Statistical Time Estimates for Deepwater Completions in the Gulf of Mexico: Integration of Neural Networking and Distribution Modeling

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Statistical Time Estimates for Deepwater Completions in the Gulf of Mexico: Integration of Neural Networking and Distribution Modeling

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List of Abbreviations

CRI   completions risk index

A   constant factor (time/depth)

AFE   approval for expenditure

B   exponent on measured depth (unitless)

BOP   blow out preventer

BP   British Petroleum

C   penalty factor in learning curve (unitless)

DDR   daily drilling report

E   annual improvement (unitless)

ft   feet

i   well number in dataset

in   inches

LCF   learning curve factor (unitless)

MD   measured depth (feet)

μ mean

N   number of samples in dataset

NPT   non-productive time

SDF   spud date factor (unitless)

Σ standard deviation

t   time (days)

TA   temporarily abandon

TF   trouble free

TFT   trouble free time

WOW wait on weather

X   well value for particular parameter in statistical analysis

Chapter 1: Introduction

1.1 Statement of Problem

Oil and gas have been the leading energy recourses from the Industrial Revolution. Though there is currently a push for alternative energy means, one thing remains certain, oil and gas is here for the foreseeable future. As a result of the high demand for oil and gas, easily obtainable hydrocarbons have been deemed unprofitable or have already been extracted.

As time progresses, so does the difficulty of finding, drilling, completing, and producing reservoirs. Thus, the oil and gas industry must rely on innovative methods and technology to find and extract the remaining hydrocarbons. In the recent past, many unconventional methods for producing hydrocarbons have come to light. For instance, producing oil and gas from shale.

Shale is a sedimentary rock composed of clay to silt sized grains that have been significantly compacted from the overlying materials. Permeability in shale is essentially nonexistent, previously rendering them worthless as a producer for the oil and gas industry. Hydraulic fracturing, or hydrofracking, has changed the perspective of this rock as it relates to energy. Layers of shale that were once caps or boundaries to trap oil in sandstones are now viewed as sources for hydrocarbons. Hydraulic fracturing is just one of the many methods that have developed as a result of economical hydrocarbons becoming more difficult to extract.

This thesis focuses on another aspect that is constantly evolving: water depth. Water depths are continuing to increase proportionally with the demand of these natural resources.

This renders the process of extracting the resources more difficult, and particularly more expensive.

Figure 1: Image of deepwater semi-submersible rig

It is extremely expensive to drill deepwater wells, and even more expensive to complete them. All the advancements in completion technology come with a price, literally. Rig rates alone average around half a million dollars a day (Figure 1). This number even excludes the price of additional equipment required to drill and complete a well. It is estimated typically that deepwater operations average around one million dollars a day, which generally only increases with deeper waters.

Often times, wells are drilled without encountering any hydrocarbons. Other times, hydrocarbons are encountered, but the targets are not profitable enough to cover the expense for drilling and completion operations. Needless to say, companies who are invested in a well want to have an estimate of how much it would cost to complete it. Thus, it is important to analyze costs prior to initiating any well plan.

Completion time estimates could be a determining factor as to whether or not to drill a well. The problem is that deepwater operations are relatively new and there is little completion data from which to base the estimates. Stone Energy recently developed a deepwater department, thus, even less data was available to estimate completion costs for deepwater wells in the Gulf of Mexico. Improving the completion time estimates was crucial for the newly developed Stone Energy deepwater department.

1.2 Study Objectives

The number one factor affecting drilling and completion costs is time; the longer it takes, the more it costs. Therefore, the primary objective of this study was only to improve Stone Energy's statistical time estimates for deepwater completions. Previous deepwater completion time estimates were based on experience, rather than statistics. This was due to a minimal amount of data in the archive, as the Stone deepwater team was only recently developed.

Statistical time estimates for operations are typically performed at the preliminary stage of the total cost estimate for a well (drilling and completions). That being said, front-end time estimates are expected to be within ±40% of the actual completion field days. These estimates are fine-tuned as well planning progresses and more details are available, but there is the potential need for multiple preliminary statistical time estimates at once.

In the recent past, during the lease sale event, Stone Energy received 40 prospect wells that required preliminary statistical cost estimates in a two-week period. With the accuracy only needing to be within 40% and the potential to have multiple prospect wells in a short period of time, spending substantial amounts of time on every well estimate would be a poor use of company resources. Thus, developing a user-friendly program that could rapidly

perform statistical time estimates within the allotted accuracy range for deepwater completions was essential.

1.3 Dodson Datasystems

Dodson Datasystems® is a company that stores enormous amounts of drilling and completion data from a variety of operators in the Gulf of Mexico (Figure 2). Operators submit specific well parameters to the database, as well as time segments in two different stages: after drilling and after completion. The purpose of the database is to benchmark operators in the system.

Figure 2: Dodson Datasystems logo

Operators, who are subscribed to Dodson Datasystems, are allowed to view data from all the other operator's wells, provided they are subscribed as well. It is a useful tool for comparing performance of operators with each other, but the data can also be used to estimate the time to drill and complete a well. While Dodson Datasystems stores time data for a substantial amount of wells, it also considers the difficulty of the wells for benchmarking purposes.

Completion risk index (CRI) is Dodson Datasystems' approach to numerically measure the difficulty of a well. Therefore, if it takes a significant amount of time to complete a well with a higher complexity, it will be normalized when compared to easier wells. CRI is calculated using a Dodson Datasystems copy written formula and is included with every completed well that is submitted to the database. The CRI of every well considers 16 variables obtained from well attributes in the formula, all of which are required to be

submitted by the operator upon completion of the well (Table 1). Figure 3 displays a

consistent relationship between the CRI to completion time when plotted (IHS, 2013). Thus,

the CRI alone can be a useful tool to estimate completion times.

Rig Type	Production Casing Size
Tubing Metallurgy	Sand Control Type
Production Casing Type	Intelligent Completion?
Completion Type	Bottom Hole Temperature > 300°F
Tree Type	Production Casing Squeezed?
Mechanical Type	Re-Entry to Temporarily Abandoned Well?
Interval Bottom Depth	Hole Angle at Perforation
Interval Length	Completion Fluid Weight

