Sudan University of Science and Technology
College of Petroleum Engineering and Mining
Department of petroleum Engineering

Estimated mud weight window for well bore stability case study aldinder field well tawakul-1

تقدير نافذة الطين الأمنة لضمان إستقرارية جدار البئر حقل الدندر البئر (tawakul-1)

Project submitted in partial fulfillment of the requirement for the Bachelor of Engineering (Horns) Degree in petroleum Engineering

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Determine mud weight window to overcome wellbore instability

Graduation project submitted to college of Petroleum Engineering and Technology in Sudan University of Science and Technology Submitted in Partial Fulfillment of the Requirement for the Bachelor of Engineering (Hones) Degree in Transportation and Refining Engineering

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الإستهلال

قال تعالى:

(اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ (1) خَلَقَ
الْإِنسَانَ مِنْ عَلَقٍ (2) اقْرَأْ وَرَبُّكَ الْأَكْرَمُ (3) الَّذِي
عَلَّمَ بِالْقَلَمِ (4) عَلَّمَ الْإِنسَانَ مَا لَمْ يَعْلَمْ (5) }

صدق الله العظيم)

سورة العلق الآيات (1-5)

DEDICATION

We dedicate this project to: our parents for the love and support they have provided throughout our entire life, they have been there for every decision we have made and help our dreams become reality, friends and their families for help and encouragement. Techers in petroleum engineering department, and specially and to all batch 4th petroleum engineering B. tech Students.

ACKNOWLEDGEMENT

Acknowledgment First of all, we would like to thank Great and Almighty Allah who gave us the power to fulfill this study. Thanks, should be given to our supervisor’s we would like to express our appreciation to our supervisor: **Dr. Ahmed Abdelaziz Ibrahim**

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The greatest thanks for all which help us until this research completed and reached to this feature at top of them.

ABSTRACT

The Well bore instability is one of the main problems that engineers meet during drilling. The case study in this research estimated the formation pore pressure and fraction pressure using Eton and ratio mothed. The results show that the stability of wellbore is quite a challenge because of low pore pressure compare to the fracture pressure with an existing of the shallow gas beds. These findings concluded the section of the Blue Nile Basin has to be well cemented and close, although, the drilling fluid has to be at minimum as much of its pressure and density with slow operation speed and prepare to fluid washing process.

التجريد

عدم استقرارية جدار البئر تعتبر من المشاكل الرئيسية التي تقابل المهندسين اثناء عملية الحفر.

في هذا البحث تم تناول دراسة حقلية لتقدير ضغط الطبقات و ضغط تكسر الطبقات . لإختيار نافذة الطين الأمنة وموضع وطول أنابيب التغليف لضمان إستقرارية البئر باستخدام طريقة إتون والطريقة النسبية ،اظهرت النتائج أن إستقرارية جدار البئر تمثل تحدي بسبب الإنخفاض في الضغط المسامي للطبقات مقارنة بضغط الكسر للطبقة مع وجود طبقات الغاز الضحلة ،هذة النتائج تضمنت أن المقطع الموجود في حوض النيل الازرق يجب أن يكون مسمتتناً بطريقة جيدة ومغلف .

مع أن سائل الحفر يجب أن يكون قليلاً بطريقة تعادل الضغط والكثافة مع سرعة عملية منخفضة وان يتم تحضير عملية الغسل بالمائع .

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Chapter One

Chapter One

Introduction

Wellbore stability is a very complex phenomenon. Many factors can affect the stress distribution around a borehole during various drilling processes. The main factors that impact wellbore stability-rock properties, far-field principal stresses, wellbore trajectory, pore pressure, drilling fluid and pore fluid chemical properties, temperature, wellbore equivalent mud weight, and time.

Rock properties play a vital role in wellbore stability analysis because the wellbore stability occurs on the rock matrix. Rock types, Young's modulus, Poisson's ratio, Biot's constant, rock porosity, permeability, bulk density, cohesive strength, tensile strength and internal friction angle, natural fractures, etc. are parameters that affect wellbore stability performance .Even though rock properties cannot be controlled by drilling engineers, a better understanding of rock properties can help well planners to decrease risk by choosing a different well path or predicting correctly the rock behavior for borehole stability analysis.**(F. Zhang et al., 2016)**.

There are Several well problems often arise during drilling related to the geomechanics and rock behavior and properties such as circulation loss and this is unplanned event that usually must be fixed before drilling can go on. Circulation losses where tensile failure occurred also may lead to loss of well control, consequential in a blowout, or lead to trouble in cleaning the borehole. Spalling and /or hole closure in case of compressive failure of the rock. Other problem is the Mechanical borehole collapse often happens at low borehole pressures, particularly in shales, chemical effects may induce hole enlargement or collapse. When water-based drilling fluids are used, the shale may react with the mud filtrate (fluid that penetrates the wellbore wall), deteriorating the borehole, hole enlargement, unintentionally induced tensile fractures or difficult directional control incidents. In severe conditions, wellbore instability can increase non-productive time and create simultaneous frequencies of multiple instability incidents, which potentially can lead to stuck pipe, pack off, and eventual loss of the open hole section. (Mondal, Gunasekaran, & K Patel, 2013).

1.1. General Geological Description (Blue Nile Basin):

The Blue Nile basin originated in an area of Neoproterozoic rocks aged about 750Ma that had become a pen plain, possibly during the Paleozoic era (540 - 250Ma). The basin was formed due to rifting during the Mesozoic era (250 - 65Ma). Between the Triassic and early Jurassic, about 300m of fluvial sediments were deposited by rivers and streams. During the Jurassic (200 - 145Ma) the basin was twice covered by an arm of the Indian Ocean for extended periods, creating a lower limestone sediment 450m thick and an upper limestone sediment 400m. In the late Jurassic and early Cretaceous period the basin rose, and the 280m upper sandstone sediments are alluvial or fluvial. In total, about 1.4km of sediment was deposited over the basement rocks in this period. Later, the Afar mantle plume caused volcanic eruptions in the early and late Oligocene (34 - 23Ma), depositing volcanic rocks between 500 ~ 2000m thick, with further eruptions in the Quaternary depositing another 300m of rock. (GANI. DS, M. G. ABDELSALAM,2008).

Block-8 is part of Blue Nile basin characterized by very complex geological structure. Seismic cross-sections for Tawakul-1 area are presented in Figures (1–1) explain many major and minor faults, but generally can be divided formations into classes from top to bottom as follows:

- Damazin Formation

- Dinder I Formation

- Dinder II Formation-

- Dinder III Formation

- Blue Nile Formation

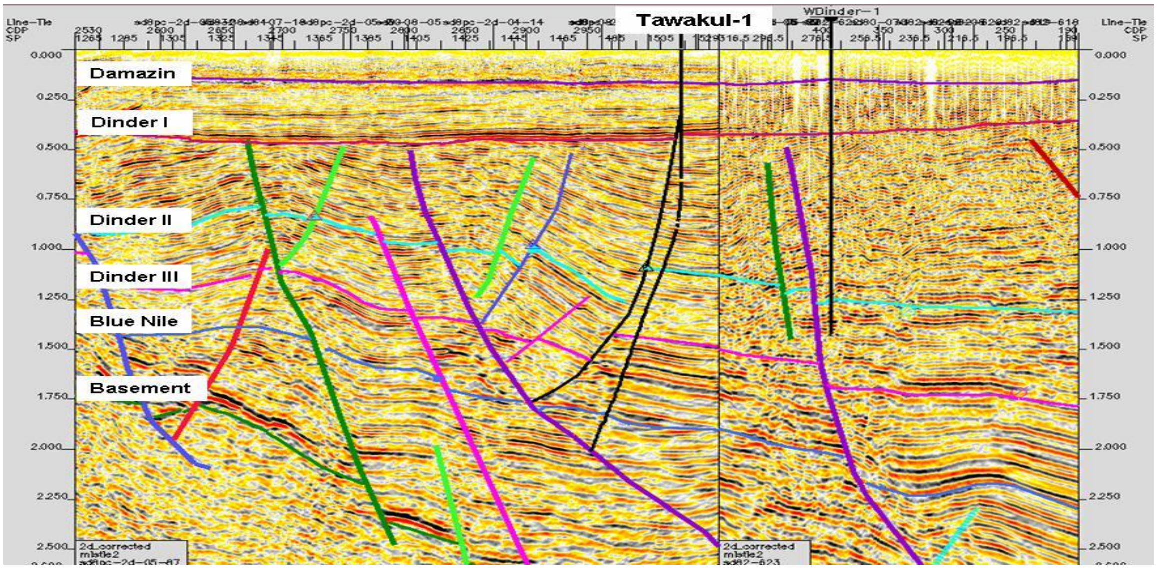

Figure (1-1): Tawakul Field Seismic (Mohamed Ishaq,2008)

Surface Layer: The upper section of the borehole starts from surface to top of Damazin formation. Consist of loose sandstone intervals interbedded with thin layers of claystone. The sandstone is fine to coarse grained, subangular to subrounded, poorly sorted and good porosity; sometimes there are traces of mica observed in the cutting samples. The claystone is light to medium grey and brown in color, soft to firm. Due to above description, drilling operation usually face drilling fluid losses problems, especially when drilling conductor hole. (Mohamed Ishaq,2008)

Damazin formation: This formation consists of claystone interbedded with sandstone layers. The claystone is light to dark grey, greenish grey, brownish grey and reddish brown in color and it is firm, minor moderately hard, subblocky to blocky and highly calcareous. The sandstone is unconsolidated, medium to fine grained and poorly sorted. It is noted that the percentage of claystone began in increasing, therefore it is common to use inhibition system, but this region (surface hole) can be successfully drilled using bentonite system when economic term is considered. The thickness of Damazin formation in this well between 167 To 424m MD and generally in Block-8 is variable from well to other. (Mohamed Ishaq,2008).

Dinder I formation: The upper part of this formation has more or less same percentage of clay stone and sandstone, but toward the base the clay stone is dominated. The clay stone is generally bluish grey in the upper part of the formation and change to become reddish brown to brown toward the base of this sequence. It is generally firm to moderately hard, sub blocky to blocky, silty, sandy in part, trace micro mica and slightly calcareous. The sandstone is coarse to very coarse grained fining downward and becoming silty toward the base of this sequence. It is generally translucent to transparent, unconsolidated, well to moderately sorted, sub rounded to angular, argillaceous matrix at places, traces pyrite at places, traces micromiceous and good to fair porosity. The thickness of Dindir-I formation in this well is between 424 to 1505mMD and generally in Block-8 is variable from well to other. (Mohamed Ishaq,2008).

Dindir-II Formation: This sequence is dominated by clay stone interbedded with thin beds of sandstone at the upper part of the formation and then changes to be only clay stone toward the base of the formation. The clay stone is medium to dark grey, reddish brown to brownish grey, occasionally greenish grey in color. It is firm to moderately hard, sub blocky to blocky, earthy, trace silty, trace micromicaceous and slightly calcareous. The sandstone is translucent to transparent, medium to coarse grained, occasionally fine grained at places, trace very coarse grained, unconsolidated, subrounded to subangular, moderately sorted, locally trace argillaceous matrix and fair porosity. Dinder-II thickness in this well is between 1505 to 2363m MD and generally in Block-8 is variable from well to other.

Dindir-III Formation: This formation is consisting mainly of clay stone interbedded with very thin layers of sandstone and siltstone. The clay stone is dark to medium grey, occasionally light grey, and trace reddish brown color. 1It is firm to moderately hard, blocky to subblocky, earthy, and occasionally silty at places and slightly to non-calcareous. The sandstone is transparent to translucent, unconsolidated, fine to medium grained, graded to silt stone at places, rounded to subrounded, moderately sorted and fair to good porosity. This formation thickness in this well is between 2363 to 3297m MD and generally in Block-8 is variable from well to other. (Mohamed Ishaq,2008).

Blue Nile Formation: This formation is consisting mainly of clay stone interbedded with thin layers of sandstone and siltstone. The clay stone is dark to medium grey, occasionally light grey, with white traces color. It is moderately hard to very hard, minor firm, blocky, minor subblocky, trace silty and sandy, trace micromicaceous and slightly calcareous. (Mohamed Ishaq,2008).

1.2. Problem statement:

Pore pressure , fraction pressure and well pore stability are significant challenges to exploration drilling particularly in regions featuring weaker rock , or sub salt formations a lack of accurate well pore instability brings many problems such as blow outs , kicks , hole washouts , well pore break out and stuck pipe well pore instability adds to drilling to drill time and increased costs .it is quit challenge at the tawakwl well which is the case of study.

1.3. Objectives:

The main objective is to:

A- determine formation pore pressure

B-determine fraction pressure

And the Sub objective:

A- Estimate mud window

B- Estimate the proper mud properties to be selected

C- Estimate the casing seat Position

D- Estimate the casing length

CHAPTER TWO

Chapter two

Literature review

field Jenny Jimenez, Luz Valera Lara, Alexander Rueda and Nestor Fernando Trujillo (2007) discussed the geomechanical wellbore stability modeling of exploratory wells.

Shams Elfalah Ahmed Alblola (2009) studied greater Bamboo area block 2A of unity in southern Sudan, the study starts by collecting data, evaluating and analyzing, logical arrangement of daily information and the other running operations, run a correlation analyzing, designing, targeting and vise versa to get the optimum. The failure envelope stress, mud pressure and mud weight calculation were done to prevent hole collapse in Bamboo west.

Ali, Assel Mohammed, Abdullah Ali, Mariam (2020) Drilling operations and these problems are usually due to design errors in the drilling column in terms of weights and equipment or deficiencies in drilling fluid functions in terms of design and alignment with earth layers. Thus, the quality of the performance of the drilling fluid directly depends on its physical properties, and usually there are natural problems occur during the drilling process and the main cause for this is the interaction of drilling fluid with the components of these formations. Therefore, this reaction may be positive in terms of the formation of a good mud cake to prevent fluid loss and preservation on well walls, or a negative reaction in terms of loss of drilling fluid inside the stratum and thus cause the collapse of the formation . Carboxylmethyle cellulose CMC plays an important part in terms of forming a mud cake with good specifications and minimizing the loss of drilling fluid, thus harming the well walls from collapse and helping to stabilize it. In this research many experiments were conducted inside to find alternative natural materials for CMC with the same quality specifications and lowest costs. Different samples were used of nano-aluminum as well as coal ash were used with prim lose (mixture) and the results were positive and useful.

Słota-Valim, Małgorzata (2017) Pore pressure and wellbore stability sometimes pose a serious challenge while drilling, especially through rock formations of reduced strength or through intervals where abnormally high pore pressure was formed. Lack of prediction of pore pressure and lack of wellbore stability analysis introduce an element of uncertainty in selection of drilling fluid density. Too low density of drilling fluid can lead to uncontrolled flow of the reservoir fluid to the wellbore (kicks), washouts and occurrence of cavern like structures called breakouts. On the other hand too high density can lead to formation fracturing and further fluid loss. Therefore wellbore stability loss frequently prolongs the operating time, rising the costs of the drilling and in severe cases may end up well abandons loss. The above mentioned complications can be avoided or greatly reduced by reliable analysis of drilling conditions with the aspects to geomechanical characteristics of drilled rock formations. This study presents the results of analysis of pore pressure performed with the use of commonly used in oil industry methods. The analysis of pore pressure was carried out in almost entire profile of four boreholes drilled through lower Paleozoic shales, deposited in the southern part of the Baltic Basin. In addition wellbore stability analysis was performed in the well with most complete geomechanical input data base. Obtained results helped identifying intervals with elevated pore pressure could pose a risk during drilling operation. Elaborated 1D geomechanical model provides safe mud weight window helping to reduce the instabilities risk and constitute a great tool for geomechanical model validation.

Ahmad, Hafiz Mudaser (2018**)** The successful drilling operation of oil and gas wells required high quality of drilling fluids which can stabilize well formations and able to withstand deep wellbore conditions of elevated temperature. Wellbore formations are mainly composed of shale (soft clay) and are likely to destabilize upon interacting with water. The instability of wellbore is caused by the interactions of water with the formation that results in the swelling of shale. Specialized drilling fluids can overcome this issue by stabilizing wellbore formations.

The use of polymer nan composite as water-based drilling fluid additive enhances the rheological properties, filtration characteristics and borehole stability at high-temperature drilling applications.

Widad Mohd Al-Wardy (2010) Drilling through Nahr Umr shales has been a challenge in many fields in North of Oman due to the weak nature of these shales. Increased difficulty is faced during drilling if the knowledge of the geomechanical parameters is limited especially the in situ stress magnitude and direction in the formation drilled. Problems such as borehole collapse and stuck pipes cause major delays in drilling time due to borehole cleaning and sidetracking in this specific field. This time delay and other recovery measures undertaken has cost huge amount of money that can be significantly reduced if the geomechanical parameters such as rock strength and in situ stresses of Nahr Umr are known. This can be then used to obtain the appropriate mud weight to drill a well in any desired direction in order to minimize borehole failure.

In this paper some problems during drilling the Nahr Umr shales will be discussed. Also, the workflow of building a geomechanical model in order to use it in wellbore stability analysis will be described. The output results will summarize the minimum required mud weight and unconfined compressive strength (UCS) for drilling a well in any direction in a form of lower hemisphere plots.

In this project, we are going to predict the safety mud window by estimateing the pore pressure and fracture pressure using Excel.

CHAPTER THREE

Chapter three

Methodology

There are many methods of calculating pore pressure from Resistivity (Rc) data, the Eaton Method and the Ratio Method. The Eaton Method is used in most sedimentary basins for calculating pore pressure from shale point Rc values. The Ratio Method has been used successfully in sande –shell sequences in the Middle East. (H. Rabia, 2002).

3.1 Ratio Method:

The ratio method is much simpler and does not require values of overburden. To calculate pore pressure, use the following formula:

$$PP = Pn \times (Rcn/Rco) \qquad (3.1)$$

Where:-

PP= Pore pressure (ppg)

Pn= Normal pore pressure (ppg)

Rco= Observed d exponent

Rcn= Normal trendline value of d exponent

3.2 Eaton Method:

The Eaton Method is basically simple if we remember the basic pressure relationship $\sigma ov = Pf + \sigma mat$. Rearranging the latter equation as matrix stress equal to $\sigma ov - Pn$, where Pn is normal formation pressure, shows that the Eaton formula uses

1. Record the value of the normal trendline dc (dcn) and observe dc (dco) at the depth of interest. use only dco values from sande shales. Do not use any other lithology dc value.

