGIII

@G3:64TC8AAXX:5:67:7188:14753/1

TTGTACACACCGCCCGTCGCTCCTACCGATTG

+

FGDHHHFHHGGHFFF;ABBC<BFFFGGGBGBB

@G3:64TC8AAXX:5:67:7188:14753/2

CATTTAGAGGAAGTGGAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCAGAAGG

+

?6?:=?B?=88*=4-===EDEEBEGGGDEBBFCG?GGDGGGGEEGGIIIGGGIGIG

@G3:64TC8AAXX:5:67:18675:14754/1

TTTTCCCCAACGACCGTAGCACCTACCTATTGAGAGTTCCGTTGCAGCCTCGGGATTGTAG
TTGGGTTCTTTATTGGATCCTGACCGCGAGAACCTGTCTAAACCTTATCACTTAGAGGAAG
GTGAAGTCGTAACAAGGTTTCC

+

77&-),2+-22,1009,1*,(5)),..*)+*);)5/;/77777255???.+/-

-.....8G88B5D7875E33300757@@@@@@@@@@@@@A>@@@@@@@@@@@@@C
@D8<<<CDB:>D1>1EA>>;F@BD8>334:CB?5B

@G3:64TC8AAXX:5:67:18675:14754/2

GCACCTGCCGATTGAGTGTGCCGGTGAAGCCTCGGGATTGTAGTTGGGTTCTTTATTGGA
TCCTGACCGCGAGATCCTGTCTAAACCTTATCACTGAGAGGAAGGTGAAGTCGTAACAAGG
TTTCAGTAGGGGAACCTGCAGAAGG

+

B;7B5?-4-BB?D?DBBD=-DFE=FB=B4;4IGEGGHFFGGGDGGDED6?

A4CFGB@@@@GEC<GB@D<@@B=88B-:D<@@H@@I@@A@@@@@I@?7778<33C,@///
27C475@@@@@313B3>-2B-@=-.1BB12@7/2/IH

@G3:64TC8AAXX:5:67:2027:14755/1

CCTCCCGCAGGTTACCTACGGCTACCTTGTTACGACTTCCCCCAGTCATGAACCACACC
GTGGTGATCGCCCTCTTGCGTTAGGCTAACCCTTCTGGTGCAGTCCACTCCCATGGTGTG
ACGGGCGGTGTGTACAA

+

>>.&'0257;HHHHDGGGGGGHHHHHHHHHBFEEFF+?BBB54<-

B8AB:BBFFCGGGGGGCGEGGGBDGGG=DGGDFGCGGG@GIGIEIGGGGGDDGGIIIIIIII
IIGH

TTTTCCACACCGCCCGTCGCACCTACCGATTGAGTGTTCCGGTGAAGCCTCGGGATTGTAG
TTGGGTTCCCTTTATTGGATCCTGACCGCGAGAACCTGTCTAAACCTTATCACTTAGAGGAAG
GTGAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCAGAAGG

+

ACAFIFBEHGHGGGEIEEFC@FHIFIIHIGHIGIHIFGGEEGHIGIIIIIIHIIIGGGEGIGIIIIIIHII<IIIE
HGIIIIIIIEGIIIIIIHIIIIIIIIII

CCTTCCGCAGGTTCACCTACGGAAACCTTGTTACGACTTCACCTTCCTGTAAGTGATAAGGT
TTAGACAGGATCTCGCGGT CAGGATCCAATAAAGGAACCCAACTACAATCCCGAGGCTTCA
CCGGAACACTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA

+

BAEBDDEGDDGD@DD9CCEBDIDEEFIIHHHGIIIFDEECCHHEGHHEEFIIIGHIHHIGGGHHDHIFI
GGGGDEGGGGDDGDGDIIHHIIHHGIHHHHHHHHHHHHHHHHHHHH

CCTTCCGCAGGTTACCTACGGAAACCTTGTTACGACTTCACCTTCCTCTAGAT

+

@G3:64TC8AAXX:5:67:5855:14758/2

ATCCAATCGGTAGGAGCGACGGGCGGTGTGTACAA

+

@G3:64TC8AAXX:5:67:4758:14762/1

TTGTACACACCGCCCGTCGCTCCTACCGATTGAA

+

@G3:64TC8AAXX:5:67:4758:14762/2

GGTTTCCCGCAATGAGACTCCGTGAAGCTGTCCAAACCTTATCATTTAGAGGAAGGAGAAG
TCGTAACAAGGTTTCCGTAGGTGAACCTGCGGAAGG

+

GEGGGGGDG<|B|G|FFECF?EFAE||B|||

CCTTCTGCAGGTTACCTACGGCTACCTTGTTACGACTTCACCCCAGTCATGAACCACACC
GTGGTGATCGTCCTCCCGAAGGTTAGACTAACCATTCTGGTGCAATCCACTCCCATGGTG
TGACGGGGCGGTGTGTACA