Table 1: Parameters used in Dodson Datasystems CRI formula.
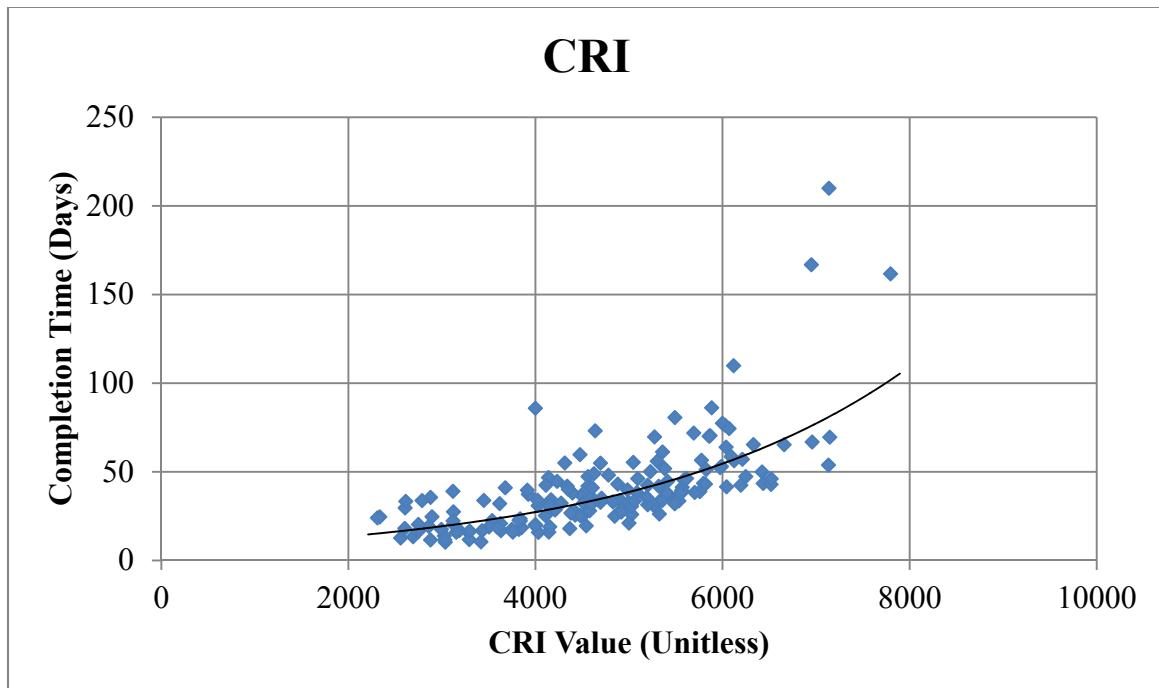
Figure 3: Dodson Datasystems CRI plotted against time

As stated earlier in Section 1.2, the objectives of this study were to improve statistical

time estimates and create a program that simplifies the process. CRI is calculated using an

algorithm, not statistically. If the CRI was used in the study, predictions would be made from predicted data, which would result in further error. Therefore, the CRI was not considered in this study. However, the study has the same premise as the CRI, a way to relate well parameters to completion time.

Data for 168 wells are stored in the Dodson Datasystems deepwater completion database. This data was obtained from wells that used deepwater rigs only: semi-submersible, platform, or drillship. As discussed earlier, this small number is due to deepwater operations being relatively new to the oil and gas industry. In addition to that, completions data are significantly smaller in the deepwater database in comparison to drilling, which has data for over 1,000 wells in the Dodson Datasystems database.

This study focused on the completion data within the Dodson Datasystems database, specifically, time data in relation to completion characteristics of wells. The drilling database defined total drilling time as spud to TD; total completion time was not this simple. Dodson Datasystems completion times were divided into nine different segments, and the non-productive time (NPT) associated with those times (Table 2).

Casing Run and Cement Time	Install Tree Time
Pick Up Completion String, Displacement, and Filter Time	Rig Down and Move Off Time
Perforation Time	Well Test Time
Sand Control Time	Rig Up Time on Re-Entry Well (TA Re-Entry Time)
Run Tubing Time	

Table 2: Dodson Datasystems completion time segments

All times had clear definitions of when they begin and end. For example, run and cement casing time started when the last logging tool was laid down and ended just prior to picking up the completion string to begin displacement (IHS, 2014).

The explanation for the nine time segments, as opposed to having set start dates and stop dates, was due completions having different operational procedures. For instance, not every well in the database ran and cemented casing. For that reason, the completion start date could not be defined solely by the commencement of running and cementing casing. This created consistency between wells within the database.

Additionally, there were wait on weather (WOW) times and rig failure times. Dodson Datasystems subtracted these times from the total completion time, as they do not accurately portray an operator's performance.

Having a clear definition of these time segments was crucial to this study, so that all the well times in the database were consistent with one another. Different operators will have different definitions of when a particular procedure starts and stops; Dodson Datasystems eliminated the potential for this variability.

Additionally, blow out preventer (BOP) certification times were not included for the wells in the Dodson Datasystems database. The British Petroleum (BP) oil spill in 2010, also known as the Macondo blowout, is responsible for the discrepancy in BOP certification times. Before the Macondo blowout, BOPs were not required to be certified before each new well. Post-Macondo wells were required to have BOPs certified prior to being latched, which added on about two weeks to total completion time on average. A database containing wells with BOP certification times and without BOP certification times would severely skew the total completion time statistical estimate.

Chapter 2: Theoretical Background

2.1 Introduction

It is a well-known fact that drilling for oil is an expensive gamble, especially in deep water. As discussed in Chapter 1, rig rates alone can exceed half a million dollars a day. Operations require some of the most expensive and technologically advanced equipment in the world. Thus, the number one driving factor of drilling costs is time.

There has been a substantial amount of research performed on the time it takes to drill a well, and what well parameters will increase the amount of time. However, publications on the driving factors that affect the time to complete a well alone are limited, especially from a statistical standpoint.

The completion phase can often times be more expensive than the drilling phase on a day-to-day basis. Like drilling, the number one driving factor of completion costs is time. Thus, well costs can increase dramatically depending on the length of the completion phase of a well.

2.2 Previous Well Statistical Performance Estimation Studies

Unfortunately for this study, there were no publications related directly to statistical time estimates for completions readily available. However, two articles reviewed were related to the task at hand: Probabilistic Well Time Estimation Revisited (Adams et al., 2009) and Drilling Time Predictions from Statistical Analysis (Dawson et al., 1987). Both of these articles focus on well time as a whole, with only a fraction of the studies attributed to completions. Though neither of these articles address towards statistical time estimation for completions specifically, many of the principals could be applied to this study.

2.2.1 Probabilistic Well Time Estimation Revisited

Data from 104 Nexen and Legacy wells in the North Sea were used for this study. Wells were selected provided they met the following criteria: close proximity to one another, drilled conventionally only, and drilled within the last 10 years. These guidelines were set to normalize the data. Wells being in close proximity to one another would ensure that the geology, drilling hazards, and weather would be similar (Adams et al., 2009). Having wells that were only drilled conventionally would eliminate outliers on either side of the distribution. With the constant improvements to drilling and completion operations, selecting wells within the recent past would provide the most accurate data for the analysis.

Different operators will have different definitions of NPT. It can be argued that all operations are trouble free (TF), as all operations take the well forward (Adams et al., 1987). However, when performing a statistical analysis, there must be a clear definition of NPT to normalize the data. This article defined trouble free time (TFT) as any procedure performed and correlated to the plan. Whereas, NPT was defined as any additional time that was unplanned. The total well time for drilling and completions was defined by Equation 1.

$$Total\ Time = TFT + NPT$$ ………………………..……….……………Equation 1

Every well in the database needed to be reevaluated and characterized by the previous definitions. This involved going through every daily drilling report (DDR) for every well and assigning new NPT times. This process resulted in the original data being, on average, a 19.7% underestimate of NPT; one underestimate was as high as 86.1%. Mechanical NPT accounted for approximately 75% of all the NPT in the database.

A boundary of 2.5 days was set within the mechanical NPT data to clearly define parent events and extreme events (train wrecks). The extreme events were classified as taking

greater than 2.5 days, and the parent events were classified as taking less than 2.5 days (Adams et al., 2009). Of 2,512 mechanical NPT events, only 91 were classified as train wrecks. However, the sum of the total time of the train wrecks was 1.75 years, accounting for over 50% of the of mechanical NPT times. This extreme statistic resulted in analyzing the distributions of the parent and extreme mechanical NPT events separately.