2. Record the overburden gradient from the overburden plot at the depth of interest.

3. Use the following formula to calculate pore pressure:

$$PPE = \sigma ov - (\sigma ov - Pn) \times \left(\frac{Rco}{Rcn}\right)^{1.2} \quad (3.2)$$

Where :

PPE= Eaton's Pore pressure (ppg)

σov= Overburden (ppg)

Pn= Normal pore pressure gradient (ppg)

Rco= Observed value of dc at depth of interest

Rcn= Normal trendline value of dc at depth of interest

3.3 OVERBURDEN PRESSURE: -

The overburden pressure is defined as the pressure exerted by the total weight of overlying formations above the point of interest. The total weight is the combined weight of both the formation solids (rock matrix) and formation fluids in the pore space. The density of the combined weight is referred to as the bulk density (ρb). The overburden pressure can therefore be expressed as the hydrostatic pressure exerted by all materials overlying the depth of interest:

$$\sigma ov=0.052*\rho b*D \quad (3.3)$$

Pp=formation bulk density

D=true vertical depth

Fraction pressure:-

$$FP=PP+(100\sim150) \quad (3.4)$$

FP=fraction pressure

CHAPTER FOUR

Chapter four

Results and discussion

In this chapter estimating of the pore pressure and fraction pressure. Then Plot the result to estimate the mud window, mud selection, calculate casing set and casing length.

4.1. Data collected:

The following Data obtained from Aldindir field in Blue Nile Basin block (8) tawakkul well (1) Interval gradients are calculated from shallowest to deepest point in the zone. Individual gradients are always calculated to the next deeper point with valid pressure reading (only last pretest to surface).The data that have been collected is as Microsoft excel sheet file which content of log data as show in table(4-1).

Table (4.1) collected Data

	A	B	C	D
1	DEBTH	RT-HRLT	Pn	dencity
2	930.8592	6.0905	1273.75	10.39
3	931.0116	6.2267	1273.75	10.39
4	932.0784	8.9044	1273.75	10.39
5	933.1452	4.0922	1273.75	10.39
6	934.0596	4.7669	1273.75	10.39
7	935.1264	5.781	1273.75	10.39
8	936.0408	6.816	1273.75	10.39
9	937.1076	5.3348	1273.75	10.39
10	938.022	5.4166	1273.75	10.39
11	939.0888	5.7616	1273.75	10.39
12	940.0032	4.4051	1273.75	10.39
13	941.07	5.3635	1273.75	10.39
14	942.1368	5.2693	1273.75	10.39
15	943.0512	5.0306	1273.75	10.39
16	944.118	5.2165	1273.75	10.39
17	945.0324	3.7756	1273.75	10.39
18	946.0992	8.7108	1273.75	10.39
19	947.0136	6.6551	1273.75	10.39
20	948.0804	6.6846	1273.75	10.39
21	949.1472	6.0387	1314.44	10.39
22	950.0616	9.0967	1315.75	10.51
23	951.1284	27.4557	1317.15	10.51
24	952.0428	26.8223	1318.61	10.52
25	953.1096	16.2725	1318.61	10.52
26	954.024	13.872	1318.61	10.52
27	955.0908	7.8066	1318.61	10.52
28	956.0052	5.6357	1318.61	10.52
29	957.072	7.0563	1318.61	10.52
30	958.1388	11.2513	1318.61	10.52
31	959.0532	8.012	1318.61	10.52
32	960.12	6.0644	1318.61	10.52
33	961.0344	6.7705	1318.61	10.52
34	962.1012	4.0585	1318.61	10.52
35	963.0156	5.8843	1318.61	10.52
36	964.0824	4.9297	1318.61	10.52
37	965.1492	15.4693	1318.61	10.52
38	966.0636	11.8554	1318.61	10.52
39	967.1304	15.3813	1318.61	10.52
40	968.0448	15.8818	1318.61	10.52
41	969.1116	12.7292	1318.61	10.52
42	970.026	23.7082	1318.61	10.52
43	971.0928	6.1266	1318.61	10.52
44	972.0072	8.6693	1318.61	10.52
45	973.074	11.2843	1318.61	10.52
46	974.1408	6.3693	1318.61	10.52
47	975.0552	4.299	1318.61	10.52
48	976.122	5.3967	1318.61	10.52
49	977.0364	7.0535	1318.61	10.52
50	978.1032	4.2814	1318.61	10.52
51	979.0176	4.6423	1318.61	10.52
52	980.0844	4.4112	1318.61	10.52
53	981.1512	4.4579	1318.61	10.52
54	982.0656	4.207	1318.61	10.52
55	983.1324	4.2964	1318.61	10.52
56	983.8944	3.3007	1318.61	10.52
57	985.1136	9.0397	1318.61	10.52
58	986.028	4.5121	1318.61	10.52
59	987.0948	6.3696	1318.61	10.52
60	988.0092	5.5661	1318.61	10.52
61	989.076	6.7767	1318.61	10.52
62	990.1428	7.2202	1318.61	10.52
63	991.0572	6.2438	1318.61	10.52
64	992.124	9.8491	1318.61	10.52
65	993.0384	7.1555	1318.61	10.52
66	994.1052	9.0362	1318.61	10.52
67	995.0196	7.3953	1395.91	10.54
68	996.0864	10.7317	1380.7	10.53
69	997.0008	36.4401	1380.7	10.53
70	998.0676	9.2529	1383.5	10.51
71	999.1344	12.4932	1384.91	10.51
72	1000.049	7.542	1384.91	10.51
73	1001.116	44.7733	1384.91	10.51
74	1002.03	14.5108	1384.91	10.51
75	1003.097	5.2407	1384.91	10.51
76	1004.011	4.8282	1384.91	10.51
77	1005.078	6.1789	1384.91	10.51
78	1006.145	5.5949	1384.91	10.51
79	1007.974	7.3792	1384.91	10.51
80	1008.126	6.9009	1384.91	10.51
81	1009.955	10.2283	1384.91	10.51
82	1010.107	9.7037	1384.91	10.51
83	1011.936	11.0328	1384.91	10.51
84	1012.088	10.6184	1384.91	10.51
85	1013.917	9.904	1384.91	10.51
86	1014.07	8.8096	1384.91	10.51
87	1015.898	6.0219	1384.91	10.51
88	1016.051	7.6138	1384.91	10.51
89	1017.88	6.3286	1384.91	10.51
90	1018.032	6.0111	1384.91	10.51
91	1019.861	5.6806	1384.91	10.51
92	1020.013	6.0759	1384.91	10.51
93	1021.994	3.0929	1384.91	10.51
94	1022.147	2.5827	1384.91	10.51
95	1023.976	4.6916	1384.91	10.51
96	1024.128	4.4164	1384.91	10.51
97	1025.957	2.9755	1384.91	10.51
98	1026.109	3.0391	1384.91	10.51
98	1026.109	3.0391	1384.91	10.51
99	1027.938	3.6292	1384.91	10.51
100	1028.09	3.9981	1384.91	10.51
101	1029.919	3.5018	1384.91	10.51
102	1030.072	3.4462	1384.91	10.51
103	1031.9	8.735	1384.91	10.51
104	1032.053	10.9385	1384.91	10.51
105	1033.882	3.7616	1384.91	10.51
106	1034.034	4.2184	1384.91	10.51
107	1035.863	7.303	1384.91	10.51
108	1036.015	6.7795	1384.91	10.51
109	1037.996	5.3169	1384.91	10.51
110	1038.149	5.6971	1384.91	10.51
111	1039.825	3.6165	1384.91	10.51
112	1040.13	4.1262	1384.91	10.51
113	1041.959	4.8336	1384.91	10.51
114	1042.111	4.7401	1384.91	10.51
115	1043.94	4.561	1384.91	10.51
116	1044.092	4.3325	1384.91	10.51
117	1045.921	3.2607	1384.91	10.51
118	1046.074	3.3215	1384.91	10.51
119	1047.902	7.2884	1384.91	10.51
120	1048.055	6.5577	1384.91	10.51
121	1049.884	3.697	1384.91	10.51
122	1050.036	3.4082	1384.91	10.51
123	1051.712	3.8793	1384.91	10.51
124	1052.932	3.1196	1384.91	10.51
125	1053.084	2.9336	1384.91	10.51
126	1054.913	4.3919	1384.91	10.51
127	1055.065	4.4084	1384.91	10.51
128	1056.894	6.84	1384.91	10.51
129	1057.046	6.5261	1384.91	10.51
130	1058.875	7.1217	1384.91	10.51
131	1059.028	7.2457	1384.91	10.51
132	1060.856	7.7638	1384.91	10.51
133	1061.009	11.1781	1384.91	10.51
134	1062.99	11.7554	1384.91	10.51
135	1063.142	11.6344	1384.91	10.51
136	1064.971	4.7776	1384.91	10.51
137	1065.124	4.6125	1384.91	10.51
138	1066.952	5.5484	1384.91	10.51
139	1067.105	5.8311	1384.91	10.51
140	1068.934	4.8477	1384.91	10.51
141	1069.086	5.3027	1384.91	10.51
142	1070.915	11.873	1384.91	10.51
143	1071.067	12.644	1485.7	10.53
144	1072.896	20.0951	1487.86	10.51
145	1073.048	23.4904	1487.86	10.51
146	1074.725	27.0605	1490.46	10.51

Continue

	A	B	C	D
146	1074.725	27.0605	1490.46	10.51
147	1075.944	28.1484	1490.46	10.51
148	1076.096	40.3868	1493.15	10.5
149	1077.925	9.6064	1493.15	10.5
150	1078.078	15.88	1495.8	10.49
151	1079.906	47.2751	1495.8	10.49
152	1080.059	44.8495	1498.4	10.5
153	1081.888	19.933	1498.4	10.5
154	1082.04	17.4131	1501.13	10.5
155	1083.869	30.2945	1501.13	10.5
156	1084.021	33.4653	1501.13	10.5
157	1085.85	20.4283	1501.13	10.5
158	1086.002	19.2869	1501.13	10.5
159	1087.984	26.0127	1512.26	10.5
160	1088.136	27.2574	1513.29	10.5
161	1089.965	11.5773	1514.84	10.5
162	1090.27	10.8367	1514.84	10.5
163	1091.946	16.702	1514.84	10.5
164	1092.098	22.9127	1514.84	10.5
165	1093.927	9.3544	1514.84	10.5
166	1094.08	17.8628	1514.84	10.5
167	1095.908	3.913	1514.84	10.5
168	1096.061	3.3128	1514.84	10.5
169	1097.89	11.5038	1514.84	10.5
170	1098.042	10.5056	1514.84	10.5
171	1099.871	9.6732	1514.84	10.5
172	1100.023	8.8158	1514.84	10.5
173	1101.852	6.7267	1528.19	10.5
174	1102.004	6.7431	1530.24	10.5
175	1103.986	5.2333	1530.24	10.5
176	1104.138	5.2143	1532.2	10.49
177	1105.967	8.8013	1433.45	10.49
178	1106.119	9.4787	1433.45	10.49
179	1107.948	18.4984	1433.45	10.49
180	1108.1	23.6474	1433.45	10.49
181	1109.929	45.3425	1433.45	10.49
182	1110.082	44.5108	1433.45	10.49
183	1111.91	5.0071	1433.45	10.49
184	1112.063	4.2981	1433.45	10.49
185	1113.892	7.058	1433.45	10.49
186	1114.044	6.6321	1433.45	10.49
187	1115.873	4.9959	1433.45	10.49
188	1116.025	4.8295	1433.45	10.49
189	1117.854	4.4415	1433.45	10.49
190	1118.006	4.1834	1433.45	10.49
191	1119.988	4.3427	1433.45	10.49
192	1120.14	4.3114	1433.45	10.49
193	1121.969	5.5978	1433.45	10.49
194	1122.121	5.8401	1433.45	10.49

	A	B	C	D
194	1122.121	5.8401	1433.45	10.49
195	1123.95	5.8648	1433.45	10.49
196	1124.102	4.9771	1433.45	10.49
197	1125.779	5.478	1433.45	10.49
198	1126.998	4.5926	1433.45	10.49
199	1127.15	4.923	1433.45	10.49
200	1128.522	7.194	1433.45	10.49
201	1130.96	9.3125	1433.45	10.49
202	1131.113	8.4096	1433.45	10.49
203	1132.942	10.1625	1433.45	10.49
204	1133.094	9.881	1433.45	10.49
205	1134.923	6.0587	1433.45	10.49
206	1135.075	6.0354	1433.45	10.49
207	1136.904	4.1008	1433.45	10.49
208	1137.056	3.939	1433.45	10.49
209	1138.885	7.6803	1433.45	10.49
210	1139.038	9.3071	1433.45	10.49
211	1140.714	5.7987	1433.45	10.49
212	1141.933	6.149	1433.45	10.49
213	1142.086	6.2986	1433.45	10.49
214	1143.914	7.5843	1433.45	10.49
215	1144.067	7.8987	1433.45	10.49
216	1145.896	5.7775	1433.45	10.49
217	1146.048	5.3393	1433.45	10.49
218	1147.877	5.2308	1433.45	10.49
219	1148.029	4.7275	1433.45	10.49
220	1149.858	4.1267	1433.45	10.49
221	1150.01	3.8933	1433.45	10.49
222	1151.687	4.9987	1433.45	10.49
223	1152.906	5.0147	1433.45	10.49
224	1153.058	4.8729	1433.45	10.49
225	1154.278	9.8297	1433.45	10.49
226	1155.649	5.683	1433.45	10.49
227	1156.868	4.1869	1433.45	10.49
228	1157.021	3.8608	1433.45	10.49
229	1158.85	4.89	1433.45	10.49
230	1159.002	4.8237	1433.45	10.49
231	1160.983	6.2955	1433.45	10.49
232	1161.136	6.1726	1433.45	10.49
233	1162.964	6.3805	1433.45	10.49
234	1163.117	6.0655	1433.45	10.49
235	1164.946	6.5983	1433.45	10.49
236	1165.098	6.435	1433.45	10.49
237	1166.774	4.5951	1433.45	10.49
238	1166.927	4.2383	1433.45	10.49
239	1167.079	4.0515	1433.45	10.49
240	1168.756	5.4057	1433.45	10.49
241	1169.975	4.0435	1433.45	10.49
242	1170.127	4.0215	1433.45	10.49

	A	B	C	D
242	1170.127	4.0215	1433.45	10.49
243	1171.346	4.9981	1433.45	10.49
244	1172.87	6.9984	1433.45	10.49
245	1173.023	8.3793	1433.45	10.49
246	1174.852	32.6645	1433.45	10.49
247	1175.004	30.4499	1433.45	10.49
248	1176.985	5.5317	1433.45	10.49
249	1177.138	4.8762	1433.45	10.49
250	1178.966	4.6759	1433.45	10.49
251	1179.119	4.662	1433.45	10.49
252	1180.948	8.8157	1433.45	10.49
253	1181.1	7.3417	1433.45	10.49
254	1182.776	3.1754	1433.45	10.49
255	1183.996	4.2288	1433.45	10.49
256	1184.148	4.4923	1433.45	10.49
257	1185.977	4.5322	1433.45	10.49
258	1186.129	4.6994	1433.45	10.49
259	1187.958	5.2223	1433.45	10.49
260	1188.11	5.1361	1433.45	10.49
261	1189.939	4.952	1433.45	10.49
262	1190.092	5.1835	1433.45	10.49
263	1191.92	7.3178	1433.45	10.49
264	1192.073	7.5683	1433.45	10.49
265	1193.749	11.5614	1433.45	10.49
266	1196.035	4.2436	1433.45	10.49
267	1197.407	9.7684	1433.45	10.49
268	1198.931	9.9509	1433.45	10.49
269	1199.083	10.4106	1433.45	10.49
270	1200.912	11.6559	1433.45	10.49
271	1201.064	3.9752	1433.45	10.49
272	1202.893	4.3624	1433.45	10.49
273	1203.046	4.5646	1433.45	10.49
274	1203.198	4.6813	1433.45	10.49
275	1204.874	6.3124	1433.45	10.49
276	1205.027	5.7683	1433.45	10.49
277	1206.398	4.4692	1433.45	10.49
278	1207.618	10.9168	1433.45	10.49
279	1208.989	7.4293	1433.45	10.49
280	1209.142	7.5705	1433.45	10.49
281	1210.818	9.6852	1433.45	10.49
282	1211.885	9.1717	1433.45	10.49
283	1212.037	10.8606	1433.45	10.49
284	1213.866	12.8265	1433.45	10.49
285	1214.018	13.2453	1433.45	10.49
286	1215.695	3.1043	1433.45	10.49
287	1216.914	6.8803	1433.45	10.49
288	1217.066	6.7004	1433.45	10.49
289	1218.438	7.4429	1433.45	10.49
290	1219.962	6.924	1433.45	10.49

Continue

	A	B	C	D
290	1219.962	6.924	1433.45	10.49
291	1220.114	6.5197	1433.45	10.49
292	1221.943	4.8124	1433.45	10.49
293	1222.096	4.9425	1433.45	10.49
294	1223.924	9.0117	1433.45	10.49
295	1224.077	7.5742	1433.45	10.49
296	1225.906	6.1949	1433.45	10.49
297	1226.058	6.1945	1705.1	10.51
298	1227.887	7.9799	1705.1	10.51
299	1228.039	8.1851	1706.92	10.49
300	1229.716	10.0966	1709.33	10.49
301	1230.935	6.3496	1710.53	10.49
302	1231.087	6.4731	1711.74	10.49
303	1232.306	11.0978	1711.74	10.49
304	1233.983	11.0823	1711.74	10.49
305	1234.135	11.618	1711.74	10.49
306	1235.964	14.4406	1711.74	10.49
307	1236.116	7.8143	1711.74	10.49
308	1237.945	6.9117	1711.74	10.49
309	1238.098	6.3602	1711.74	10.49
310	1239.926	5.4885	1711.74	10.49
311	1240.079	6.6389	1711.74	10.49
312	1241.908	8.8041	1711.74	10.49
313	1242.06	9.1612	1711.74	10.49
314	1243.736	12.3291	1711.74	10.49
315	1244.956	11.7199	1711.74	10.49
316	1246.937	11.4305	1711.74	10.49
317	1247.089	13.5145	1711.74	10.49
318	1248.918	15.704	1711.74	10.49
319	1249.07	16.3622	1711.74	10.49
320	1250.899	12.8963	1711.74	10.49
321	1251.052	24.4378	1711.74	10.49
322	1252.88	26.8309	1711.74	10.49
323	1253.033	24.8554	1711.74	10.49
324	1254.862	11.5923	1711.74	10.49
325	1255.014	10.8026	1711.74	10.49
326	1256.995	7.9678	1711.74	10.49
327	1257.148	14.4513	1711.74	10.49
328	1258.824	7.4081	1711.74	10.49
329	1259.891	5.4679	1711.74	10.49
330	1260.043	4.5515	1711.74	10.49
331	1261.262	5.6705	1711.74	10.49
332	1262.939	4.3603	1711.74	10.49
333	1263.091	4.9458	1711.74	10.49
334	1264.92	10.8776	1711.74	10.49
335	1265.072	11.9778	1711.74	10.49
336	1267.968	7.9952	1711.74	10.49
337	1268.12	8.8617	1711.74	10.49
338	1269.949	9.1776	1711.74	10.49