+

=BB1FGAGHIHIIIEIIIDIIBIIIDIGFGGIIIGIGGEGGEGGGEHIIIGIIGIIHIIIIHIGIIII

@G3:64TC8AAXX:5:67:7334:14763/1
CCTTCTGCAGGTTACCTACGGAAACCTTGTTACGACTTCTCCTTCCTCTAAATGATAAGGT
TCGGACAGCTTCCCGCGGCGTCGCGGCTG

+

```
IIIIHIIIIIIIIIGGGGG-EEEEGGGGGFFF?8(<'>.&@@1B?EE+EDBEBEEGG>@>3>A-??C9?
E3AAEB?B2?@82@893586?
```

@G3:64TC8AAXX:5:67:7334:14763/2
CGGCTGGAGAACCAGCTGCGGCGCCGCAGTCCGGGGGCGCTACCGGATCATTCAATCGG
TAGGAGCGACGGGCGGTGTGTACAA

+

??=8*?>@7<3A2<<;9>=C?=E@BEEFIIFIIBHIIIGIGEEDHIIBIHGIIIHHIIIIIIHEIIFIIIIIIIIIIIIIIII

@G3:64TC8AAXX:5:67:14572:14764/1
CCTTCCGCAGGTTACCTACGGAAACCTTGTTCTACCATCACCTTCCTCTAAACGATGAGGT
TTCCACAAGATCCCACGGAAGCGCATCCAATAAAGGACGCGCAGCCACGGTCCCTAGTTTT
CGCCGAATCGTTCAATCGGTAGGTGCGACTGGCGGTGTGTACAA

+

GGGGGEBEE:796<::>?:<8BDDDBB3DDBE+DE4;/9;(-.-.@=6/4DDGGGGFEEEA0AA>?:B?
<D@DGDDEG?=<<A?AD3@A=7@?:?(7655?BCBBGBECG3630(8=??
E:::21<DGAGBEIHIIGHG@@:=B=4BBB=B8B?G@DDG=GGGGB@

@G3:64TC8AAXX:5:67:17292:14765/1
TTGTACACACTGCCCCGTACAACAAGGGAGTGGATTGCACCAGAAGTAGTTAGTCTAACCT
TCGGGAGGACGATTGCCACGGTGTGGTTCATGACTGGGGTGAAGTCGTAACAAGGTAGCC
GTAGGTGAACCTGCAGAAGG

+

GGGEGGGGG@GGGGGGGGEEEE<GG@ABDDGDDDG@>DDDDGHFFEHI GGGGGGG
GGGGDIGGDGG@BBE?

EGECAEGGGFGGGGBFFDGGGGGGGGGGEDGGGEGGGEGBGIIIIIBIIEGGGGF4FF
FII

@G3:64TC8AAXX:5:67:7536:14765/1
CCTTCTGCAGGTTACCTACGGAAACCTTGTTACAACCTTCACCTTCCTCTAAACGATGAGGT
TTACACAAGATCCACGGAAGCGCATCCAATAAAGGACGCGCAGCCACGGTCCCGAGTTTT
CACCGAATCGTTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA

 $+$

```
IIIIIIIIIIIIIIIIIIII8GGGGGGGGGGGG<B+8&>'<4+7AEC2AGGGGGIIDIHA2AA?C>A?>>?@?
BGGGB?@=??:A?><?;??<?;5<8?
```

C>BEC E E G F G D G G D G 2 A C C E B G G D B E A G D D G B G D E G I G I F I I I I I I I H I I I I I I I H I H I

@G3:64TC8AAXX:5:67:10776:14766/1
TTGTCCACACCGCCCGTCGCTACTACCGATTGAACGTTTTAGTGAGGTCCTCAGACTGTTT
GCTTGGCGGATTACTCTGCCTGGCTGGCGGGAAGACGACCAAAGTGTAGCGTTTAGAGGA
AGTAAAAGTCGTAACAAGGTTTCCGTAGGTGAACCTGCAGAAGG

+

==84)26552@<B<209A77?A?85999B@=E?

B@GBBDCHIGIFIIDE@HHHHGIIHHHHIBIGIIBIIHI=?