It was also decided to separate the wells by the following well types prior to analyzing the distribution:

- Semi-submersible exploration, non HPHT

- Semi-submersible development, non HPHT

- Semi- submersible exploration HPHT

- Semi-submersible development HPHT

- Jack-up development

- Platform development

This resulted in many significantly smaller datasets, as only eight of the wells were jack-up rigs (Adams et al., 2009).

Analysis indicated that Weibull was the best distribution for train wrecks, and log-normal was the best distribution for parent events. Additionally, the best distribution model was checked for TFT, open water WOW, and riser connected WOW. TFT plus Mechanical parent NPT was log-normally distributed, whereas the remainder of NPT times were Weibull distributed.

The predicted mean times of the six datasets from their corresponding distributions were all within 0.2% of the historical mean times. However, for our study, we are not trying to predict the mean of historical wells. The objective is to predict completion time for future

wells. Every well is unique, and the fact that some well characteristics affect completion time more than others cannot be disputed. Simply using a statistical analysis to determine the average completion time of wells will not give accurate results. For instance, two development wells drilled in the same area with semi-submersible rigs will not have the same completion time if they have a difference of 10,000 feet in interval measured depth (MD). There are an infinite amount of factors that affect completion time, and all of which cannot be captured at the current time. However, for factors that are known, they should be analyzed for their effect on completion time in order to produce accurate results.

The results of this analysis were obtained from North Sea wells within close proximity of one another, thus, they could not be applied to the Gulf of Mexico. However, methods utilized in this study could be incorporated in the deepwater completions statistical time estimate study.

2.2.2 Drilling Time Predictions from Statistical Analysis

This thesis focused on well time estimations from statistical analysis and the development of equations. Accurate time estimations prior to drilling are important for two primary reasons: they can directly influence economic analysis and they provide a scale that can measure performance (Dawson et al., 1987).

There has been a significant amount of research performed as to the most likely outcome for well time estimates. However, there have been less studies on error bands associated with the most likely outcome. This study developed empirical equations, through curve fitting, to make "best guess" estimates, as well as apply error bars to the "best guess." These error bands can be used to determine whether deviations in time are significant or not.

The database was composed of wells drilled to the Jurassic and either located in central or northern North Sea. Well information available in the platform drilling database were: well name, spud date, total MD, maximum hole angle, drilling order in template, total well time, drilling time, completion time, and trouble time (Dawson et al., 1987). The subsea database only contained the following information: well name, total measured depth, maximum hole angle, drilling order in template, drilling time, and NPT associated with drilling.

Trouble time used in the study was defined by the operator; however, anytime that was not associated with drilling, completion, or NPT was omitted. Thus, there were likely discrepancies between well times due to NPT definitions fluctuating from operator to operator.

Time data was plotted against measured depth, maximum hole angle, spud date, and drilling order to determine the relationships between them. This was to determine constant values to in equations that were used to fit the data. Two variations of equations were used in this study:

$$\text{Time} = A * md^B \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{Equation 2}$$

$$\text{Time} = A * md^B * LCF * SDF \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{Equation 3}$$

The learning curve factor (LCF) was calculated by:

$$LCF = 1.0 + C * \exp(0.693*(1\text{-drilling order})/D \dots\dots\dots\dots\dots\dots\dots \text{Equation 4}$$

The spud date factor (SDF) was calculated by:

$$SDF = (1.0 - E)^{\wedge}(\text{spud date} - 1/1/1984) \dots\dots\dots\dots\dots\dots\dots\dots \text{Equation 5}$$

Variables utilized in these equations were:

A-constant factor (time/depth)

B-exponent on measured depth (dimensionless)

C-penalty factor in learning curve (dimensionless)

D-Half-life of learning

E-annual improvement

The learning curve factor was added to the original equation to reflect how wells improve as they are drilled in the template. Wells drilled earlier in the template tended to take more time than wells at the end. Spud date factor was utilized to reflect technological improvement as time progressed. Times were less for wells drilled at more recent dates when compared to wells drilled in 1984. The primary driving factor in these equations was measured depth: as well depth increases, so did the well time. The two equations developed in this study were used to fit the models to the data.

Time data was divided into different datasets: platform total time, platform drilling time, platform completion time, platform trouble time, and subsea drilling time with associated NPT. The five constant values within the equations were obtained via performing a regression analysis within each dataset. These constants were then input into the equation to obtain the corresponding time prediction for wells in central or northern North Sea.

The standard deviations of each equation relative to its database were used to evaluate the accuracy of study. Standard deviation results ranged from 17% to 123% of the dataset population mean. Completion and trouble time results were less accurate that drilling and total well times.

The constants obtained from the regression analysis were designed to be used in the North Sea area only. Results of the study indicated that the most influential parameter

affecting time was measured depth. SPF and LCF substantially reduces predicted times for wells. Hole angle only has an indirect effect on well time, due to increasing measured depth.

These equations were developed with constant values, then determined from a regression analysis to fit the data. This seemed like an unreliable method to perform time estimates, as the data was manipulated to fit a model, instead of developing a model to fit the data. Additionally, times used in the study were defined by individual operators. As discussed in Section 2.2, this creates an inconsistency within the dataset. Estimating times, without a standard definition of time breakdowns will create erroneous results.

2.2.3   Summary of Previous Well Statistical Performance Estimation Studies

The two previously discussed studies had a different approach to statistical time estimates than ours. First of all, neither of them focused solely on completion estimations. Completion times were included in both studies as part of the total well time, but little to no analysis was performed on how certain parameters affect completion time. Essentially, these two studies were designed for drilling time estimations and then applied to total well time. However, many methods involved in both of these studies were applied in this thesis.

An important aspect that was extracted from the theoretical background was the strict definition of NPT to create consistency in the data. Though a clear definition of NPT is not necessary in our study, because it focuses on total completion time and does not need to distinguish between trouble free time and NPT, it is crucial for the data to be consistent.

Results from a statistical analysis are only as accurate as the data used in the analysis. Luckily, Dodson Datasystems has already normalized the database with clear definitions for the nine different completion time segments.

The article reviewed in Section 2.2 also discussed the importance of determining the distribution when performing a statistical time estimation. The probabilities will vary depending on what distribution model is used in the analysis.

A few key issues were highlighted from these two articles and were the foundation of this entire statistical cost estimate. Most importantly, analyzing the relationship of certain well parameters to well time was another important aspect learned from the theoretical background (e.g. – total measured depth compared to total well time). In fact, this was the basis for our completion study.

Both articles discuss the importance of wells in close location. Thus, the dataset utilized in our study was secluded to the Gulf of Mexico. Both articles separate the data based on well type: subsea or platform, etc. One article discussed how small the datasets became when the division was applied. We wanted to remedy this problem in our study.

Finally, both articles give results based off of entire population, but the average of a population is not necessarily the most likely outcome. Rather than incorporating the entire dataset in the analysis, using a smaller dataset of wells that reflect similar well times to the prospect well would likely give a more accurate result. While there were areas for improvement in these articles, they presented many innovative methods that could be expanded upon for our study.