	A	B	C	D
338	1269.949	9.1776	1711.74	10.49
339	1270.102	7.6559	1711.74	10.49
340	1271.93	10.1957	1711.74	10.49
341	1272.083	9.0009	1711.74	10.49
342	1273.759	5.861	1711.74	10.49
343	1274.978	4.4803	1711.74	10.49
344	1275.131	4.689	1711.74	10.49
345	1276.96	5.1063	1711.74	10.49
346	1277.112	5.3974	1711.74	10.49
347	1278.941	4.1291	1711.74	10.49
348	1279.093	4.3437	1711.74	10.49
349	1280.77	6.3625	1711.74	10.49
350	1281.989	9.1047	1711.74	10.49
351	1282.141	9.2702	1711.74	10.49
352	1283.97	14.9756	1711.74	10.49
353	1284.122	17.3939	1711.74	10.49
354	1285.951	8.0642	1711.74	10.49
355	1286.104	7.1343	1711.74	10.49
356	1287.932	8.8282	1711.74	10.49
357	1288.085	8.8171	1711.74	10.49
358	1289.914	7.1285	1711.74	10.49
359	1290.066	6.6199	1711.74	10.49
360	1291.895	4.9216	1711.74	10.49
361	1292.047	4.9486	1711.74	10.49
362	1293.724	8.5304	1711.74	10.49
363	1294.943	5.4685	1711.74	10.49
364	1295.095	5.0752	1711.74	10.49
365	1296.924	5.0549	1711.74	10.49
366	1297.076	5.7359	1711.74	10.49
367	1298.905	10.2441	1711.74	10.49
368	1299.058	11.0351	1711.74	10.49
369	1300.886	7.3986	1711.74	10.49
370	1301.039	7.924	1711.74	10.49
371	1302.868	6.9809	1711.74	10.49
372	1303.02	6.5666	1711.74	10.49
373	1304.849	8.6222	1711.74	10.49
374	1305.001	6.6513	1711.74	10.49
375	1306.525	4.5035	1711.74	10.49
376	1307.897	8.375	1711.74	10.49
377	1308.049	11.0346	1711.74	10.49
378	1309.878	18.0003	1711.74	10.49
379	1310.03	16.7499	1711.74	10.49
380	1311.859	14.5233	1711.74	10.49
381	1312.012	19.15	1711.74	10.49
382	1313.993	14.6053	1711.74	10.49
383	1314.145	14.1379	1711.74	10.49
384	1315.974	13.2229	1711.74	10.49
385	1316.126	9.6594	1711.74	10.49
386	1317.803	13.7384	1711.74	10.49

	A	B	C	D
386	1317.803	13.7384	1711.74	10.49
387	1318.87	3.6956	1711.74	10.49
388	1319.022	3.3799	1711.74	10.49
389	1320.394	23.9421	1711.74	10.49
390	1321.918	9.3027	1711.74	10.49
391	1322.07	9.5746	1711.74	10.49
392	1323.899	7.228	1711.74	10.49
393	1324.051	7.5542	1711.74	10.49
394	1325.728	8.5735	1711.74	10.49
395	1326.947	9.6185	1711.74	10.49
396	1327.099	9.7472	1711.74	10.49
397	1328.928	10.7703	1711.74	10.49
398	1329.08	12.7442	1711.74	10.49
399	1330.909	4.3792	1711.74	10.49
400	1331.062	4.581	1711.74	10.49
401	1332.586	3.7484	1711.74	10.49
402	1333.957	5.8062	1711.74	10.49
403	1334.11	6.3158	1711.74	10.49
404	1335.938	4.2326	1711.74	10.49
405	1336.091	4.8012	1711.74	10.49
406	1337.92	6.3687	1711.74	10.49
407	1338.072	6.7847	1711.74	10.49
408	1339.901	7.3861	1711.74	10.49
409	1340.053	7.3504	1711.74	10.49
410	1341.882	5.7067	1711.74	10.49
411	1342.034	5.3635	1711.74	10.49
412	1343.711	5.5103	1711.74	10.49
413	1344.93	5.9749	1711.74	10.49
414	1345.082	5.9341	1711.74	10.49
415	1346.911	4.5916	1711.74	10.49
416	1347.064	6.7063	1711.74	10.49
417	1348.892	6.3091	1711.74	10.49
418	1349.045	6.5782	1711.74	10.49
419	1350.569	6.0178	1711.74	10.49
420	1351.94	6.564	1711.74	10.49
421	1352.093	6.0412	1711.74	10.49
422	1353.922	3.4703	1711.74	10.49
423	1354.074	3.2597	1711.74	10.49
424	1355.903	4.1333	1711.74	10.49
425	1356.055	4.0931	1711.74	10.49
426	1357.884	4.5868	1711.74	10.49
427	1358.036	4.8932	1711.74	10.49
428	1359.865	7.5978	1711.74	10.49
429	1360.018	7.4191	1711.74	10.49
430	1361.542	5.7246	1711.74	10.49
431	1362.913	9.6483	1711.74	10.49
432	1363.066	8.8231	1711.74	10.49
433	1364.894	9.7469	1711.74	10.49
434	1365.047	10.9487	1711.74	10.49

Continue

	A	B	C	D
434	1365.047	10.9487	1711.74	10.49
435	1366.876	4.9455	1711.74	10.49
436	1367.028	4.9424	1711.74	10.49
437	1368.857	5.1751	1711.74	10.49
438	1369.009	5.2172	1711.74	10.49
439	1370.686	4.7903	1711.74	10.49
440	1371.905	11.6379	1711.74	10.49
441	1372.057	10.8945	1711.74	10.49
442	1373.276	7.1156	1711.74	10.49
443	1374.953	9.2432	1711.74	10.49
444	1375.105	8.631	1711.74	10.49
445	1376.934	11.4393	1711.74	10.49
446	1377.086	11.5141	1711.74	10.49
447	1378.61	9.6488	1711.74	10.49
448	1379.982	4.2286	1711.74	10.49
449	1380.134	4.2455	1711.74	10.49
450	1381.963	5.7204	1711.74	10.49
451	1382.116	6.5423	1711.74	10.49
452	1383.792	6.3415	1711.74	10.49
453	1384.859	9.8127	1711.74	10.49
454	1385.011	10.2326	1711.74	10.49
455	1386.992	3.7597	1711.74	10.49
456	1387.145	3.7826	1711.74	10.49
457	1388.974	8.8662	1711.74	10.49
458	1389.126	8.9926	1711.74	10.49
459	1390.65	9.0118	1711.74	10.49
460	1391.869	7.4821	1711.74	10.49
461	1392.022	7.0454	1711.74	10.49
462	1393.85	7.3253	1711.74	10.49
463	1394.003	6.3839	1711.74	10.49
464	1395.527	3.8437	1711.74	10.49
465	1396.898	4.4984	1711.74	10.49
466	1397.051	4.9845	1711.74	10.49
467	1398.88	7.6061	1711.74	10.49
468	1399.032	8.0513	1711.74	10.49
469	1400.861	3.75	1711.74	10.49
470	1401.013	4.5367	1711.74	10.49
471	1402.994	7.6595	1711.74	10.49
472	1403.147	7.173	1711.74	10.49
473	1404.976	3.2417	1711.74	10.49
474	1405.128	3.6031	1711.74	10.49
475	1406.957	10.6203	1711.74	10.49
476	1407.109	10.7911	1711.74	10.49
477	1408.938	17.3394	1711.74	10.49
478	1409.09	14.5847	1711.74	10.49
479	1410.919	4.2497	1711.74	10.49
480	1411.072	3.9475	1711.74	10.49
481	1412.9	3.6302	1711.74	10.49
482	1413.053	3.6286	1711.74	10.49

	A	B	C	D
482	1413.053	3.6286	1711.74	10.49
483	1414.882	3.6089	1711.74	10.49
484	1415.034	3.5287	1711.74	10.49
485	1416.863	5.1569	1711.74	10.49
486	1417.015	5.4708	1711.74	10.49
487	1418.996	5.9364	1711.74	10.49
488	1419.149	6.2102	1711.74	10.49
489	1420.978	8.2366	1711.74	10.49
490	1421.13	10.8099	1711.74	10.49
491	1422.959	9.806	1711.74	10.49
492	1423.111	6.7748	1711.74	10.49
493	1424.94	8.8327	1711.74	10.49
494	1425.092	8.7355	1711.74	10.49
495	1426.921	5.0725	1711.74	10.49
496	1427.074	4.2582	1711.74	10.49
497	1428.902	10.1968	1711.74	10.49
498	1429.055	12.2805	1711.74	10.49
499	1430.884	7.9288	1711.74	10.49
500	1431.036	7.9724	1711.74	10.49
501	1432.865	6.9103	1711.74	10.49
502	1433.017	6.7742	1711.74	10.49
503	1434.998	4.767	1711.74	10.49
504	1435.151	4.8473	1711.74	10.49
505	1436.98	16.2584	1711.74	10.49
506	1437.132	17.4913	1711.74	10.49
507	1438.961	15.0802	1711.74	10.49
508	1439.113	15.839	1711.74	10.49
509	1440.942	10.7671	1711.74	10.49
510	1441.094	8.9919	1711.74	10.49
511	1442.923	9.7886	1711.74	10.49
512	1443.076	11.6084	1711.74	10.49
513	1444.904	26.3865	1711.74	10.49
514	1445.057	24.5975	1711.74	10.49
515	1446.886	13.2035	1711.74	10.49
516	1447.038	12.1062	1711.74	10.49
517	1448.867	17.0912	1711.74	10.49
518	1449.019	17.3329	1711.74	10.49
519	1450.848	6.8662	1711.74	10.49
520	1451	6.1567	1711.74	10.49
521	1452.829	9.8454	1711.74	10.49
522	1453.896	29.1878	1711.74	10.49
523	1454.048	24.1175	1711.74	10.49
524	1455.877	8.5371	1711.74	10.49
525	1456.03	8.1582	1711.74	10.49
526	1457.858	10.6005	1711.74	10.49
527	1458.011	10.3481	1711.74	10.49
528	1459.992	5.173	1711.74	10.49
529	1460.144	6.1969	1711.74	10.49
530	1461.973	6.0388	1711.74	10.49

	A	B	C	D
530	1461.973	6.0388	1711.74	10.49
531	1462.126	5.4243	1711.74	10.49
532	1463.954	9.3595	1711.74	10.49
533	1464.107	8.2417	1711.74	10.49
534	1465.936	4.6693	1711.74	10.49
535	1466.088	4.5465	1711.74	10.49
536	1467.917	4.5926	1711.74	10.49
537	1468.069	4.4621	2046.92	123.02
538	1469.898	8.6188	2047.36	122.04
539	1470.05	8.9149	2049.58	120.23
540	1471.879	5.2793	2050.59	119.34
541	1472.032	5.101	2050.59	119.34
542	1473.86	10.3327	2050.59	119.34
543	1474.013	7.5954	2050.59	119.34
544	1475.994	10.3472	2050.59	119.34
545	1476.146	9.5116	2050.59	119.34
546	1477.975	7.1301	2050.59	119.34
547	1478.128	6.8844	2050.59	119.34
548	1479.956	10.6337	2050.59	119.34
549	1480.109	12.2325	2063.42	119.19
550	1481.938	11.1524	2063.42	119.19
551	1482.09	9.1001	2065.41	118.32
552	1483.919	16.4111	2067.48	117.53
553	1484.071	15.4391	2069.07	115.85
554	1485.9	8.1914	2069.07	115.85
555	1486.052	7.4436	2071.26	115.09
556	1487.881	10.4343	2071.26	115.09
557	1488.034	11.0754	2071.26	115.09
558	1489.862	6.2747	2071.26	115.09
559	1490.015	5.5842	2071.26	115.09
560	1491.996	6.1945	2071.26	115.09
561	1492.148	6.5562	2071.26	115.09
562	1493.977	4.4169	2071.26	115.09
563	1494.13	4.545	2071.26	115.09
564	1495.958	16.1054	2071.26	115.09
565	1496.111	17.2392	2071.26	115.09
566	1497.94	7.7461	2071.26	115.09
567	1498.092	7.394	2071.26	115.09
568	1499.921	7.0487	2071.26	115.09
569	1500.073	6.9869	2071.26	115.09
570	1501.902	4.5308	2071.26	115.09
571	1502.054	4.4811	2071.26	115.09
572	1503.883	9.9179	2071.26	115.09
573	1504.036	9.7985	2071.26	115.09
574	1505.864	12.5705	2071.26	115.09
575	1506.017	8.4005	2071.26	115.09
576	1507.998	11.811	2071.26	115.09
577	1508.15	12.4813	2071.26	115.09
578	1509.979	9.8012	2071.26	115.09

Continue

	A	B	C	D
578	1509.979	9.8012	2071.26	115.09
579	1510.132	10.1934	2071.26	115.09
580	1511.96	10.8808	2071.26	115.09
581	1512.113	11.4558	2071.26	115.09
582	1513.942	14.6846	2071.26	115.09
583	1514.094	19.1875	2071.26	115.09
584	1515.923	17.8524	2071.26	115.09
585	1516.075	12.2057	2071.26	115.09
586	1517.904	8.7337	2071.26	115.09
587	1518.056	9.1504	2071.26	115.09
588	1519.885	9.1079	2071.26	115.09
589	1520.038	9.3599	2071.26	115.09
590	1521.866	5.4855	2071.26	115.09
591	1522.019	5.6724	2071.26	115.09
592	1523.848	5.7681	2071.26	115.09
593	1524	5.7451	2071.26	115.09
594	1525.981	7.9049	2071.26	115.09
595	1526.134	7.6079	2071.26	115.09
596	1527.962	6.2517	2071.26	115.09
597	1528.115	6.6235	2071.26	115.09
598	1529.944	9.2889	2071.26	115.09
599	1530.096	10.9539	2071.26	115.09
600	1531.925	15.5032	2071.26	115.09
601	1532.077	11.0458	2071.26	115.09
602	1533.906	7.5033	2071.26	115.09
603	1534.058	7.2902	2071.26	115.09
604	1535.887	11.3327	2071.26	115.09
605	1536.04	21.3411	2071.26	115.09
606	1537.868	11.6543	2071.26	115.09
607	1538.021	12.5812	2071.26	115.09
608	1539.85	11.3973	2071.26	115.09
609	1540.002	10.8878	2071.26	115.09
610	1541.983	13.7355	2071.26	115.09
611	1542.136	12.9326	2071.26	115.09
612	1543.964	10.9939	2071.26	115.09
613	1544.117	10.2565	2071.26	115.09
614	1545.946	16.2774	2071.26	115.09
615	1546.098	10.6905	2071.26	115.09
616	1547.927	11.377	2071.26	115.09
617	1548.079	10.9084	2071.26	115.09
618	1549.908	15.011	2071.26	115.09
619	1550.06	14.9537	2071.26	115.09
620	1551.889	12.5812	2071.26	115.09
621	1552.042	15.3935	2071.26	115.09
622	1553.87	10.4518	2071.26	115.09
623	1554.023	9.2275	2071.26	115.09
624	1555.852	21.1354	2071.26	115.09
625	1556.004	23.8445	2071.26	115.09
626	1557.985	6.7781	2071.26	115.09

	A	B	C	D
626	1557.985	6.7781	2071.26	115.09
627	1558.138	6.6716	2071.26	115.09
628	1559.966	8.8823	2071.26	115.09
629	1560.119	8.6106	2071.26	115.09
630	1561.948	6.2637	2071.26	115.09
631	1562.1	5.9179	2071.26	115.09
632	1563.929	15.3603	2071.26	115.09
633	1564.081	16.2931	2071.26	115.09
634	1565.91	10.3603	2071.26	115.09
635	1566.062	11.3694	2071.26	115.09
636	1567.891	19.7847	2071.26	115.09
637	1568.044	20.0797	2071.26	115.09
638	1569.872	13.0349	2071.26	115.09
639	1570.025	11.7607	2071.26	115.09
640	1571.854	13.719	2071.26	115.09
641	1572.006	13.027	2071.26	115.09
642	1573.987	9.4296	2071.26	115.09
643	1574.14	8.2885	2071.26	115.09
644	1575.968	6.9578	2071.26	115.09
645	1576.121	6.9379	2071.26	115.09
646	1577.95	11.5062	2071.26	115.09
647	1578.102	7.8373	2071.26	115.09
648	1579.931	8.6145	2071.26	115.09
649	1580.083	8.7307	2071.26	115.09
650	1581.912	12.6276	2071.26	115.09
651	1582.064	8.3901	2071.26	115.09
652	1583.893	15.9785	2071.26	115.09
653	1584.046	17.5351	2071.26	115.09
654	1585.874	13.1232	2071.26	115.09
655	1586.027	15.963	2071.26	115.09
656	1587.856	14.2327	2071.26	115.09
657	1588.008	13.7782	2071.26	115.09
658	1589.989	11.5305	2071.26	115.09
659	1590.142	12.1945	2071.26	115.09
660	1591.97	14.3486	2071.26	115.09
661	1592.123	15.7246	2071.26	115.09
662	1593.952	8.1689	2071.26	115.09
663	1594.104	10.7266	2071.26	115.09
664	1595.933	7.6043	2071.26	115.09
665	1596.085	7.8243	2071.26	115.09
666	1597.914	22.9226	2071.26	115.09
667	1598.066	24.4331	2071.26	115.09
668	1599.895	10.5753	2071.26	115.09
669	1600.048	9.4578	2071.26	115.09
670	1601.876	12.8556	2071.26	115.09
671	1602.029	14.5109	2071.26	115.09
672	1603.858	6.5009	2071.26	115.09
673	1604.01	5.8005	2071.26	115.09
674	1605.991	6.8884	2071.26	115.09