AAAF5BFHGGIGIGGGGGEGGGGIIEIIIIIIIGGHHHHHGGGIIIGIGIIIIHHHHIIIDDIIDIBIIDIIHBIIH

IIIIHIIHIF

@G3:64TC8AAXX:5:67:10481:14767/1

CCTTCTGCAGGTTACCTACGGATACCTTGTTACAACCTTCACCTTCCTCTAAATGTAAACGT
TTGATTAACCTCCACGGCAGCGTCCCAATGAAGGCGACATTGCCACGGTCCGAGAACT
CACGGGTACATTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA

+

IIIIHIIIIIIIIIGGGGG,@@B@GGGGGEF8=F5<'@=(<B<@GGG<DGGGGGCFCEEEBEEHGGG
EBB8BB@EFEEEEEEECBEFCFCA@AAFFGIIHHFIIIIHGGGECGGC????CECCBGB?
BCIHHIIGIIIIIIIIIIHIIIIIIIIII

@G3:64TC8AAXX:5:67:9863:14767/1

TTGTACACACCGCCCGTCGCCACTACCGATTGATTGACCCCTTGCAATTTTCGGATTGCTCA
CCTTTGCATTACGTGCTTTGGTTGCGAGACGTTGATTGAACC

+

GGDDEE?GBEGGGGDDFBDG??B??GG>8B7;-?;,26',/))5;1;-
7>8739.;@9&+<+'634<.:%93;==;A=C>?>>>E>>7'(12AA5AAB@3BD

@G3:64TC8AAXX:5:67:9863:14767/2

GATTGAAGGGTCCGGTGAAATCTGCGGATTGCTGACCTTTGCATTACGTGCTTTGGTTGC
GAGAAGTTGATTGAACCTTATCAGTTAGAGGAAGGAGAAGTCGTAACAAGTTTCCGTAGG
TGAACCTGCGGAAGG

+

?:2<>A=2AF=-??ACEC>A?CB+EB@?3@FCCE?
CE+ECFAB3ABDGGEG<GBBGGGGGDGGGG@GGGGEE4EA?DD<G<???-
88GGGGGGDGIBIIIFBF2IIIIIGGGE<BIIIEIIIDIIHHIIEIHHII

@G3:64TC8AAXX:5:67:3098:14768/1

CGCCCGTCGCTCCTACCGATTGAATGGTCCGGTGAAATCTTCGGATTGCTGACCTTTGCAT
TCACGTGCTTTGGTTGCGAGAAGTTGATTGAACCTTATCATTTAGAGGAAGGAGAAGTCGTA
ACAAGGTTTCCGTAGGTGAACCTGCAGAAGG

+

CC@C22CCCA@@@@@CCCGBCBG?B;?E44><@AE2@>AC><?
GDGDGFDGIBFGIIGGDIHGEDDIGII@IIIIIDDIGDGG-
GGGGGGEGDDIGGIIHIIIBIDIIIIIEIHHIIIIIGIIIIIIIIHIIIIII@IIIIIIIIII

@G3:64TC8AAXX:5:67:12384:14768/1

CGCCCGTCGCTACTACCGATTGAACGTGTTAGTGAGGTCCTCGGATTGTGATTCAGCTGGT
TCACGCTGACTGTTTTGCGAGAAGACGACCAAACCTGAAGCGTTTAGAGGAAGTAAAGTCG
TAACAAGGTTTCCGTAGGTGAACCTGCAGAAGG

+

8858E36@@>?@@<68DGAA@DA=?
A<43BIFHHIGIEE<DIII>HGDGIGIIHIIIDGEGGGDGGDGIHIFIHIIIIIGGGGG.GGGGIIBIIIIIIIBCB
@G5GEGIIEGGGIIIEHIGIGIIEIIIBIGGIBIIHBIIHIIII@IEIGFB

@G3:64TC8AAXX:5:67:14079:14770/1

CCTTCTGCAGGTTACCTACGGAAACCTTGTTACGACTTCACCTTCCTCTAAGTGATAAGGT
TTAGACAGGTTCTCGCGGTCAGGATCCAATAAAGGAACCAACTACAATCCCGAGGCTTCA
CCGGAACACTCAATCGGTAGGTGCGACGGGCGGTGTGTACAA

+

GGEHHHHHHHHHHGHGGGGGBGGGGGGGGGFFB?<??
7>@:BC@BGGCDCEEFCEGGGGGEGGBGEGDHHBBEEGEGGHGGHHHGGA>A@C=AHH
HGHHHHHHGFGGGAGGGGFEGGEG@BGGGGFGGEGEIIIGIIIGIIIFIIHHIIIIIIIGHHII
@G3:64TC8AAXX:5:67:15997:14770/1
CCTTCCGCAGGTTACCTACGGAAACCTTGTTACACCTTCTCCTTCCTCTAGATGATAAGGA
TTGGGTGACTTCCCGGCGCAGC