2.3 Neural Networking

Neural networks, or artificial neural networks, are mathematical constructs that were inspired by biological neural networks (Heaton, 2010). They are effective when it comes to accomplishing simple tasks, but they are particularly useful for recognizing patterns. The network structure is composed of input layers, hidden layers, and output layers (Figure 4).
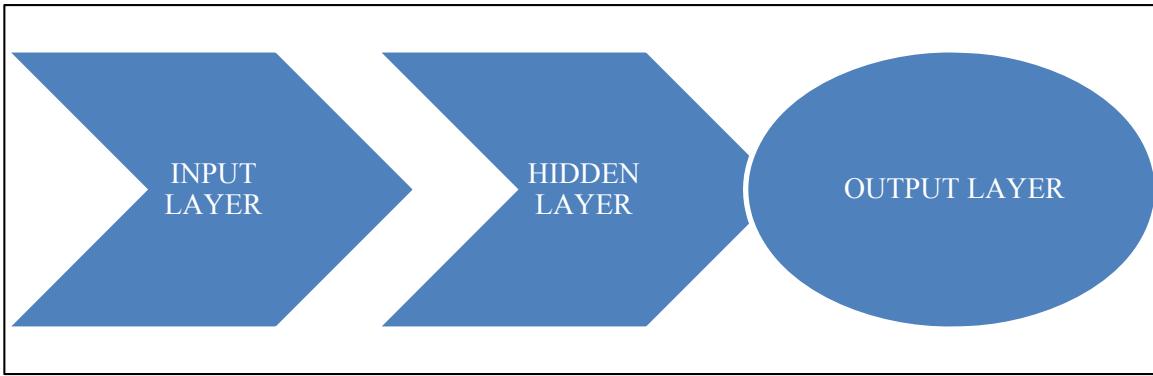
Figure 4: General structure of artificial neural network system

The input layers are the data which are utilized in the analysis to predict the output layer. Within a dataset of six fields, five of the fields will be used to predict values within the sixth via pattern detection. These five fields may contain continuous or discrete variables, all of which are on different scales (Heaton, 2010). With the original input values, these fields cannot be compared to one another because they are not normalized.

Neural networks take these inputs of various scales, and convert them all on a scale of zero to one (Microsoft, 2014). This process is called scoring. These values are then normalized, so that they can be analyzed for their effects on the sixth field. The hidden layer accounts for independent and dependent variables. If two input parameters affect the output together, but not individually, they still need to be accounted for. For instance, if one of the five fields was removed from the analysis, the scores for all the variables would likely change.

Details of the mathematics behind the neural network training are not necessary to obtain the needed results (Heaton, 2012). However, it is important to have background knowledge on the subject when reviewing the analysis. SQL Server Data Mining Add-In for Office simplifies the process of neural networking, and details behind the theory are described in more detail in Chapter 4 (Microsoft, 2014).

Chapter 3: Methods

3.1 Introduction

With only 168 wells in the deepwater completions database, it was difficult to filter out wells with similar characteristics. If a prospect well is greater than 25,000 feet and the wells were filtered by this criteria, the sample set would not be robust enough to perform a statistical analysis.

Then again, using every well in the database would not give an accurate statistical representation of completion time, but more so an average time of all the wells. If a prospect well with a total depth of 25,000 feet was to be analyzed for total completion time, using a well with a depth of 5,000 feet in the analysis would typically not be practical. Using wells like this in the statistical analysis would give erroneous results.

There was a need to normalize the data so that any combination of wells could be used in the statistical analysis, regardless of whether or not the well characteristics were the same.

Well parameters, used in the CRI formula, were plotted against the different time segments obtained from Dodson Datasystems. This method was obtained from performing the theoretical background (Dawson et al., 1987). For instance, completion time previously was thought to increase with interval length (Figure 5).
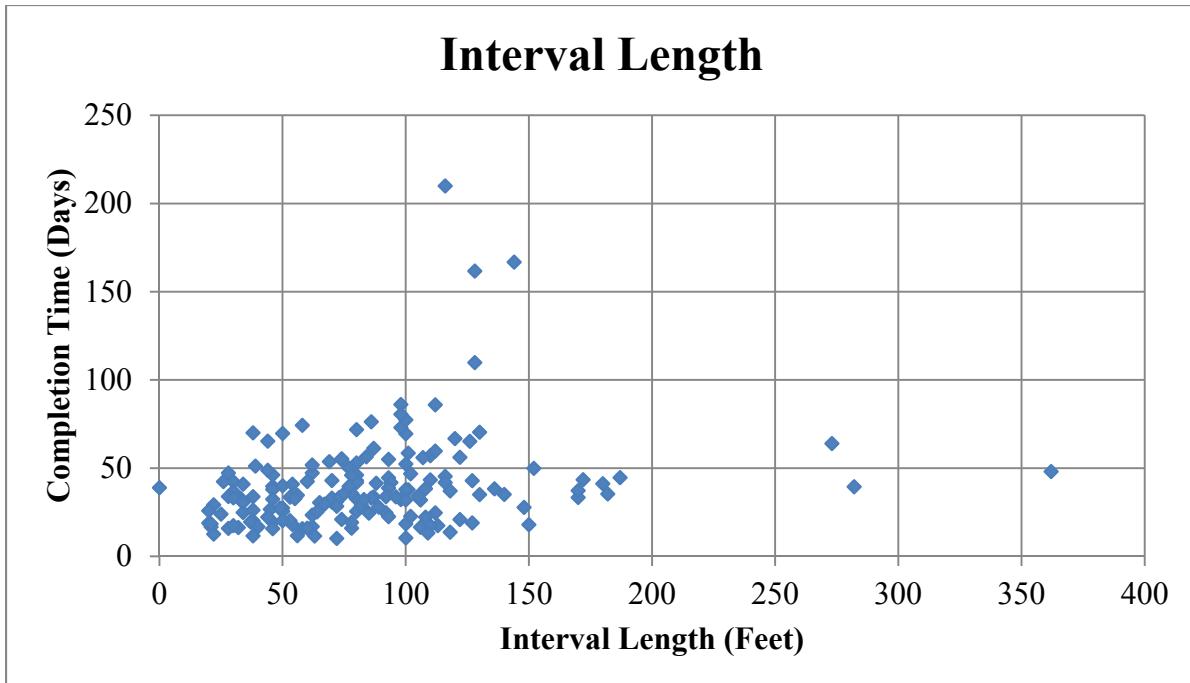
Figure 5: Interval length plotted against total completion time

This process was repeated for every applicable well parameter against every Dodson Datasystems time segment, which resulted in over 750 plots. Scatter in the data made it difficult to decipher any true correlation between the parameters and completion time (Figure 5). Results of these plots were not significant enough to base any statistical time estimations. Additionally, there were two important explanations for not taking this approach:

1. Using every well in the database would not produce as accurate results as using a subset of wells with similar completion times

2. Applying a trend line to all the data to fit our empirical equations for well parameters would be more representative of approaching the solution from an answer

It was decided that another method of analysis was needed as the foundation of the time estimates.

3.2 Neural Network

Neural networking was used in this study to normalize the well characteristics, so that the properties were weighted relative to their impact on completion time. Thus, it was not important whether all the wells utilized in the analysis had similar water depths, as the other well properties would compensate for the differences.

For a statistical analysis to be valid, a minimum sample size of 30 must be used (Hubele, 2011). 30 wells, from the database of 168, were to be used in each analysis. However, these sample wells needed to have a combination of properties that would impact completion time similarly to the prospect well, regardless of whether the properties were the same or not. In order for this to be performed, completion properties of the wells needed to be analyzed with respect to completion time.