	A	B	C	D
674	1605.991	6.8884	2071.26	115.09
675	1606.144	6.8723	2071.26	115.09
676	1607.972	16.3756	2071.26	115.09
677	1608.125	23.0798	2071.26	115.09
678	1609.954	9.6935	2071.26	115.09
679	1610.106	9.9764	2071.26	115.09
680	1611.935	10.2343	2071.26	115.09
681	1612.087	8.6541	2071.26	115.09
682	1613.916	13.9562	2071.26	115.09
683	1614.068	11.6414	2071.26	115.09
684	1615.897	14.9234	2071.26	115.09
685	1616.05	15.0148	2071.26	115.09
686	1617.878	4.7865	2071.26	115.09
687	1618.031	4.7272	2071.26	115.09
688	1619.86	10.2746	2071.26	115.09
689	1620.012	9.1996	2071.26	115.09
690	1621.993	3.8813	2071.26	115.09
691	1622.146	4.4985	2071.26	115.09
692	1623.974	4.932	2071.26	115.09
693	1624.127	5.1831	2071.26	115.09
694	1625.956	5.5222	2071.26	115.09
695	1626.108	5.6034	2071.26	115.09
696	1627.937	5.2689	2071.26	115.09
697	1628.089	5.0388	2071.26	115.09
698	1629.918	21.2539	2071.26	115.09
699	1630.07	20.2764	2071.26	115.09
700	1631.899	4.9244	2071.26	115.09
701	1632.052	4.9256	2071.26	115.09
702	1633.88	4.8606	2071.26	115.09
703	1634.033	4.9361	2071.26	115.09
704	1635.862	5.4562	2071.26	115.09
705	1636.014	5.6782	2071.26	115.09
706	1637.995	8.903	2285.81	10.5
707	1638.148	10.7616	2287.89	10.49
708	1639.976	6.6811	2288.97	10.49
709	1640.129	6.3346	2288.97	10.49
710	1641.958	11.7003	2288.97	10.49
711	1642.11	12.0248	2288.97	10.49
712	1643.939	17.0032	2288.97	10.49
713	1644.091	14.6098	2288.97	10.49
714	1645.92	4.9523	2288.97	10.49
715	1646.072	5.2674	2288.97	10.49
716	1647.901	25.0459	2288.97	10.49
717	1648.054	25.4452	2288.97	10.49
718	1649.882	15.7694	2303.04	10.49
719	1650.035	14.1741	2305.14	10.49
720	1651.864	4.0138	2305.14	10.49
721	1652.016	5.0208	2307.48	10.49
722	1653.997	12.3158	2308.63	10.49

4.2. Pore pressure and fracture pressure estimation:

Case study calculation use Microsoft excel and stranded by Calculate resistivity trends and To obtain resistivity trend plot Depth VS True resistivity, see figure (41)

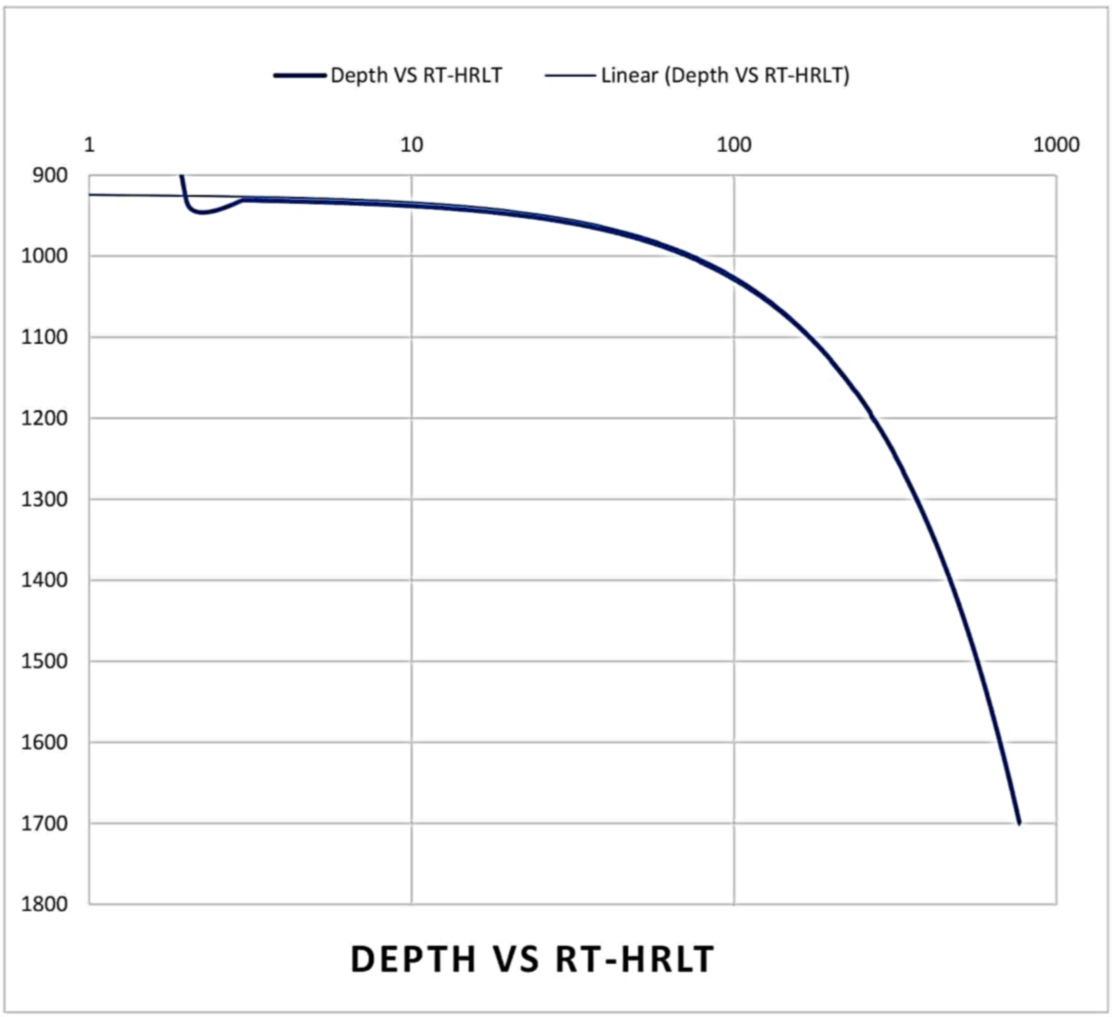

Figure (4-1) Depth VS RT-HRLT

Then by using equation (3-1) and the results tabulated in table (4-2) and (4-3)

Table(4.2)Resistivity trend,formation pore pressure ratio and fracture pressure

	A	B	C		A	B	C		A	B	C		A	B	C
1	RT	PPR	FPR	58	4.5121	1318.61	1468.61	115	4.561	1384.91	1534.91	172	8.8158	1514.84	1664.84
2	6.0905	1273.75	1423.75	59	6.3696	1318.61	1468.61	116	4.3325	1384.91	1534.91	173	6.7267	1528.19	1678.19
3	6.2267	1273.75	1423.75	60	5.5661	1318.61	1468.61	117	3.2607	1384.91	1534.91	174	6.7431	1530.24	1680.24
4	8.9044	1273.75	1423.75	61	6.7767	1318.61	1468.61	118	3.3215	1384.91	1534.91	175	5.2333	1530.24	1680.24
5	4.0922	1273.75	1423.75	62	7.2202	1318.61	1468.61	119	7.2884	1384.91	1534.91	176	5.2143	1532.2	1682.2
6	4.7669	1273.75	1423.75	63	6.2438	1318.61	1468.61	120	6.5577	1384.91	1534.91	177	8.8013	1433.45	1583.45
7	5.781	1273.75	1423.75	64	9.8491	1318.61	1468.61	121	3.697	1384.91	1534.91	178	9.4787	1433.45	1583.45
8	6.816	1273.75	1423.75	65	7.1555	1318.61	1468.61	122	3.4082	1384.91	1534.91	179	18.4984	1433.45	1583.45
9	5.3348	1273.75	1423.75	66	9.0362	1318.61	1468.61	123	3.8793	1384.91	1534.91	180	23.6474	1433.45	1583.45
10	5.4166	1273.75	1423.75	67	7.3953	1395.91	1545.91	124	3.1196	1384.91	1534.91	181	45.3425	1433.45	1583.45
11	5.7616	1273.75	1423.75	68	10.7317	1380.7	1530.7	125	2.9336	1384.91	1534.91	182	44.5108	1433.45	1583.45
12	4.4051	1273.75	1423.75	69	36.4401	1380.7	1530.7	126	4.3919	1384.91	1534.91	183	5.0071	1433.45	1583.45
13	5.3635	1273.75	1423.75	70	9.2529	1383.5	1533.5	127	4.4084	1384.91	1534.91	184	4.2981	1433.45	1583.45
14	5.2693	1273.75	1423.75	71	12.4932	1384.91	1534.91	128	6.84	1384.91	1534.91	185	7.058	1433.45	1583.45
15	5.0306	1273.75	1423.75	72	7.542	1384.91	1534.91	129	6.5261	1384.91	1534.91	186	6.6321	1433.45	1583.45
16	5.2165	1273.75	1423.75	73	44.7733	1384.91	1534.91	130	7.1217	1384.91	1534.91	187	4.9959	1433.45	1583.45
17	3.7756	1273.75	1423.75	74	14.5108	1384.91	1534.91	131	7.2457	1384.91	1534.91	188	4.8295	1433.45	1583.45
18	8.7108	1273.75	1423.75	75	5.2407	1384.91	1534.91	132	7.7638	1384.91	1534.91	189	4.4415	1433.45	1583.45
19	6.6551	1273.75	1423.75	76	4.8282	1384.91	1534.91	133	11.1781	1384.91	1534.91	190	4.1834	1433.45	1583.45
20	6.6846	1273.75	1423.75	77	6.1789	1384.91	1534.91	134	11.7554	1384.91	1534.91	191	4.3427	1433.45	1583.45
21	6.0387	1314.44	1464.44	78	5.5949	1384.91	1534.91	135	11.6344	1384.91	1534.91	192	4.3114	1433.45	1583.45
22	9.0967	1315.75	1465.75	79	7.3792	1384.91	1534.91	136	4.7776	1384.91	1534.91	193	5.5978	1433.45	1583.45
23	27.4557	1317.15	1467.15	80	6.9009	1384.91	1534.91	137	4.6125	1384.91	1534.91	194	5.8401	1433.45	1583.45
24	26.8223	1318.61	1468.61	81	10.2283	1384.91	1534.91	138	5.5484	1384.91	1534.91	195	5.8648	1433.45	1583.45
25	16.2725	1318.61	1468.61	82	9.7037	1384.91	1534.91	139	5.8311	1384.91	1534.91	196	4.9771	1433.45	1583.45
26	13.872	1318.61	1468.61	83	11.0328	1384.91	1534.91	140	4.8477	1384.91	1534.91	197	5.478	1433.45	1583.45
27	7.8066	1318.61	1468.61	84	10.6184	1384.91	1534.91	141	5.3027	1384.91	1534.91	198	4.5926	1433.45	1583.45
28	5.6357	1318.61	1468.61	85	9.904	1384.91	1534.91	142	11.873	1384.91	1534.91	199	4.923	1433.45	1583.45
29	7.0563	1318.61	1468.61	86	8.8096	1384.91	1534.91	143	12.644	1485.7	1635.7	200	7.194	1433.45	1583.45
30	11.2513	1318.61	1468.61	87	6.0219	1384.91	1534.91	144	20.0951	1487.86	1637.86	201	9.3125	1433.45	1583.45
31	8.012	1318.61	1468.61	88	7.6138	1384.91	1534.91	145	23.4904	1487.86	1637.86	202	8.4096	1433.45	1583.45
32	6.0644	1318.61	1468.61	89	6.3286	1384.91	1534.91	146	27.0605	1490.46	1640.46	203	10.1625	1433.45	1583.45
33	6.7705	1318.61	1468.61	90	6.0111	1384.91	1534.91	147	28.1484	1490.46	1640.46	204	9.881	1433.45	1583.45
34	4.0585	1318.61	1468.61	91	5.6806	1384.91	1534.91	148	40.3868	1493.15	1643.15	205	6.0587	1433.45	1583.45
35	5.8843	1318.61	1468.61	92	6.0759	1384.91	1534.91	149	9.6064	1493.15	1643.15	206	6.0354	1433.45	1583.45
36	4.9297	1318.61	1468.61	93	3.0929	1384.91	1534.91	150	15.88	1495.8	1645.8	207	4.1008	1433.45	1583.45
37	15.4693	1318.61	1468.61	94	2.5827	1384.91	1534.91	151	47.2751	1495.8	1645.8	208	3.939	1433.45	1583.45
38	11.8554	1318.61	1468.61	95	4.6916	1384.91	1534.91	152	44.8495	1498.4	1648.4	209	7.6803	1433.45	1583.45
39	15.3813	1318.61	1468.61	96	4.4164	1384.91	1534.91	153	19.933	1498.4	1648.4	210	9.3071	1433.45	1583.45
40	15.8818	1318.61	1468.61	97	2.9755	1384.91	1534.91	154	17.4131	1501.13	1651.13	211	5.7987	1433.45	1583.45
41	12.7292	1318.61	1468.61	98	3.0391	1384.91	1534.91	155	30.2945	1501.13	1651.13	212	6.149	1433.45	1583.45
42	23.7082	1318.61	1468.61	99	3.6292	1384.91	1534.91	156	33.4653	1501.13	1651.13	213	6.2986	1433.45	1583.45
43	6.1266	1318.61	1468.61	100	3.9981	1384.91	1534.91	157	20.4283	1501.13	1651.13	214	7.5843	1433.45	1583.45
44	8.6693	1318.61	1468.61	101	3.5018	1384.91	1534.91	158	19.2869	1501.13	1651.13	215	7.8987	1433.45	1583.45
45	11.2843	1318.61	1468.61	102	3.4462	1384.91	1534.91	159	26.0127	1512.26	1662.26	216	5.7775	1433.45	1583.45
46	6.3693	1318.61	1468.61	103	8.735	1384.91	1534.91	160	27.2574	1513.29	1663.29	217	5.3393	1433.45	1583.45
47	4.299	1318.61	1468.61	104	10.9385	1384.91	1534.91	161	11.5773	1514.84	1664.84	218	5.2308	1433.45	1583.45
48	5.3967	1318.61	1468.61	105	3.7616	1384.91	1534.91	162	10.8367	1514.84	1664.84	219	4.7275	1433.45	1583.45
49	7.0535	1318.61	1468.61	106	4.2184	1384.91	1534.91	163	16.702	1514.84	1664.84	220	4.1267	1433.45	1583.45
50	4.2814	1318.61	1468.61	107	7.303	1384.91	1534.91	164	22.9127	1514.84	1664.84	221	3.8933	1433.45	1583.45
51	4.6423	1318.61	1468.61	108	6.7795	1384.91	1534.91	165	9.3544	1514.84	1664.84	222	4.9987	1433.45	1583.45
52	4.4112	1318.61	1468.61	109	5.3169	1384.91	1534.91	166	17.8628	1514.84	1664.84	223	5.0147	1433.45	1583.45
53	4.4579	1318.61	1468.61	110	5.6971	1384.91	1534.91	167	3.913	1514.84	1664.84	224	4.8729	1433.45	1583.45
54	4.207	1318.61	1468.61	111	3.6165	1384.91	1534.91	168	3.3128	1514.84	1664.84	225	9.8297	1433.45	1583.45
55	4.2964	1318.61	1468.61	112	4.1262	1384.91	1534.91	169	11.5038	1514.84	1664.84	226	5.683	1433.45	1583.45
56	3.3007	1318.61	1468.61	113	4.8336	1384.91	1534.91	170	10.5056	1514.84	1664.84	227	4.1869	1433.45	1583.45
57	9.0397	1318.61	1468.61	114	4.7401	1384.91	1534.91	171	9.6732	1514.84	1664.84	228	3.8608	1433.45	1583.45
58	4.5121	1318.61	1468.61	115	4.561	1384.91	1534.91	172	8.8158	1514.84	1664.84	229	4.89	1433.45	1583.45
59	6.3696	1318.61	1468.61	116	4.3325	1384.91	1534.91	173	6.7267	1528.19	1678.19	230	4.8237	1433.45	1583.45

Continue

	A	B	C
229	4.89	1433.45	1583.45
230	4.8237	1433.45	1583.45
231	6.2955	1433.45	1583.45
232	6.1726	1433.45	1583.45
233	6.3805	1433.45	1583.45
234	6.0655	1433.45	1583.45
235	6.5983	1433.45	1583.45
236	6.435	1433.45	1583.45
237	4.5951	1433.45	1583.45
238	4.2383	1433.45	1583.45
239	4.0515	1433.45	1583.45
240	5.4057	1433.45	1583.45
241	4.0435	1433.45	1583.45
242	4.0215	1433.45	1583.45
243	4.9981	1433.45	1583.45
244	6.9984	1433.45	1583.45
245	8.3793	1433.45	1583.45
246	32.6645	1433.45	1583.45
247	30.4499	1433.45	1583.45
248	5.5317	1433.45	1583.45
249	4.8762	1433.45	1583.45
250	4.6759	1433.45	1583.45
251	4.662	1433.45	1583.45
252	8.8157	1433.45	1583.45
253	7.3417	1433.45	1583.45
254	3.1754	1433.45	1583.45
255	4.2288	1433.45	1583.45
256	4.4923	1433.45	1583.45
257	4.5322	1433.45	1583.45
258	4.6994	1433.45	1583.45
259	5.2223	1433.45	1583.45
260	5.1361	1433.45	1583.45
261	4.952	1433.45	1583.45
262	5.1835	1433.45	1583.45
263	7.3178	1433.45	1583.45
264	7.5683	1433.45	1583.45
265	11.5614	1433.45	1583.45
266	4.2436	1433.45	1583.45
267	9.7684	1433.45	1583.45
268	9.9509	1433.45	1583.45
269	10.4106	1433.45	1583.45
270	11.6559	1433.45	1583.45
271	3.9752	1433.45	1583.45
272	4.3624	1433.45	1583.45
273	4.5646	1433.45	1583.45
274	4.6813	1433.45	1583.45
275	6.3124	1433.45	1583.45
276	5.7683	1433.45	1583.45
277	4.4692	1433.45	1583.45
278	10.9168	1433.45	1583.45
279	7.4293	1433.45	1583.45
280	7.5705	1433.45	1583.45
281	9.6852	1433.45	1583.45
282	9.1717	1433.45	1583.45
283	10.8606	1433.45	1583.45
284	12.8265	1433.45	1583.45
285	13.2453	1433.45	1583.45
286	3.1043	1433.45	1583.45
287	6.8803	1433.45	1583.45