The theoretical background performed in Section 2.3 concluded that the primary driving factor for total completion time was well depth. However, the review did not elaborate on how much of an impact in comparison to other well properties. While it was easy to say that deeper wells typically took longer to complete, it was not as easy to explain why some deeper wells were completed faster than shallow wells. Therefore, other factors must have been contributing to the total well time, like the number of intervals.

The goal of this study was to identify which characteristics impact time, but primarily to determine the extent. As discussed earlier, Dodson Datasystems used the CRI value to numerically evaluating the difficulty of a well's completion. This value was calculated using the inputs outlined in Table 1. A discussion over the CRI was had with Stone's completion engineers to determine which of the input parameters were applicable to this study. Few of the parameters were omitted, but the majority were to be used in the neural network analysis.

When data is exported from the Dodson Datasystems database, it is exported with

information for well intervals (Table 3).

AREA	WATER DEPTH	INTERVAL	INTERVAL BOTTOM DEPTH	INTERVAL LENGTH	TOTAL COMPLETION TIME
East Breaks	3673	1	12044	18	12.1
East Breaks	3673	2	11836	61	2.59
East Breaks	3673		12044	79	14.69

Table 3: Example of interval data as it is exported from Dodson Datasystems

Table 3 displays a two interval well with parameter and time data; more data is

displayed when exported from Dodson Datasystems, but not necessary to convey the

message. The blank cell in the interval column is a summary of the total well, however, the

data cannot be exported as the well summary only. Thus, wells with more than one interval

needed to be combined for this study. This was a time consuming process, but a necessary

one at that. It was decided that the deeper the interval, the longer the completion would take.

The deepest interval was recorded for wells with more than one interval, likewise, the longest

interval was recorded. This process was repeated for all 15 applicable well parameters.

Though it was not necessary for some parameters, as they had the exact same data for all

intervals (e.g. – Tree Type). The dataset with relevant times and parameters are located in

Appendix A[1]. Once all interval data had been combined into well data, the neural network

analysis could commence.

Microsoft Excel, in combination with SQL Server, was the program used to perform

the neural network analysis (Microsoft, 2014). SQL Server Data Mining Add-Ins for Office

needed to be installed in Microsoft Excel to perform any of the neural network analysis.

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[1] Permission to include Dodson Datasystems Deepwater Completion Data was
obtained from Ted Dodson and is included as Appendix C.

While this powerful software can perform multiple functions, the Prediction Calculator was the only tool used in this study.

Prediction calculator uses the Microsoft Logistic Regression algorithm, but it is simplified to be user friendly. Logistic regression is a method of determining the contribution of multiple factors to a pair of outcomes. As discussed in Section 1.4, the multiple factors are converted on the same scale and designated scores depending on their effect on the outcome pairs. The factors used in the analysis can be either discrete or continuous variables. Microsoft calls this process of converting these values the Z-Score normalization (Microsoft, 2014). For continuous values the Z-Score is calculated by Equations 6 and 7:

Z-Score (present) = $(X-\mu)/\sigma$……………………………………………...Equation 6

Z-Score (absent) = $-\mu/\sigma$…………………………………………..……Equation 7

For discrete values the Z-Score is calculated by Equations 8 and 9:

Z-Score (present) = $(1-\mu)/\sigma$……………………………………………...Equation 8

Z-Score (absent) = $-\mu/\sigma$…………………………………………..……Equation 9

Where:

X = Value encoded

μ = Average value of converted scores (0-1)

σ = Standard deviation of converted scores (0-1)

Step one of this process was to choose a target column within the dataset to define the pair of outcomes in the analysis. The objective of performing a neural network analysis was to compare well parameters for impact on total completion time, thus, the target column was total completion time (Figure 6). A maximum value, a minimum value, and a median were obtained from the total completion time data and were 10.2 days, 34.1 days, and 210 days,

respectively. The pair of outcomes selected for the analysis were the time data in the range of 10.2 days to 34.1 days and 34.1 days to 210 days.
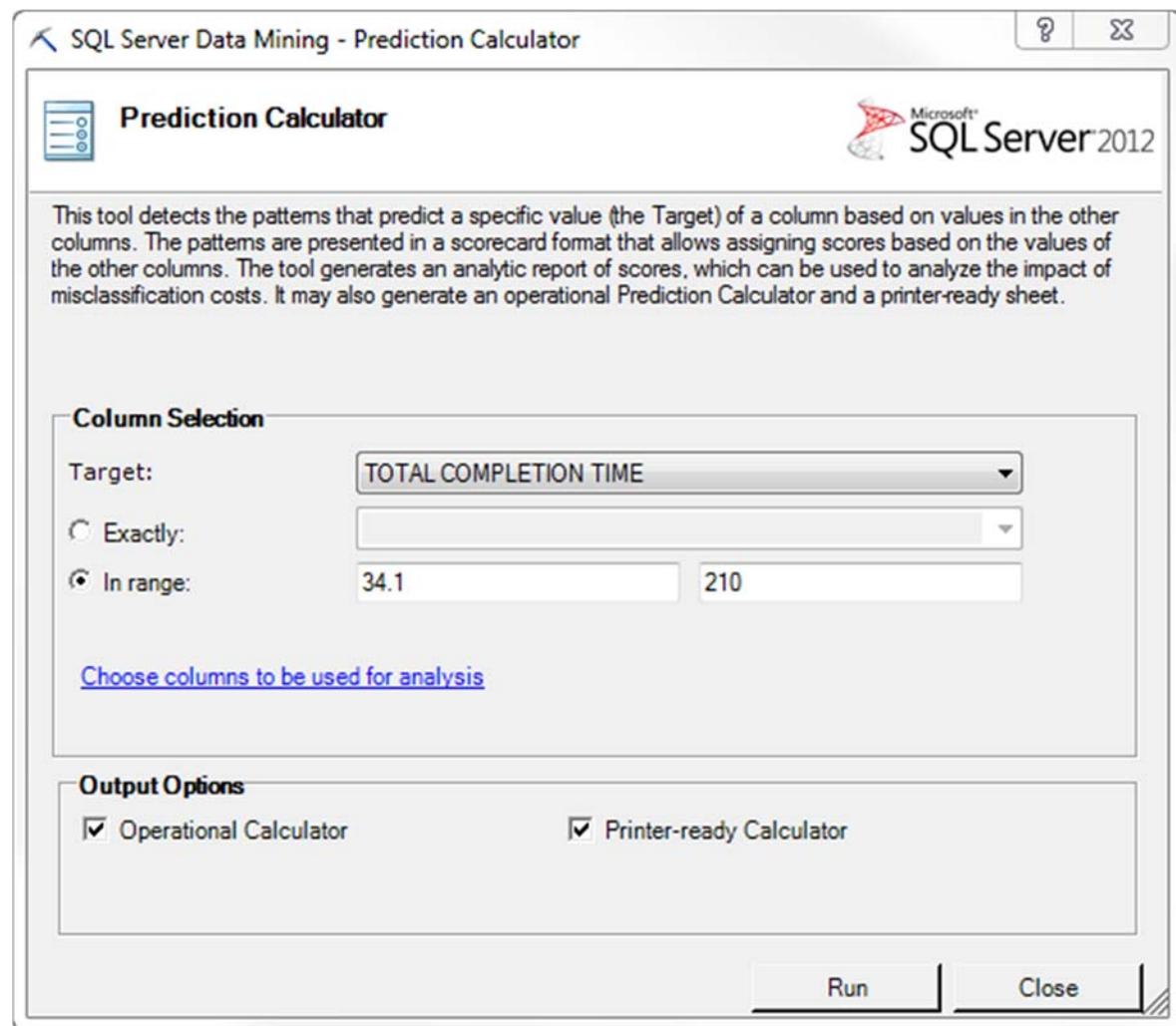
Figure 6: Image of the SQL Server Data Mining – Prediction Calculator