	A	B	C
286	3.1043	1433.45	1583.45
287	6.8803	1433.45	1583.45
288	6.7004	1433.45	1583.45
289	7.4429	1433.45	1583.45
290	6.924	1433.45	1583.45
291	6.5197	1433.45	1583.45
292	4.8124	1433.45	1583.45
293	4.9425	1433.45	1583.45
294	9.0117	1433.45	1583.45
295	7.5742	1433.45	1583.45
296	6.1949	1433.45	1583.45
297	6.1945	1705.1	1855.1
298	7.9799	1705.1	1855.1
299	8.1851	1706.92	1856.92
300	10.0966	1709.33	1859.33
301	6.3496	1710.53	1860.53
302	6.4731	1711.74	1861.74
303	11.0978	1711.74	1861.74
304	11.0823	1711.74	1861.74
305	11.618	1711.74	1861.74
306	14.4406	1711.74	1861.74
307	7.8143	1711.74	1861.74
308	6.9117	1711.74	1861.74
309	6.3602	1711.74	1861.74
310	5.4885	1711.74	1861.74
311	6.6389	1711.74	1861.74
312	8.8041	1711.74	1861.74
313	9.1612	1711.74	1861.74
314	12.3291	1711.74	1861.74
315	11.7199	1711.74	1861.74
316	11.4305	1711.74	1861.74
317	13.5145	1711.74	1861.74
318	15.704	1711.74	1861.74
319	16.3622	1711.74	1861.74
320	12.8963	1711.74	1861.74
321	24.4378	1711.74	1861.74
322	26.8309	1711.74	1861.74
323	24.8554	1711.74	1861.74
324	11.5923	1711.74	1861.74
325	10.8026	1711.74	1861.74
326	7.9678	1711.74	1861.74
327	14.4513	1711.74	1861.74
328	7.4081	1711.74	1861.74
329	5.4679	1711.74	1861.74
330	4.5515	1711.74	1861.74
331	5.6705	1711.74	1861.74
332	4.3603	1711.74	1861.74
333	4.9458	1711.74	1861.74
334	10.8776	1711.74	1861.74
335	11.9778	1711.74	1861.74
336	7.9952	1711.74	1861.74
337	8.8617	1711.74	1861.74
338	9.1776	1711.74	1861.74
339	7.6559	1711.74	1861.74
340	10.1957	1711.74	1861.74
341	9.0009	1711.74	1861.74
342	5.861	1711.74	1861.74
343	4.4803	1711.74	1861.74
344	4.689	1711.74	1861.74

	A	B	C
343	4.4803	1711.74	1861.74
344	4.689	1711.74	1861.74
345	5.1063	1711.74	1861.74
346	5.3974	1711.74	1861.74
347	4.1291	1711.74	1861.74
348	4.3437	1711.74	1861.74
349	6.3625	1711.74	1861.74
350	9.1047	1711.74	1861.74
351	9.2702	1711.74	1861.74
352	14.9756	1711.74	1861.74
353	17.3939	1711.74	1861.74
354	8.0642	1711.74	1861.74
355	7.1343	1711.74	1861.74
356	8.8282	1711.74	1861.74
357	8.8171	1711.74	1861.74
358	7.1285	1711.74	1861.74
359	6.6199	1711.74	1861.74
360	4.9216	1711.74	1861.74
361	4.9486	1711.74	1861.74
362	8.5304	1711.74	1861.74
363	5.4685	1711.74	1861.74
364	5.0752	1711.74	1861.74
365	5.0549	1711.74	1861.74
366	5.7359	1711.74	1861.74
367	10.2441	1711.74	1861.74
368	11.0351	1711.74	1861.74
369	7.3986	1711.74	1861.74
370	7.924	1711.74	1861.74
371	6.9809	1711.74	1861.74
372	6.5666	1711.74	1861.74
373	8.6222	1711.74	1861.74
374	6.6513	1711.74	1861.74
375	4.5035	1711.74	1861.74
376	8.375	1711.74	1861.74
377	11.0346	1711.74	1861.74
378	18.0003	1711.74	1861.74
379	16.7499	1711.74	1861.74
380	14.5233	1711.74	1861.74
381	19.15	1711.74	1861.74
382	14.6053	1711.74	1861.74
383	14.1379	1711.74	1861.74
384	13.2229	1711.74	1861.74
385	9.6594	1711.74	1861.74
386	13.7384	1711.74	1861.74
387	3.6956	1711.74	1861.74
388	3.3799	1711.74	1861.74
389	23.9421	1711.74	1861.74
390	9.3027	1711.74	1861.74
391	9.5746	1711.74	1861.74
392	7.228	1711.74	1861.74
393	7.5542	1711.74	1861.74
394	8.5735	1711.74	1861.74
395	9.6185	1711.74	1861.74
396	9.7472	1711.74	1861.74
397	10.7703	1711.74	1861.74
398	12.7442	1711.74	1861.74
399	4.3792	1711.74	1861.74
400	4.581	1711.74	1861.74
401	3.7484	1711.74	1861.74

	A	B	C
343	4.4803	1711.74	1861.74
344	4.689	1711.74	1861.74
345	5.1063	1711.74	1861.74
346	5.3974	1711.74	1861.74
347	4.1291	1711.74	1861.74
348	4.3437	1711.74	1861.74
349	6.3625	1711.74	1861.74
350	9.1047	1711.74	1861.74
351	9.2702	1711.74	1861.74
352	14.9756	1711.74	1861.74
353	17.3939	1711.74	1861.74
354	8.0642	1711.74	1861.74
355	7.1343	1711.74	1861.74
356	8.8282	1711.74	1861.74
357	8.8171	1711.74	1861.74
358	7.1285	1711.74	1861.74
359	6.6199	1711.74	1861.74
360	4.9216	1711.74	1861.74
361	4.9486	1711.74	1861.74
362	8.5304	1711.74	1861.74
363	5.4685	1711.74	1861.74
364	5.0752	1711.74	1861.74
365	5.0549	1711.74	1861.74
366	5.7359	1711.74	1861.74
367	10.2441	1711.74	1861.74
368	11.0351	1711.74	1861.74
369	7.3986	1711.74	1861.74
370	7.924	1711.74	1861.74
371	6.9809	1711.74	1861.74
372	6.5666	1711.74	1861.74
373	8.6222	1711.74	1861.74
374	6.6513	1711.74	1861.74
375	4.5035	1711.74	1861.74
376	8.375	1711.74	1861.74
377	11.0346	1711.74	1861.74
378	18.0003	1711.74	1861.74
379	16.7499	1711.74	1861.74
380	14.5233	1711.74	1861.74
381	19.15	1711.74	1861.74
382	14.6053	1711.74	1861.74
383	14.1379	1711.74	1861.74
384	13.2229	1711.74	1861.74
385	9.6594	1711.74	1861.74
386	13.7384	1711.74	1861.74
387	3.6956	1711.74	1861.74
388	3.3799	1711.74	1861.74
389	23.9421	1711.74	1861.74
390	9.3027	1711.74	1861.74
391	9.5746	1711.74	1861.74
392	7.228	1711.74	1861.74
393	7.5542	1711.74	1861.74
394	8.5735	1711.74	1861.74
395	9.6185	1711.74	1861.74
396	9.7472	1711.74	1861.74
397	10.7703	1711.74	1861.74
398	12.7442	1711.74	1861.74
399	4.3792	1711.74	1861.74
400	4.581	1711.74	1861.74
401	3.7484	1711.74	1861.74

Continue

	A	B	C
400	4.581	1711.74	1861.74
401	3.7484	1711.74	1861.74
402	5.8062	1711.74	1861.74
403	6.3158	1711.74	1861.74
404	4.2326	1711.74	1861.74
405	4.8012	1711.74	1861.74
406	6.3687	1711.74	1861.74
407	6.7847	1711.74	1861.74
408	7.3861	1711.74	1861.74
409	7.3504	1711.74	1861.74
410	5.7067	1711.74	1861.74
411	5.3635	1711.74	1861.74
412	5.5103	1711.74	1861.74
413	5.9749	1711.74	1861.74
414	5.9341	1711.74	1861.74
415	4.5916	1711.74	1861.74
416	6.7063	1711.74	1861.74
417	6.3091	1711.74	1861.74
418	6.5782	1711.74	1861.74
419	6.0178	1711.74	1861.74
420	6.564	1711.74	1861.74
421	6.0412	1711.74	1861.74
422	3.4703	1711.74	1861.74
423	3.2597	1711.74	1861.74
424	4.1333	1711.74	1861.74
425	4.0931	1711.74	1861.74
426	4.5868	1711.74	1861.74
427	4.8932	1711.74	1861.74
428	7.5978	1711.74	1861.74
429	7.4191	1711.74	1861.74
430	5.7246	1711.74	1861.74
431	9.6483	1711.74	1861.74
432	8.8231	1711.74	1861.74
433	9.7469	1711.74	1861.74
434	10.9487	1711.74	1861.74
435	4.9455	1711.74	1861.74
436	4.9424	1711.74	1861.74
437	5.1751	1711.74	1861.74
438	5.2172	1711.74	1861.74
439	4.7903	1711.74	1861.74
440	11.6379	1711.74	1861.74
441	10.8945	1711.74	1861.74
442	7.1156	1711.74	1861.74
443	9.2432	1711.74	1861.74
444	8.631	1711.74	1861.74
445	11.4393	1711.74	1861.74
446	11.5141	1711.74	1861.74
447	9.6488	1711.74	1861.74
448	4.2286	1711.74	1861.74
449	4.2455	1711.74	1861.74
450	5.7204	1711.74	1861.74
451	6.5423	1711.74	1861.74
452	6.3415	1711.74	1861.74
453	9.8127	1711.74	1861.74
454	10.2326	1711.74	1861.74
455	3.7597	1711.74	1861.74
456	3.7826	1711.74	1861.74
457	8.8662	1711.74	1861.74
458	8.9926	1711.74	1861.74

	A	B	C
457	8.8662	1711.74	1861.74
458	8.9926	1711.74	1861.74
459	9.0118	1711.74	1861.74
460	7.4821	1711.74	1861.74
461	7.0454	1711.74	1861.74
462	7.3253	1711.74	1861.74
463	6.3839	1711.74	1861.74
464	3.8437	1711.74	1861.74
465	4.4984	1711.74	1861.74
466	4.9845	1711.74	1861.74
467	7.6061	1711.74	1861.74
468	8.0513	1711.74	1861.74
469	3.75	1711.74	1861.74
470	4.5367	1711.74	1861.74
471	7.6595	1711.74	1861.74
472	7.173	1711.74	1861.74
473	3.2417	1711.74	1861.74
474	3.6031	1711.74	1861.74
475	10.6203	1711.74	1861.74
476	10.7911	1711.74	1861.74
477	17.3394	1711.74	1861.74
478	14.5847	1711.74	1861.74
479	4.2497	1711.74	1861.74
480	3.9475	1711.74	1861.74
481	3.6302	1711.74	1861.74
482	3.6286	1711.74	1861.74
483	3.6089	1711.74	1861.74
484	3.5287	1711.74	1861.74
485	5.1569	1711.74	1861.74
486	5.4708	1711.74	1861.74
487	5.9364	1711.74	1861.74
488	6.2102	1711.74	1861.74
489	8.2366	1711.74	1861.74
490	10.8099	1711.74	1861.74
491	9.806	1711.74	1861.74
492	6.7748	1711.74	1861.74
493	8.8327	1711.74	1861.74
494	8.7355	1711.74	1861.74
495	5.0725	1711.74	1861.74
496	4.2582	1711.74	1861.74
497	10.1968	1711.74	1861.74
498	12.2805	1711.74	1861.74
499	7.9288	1711.74	1861.74
500	7.9724	1711.74	1861.74
501	6.9103	1711.74	1861.74
502	6.7742	1711.74	1861.74
503	4.767	1711.74	1861.74
504	4.8473	1711.74	1861.74
505	16.2584	1711.74	1861.74
506	17.4913	1711.74	1861.74
507	15.0802	1711.74	1861.74
508	15.839	1711.74	1861.74
509	10.7671	1711.74	1861.74
510	8.9919	1711.74	1861.74
511	9.7886	1711.74	1861.74
512	11.6084	1711.74	1861.74
513	26.3865	1711.74	1861.74
514	24.5975	1711.74	1861.74
515	13.2035	1711.74	1861.74

	A	B	C
457	8.8662	1711.74	1861.74
458	8.9926	1711.74	1861.74
459	9.0118	1711.74	1861.74
460	7.4821	1711.74	1861.74
461	7.0454	1711.74	1861.74
462	7.3253	1711.74	1861.74
463	6.3839	1711.74	1861.74
464	3.8437	1711.74	1861.74
465	4.4984	1711.74	1861.74
466	4.9845	1711.74	1861.74
467	7.6061	1711.74	1861.74
468	8.0513	1711.74	1861.74
469	3.75	1711.74	1861.74
470	4.5367	1711.74	1861.74
471	7.6595	1711.74	1861.74
472	7.173	1711.74	1861.74
473	3.2417	1711.74	1861.74
474	3.6031	1711.74	1861.74
475	10.6203	1711.74	1861.74
476	10.7911	1711.74	1861.74
477	17.3394	1711.74	1861.74
478	14.5847	1711.74	1861.74
479	4.2497	1711.74	1861.74
480	3.9475	1711.74	1861.74
481	3.6302	1711.74	1861.74
482	3.6286	1711.74	1861.74
483	3.6089	1711.74	1861.74
484	3.5287	1711.74	1861.74
485	5.1569	1711.74	1861.74
486	5.4708	1711.74	1861.74
487	5.9364	1711.74	1861.74
488	6.2102	1711.74	1861.74
489	8.2366	1711.74	1861.74
490	10.8099	1711.74	1861.74
491	9.806	1711.74	1861.74
492	6.7748	1711.74	1861.74
493	8.8327	1711.74	1861.74
494	8.7355	1711.74	1861.74
495	5.0725	1711.74	1861.74
496	4.2582	1711.74	1861.74
497	10.1968	1711.74	1861.74
498	12.2805	1711.74	1861.74
499	7.9288	1711.74	1861.74
500	7.9724	1711.74	1861.74
501	6.9103	1711.74	1861.74
502	6.7742	1711.74	1861.74
503	4.767	1711.74	1861.74
504	4.8473	1711.74	1861.74
505	16.2584	1711.74	1861.74
506	17.4913	1711.74	1861.74
507	15.0802	1711.74	1861.74
508	15.839	1711.74	1861.74
509	10.7671	1711.74	1861.74
510	8.9919	1711.74	1861.74
511	9.7886	1711.74	1861.74
512	11.6084	1711.74	1861.74
513	26.3865	1711.74	1861.74
514	24.5975	1711.74	1861.74
515	13.2035	1711.74	1861.74

	A	B	C
514	24.5975	1711.74	1861.74
515	13.2035	1711.74	1861.74
516	12.1062	1711.74	1861.74
517	17.0912	1711.74	1861.74
518	17.3329	1711.74	1861.74
519	6.8662	1711.74	1861.74
520	6.1567	1711.74	1861.74
521	9.8454	1711.74	1861.74
522	29.1878	1711.74	1861.74
523	24.1175	1711.74	1861.74
524	8.5371	1711.74	1861.74
525	8.1582	1711.74	1861.74
526	10.6005	1711.74	1861.74
527	10.3481	1711.74	1861.74
528	5.173	1711.74	1861.74
529	6.1969	1711.74	1861.74
530	6.0388	1711.74	1861.74
531	5.4243	1711.74	1861.74
532	9.3595	1711.74	1861.74
533	8.2417	1711.74	1861.74
534	4.6693	1711.74	1861.74
535	4.5465	1711.74	1861.74
536	4.5926	1711.74	1861.74
537	4.4621	2046.92	2196.92
538	8.6188	2047.36	2197.36
539	8.9149	2049.58	2199.58
540	5.2793	2050.59	2200.59
541	5.101	2050.59	2200.59
542	10.3327	2050.59	2200.59
543	7.5954	2050.59	2200.59
544	10.3472	2050.59	2200.59
545	9.5116	2050.59	2200.59
546	7.1301	2050.59	2200.59
547	6.8844	2050.59	2200.59
548	10.6337	2050.59	2200.59
549	12.2325	2063.42	2213.42
550	11.1524	2063.42	2213.42
551	9.1001	2065.41	2215.41
552	16.4111	2067.48	2217.48
553	15.4391	2069.07	2219.07
554	8.1914	2069.07	2219.07
555	7.4436	2071.26	2221.26
556	10.4343	2071.26	2221.26
557	11.0754	2071.26	2221.26
558	6.2747	2071.26	2221.26
559	5.5842	2071.26	2221.26
560	6.1945	2071.26	2221.26
561	6.5562	2071.26	2221.26
562	4.4169	2071.26	2221.26
563	4.545	2071.26	2221.26
564	16.1054	2071.26	2221.26
565	17.2392	2071.26	2221.26
566	7.7461	2071.26	2221.26
567	7.394	2071.26	2221.26
568	7.0487	2071.26	2221.26
569	6.9869	2071.26	2221.26
570	4.5308	2071.26	2221.26
571	4.4811	2071.26	2221.26
572	9.9179	2071.26	2221.26

continue

	A	B	C		A	B	C		A	B	C		A	B	C
571	4.4811	2071.26	2221.26	628	8.8823	2071.26	2221.26	685	15.0148	2071.26	2221.26	742	12.4957	2308.63	2458.63
572	9.9179	2071.26	2221.26	629	8.6106	2071.26	2221.26	686	4.7865	2071.26	2221.26	743	14.7059	2308.63	2458.63
573	9.7985	2071.26	2221.26	630	6.2637	2071.26	2221.26	687	4.7272	2071.26	2221.26	744	10.8629	2308.63	2458.63
574	12.5705	2071.26	2221.26	631	5.9179	2071.26	2221.26	688	10.2746	2071.26	2221.26	745	9.2849	2308.63	2458.63
575	8.4005	2071.26	2221.26	632	15.3603	2071.26	2221.26	689	9.1996	2071.26	2221.26	746	10.5248	2308.63	2458.63
576	11.811	2071.26	2221.26	633	16.2931	2071.26	2221.26	690	3.8813	2071.26	2221.26	747	11.8999	2308.63	2458.63
577	12.4813	2071.26	2221.26	634	10.3603	2071.26	2221.26	691	4.4985	2071.26	2221.26	748	11.1353	2308.63	2458.63
578	9.8012	2071.26	2221.26	635	11.3694	2071.26	2221.26	692	4.932	2071.26	2221.26	749	10.9371	2348.56	2498.56
579	10.1934	2071.26	2221.26	636	19.7847	2071.26	2221.26	693	5.1831	2071.26	2221.26	750	12.5985	2349.32	2499.32
580	10.8808	2071.26	2221.26	637	20.0797	2071.26	2221.26	694	5.5222	2071.26	2221.26	751	9.5073	2349.32	2499.32
581	11.4558	2071.26	2221.26	638	13.0349	2071.26	2221.26	695	5.6034	2071.26	2221.26	752	10.2489	2349.32	2499.32
582	14.6846	2071.26	2221.26	639	11.7607	2071.26	2221.26	696	5.2689	2071.26	2221.26	753	9.7936	2349.32	2499.32
583	19.1875	2071.26	2221.26	640	13.719	2071.26	2221.26	697	5.0388	2071.26	2221.26	754	14.5109	2349.32	2499.32
584	17.8524	2071.26	2221.26	641	13.027	2071.26	2221.26	698	21.2539	2071.26	2221.26	755	12.3809	2349.32	2499.32
585	12.2057	2071.26	2221.26	642	9.4296	2071.26	2221.26	699	20.2764	2071.26	2221.26	756	4.5158	2349.32	2499.32
586	8.7337	2071.26	2221.26	643	8.2885	2071.26	2221.26	700	4.9244	2071.26	2221.26	757	4.8492	2349.32	2499.32
587	9.1504	2071.26	2221.26	644	6.9578	2071.26	2221.26	701	4.9256	2071.26	2221.26	758	5.3814	2349.32	2499.32
588	9.1079	2071.26	2221.26	645	6.9379	2071.26	2221.26	702	4.8606	2071.26	2221.26	759	4.5287	2349.32	2499.32
589	9.3599	2071.26	2221.26	646	11.5062	2071.26	2221.26	703	4.9361	2071.26	2221.26	760	11.5596	2349.32	2499.32
590	5.4855	2071.26	2221.26	647	7.8373	2071.26	2221.26	704	5.4562	2071.26	2221.26	761	13.767	2349.32	2499.32
591	5.6724	2071.26	2221.26	648	8.6145	2071.26	2221.26	705	5.6782	2071.26	2221.26	762	15.5422	2349.32	2499.32
592	5.7681	2071.26	2221.26	649	8.7307	2071.26	2221.26	706	8.903	2285.81	2435.81	763	12.1311	2349.32	2499.32
593	5.7451	2071.26	2221.26	650	12.6276	2071.26	2221.26	707	10.7616	2287.89	2437.89	764	11.6591	2368.49	2518.49
594	7.9049	2071.26	2221.26	651	8.3901	2071.26	2221.26	708	6.6811	2288.97	2438.97	765	11.4078	2370.65	2520.65
595	7.6079	2071.26	2221.26	652	15.9785	2071.26	2221.26	709	6.3346	2288.97	2438.97	766	10.089	2370.65	2520.65
596	6.2517	2071.26	2221.26	653	17.5351	2071.26	2221.26	710	11.7003	2288.97	2438.97	767	10.3412	2374.13	2524.13
597	6.6235	2071.26	2221.26	654	13.1232	2071.26	2221.26	711	12.0248	2288.97	2438.97	768			
598	9.2889	2071.26	2221.26	655	15.963	2071.26	2221.26	712	17.0032	2288.97	2438.97	769			
599	10.9539	2071.26	2221.26	656	14.2327	2071.26	2221.26	713	14.6098	2288.97	2438.97	770			
600	15.5032	2071.26	2221.26	657	13.7782	2071.26	2221.26	714	4.9523	2288.97	2438.97	771			
601	11.0458	2071.26	2221.26	658	11.5305	2071.26	2221.26	715	5.2674	2288.97	2438.97	772			
602	7.5033	2071.26	2221.26	659	12.1945	2071.26	2221.26	716	25.0459	2288.97	2438.97	773			
603	7.2902	2071.26	2221.26	660	14.3486	2071.26	2221.26	717	25.4452	2288.97	2438.97	774			
604	11.3327	2071.26	2221.26	661	15.7246	2071.26	2221.26	718	15.7694	2303.04	2453.04	775			
605	21.3411	2071.26	2221.26	662	8.1689	2071.26	2221.26	719	14.1741	2305.14	2455.14	776			
606	11.6543	2071.26	2221.26	663	10.7266	2071.26	2221.26	720	4.0138	2305.14	2455.14	777			
607	12.5812	2071.26	2221.26	664	7.6043	2071.26	2221.26	721	5.0208	2307.48	2457.48	778			
608	11.3973	2071.26	2221.26	665	7.8243	2071.26	2221.26	722	12.3158	2308.63	2458.63	779			
609	10.8878	2071.26	2221.26	666	22.9226	2071.26	2221.26	723	13.9562	2308.63	2458.63	780			
610	13.7355	2071.26	2221.26	667	24.4331	2071.26	2221.26	724	7.1653	2308.63	2458.63	781			
611	12.9326	2071.26	2221.26	668	10.5753	2071.26	2221.26	725	7.1595	2308.63	2458.63	782			
612	10.9939	2071.26	2221.26	669	9.4578	2071.26	2221.26	726	5.2507	2308.63	2458.63	783			
613	10.2565	2071.26	2221.26	670	12.8556	2071.26	2221.26	727	5.3888	2308.63	2458.63	784			
614	16.2774	2071.26	2221.26	671	14.5109	2071.26	2221.26	728	11.7331	2308.63	2458.63	785			
615	10.6905	2071.26	2221.26	672	6.5009	2071.26	2221.26	729	12.4899	2308.63	2458.63	786			
616	11.377	2071.26	2221.26	673	5.8005	2071.26	2221.26	730	3.8332	2308.63	2458.63	787			
617	10.9084	2071.26	2221.26	674	6.8884	2071.26	2221.26	731	3.767	2308.63	2458.63	788			
618	15.011	2071.26	2221.26	675	6.8723	2071.26	2221.26	732	4.4824	2308.63	2458.63	789			
619	14.9537	2071.26	2221.26	676	16.3756	2071.26	2221.26	733	5.0288	2308.63	2458.63	790			
620	12.5812	2071.26	2221.26	677	23.0798	2071.26	2221.26	734	6.8372	2308.63	2458.63	791			
621	15.3935	2071.26	2221.26	678	9.6935	2071.26	2221.26	735	6.8723	2308.63	2458.63	792			
622	10.4518	2071.26	2221.26	679	9.9764	2071.26	2221.26	736	9.9114	2308.63	2458.63	793			
623	9.2275	2071.26	2221.26	680	10.2343	2071.26	2221.26	737	9.0233	2308.63	2458.63	794			
624	21.1354	2071.26	2221.26	681	8.6541	2071.26	2221.26	738	6.585	2308.63	2458.63	795			
625	23.8445	2071.26	2221.26	682	13.9562	2071.26	2221.26	739	6.1063	2308.63	2458.63	796			
626	6.7781	2071.26	2221.26	683	11.6414	2071.26	2221.26	740	4.33	2308.63	2458.63	797			
627	6.6716	2071.26	2221.26	684	14.9234	2071.26	2221.26	741	4.2023	2308.63	2458.63	798			
628	8.8823	2071.26	2221.26	685	15.0148	2071.26	2221.26	742	12.4957	2308.63	2458.63	799			
629	8.6106	2071.26	2221.26	686	4.7865	2071.26	2221.26	743	14.7059	2308.63	2458.63	800			

Table (4.3) overburden stress, pore pressure eaton and fraction pressure

	A	B	C
1	Pob	PPE	FPE
2	502.9246	1273.75	1423.75
3	503.0069	1273.75	1423.75
4	503.5833	1273.75	1423.75
5	504.1597	1273.75	1423.75
6	504.6537	1273.75	1423.75
7	505.2301	1273.75	1423.75
8	505.7241	1273.75	1423.75
9	506.3005	1273.75	1423.75
10	506.7945	1273.75	1423.75
11	507.3709	1273.75	1423.75
12	507.8649	1273.75	1423.75
13	508.4413	1273.75	1423.75
14	509.0177	1273.75	1423.75
15	509.5117	1273.75	1423.75
16	510.0881	1273.75	1423.75
17	510.5821	1273.75	1423.75
18	511.1585	1273.75	1423.75
19	511.6525	1273.75	1423.75
20	512.2289	1273.75	1423.75
21	512.8052	1314.44	1464.44
22	519.2277	1315.75	1465.75
23	519.8107	1317.15	1467.15
24	520.8055	1318.61	1468.61
25	521.3891	1318.61	1468.61
26	521.8893	1318.61	1468.61
27	522.4729	1318.61	1468.61
28	522.9731	1318.61	1468.61
29	523.5567	1318.61	1468.61
30	524.1402	1318.61	1468.61
31	524.6405	1318.61	1468.61
32	525.224	1318.61	1468.61
33	525.7243	1318.61	1468.61
34	526.3078	1318.61	1468.61
35	526.8081	1318.61	1468.61
36	527.3916	1318.61	1468.61
37	527.9752	1318.61	1468.61
38	528.4754	1318.61	1468.61
39	529.059	1318.61	1468.61
40	529.5592	1318.61	1468.61
41	530.1428	1318.61	1468.61
42	530.643	1318.61	1468.61
43	531.2266	1318.61	1468.61
44	531.7268	1318.61	1468.61
45	532.3104	1318.61	1468.61
46	532.894	1318.61	1468.61
47	533.3942	1318.61	1468.61
48	533.9778	1318.61	1468.61
49	534.478	1318.61	1468.61
50	535.0616	1318.61	1468.61
51	535.5618	1318.61	1468.61
52	536.1454	1318.61	1468.61
53	536.729	1318.61	1468.61

	A	B	C
52	536.1454	1318.61	1468.61
53	536.729	1318.61	1468.61
54	537.2292	1318.61	1468.61
55	537.8127	1318.61	1468.61
56	538.2296	1318.61	1468.61
57	538.8965	1318.61	1468.61
58	539.3968	1318.61	1468.61
59	539.9803	1318.61	1468.61
60	540.4806	1318.61	1468.61
61	541.0641	1318.61	1468.61
62	541.6477	1318.61	1468.61
63	542.1479	1318.61	1468.61
64	542.7315	1318.61	1468.61
65	543.2317	1318.61	1468.61
66	543.8153	1318.61	1468.61
67	545.3503	1395.91	1545.91
68	545.4171	1380.7	1530.7
69	545.9178	1380.7	1530.7
70	545.4639	1383.5	1533.5
71	546.0469	1384.91	1534.91
72	546.5467	1384.91	1534.91
73	547.1297	1384.91	1534.91
74	547.6294	1384.91	1534.91
75	548.2125	1384.91	1534.91
76	548.7122	1384.91	1534.91
77	549.2952	1384.91	1534.91
78	549.8783	1384.91	1534.91
79	550.8777	1384.91	1534.91
80	550.961	1384.91	1534.91
81	551.9605	1384.91	1534.91
82	552.0438	1384.91	1534.91
83	553.0433	1384.91	1534.91
84	553.1266	1384.91	1534.91
85	554.126	1384.91	1534.91
86	554.2093	1384.91	1534.91
87	555.2088	1384.91	1534.91
88	555.2921	1384.91	1534.91
89	556.2916	1384.91	1534.91
90	556.3748	1384.91	1534.91
91	557.3743	1384.91	1534.91
92	557.4576	1384.91	1534.91
93	558.5404	1384.91	1534.91
94	558.6237	1384.91	1534.91
95	559.6231	1384.91	1534.91
96	559.7064	1384.91	1534.91
97	560.7059	1384.91	1534.91
98	560.7892	1384.91	1534.91
99	561.7887	1384.91	1534.91
100	561.872	1384.91	1534.91
101	562.8714	1384.91	1534.91
102	562.9547	1384.91	1534.91
103	563.9542	1384.91	1534.91
104	564.0375	1384.91	1534.91

	A	B	C
103	563.9542	1384.91	1534.91
104	564.0375	1384.91	1534.91
105	565.037	1384.91	1534.91
106	565.1203	1384.91	1534.91
107	566.1197	1384.91	1534.91
108	566.203	1384.91	1534.91
109	567.2858	1384.91	1534.91
110	567.3691	1384.91	1534.91
111	568.2853	1384.91	1534.91
112	568.4518	1384.91	1534.91
113	569.4513	1384.91	1534.91
114	569.5346	1384.91	1534.91
115	570.5341	1384.91	1534.91
116	570.6174	1384.91	1534.91
117	571.6169	1384.91	1534.91
118	571.7001	1384.91	1534.91
119	572.6996	1384.91	1534.91
120	572.7829	1384.91	1534.91
121	573.7824	1384.91	1534.91
122	573.8657	1384.91	1534.91
123	574.7819	1384.91	1534.91
124	575.4482	1384.91	1534.91
125	575.5315	1384.91	1534.91
126	576.5309	1384.91	1534.91
127	576.6142	1384.91	1534.91
128	577.6137	1384.91	1534.91
129	577.697	1384.91	1534.91
130	578.6965	1384.91	1534.91
131	578.7798	1384.91	1534.91
132	579.7792	1384.91	1534.91
133	579.8625	1384.91	1534.91
134	580.9453	1384.91	1534.91
135	581.0286	1384.91	1534.91
136	582.0281	1384.91	1534.91
137	582.1113	1384.91	1534.91
138	583.1108	1384.91	1534.91
139	583.1941	1384.91	1534.91
140	584.1936	1384.91	1534.91
141	584.2769	1384.91	1534.91
142	585.2764	1384.91	1534.91
143	586.4736	1485.7	1635.7
144	586.3591	1487.86	1637.86
145	586.4424	1487.86	1637.86
146	587.3586	1490.46	1640.46
147	588.0249	1490.46	1640.46
148	587.5486	1493.15	1643.15
149	588.5472	1493.15	1643.15
150	588.0698	1495.8	1645.8
151	589.0673	1495.8	1645.8
152	589.7121	1498.4	1648.4
153	590.7106	1498.4	1648.4
154	590.7938	1501.13	1651.13
155	591.7924	1501.13	1651.13

	A	B	C
154	590.7938	1501.13	1651.13
155	591.7924	1501.13	1651.13
156	591.8756	1501.13	1651.13
157	592.8741	1501.13	1651.13
158	592.9573	1501.13	1651.13
159	594.039	1512.26	1662.26
160	594.1223	1513.29	1663.29
161	595.1208	1514.84	1664.84
162	595.2872	1514.84	1664.84
163	596.2025	1514.84	1664.84
164	596.2857	1514.84	1664.84
165	597.2843	1514.84	1664.84
166	597.3675	1514.84	1664.84
167	598.366	1514.84	1664.84
168	598.4492	1514.84	1664.84
169	599.4477	1514.84	1664.84
170	599.5309	1514.84	1664.84
171	600.5295	1514.84	1664.84
172	600.6127	1514.84	1664.84
173	601.6112	1528.19	1678.19
174	601.6944	1530.24	1680.24
175	602.7761	1530.24	1680.24
176	602.2852	1532.2	1682.2
177	603.2828	1433.45	1583.45
178	603.3659	1433.45	1583.45
179	604.3635	1433.45	1583.45
180	604.4466	1433.45	1583.45
181	605.4442	1433.45	1583.45
182	605.5273	1433.45	1583.45
183	606.5249	1433.45	1583.45
184	606.608	1433.45	1583.45
185	607.6056	1433.45	1583.45
186	607.6887	1433.45	1583.45
187	608.6863	1433.45	1583.45
188	608.7694	1433.45	1583.45
189	609.767	1433.45	1583.45
190	609.8501	1433.45	1583.45
191	610.9308	1433.45	1583.45
192	611.014	1433.45	1583.45
193	612.0115	1433.45	1583.45
194	612.0947	1433.45	1583.45
195	613.0922	1433.45	1583.45
196	613.1754	1433.45	1583.45
197	614.0898	1433.45	1583.45
198	614.7549	1433.45	1583.45
199	614.838	1433.45	1583.45
200	615.5862	1433.45	1583.45
201	616.9163	1433.45	1583.45
202	616.9994	1433.45	1583.45
203	617.997	1433.45	1583.45
204	618.0801	1433.45	1583.45
205	619.0777	1433.45	1583.45
206	619.1608	1433.45	1583.45

continue

	A	B	C
205	619.0777	1433.45	1583.45
206	619.1608	1433.45	1583.45
207	620.1584	1433.45	1583.45
208	620.2415	1433.45	1583.45
209	621.2391	1433.45	1583.45
210	621.3222	1433.45	1583.45
211	622.2367	1433.45	1583.45
212	622.9017	1433.45	1583.45
213	622.9849	1433.45	1583.45
214	623.9824	1433.45	1583.45
215	624.0656	1433.45	1583.45
216	625.0631	1433.45	1583.45
217	625.1463	1433.45	1583.45
218	626.1438	1433.45	1583.45
219	626.227	1433.45	1583.45
220	627.2245	1433.45	1583.45
221	627.3077	1433.45	1583.45
222	628.2221	1433.45	1583.45
223	628.8872	1433.45	1583.45
224	628.9703	1433.45	1583.45
225	629.6353	1433.45	1583.45
226	630.3835	1433.45	1583.45
227	631.0486	1433.45	1583.45
228	631.1317	1433.45	1583.45
229	632.1293	1433.45	1583.45
230	632.2124	1433.45	1583.45
231	633.2931	1433.45	1583.45
232	633.3762	1433.45	1583.45
233	634.3738	1433.45	1583.45
234	634.457	1433.45	1583.45
235	635.4545	1433.45	1583.45
236	635.5377	1433.45	1583.45
237	636.4521	1433.45	1583.45
238	636.5352	1433.45	1583.45
239	636.6184	1433.45	1583.45
240	637.5328	1433.45	1583.45
241	638.1979	1433.45	1583.45
242	638.281	1433.45	1583.45
243	638.946	1433.45	1583.45
244	639.7773	1433.45	1583.45
245	639.8605	1433.45	1583.45
246	640.8581	1433.45	1583.45
247	640.9412	1433.45	1583.45
248	642.0219	1433.45	1583.45
249	642.105	1433.45	1583.45
250	643.1026	1433.45	1583.45
251	643.1857	1433.45	1583.45
252	644.1833	1433.45	1583.45
253	644.2664	1433.45	1583.45
254	645.1809	1433.45	1583.45
255	645.8459	1433.45	1583.45
256	645.9291	1433.45	1583.45
257	646.9266	1433.45	1583.45