The theory behind this method was to completely divide the dataset in half, and compare 50% of the wells with faster completion times to wells with 50% of the wells with longer completion times. The explanation for this was that wells in the 50th percentile to the 100th percentile would have attributes that impact completion time more than those in the 1st percentile to the 50th percentile (Figure 7).
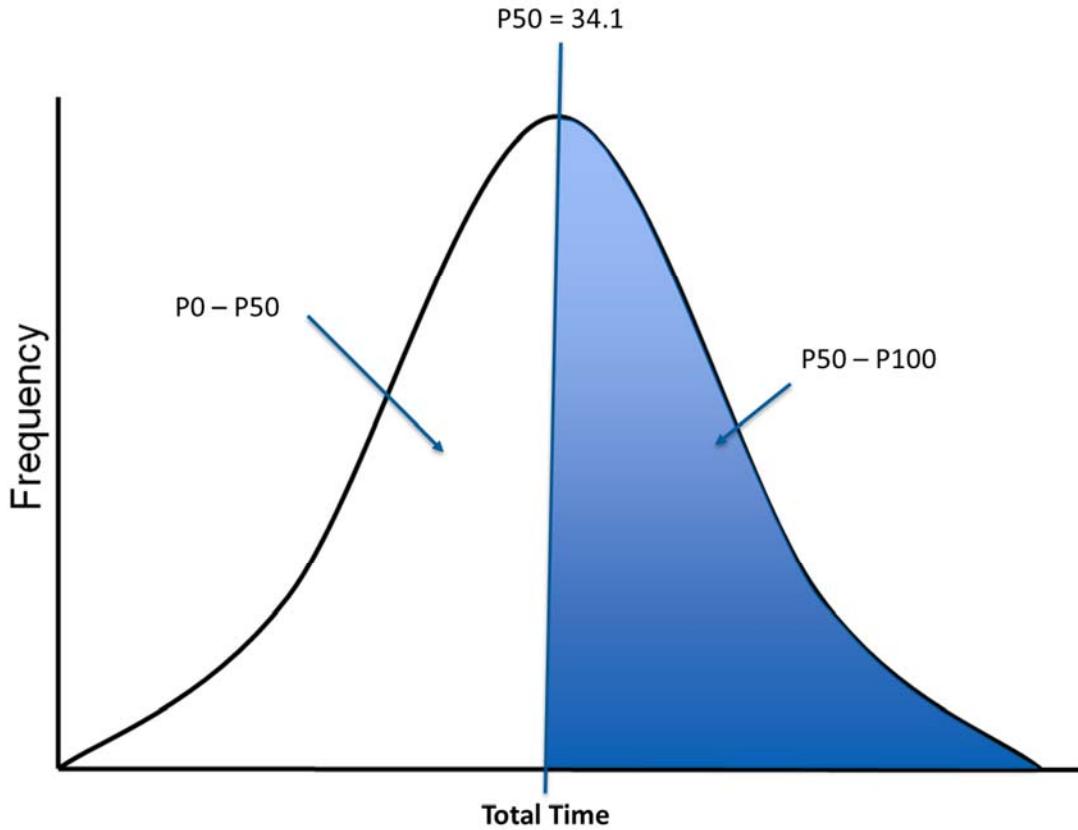
Figure 7: Bell curve with median dividing the pair of outcomes to show wells with completion properties that increase time

Once the pair of outcomes were selected, well characteristic categories used in the analysis were selected. These were the 15 parameters that were obtained from the Dodson CRI calculation (Section 1.3). Columns of data for each of the 15 parameters for all 168 wells were selected to be used in the analysis and compared to completion time.

When the program was run, it went through iterations using Equations 6 – 9 to determine the scores of every potential input for every category. Impact results for every possible input were obtained (Table 4).

ATTRIBUTE	VALUE	RELATIVE IMPACT
Interval	1	0
Interval	2	37
Interval	3	91
Interval Bottom Depth	<10999	0
Interval Bottom Depth	10999-14469	24
Interval Bottom Depth	14469-17800	19
Interval Bottom Depth	17800-24659	68
Interval Bottom Depth	>=24659	62
Rig Type	DS	24
Rig Type	PF	24
Rig Type	SS	0
Tree Type	PF	32
Tree Type	SP	95
Tree Type	SS	77
Tree Type	TL	0
Tree Type	UK	66

Table 4: Example of Prediction Calculator results of impact values for Interval Number, Interval Bottom Depth, Rig Type, and Tree Type

Results were all on the same relative impact scale, regardless of the category. Now the number of intervals could be compared to completion depth to determine, which typically impacts time more. The higher the value of the relative impact of each parameter, the more likely a well with that characteristic was to be in the 50th to 100th time percentile range.

Results from the first iteration of this process were inconsistent. For instance, as interval depth increases, so should the impact on completion time. However, this was not the case in Table 4. Results indicated that interval bottom depths within the range of 14,469 feet to 17,800 feet would likely take less time than interval bottom depths within the range of

10,999 feet to 14,469 feet. This is likely attributed wells to having inconsistent steps during the completion process.

As discussed earlier, time data in Dodson Datasystems was broken down into segments, as opposed to simply a start date and a stop date. This was due to the wide variety of steps that may or may not be performed during the completion process (IHS, 2014). This subject was discussed with the Stone completion team and it was decided that three time segments would not always be performed: Run and Cement Casing, Well Test, and Temporarily Abandon (TA) Re-Entry. That being said, wells that performed all of these processes, but had characteristics that would typically not have a significant impact on time, were skewing the data. To remedy this, the neural network analysis needed to be performed against total time with every possible combination of these three segments subtracted out. This resulted in eight different time columns (Table 5) and eight different impact scales (Table 6).