	A	B	C
256	645.9291	1433.45	1583.45
257	646.9266	1433.45	1583.45
258	647.0098	1433.45	1583.45
259	648.0073	1433.45	1583.45
260	648.0905	1433.45	1583.45
261	649.088	1433.45	1583.45
262	649.1712	1433.45	1583.45
263	650.1687	1433.45	1583.45
264	650.2519	1433.45	1583.45
265	651.1663	1433.45	1583.45
266	652.4133	1433.45	1583.45
267	653.1615	1433.45	1583.45
268	653.9928	1433.45	1583.45
269	654.0759	1433.45	1583.45
270	655.0735	1433.45	1583.45
271	655.1566	1433.45	1583.45
272	656.1542	1433.45	1583.45
273	656.2373	1433.45	1583.45
274	656.3204	1433.45	1583.45
275	657.2349	1433.45	1583.45
276	657.318	1433.45	1583.45
277	658.0662	1433.45	1583.45
278	658.7312	1433.45	1583.45
279	659.4794	1433.45	1583.45
280	659.5626	1433.45	1583.45
281	660.477	1433.45	1583.45
282	661.0589	1433.45	1583.45
283	661.1421	1433.45	1583.45
284	662.1396	1433.45	1583.45
285	662.2228	1433.45	1583.45
286	663.1372	1433.45	1583.45
287	663.8022	1433.45	1583.45
288	663.8854	1433.45	1583.45
289	664.6336	1433.45	1583.45
290	665.4649	1433.45	1583.45
291	665.548	1433.45	1583.45
292	666.5456	1433.45	1583.45
293	666.6287	1433.45	1583.45
294	667.6263	1433.45	1583.45
295	667.7094	1433.45	1583.45
296	668.707	1433.45	1583.45
297	670.0652	1705.1	1855.1
298	671.0647	1705.1	1855.1
299	669.8708	1706.92	1856.92
300	670.7853	1709.33	1859.33
301	671.4503	1710.53	1860.53
302	671.5334	1711.74	1861.74
303	672.1985	1711.74	1861.74
304	673.1129	1711.74	1861.74
305	673.1961	1711.74	1861.74
306	674.1936	1711.74	1861.74
307	674.2768	1711.74	1861.74
308	675.2743	1711.74	1861.74

	A	B	C
307	674.2768	1711.74	1861.74
308	675.2743	1711.74	1861.74
309	675.3575	1711.74	1861.74
310	676.3551	1711.74	1861.74
311	676.4382	1711.74	1861.74
312	677.4358	1711.74	1861.74
313	677.5189	1711.74	1861.74
314	678.4333	1711.74	1861.74
315	679.0984	1711.74	1861.74
316	680.1791	1711.74	1861.74
317	680.2622	1711.74	1861.74
318	681.2598	1711.74	1861.74
319	681.3429	1711.74	1861.74
320	682.3405	1711.74	1861.74
321	682.4236	1711.74	1861.74
322	683.4212	1711.74	1861.74
323	683.5043	1711.74	1861.74
324	684.5019	1711.74	1861.74
325	684.585	1711.74	1861.74
326	685.6657	1711.74	1861.74
327	685.7489	1711.74	1861.74
328	686.6633	1711.74	1861.74
329	687.2452	1711.74	1861.74
330	687.3284	1711.74	1861.74
331	687.9934	1711.74	1861.74
332	688.9079	1711.74	1861.74
333	688.991	1711.74	1861.74
334	689.9886	1711.74	1861.74
335	690.0717	1711.74	1861.74
336	691.6512	1711.74	1861.74
337	691.7343	1711.74	1861.74
338	692.7319	1711.74	1861.74
339	692.815	1711.74	1861.74
340	693.8126	1711.74	1861.74
341	693.8957	1711.74	1861.74
342	694.8102	1711.74	1861.74
343	695.4752	1711.74	1861.74
344	695.5583	1711.74	1861.74
345	696.5559	1711.74	1861.74
346	696.6391	1711.74	1861.74
347	697.6366	1711.74	1861.74
348	697.7198	1711.74	1861.74
349	698.6342	1711.74	1861.74
350	699.2993	1711.74	1861.74
351	699.3824	1711.74	1861.74
352	700.38	1711.74	1861.74
353	700.4631	1711.74	1861.74
354	701.4607	1711.74	1861.74
355	701.5438	1711.74	1861.74
356	702.5414	1711.74	1861.74
357	702.6245	1711.74	1861.74
358	703.6221	1711.74	1861.74
359	703.7052	1711.74	1861.74

	A	B	C
358	703.6221	1711.74	1861.74
359	703.7052	1711.74	1861.74
360	704.7028	1711.74	1861.74
361	704.7859	1711.74	1861.74
362	705.7003	1711.74	1861.74
363	706.3654	1711.74	1861.74
364	706.4485	1711.74	1861.74
365	707.4461	1711.74	1861.74
366	707.5292	1711.74	1861.74
367	708.5268	1711.74	1861.74
368	708.6099	1711.74	1861.74
369	709.6075	1711.74	1861.74
370	709.6906	1711.74	1861.74
371	710.6882	1711.74	1861.74
372	710.7713	1711.74	1861.74
373	711.7689	1711.74	1861.74
374	711.8521	1711.74	1861.74
375	712.6834	1711.74	1861.74
376	713.4315	1711.74	1861.74
377	713.5147	1711.74	1861.74
378	714.5123	1711.74	1861.74
379	714.5954	1711.74	1861.74
380	715.593	1711.74	1861.74
381	715.6761	1711.74	1861.74
382	716.7568	1711.74	1861.74
383	716.8399	1711.74	1861.74
384	717.8375	1711.74	1861.74
385	717.9206	1711.74	1861.74
386	718.8351	1711.74	1861.74
387	719.417	1711.74	1861.74
388	719.5001	1711.74	1861.74
389	720.2483	1711.74	1861.74
390	721.0796	1711.74	1861.74
391	721.1627	1711.74	1861.74
392	722.1603	1711.74	1861.74
393	722.2434	1711.74	1861.74
394	723.1579	1711.74	1861.74
395	723.8229	1711.74	1861.74
396	723.9061	1711.74	1861.74
397	724.9036	1711.74	1861.74
398	724.9868	1711.74	1861.74
399	725.9844	1711.74	1861.74
400	726.0675	1711.74	1861.74
401	726.8988	1711.74	1861.74
402	727.647	1711.74	1861.74
403	727.7301	1711.74	1861.74
404	728.7277	1711.74	1861.74
405	728.8108	1711.74	1861.74
406	729.8084	1711.74	1861.74
407	729.8915	1711.74	1861.74
408	730.8891	1711.74	1861.74
409	730.9722	1711.74	1861.74
410	731.9698	1711.74	1861.74

continue

	A	B	C
409	730.9722	1711.74	1861.74
410	731.9698	1711.74	1861.74
411	732.0529	1711.74	1861.74
412	732.9674	1711.74	1861.74
413	733.6324	1711.74	1861.74
414	733.7155	1711.74	1861.74
415	734.7131	1711.74	1861.74
416	734.7963	1711.74	1861.74
417	735.7938	1711.74	1861.74
418	735.877	1711.74	1861.74
419	736.7083	1711.74	1861.74
420	737.4564	1711.74	1861.74
421	737.5396	1711.74	1861.74
422	738.5372	1711.74	1861.74
423	738.6203	1711.74	1861.74
424	739.6179	1711.74	1861.74
425	739.701	1711.74	1861.74
426	740.6986	1711.74	1861.74
427	740.7817	1711.74	1861.74
428	741.7793	1711.74	1861.74
429	741.8624	1711.74	1861.74
430	742.6937	1711.74	1861.74
431	743.4419	1711.74	1861.74
432	743.525	1711.74	1861.74
433	744.5226	1711.74	1861.74
434	744.6057	1711.74	1861.74
435	745.6033	1711.74	1861.74
436	745.6864	1711.74	1861.74
437	746.684	1711.74	1861.74
438	746.7671	1711.74	1861.74
439	747.6816	1711.74	1861.74
440	748.3466	1711.74	1861.74
441	748.4298	1711.74	1861.74
442	749.0948	1711.74	1861.74
443	750.0093	1711.74	1861.74
444	750.0924	1711.74	1861.74
445	751.09	1711.74	1861.74
446	751.1731	1711.74	1861.74
447	752.0044	1711.74	1861.74
448	752.7526	1711.74	1861.74
449	752.8357	1711.74	1861.74
450	753.8333	1711.74	1861.74
451	753.9164	1711.74	1861.74
452	754.8309	1711.74	1861.74
453	755.4128	1711.74	1861.74
454	755.4959	1711.74	1861.74
455	756.5766	1711.74	1861.74
456	756.6597	1711.74	1861.74
457	757.6573	1711.74	1861.74
458	757.7405	1711.74	1861.74
459	758.5718	1711.74	1861.74
460	759.2368	1711.74	1861.74
461	759.3199	1711.74	1861.74

	A	B	C
460	759.2368	1711.74	1861.74
461	759.3199	1711.74	1861.74
462	760.3175	1711.74	1861.74
463	760.4006	1711.74	1861.74
464	761.232	1711.74	1861.74
465	761.9801	1711.74	1861.74
466	762.0633	1711.74	1861.74
467	763.0608	1711.74	1861.74
468	763.144	1711.74	1861.74
469	764.1415	1711.74	1861.74
470	764.2247	1711.74	1861.74
471	765.3054	1711.74	1861.74
472	765.3885	1711.74	1861.74
473	766.3861	1711.74	1861.74
474	766.4692	1711.74	1861.74
475	767.4668	1711.74	1861.74
476	767.5499	1711.74	1861.74
477	768.5475	1711.74	1861.74
478	768.6306	1711.74	1861.74
479	769.6282	1711.74	1861.74
480	769.7113	1711.74	1861.74
481	770.7089	1711.74	1861.74
482	770.792	1711.74	1861.74
483	771.7896	1711.74	1861.74
484	771.8727	1711.74	1861.74
485	772.8703	1711.74	1861.74
486	772.9535	1711.74	1861.74
487	774.0342	1711.74	1861.74
488	774.1173	1711.74	1861.74
489	775.1149	1711.74	1861.74
490	775.198	1711.74	1861.74
491	776.1956	1711.74	1861.74
492	776.2787	1711.74	1861.74
493	777.2763	1711.74	1861.74
494	777.3594	1711.74	1861.74
495	778.357	1711.74	1861.74
496	778.4401	1711.74	1861.74
497	779.4377	1711.74	1861.74
498	779.5208	1711.74	1861.74
499	780.5184	1711.74	1861.74
500	780.6015	1711.74	1861.74
501	781.5991	1711.74	1861.74
502	781.6822	1711.74	1861.74
503	782.7629	1711.74	1861.74
504	782.8461	1711.74	1861.74
505	783.8436	1711.74	1861.74
506	783.9268	1711.74	1861.74
507	784.9243	1711.74	1861.74
508	785.0075	1711.74	1861.74
509	786.005	1711.74	1861.74
510	786.0882	1711.74	1861.74
511	787.0857	1711.74	1861.74
512	787.1689	1711.74	1861.74

	A	B	C
511	787.0857	1711.74	1861.74
512	787.1689	1711.74	1861.74
513	788.1665	1711.74	1861.74
514	788.2496	1711.74	1861.74
515	789.2472	1711.74	1861.74
516	789.3303	1711.74	1861.74
517	790.3279	1711.74	1861.74
518	790.411	1711.74	1861.74
519	791.4086	1711.74	1861.74
520	791.4917	1711.74	1861.74
521	792.4893	1711.74	1861.74
522	793.0712	1711.74	1861.74
523	793.1543	1711.74	1861.74
524	794.1519	1711.74	1861.74
525	794.235	1711.74	1861.74
526	795.2326	1711.74	1861.74
527	795.3157	1711.74	1861.74
528	796.3964	1711.74	1861.74
529	796.4796	1711.74	1861.74
530	797.4771	1711.74	1861.74
531	797.5603	1711.74	1861.74
532	798.5578	1711.74	1861.74
533	798.641	1711.74	1861.74
534	799.6386	1711.74	1861.74
535	799.7217	1711.74	1861.74
536	800.7193	1711.74	1861.74
537	9391.297	2046.92	2196.92
538	9328.09	2047.36	2197.36
539	9190.696	2049.58	2199.58
540	9134.011	2050.59	2200.59
541	9134.957	2050.59	2200.59
542	9146.306	2050.59	2200.59
543	9147.252	2050.59	2200.59
544	9159.546	2050.59	2200.59
545	9160.492	2050.59	2200.59
546	9171.841	2050.59	2200.59
547	9172.787	2050.59	2200.59
548	9184.136	2050.59	2200.59
549	9173.537	2063.42	2213.42
550	9184.871	2063.42	2213.42
551	9118.766	2065.41	2215.41
552	9069.059	2067.48	2217.48
553	8940.342	2069.07	2219.07
554	8951.359	2069.07	2219.07
555	8893.548	2071.26	2221.26
556	8904.493	2071.26	2221.26
557	8905.405	2071.26	2221.26
558	8916.35	2071.26	2221.26
559	8917.262	2071.26	2221.26
560	8929.119	2071.26	2221.26
561	8930.031	2071.26	2221.26
562	8940.975	2071.26	2221.26
563	8941.888	2071.26	2221.26

	A	B	C
562	8940.975	2071.26	2221.26
563	8941.888	2071.26	2221.26
564	8952.832	2071.26	2221.26
565	8953.744	2071.26	2221.26
566	8964.689	2071.26	2221.26
567	8965.601	2071.26	2221.26
568	8976.546	2071.26	2221.26
569	8977.458	2071.26	2221.26
570	8988.403	2071.26	2221.26
571	8989.315	2071.26	2221.26
572	9000.26	2071.26	2221.26
573	9001.172	2071.26	2221.26
574	9012.117	2071.26	2221.26
575	9013.029	2071.26	2221.26
576	9024.885	2071.26	2221.26
577	9025.798	2071.26	2221.26
578	9036.742	2071.26	2221.26
579	9037.654	2071.26	2221.26
580	9048.599	2071.26	2221.26
581	9049.511	2071.26	2221.26
582	9060.456	2071.26	2221.26
583	9061.368	2071.26	2221.26
584	9072.313	2071.26	2221.26
585	9073.225	2071.26	2221.26
586	9084.17	2071.26	2221.26
587	9085.082	2071.26	2221.26
588	9096.027	2071.26	2221.26
589	9096.939	2071.26	2221.26
590	9107.883	2071.26	2221.26
591	9108.795	2071.26	2221.26
592	9119.74	2071.26	2221.26
593	9120.652	2071.26	2221.26
594	9132.509	2071.26	2221.26
595	9133.421	2071.26	2221.26
596	9144.366	2071.26	2221.26
597	9145.278	2071.26	2221.26
598	9156.223	2071.26	2221.26
599	9157.135	2071.26	2221.26
600	9168.08	2071.26	2221.26
601	9168.992	2071.26	2221.26
602	9179.937	2071.26	2221.26
603	9180.849	2071.26	2221.26
604	9191.793	2071.26	2221.26
605	9192.705	2071.26	2221.26
606	9203.65	2071.26	2221.26
607	9204.562	2071.26	2221.26
608	9215.507	2071.26	2221.26
609	9216.419	2071.26	2221.26
610	9228.276	2071.26	2221.26
611	9229.188	2071.26	2221.26
612	9240.133	2071.26	2221.26
613	9241.045	2071.26	2221.26
614	9251.99	2071.26	2221.26

continue

	A	B	C
613	9241.045	2071.26	2221.26
614	9251.99	2071.26	2221.26
615	9252.902	2071.26	2221.26
616	9263.847	2071.26	2221.26
617	9264.759	2071.26	2221.26
618	9275.703	2071.26	2221.26
619	9276.615	2071.26	2221.26
620	9287.56	2071.26	2221.26
621	9288.472	2071.26	2221.26
622	9299.417	2071.26	2221.26
623	9300.329	2071.26	2221.26
624	9311.274	2071.26	2221.26
625	9312.186	2071.26	2221.26
626	9324.043	2071.26	2221.26
627	9324.955	2071.26	2221.26
628	9335.9	2071.26	2221.26
629	9336.812	2071.26	2221.26
630	9347.757	2071.26	2221.26
631	9348.669	2071.26	2221.26
632	9359.613	2071.26	2221.26
633	9360.525	2071.26	2221.26
634	9371.47	2071.26	2221.26
635	9372.382	2071.26	2221.26
636	9383.327	2071.26	2221.26
637	9384.239	2071.26	2221.26
638	9395.184	2071.26	2221.26
639	9396.096	2071.26	2221.26
640	9407.041	2071.26	2221.26
641	9407.953	2071.26	2221.26
642	9419.81	2071.26	2221.26
643	9420.722	2071.26	2221.26
644	9431.667	2071.26	2221.26
645	9432.579	2071.26	2221.26
646	9443.523	2071.26	2221.26
647	9444.435	2071.26	2221.26
648	9455.38	2071.26	2221.26
649	9456.292	2071.26	2221.26
650	9467.237	2071.26	2221.26
651	9468.149	2071.26	2221.26
652	9479.094	2071.26	2221.26
653	9480.006	2071.26	2221.26
654	9490.951	2071.26	2221.26
655	9491.863	2071.26	2221.26
656	9502.808	2071.26	2221.26
657	9503.72	2071.26	2221.26
658	9515.577	2071.26	2221.26
659	9516.489	2071.26	2221.26
660	9527.433	2071.26	2221.26
661	9528.345	2071.26	2221.26
662	9539.29	2071.26	2221.26
663	9540.202	2071.26	2221.26
664	9551.147	2071.26	2221.26
665	9552.059	2071.26	2221.26