TIME COMBINATIONS	EXAMPLE WELL TIMES (DAYS)
TOTAL COMP TIME	210
NO RE-ENTRY NO WELL TEST NO CASING RUN	147.2
NO RE-ENTRY NO WELL TEST	166
NO RE-ENTRY NO CASING RUN	150.2
NO RE-ENTRY	169
NO WELL TEST NO CASING RUN	31.8
NO WELL TEST	188.2
NO CASING RUN	191.2

Table 5: Screenshot of well time data with potential combinations of time segments subtracted out

ATTRIBUTE	VALUE	ALL TIMES	NO CASING RUN	NO WELL TEST	NO TA RE-ENTRY	NO WELL TEST, NO CASING RUN	NO TA RE ENTRY, NO CASING RUN	NO TA RE ENTRY, NO WELL TEST	NO CASING RUN, NO WELL TEST, NO TA RE ENTRY
INTERVAL	1	0	1	0	0	0	6	0	0
INTERVAL	2	24	18	24	24	24	30	24	26
INTERVAL	3	60	0	52	54	13	0	53	4
INTERVAL BOTTOM DEPTH	<10999	0	0	0	0	0	0	0	0
INTERVAL BOTTOM DEPTH	<14469	16	38	23	12	37	35	35	39
INTERVAL BOTTOM DEPTH	<17800	13	33	16	10	42	24	22	38
INTERVAL BOTTOM DEPTH	<24659	45	59	41	46	60	61	52	67
INTERVAL BOTTOM DEPTH	>= 24659	41	70	43	38	73	66	59	73

Table 6: Prediction Calculator impact value results for eight possible time combination outcomes

When the analysis was run against the eight different time columns, there were eight

different impact values for every single parameter. Results were still skewed for all the

potential impact columns (Table 6), for the same reason stated earlier. Some variables had a

significant impact in one column, but a minor impact in another. However, if a variable had a

significant impact in any column, it could be argued that it had an impact on completion time

but it was skewed from breakdown of the time datasets. In order to portray this, the

maximum value of each variable needed to be taken from all the relative impact time columns (Table 7).

SORT VALUES	ALL TIMES	NO CASING RUN	NO WELL TEST	NO TA RE-ENTRY	NO WELL TEST, NO CASING RUN	NO TA RE ENTRY, NO CASING RUN	NO TA RE ENTRY, NO WELL TEST	NO TA RE ENTRY, NO WELL TEST, NO TA RE ENTRY	NO CASING RUN, NO WELL TEST, NO TA RE ENTRY
6	0	1	0	0	0	6	0	0
30	24	18	24	24	24	30	24	26
60	60	0	52	54	13	0	53	4
0	0	0	0	0	0	0	0	0
39	16	38	23	12	37	35	35	39
42	13	33	16	10	42	24	22	38
67	45	59	41	46	60	61	52	67
73	41	70	43	38	73	66	59	73

Table 7: Maximum relative impact values for every potential parameter

This eliminated any skewed data from the inconsistent completion times. Maximum values obtained from this analysis were to be used as the scaled weight system of well parameters with respect to time. With the new scaled weight system, it was not as important that wells with exact or similar properties as the prospect well were in the database.

Every well in the database was assigned a score, determined from the well parameters for the fifteen categories. Each well attribute was linked to the weighted scale, and that corresponding value was applied to the well. Impact values for all 15 parameters were assigned to every well in the database, depending on the well characteristics (Figure 8).

(FEET)		(SCORE)
INTERVAL_BOTTOM_DEPTH		**INTERVAL_BOTTOM_DEPTH**
25614	→	41
26892	→	41
16462	→	13
15672	→	13
12278	→	16
26513	→	41
21398	→	45
19300	→	45
15060	→	13
13060	→	16
16738	→	13
16458	→	13
13848	→	16
12422	→	16
11558	→	16
13848	→	16
25826	→	41
18811	→	45
25096	→	41
12518	→	16

Figure 8: Image displaying how relative impact value is automatically populated for every well parameter in the database

For each well, the relative impact values were summed to give the well a time score: the higher the score, the higher the likelihood of increased completion time (Table 8).

COMPLETION FLUID WEIGHT	TEMPERATURE >300?	SQUEEZED?	SAND CONTROL TYPE	TOTAL
51	3	15	57	**593**
51	3	15	57	**597**
23	3	15	57	**587**
51	3	15	57	**583**
39	3	15	57	**603**
51	3	15	57	**603**
39	3	15	57	**577**
51	3	15	57	**607**
23	3	15	57	**574**
39	3	15	77	**572**
51	3	15	57	**568**
39	3	15	57	**566**
39	3	15	57	**564**
39	3	15	77	**563**
39	3	15	74	**561**
39	3	15	57	**556**
51	3	15	57	**551**
51	3	15	57	**637**
51	3	15	57	**545**
51	3	15	74	**639**
39	3	15	57	**543**
51	3	15	74	**530**
51	3	15	57	**526**
23	3	15	74	**525**
23	3	15	74	**523**
23	3	15	74	**520**
51	3	15	57	**520**
51	3	15	57	**516**
5	3	15	74	**511**
51	3	15	74	**504**
5	3	15	57	**501**
51	3	15	74	**499**
21	3	43	74	**473**
51	3	15	74	**466**

Table 8: Image showing four of the 15 well parameters for database wells being summed to give a total well score with respect to completion time

The program was designed to have user inputs for prospect wells that were linked to the same weighted scale system (Figure 9).

Input Categories	Inputs	Answer Options	ATTRIBUTE	VALUE	RELATIVE IMPACT	Sort Values
Number of Intervals	1'	1,2,3	INTERVAL	1	5	5
			INTERVAL	2	43	
			INTERVAL	3	53	
Interval Bottom Depth (MD)	10,090'	Deepest Interval	INTERVAL_BOTTOM_DEPTH	10561	6	6
			INTERVAL_BOTTOM_DEPTH	13543	55	
			INTERVAL_BOTTOM_DEPTH	16792	69	
			INTERVAL_BOTTOM_DEPTH	20133	91	
			INTERVAL_BOTTOM_DEPTH	20133	44	
Rig Type	pf	SS,PF,DS	RIG_TYPE	DS	26	50
			RIG_TYPE	PF	50	
			RIG_TYPE	SS	28	
Tree Type	pf	SS,SP,TL, PF, UK	TREE_TYPE	PF	79	79
			TREE_TYPE	SP	99	
			TREE_TYPE	SS	80	
			TREE_TYPE	TL	124	
			TREE_TYPE	UK	41	

Figure 9: Image of input page automatically populating prospect well score with respect to time from well characteristics

Thus, the prospect well would be assigned a score using the exact same scale as every well in the database. Figure 9 displays a prospect well with two intervals receiving a relative impact value of 30, due to the impact scale. This was repeated for every input parameter of the prospect well.

The relative impact values of the prospect well were summed to designate a score as it relates to time. Wells with similar scores were more likely to have similar completion times, regardless of how similar the well properties were. This was the foundation for how the 30 wells were selected for the sample set to be used in the statistical analysis.

Scores of every well in the database were linked to the score of the prospect well. The absolute value of the difference between the well scores in the database and the prospect well score were taken. These were the values used to sort the data for wells with the most similar completion times (Figure 10).

Temp	Squeeze?	Sand Control	TOTAL	Sort Value
81	0	77	552	0
81	0	77	546	6
81	0	77	541	11
81	0	61	565	13
81	0	77	569	17
81	0	77	574	22
81	0	77	574	22
81	0	77	528	24
81	0	83	580	28
81	0	77	593	41
81	0	77	594	42
81	0	77	598	46
81	0	63	599	47
81	0	77	602	50
81	0	77	605	53
81	0	61	607	55
81	0	63	607	55

Input Categories	Inputs	Answer Options	Sort Values
Number of Intervals	1'	1,2,3	5
Interval Bottom Depth (MD)	10,090'	Deepest Interval	6
Rig Type	pf	SS,PF,DS	50
Tree Type	pf	SS,SP,TL, PF, UK	79
Production Casing Size	7"	Your Choice	80
Production Casing Type	FS	FS, LN, LT	44
Metallurgy	cs	SC,CS, NC, CB,UK	71
Mechanical Type	s	D,S, SS, T	11
Interval Length	50'	Longest Interval	28
Intelligent? Y/N	n	Y, N	2
Hole Angle at Perf	52 deg	Steepest Angle	18
Completion Fluid Weight	10 ppg	Heaviest Fluid	0
Bottom Hole Temp > 300°	n	Y, N	81
Squeezed	n	Y, N	0
Sand Control Type	fp	FP,GP,HR,NS,OR,SLO,UK,WP	77
SCORE:			**552**

Figure 10: Image displaying values used to sort wells obtained from the difference between prospect well score and database individual well scores

In Figure 10, the prospect well has a time score of 539; the closest well in the database has a time score of 538. The difference between these two well scores is one, so this well is at the top of the list of the wells to be used in the statistical analysis. This process was repeated for every well in the database. However, there were still some adjustments that needed to be incorporated into the program in order to produce accurate results.