	A	B	C
664	9551.147	2071.26	2221.26
665	9552.059	2071.26	2221.26
666	9563.004	2071.26	2221.26
667	9563.916	2071.26	2221.26
668	9574.861	2071.26	2221.26
669	9575.773	2071.26	2221.26
670	9586.718	2071.26	2221.26
671	9587.63	2071.26	2221.26
672	9598.575	2071.26	2221.26
673	9599.487	2071.26	2221.26
674	9611.343	2071.26	2221.26
675	9612.255	2071.26	2221.26
676	9623.2	2071.26	2221.26
677	9624.112	2071.26	2221.26
678	9635.057	2071.26	2221.26
679	9635.969	2071.26	2221.26
680	9646.914	2071.26	2221.26
681	9647.826	2071.26	2221.26
682	9658.771	2071.26	2221.26
683	9659.683	2071.26	2221.26
684	9670.628	2071.26	2221.26
685	9671.54	2071.26	2221.26
686	9682.485	2071.26	2221.26
687	9683.397	2071.26	2221.26
688	9694.341	2071.26	2221.26
689	9695.253	2071.26	2221.26
690	9707.11	2071.26	2221.26
691	9708.022	2071.26	2221.26
692	9718.967	2071.26	2221.26
693	9719.879	2071.26	2221.26
694	9730.824	2071.26	2221.26
695	9731.736	2071.26	2221.26
696	9742.681	2071.26	2221.26
697	9743.593	2071.26	2221.26
698	9754.538	2071.26	2221.26
699	9755.45	2071.26	2221.26
700	9766.395	2071.26	2221.26
701	9767.307	2071.26	2221.26
702	9778.251	2071.26	2221.26
703	9779.163	2071.26	2221.26
704	9790.108	2071.26	2221.26
705	9791.02	2071.26	2221.26
706	894.3454	2285.81	2435.81
707	893.5768	2287.89	2437.89
708	894.5743	2288.97	2438.97
709	894.6575	2288.97	2438.97
710	895.655	2288.97	2438.97
711	895.7382	2288.97	2438.97
712	896.7357	2288.97	2438.97
713	896.8189	2288.97	2438.97
714	897.8164	2288.97	2438.97
715	897.8996	2288.97	2438.97
716	898.8971	2288.97	2438.97

	A	B	C
715	897.8996	2288.97	2438.97
716	898.8971	2288.97	2438.97
717	898.9803	2288.97	2438.97
718	899.9779	2303.04	2453.04
719	900.061	2305.14	2455.14
720	901.0586	2305.14	2455.14
721	901.1417	2307.48	2457.48
722	902.2224	2308.63	2458.63
723	902.3055	2308.63	2458.63
724	903.3031	2308.63	2458.63
725	903.3862	2308.63	2458.63
726	904.3838	2308.63	2458.63
727	904.4669	2308.63	2458.63
728	905.4645	2308.63	2458.63
729	905.5476	2308.63	2458.63
730	906.5452	2308.63	2458.63
731	906.6283	2308.63	2458.63
732	907.6259	2308.63	2458.63
733	907.709	2308.63	2458.63
734	908.7066	2308.63	2458.63
735	908.7898	2308.63	2458.63
736	909.7873	2308.63	2458.63
737	909.8705	2308.63	2458.63
738	910.9512	2308.63	2458.63
739	911.0343	2308.63	2458.63
740	912.0319	2308.63	2458.63
741	912.115	2308.63	2458.63
742	913.1126	2308.63	2458.63
743	913.1957	2308.63	2458.63
744	914.1933	2308.63	2458.63
745	914.2764	2308.63	2458.63
746	915.274	2308.63	2458.63
747	915.3571	2308.63	2458.63
748	916.3547	2308.63	2458.63
749	916.4378	2348.56	2498.56
750	916.5608	2349.32	2499.32
751	916.6439	2349.32	2499.32
752	917.6405	2349.32	2499.32
753	917.7235	2349.32	2499.32
754	918.7202	2349.32	2499.32
755	918.8032	2349.32	2499.32
756	919.8829	2349.32	2499.32
757	919.9659	2349.32	2499.32
758	920.9626	2349.32	2499.32
759	921.0456	2349.32	2499.32
760	921.9592	2349.32	2499.32
761	922.5405	2349.32	2499.32
762	922.6236	2349.32	2499.32
763	923.7033	2349.32	2499.32
764	924.6678	2368.49	2518.49
765	924.783	2370.65	2520.65
766	924.866	2370.65	2520.65
767	925.3643	2374.13	2524.13

To obtain a correct result and analyses determine the average pressure and running to plot it VS depth .

The table (4-4) show the average pressure and average fraction pressure.

	A	B	C
1	PP avg	FP avg	Mselct
2	1273.75	1423.75	1348.75
3	1273.75	1423.75	1348.75
4	1273.75	1423.75	1348.75
5	1273.75	1423.75	1348.75
6	1273.75	1423.75	1348.75
7	1273.75	1423.75	1348.75
8	1273.75	1423.75	1348.75
9	1273.75	1423.75	1348.75
10	1273.75	1423.75	1348.75
11	1273.75	1423.75	1348.75
12	1273.75	1423.75	1348.75
13	1273.75	1423.75	1348.75
14	1273.75	1423.75	1348.75
15	1273.75	1423.75	1348.75
16	1273.75	1423.75	1348.75
17	1273.75	1423.75	1348.75
18	1273.75	1423.75	1348.75
19	1273.75	1423.75	1348.75
20	1273.75	1423.75	1348.75
21	1314.44	1464.44	1389.44
22	1315.75	1465.75	1390.75
23	1317.15	1467.15	1392.15
24	1318.61	1468.61	1393.61
25	1318.61	1468.61	1393.61
26	1318.61	1468.61	1393.61
27	1318.61	1468.61	1393.61
28	1318.61	1468.61	1393.61
29	1318.61	1468.61	1393.61
30	1318.61	1468.61	1393.61
31	1318.61	1468.61	1393.61
32	1318.61	1468.61	1393.61
33	1318.61	1468.61	1393.61
34	1318.61	1468.61	1393.61
35	1318.61	1468.61	1393.61
36	1318.61	1468.61	1393.61
37	1318.61	1468.61	1393.61
38	1318.61	1468.61	1393.61
39	1318.61	1468.61	1393.61
40	1318.61	1468.61	1393.61
41	1318.61	1468.61	1393.61
42	1318.61	1468.61	1393.61
43	1318.61	1468.61	1393.61
44	1318.61	1468.61	1393.61
45	1318.61	1468.61	1393.61
46	1318.61	1468.61	1393.61
47	1318.61	1468.61	1393.61
48	1318.61	1468.61	1393.61
49	1318.61	1468.61	1393.61
50	1318.61	1468.61	1393.61
51	1318.61	1468.61	1393.61
52	1318.61	1468.61	1393.61
53	1318.61	1468.61	1393.61
54	1318.61	1468.61	1393.61
55	1318.61	1468.61	1393.61
56	1318.61	1468.61	1393.61
57	1318.61	1468.61	1393.61
58	1318.61	1468.61	1393.61
59	1318.61	1468.61	1393.61

	A	B	C
58	1318.61	1468.61	1393.61
59	1318.61	1468.61	1393.61
60	1318.61	1468.61	1393.61
61	1318.61	1468.61	1393.61
62	1318.61	1468.61	1393.61
63	1318.61	1468.61	1393.61
64	1318.61	1468.61	1393.61
65	1318.61	1468.61	1393.61
66	1318.61	1468.61	1393.61
67	1395.91	1545.91	1470.91
68	1380.7	1530.7	1455.7
69	1380.7	1530.7	1455.7
70	1383.5	1533.5	1458.5
71	1384.91	1534.91	1459.91
72	1384.91	1534.91	1459.91
73	1384.91	1534.91	1459.91
74	1384.91	1534.91	1459.91
75	1384.91	1534.91	1459.91
76	1384.91	1534.91	1459.91
77	1384.91	1534.91	1459.91
78	1384.91	1534.91	1459.91
79	1384.91	1534.91	1459.91
80	1384.91	1534.91	1459.91
81	1384.91	1534.91	1459.91
82	1384.91	1534.91	1459.91
83	1384.91	1534.91	1459.91
84	1384.91	1534.91	1459.91
85	1384.91	1534.91	1459.91
86	1384.91	1534.91	1459.91
87	1384.91	1534.91	1459.91
88	1384.91	1534.91	1459.91
89	1384.91	1534.91	1459.91
90	1384.91	1534.91	1459.91
91	1384.91	1534.91	1459.91
92	1384.91	1534.91	1459.91
93	1384.91	1534.91	1459.91
94	1384.91	1534.91	1459.91
95	1384.91	1534.91	1459.91
96	1384.91	1534.91	1459.91
97	1384.91	1534.91	1459.91
98	1384.91	1534.91	1459.91
99	1384.91	1534.91	1459.91
100	1384.91	1534.91	1459.91
101	1384.91	1534.91	1459.91
102	1384.91	1534.91	1459.91
103	1384.91	1534.91	1459.91
104	1384.91	1534.91	1459.91
105	1384.91	1534.91	1459.91
106	1384.91	1534.91	1459.91
107	1384.91	1534.91	1459.91
108	1384.91	1534.91	1459.91
109	1384.91	1534.91	1459.91
110	1384.91	1534.91	1459.91
111	1384.91	1534.91	1459.91
112	1384.91	1534.91	1459.91
113	1384.91	1534.91	1459.91
114	1384.91	1534.91	1459.91
115	1384.91	1534.91	1459.91
116	1384.91	1534.91	1459.91

	A	B	C
115	1384.91	1534.91	1459.91
116	1384.91	1534.91	1459.91
117	1384.91	1534.91	1459.91
118	1384.91	1534.91	1459.91
119	1384.91	1534.91	1459.91
120	1384.91	1534.91	1459.91
121	1384.91	1534.91	1459.91
122	1384.91	1534.91	1459.91
123	1384.91	1534.91	1459.91
124	1384.91	1534.91	1459.91
125	1384.91	1534.91	1459.91
126	1384.91	1534.91	1459.91
127	1384.91	1534.91	1459.91
128	1384.91	1534.91	1459.91
129	1384.91	1534.91	1459.91
130	1384.91	1534.91	1459.91
131	1384.91	1534.91	1459.91
132	1384.91	1534.91	1459.91
133	1384.91	1534.91	1459.91
134	1384.91	1534.91	1459.91
135	1384.91	1534.91	1459.91
136	1384.91	1534.91	1459.91
137	1384.91	1534.91	1459.91
138	1384.91	1534.91	1459.91
139	1384.91	1534.91	1459.91
140	1384.91	1534.91	1459.91
141	1384.91	1534.91	1459.91
142	1384.91	1534.91	1459.91
143	1485.7	1635.7	1560.7
144	1487.86	1637.86	1562.86
145	1487.86	1637.86	1562.86
146	1490.46	1640.46	1565.46
147	1490.46	1640.46	1565.46
148	1493.15	1643.15	1568.15
149	1493.15	1643.15	1568.15
150	1495.8	1645.8	1570.8
151	1495.8	1645.8	1570.8
152	1498.4	1648.4	1573.4
153	1498.4	1648.4	1573.4
154	1501.13	1651.13	1576.13
155	1501.13	1651.13	1576.13
156	1501.13	1651.13	1576.13
157	1501.13	1651.13	1576.13
158	1501.13	1651.13	1576.13
159	1512.26	1662.26	1587.26
160	1513.29	1663.29	1588.29
161	1514.84	1664.84	1589.84
162	1514.84	1664.84	1589.84
163	1514.84	1664.84	1589.84
164	1514.84	1664.84	1589.84
165	1514.84	1664.84	1589.84
166	1514.84	1664.84	1589.84
167	1514.84	1664.84	1589.84
168	1514.84	1664.84	1589.84
169	1514.84	1664.84	1589.84
170	1514.84	1664.84	1589.84
171	1514.84	1664.84	1589.84
172	1514.84	1664.84	1589.84
173	1528.19	1678.19	1603.19

	A	B	C
172	1514.84	1664.84	1589.84
173	1528.19	1678.19	1603.19
174	1530.24	1680.24	1605.24
175	1530.24	1680.24	1605.24
176	1532.2	1682.2	1607.2
177	1433.45	1583.45	1508.45
178	1433.45	1583.45	1508.45
179	1433.45	1583.45	1508.45
180	1433.45	1583.45	1508.45
181	1433.45	1583.45	1508.45
182	1433.45	1583.45	1508.45
183	1433.45	1583.45	1508.45
184	1433.45	1583.45	1508.45
185	1433.45	1583.45	1508.45
186	1433.45	1583.45	1508.45
187	1433.45	1583.45	1508.45
188	1433.45	1583.45	1508.45
189	1433.45	1583.45	1508.45
190	1433.45	1583.45	1508.45
191	1433.45	1583.45	1508.45
192	1433.45	1583.45	1508.45
193	1433.45	1583.45	1508.45
194	1433.45	1583.45	1508.45
195	1433.45	1583.45	1508.45
196	1433.45	1583.45	1508.45
197	1433.45	1583.45	1508.45
198	1433.45	1583.45	1508.45
199	1433.45	1583.45	1508.45
200	1433.45	1583.45	1508.45
201	1433.45	1583.45	1508.45
202	1433.45	1583.45	1508.45
203	1433.45	1583.45	1508.45
204	1433.45	1583.45	1508.45
205	1433.45	1583.45	1508.45
206	1433.45	1583.45	1508.45
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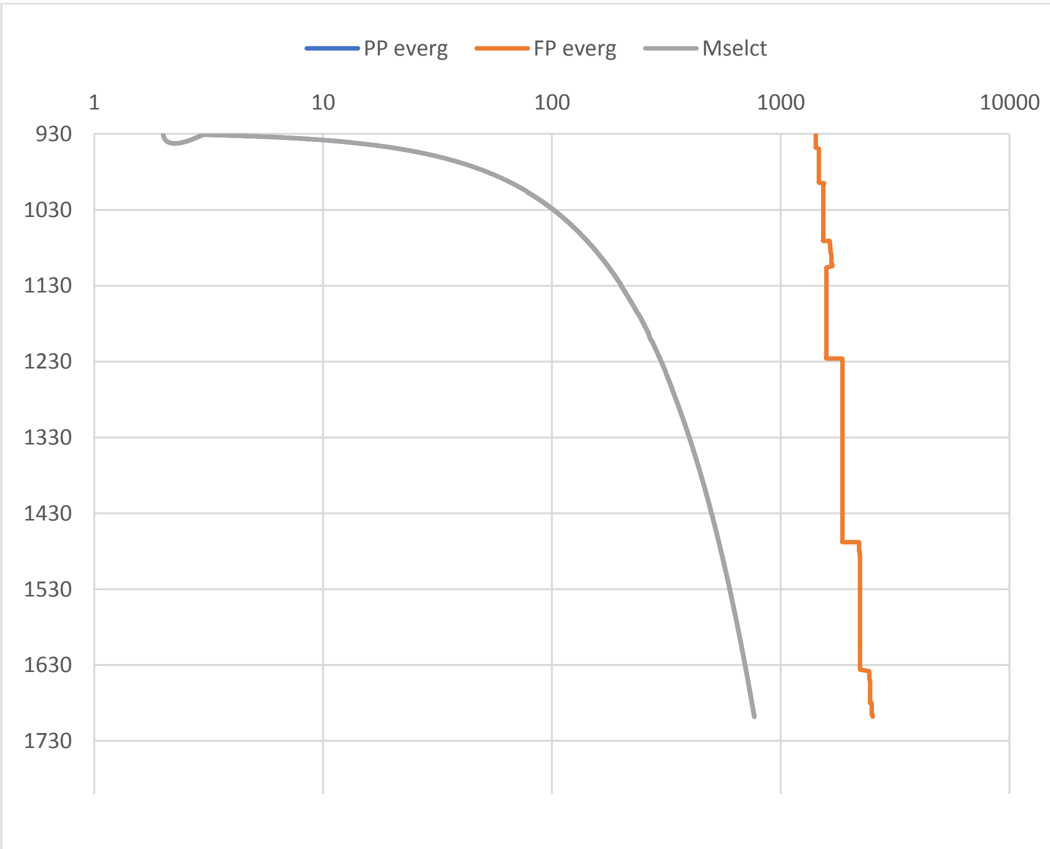
694	2071.26	2221.26	2146.26
695	2071.26	2221.26	2146.26
696	2071.26	2221.26	2146.26
697	2071.26	2221.26	2146.26
698	2071.26	2221.26	2146.26
699	2071.26	2221.26	2146.26
700	2071.26	2221.26	2146.26
701	2071.26	2221.26	2146.26
702	2071.26	2221.26	2146.26
703	2071.26	2221.26	2146.26
704	2071.26	2221.26	2146.26
705	2071.26	2221.26	2146.26
706	2285.81	2435.81	2360.81
707	2287.89	2437.89	2362.89
708	2288.97	2438.97	2363.97
709	2288.97	2438.97	2363.97
710	2288.97	2438.97	2363.97
711	2288.97	2438.97	2363.97
712	2288.97	2438.97	2363.97
713	2288.97	2438.97	2363.97
714	2288.97	2438.97	2363.97
715	2288.97	2438.97	2363.97
716	2288.97	2438.97	2363.97
717	2288.97	2438.97	2363.97
718	2303.04	2453.04	2378.04
719	2305.14	2455.14	2380.14
720	2305.14	2455.14	2380.14
721	2307.48	2457.48	2382.48
722	2308.63	2458.63	2383.63
723	2308.63	2458.63	2383.63
724	2308.63	2458.63	2383.63
725	2308.63	2458.63	2383.63
726	2308.63	2458.63	2383.63
727	2308.63	2458.63	2383.63
728	2308.63	2458.63	2383.63
729	2308.63	2458.63	2383.63
730	2308.63	2458.63	2383.63
731	2308.63	2458.63	2383.63
732	2308.63	2458.63	2383.63
733	2308.63	2458.63	2383.63
734	2308.63	2458.63	2383.63
735	2308.63	2458.63	2383.63
736	2308.63	2458.63	2383.63
737	2308.63	2458.63	2383.63
738	2308.63	2458.63	2383.63
739	2308.63	2458.63	2383.63
740	2308.63	2458.63	2383.63
741	2308.63	2458.63	2383.63
742	2308.63	2458.63	2383.63
743	2308.63	2458.63	2383.63

4.3. Discussion:

Estimate the mud window: The figure (4-2) show the safety range pressure (mud window).



Figuer (4-2): mud window

It was noticed that: Pore pressure and mud selection are identical matching that means the formation is very soft, acontamination of drilling fluid exiting of gases.

The safety interval rang of casing set abroxmatly (930-1698)m.

The length of th e casing estimated about 768m.

CHAPTER FIVE

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1. Conclusion:

Geomechanical modeling is playing an increasingly important role at challenging field development projects since field development decisions are aided by an accurate assessment of well design options that are closely tied to the existing geological and engineering data set.

The lithology of formations in ALdindir field in Blue Nile Basin block (8) tawakul are sand soft with the existing of gas beds.

The safety interval rang of casing set abroxmatly (930-1698) m

the length of the casing estimated about 768m

Estimated the safety range pressure (mud window).

5.2. Recommendation:

It is recommended to perform some laboratory core measurements for rock strength parameters, to calibrate log data.

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