3.3 Statistical Analysis

There was still the issue of the three time segments that may or may not be included in the completion plan. Additionally, it was determined that tree location was a significant factor in completion time. Stone engineers decided that they wanted to filter the data depending on whether the tree was located subsea or at the surface. Macros needed to be written to determine which time column the statistical analysis should be run on (Appendix B). These macros were dependent on the user's selection on the data sorting page (Figure 11).

Figure 11: Screenshot of available options to sort the closest wells with respect to time

The user decides whether the data should be sorted by subsea tree only, surface tree only, or all wells regardless of tree location. Additionally, the user determines which times to include in the statistical analysis, results will change accordingly. Therefore, if the prospect well plan did not include a well test, the user would select the radio button of "no well test" in whichever column was most applicable (Figure 11).

Originally, the only statistical results were going to be 10th, 25th, 50th, 75th, and 90th percentiles from the sample dataset of the closest 30 wells. More often than not, the median is a better representation of the most likely outcome than the average (Hubele, 2011). This is due to outliers have much less of an impact on the median as opposed to the mean. For instance, the 100th percentile of the entire dataset is 210 days, which would significantly

skew the average of the 30 wells if it were to be selected sample where the remainder of the wells averaged to be about 25 days. If the 100th percentile of the sample set was the only value to change, it would not skew the median at all. It would be irrelevant whether the 100th percentile was 100 days or 45 days. The same procedure was followed for the calculating NPT for the sample wells.

Though this method produced accurate results, a more detailed analysis needed to be performed. After the theoretical background of Probabilistic Well Time Revisited (Chapter 3), it was decided that the distribution played a crucial role in the statistical analysis. First, it was necessary to determine the distribution of the entire dataset. A program, Rose & Associates Toolbox, was utilized to determine the statistical distribution of the all the wells in the dataset. The program resulted in a log-normal distribution (Figure 12).
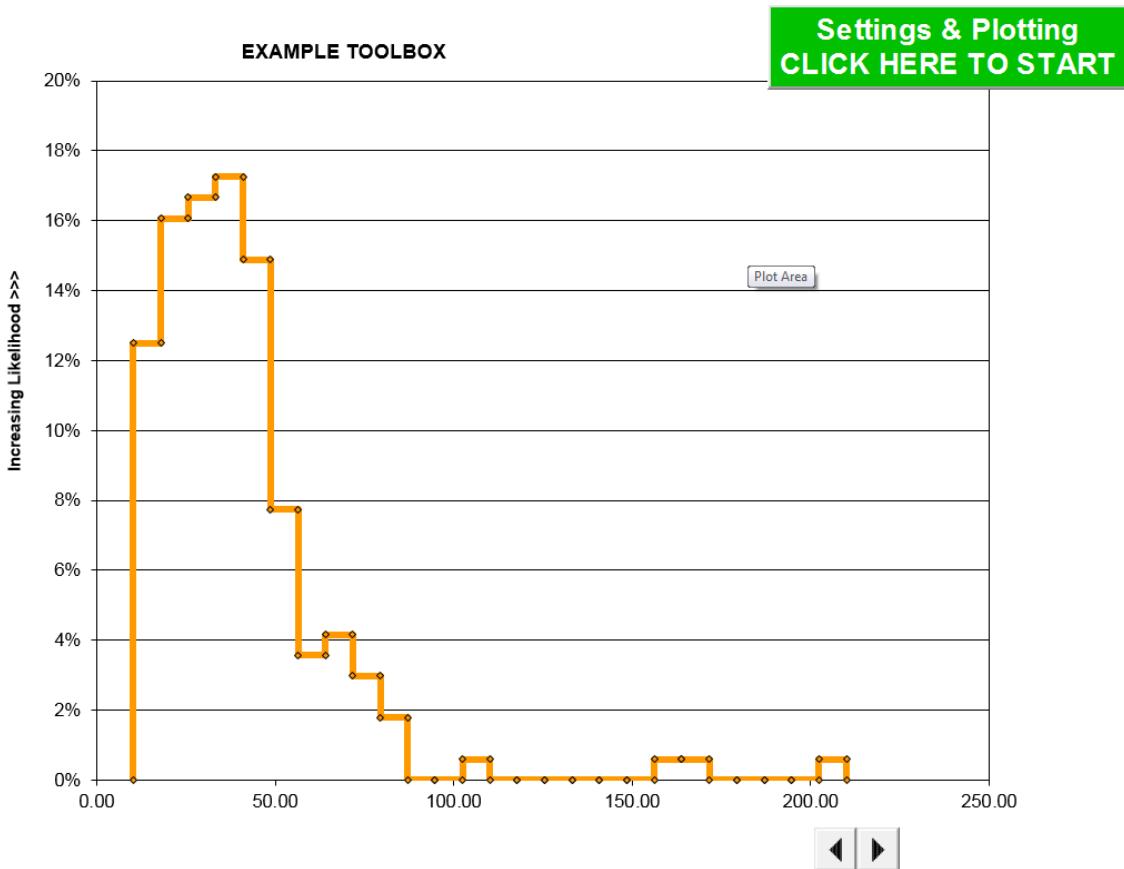
Figure 12: Total time from every well in the database plotted on log-normal distribution using Rose & Associates Toolbox

Additionally, for reassurance, the program was run on a few sample sets of thirty wells depending on the 15 different input parameters. Results from the sample sets also resulted in a log-normal distribution (Log-normal Solutions, 2012). For the program to remain user friendly, a log-normal distribution was used for the statistical analysis, regardless of the sample set.

For the closest thirty wells that resulted from the sort, the natural log needed to be taken for each of their completion times (Equation 10).

$\ln(t_i)$ = ln(total completion time for each well)………………….…...Equation 10

The average of the thirty log-normal distribution times were taken to get a new distribution mean (Equation 11).

$$\mu = \sum_{i=1}^{N} \frac{\ln(t_i)}{N} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\text{Equation 11}$$

The standard deviation of the log-normal distribution times were taken to get a new distribution standard deviation.

$$\sigma = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(\ln(t_i) - \ln(t))^2} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\text{Equation 12}$$

Then the log-normal inverse could be taken to determine the probabilities (Equation 13).

$$P(X) = F(X, \infty, \sigma) = \frac{1}{\sigma\sqrt{2\pi}}\int_0^x \frac{e^{\frac{-(\ln(t)-\infty)^2}{2\sigma^2}}}{t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\text{Equation 13}$$

The natural log of the total time for every well in the database was taken, then the mean and standard deviation of these values were obtained to develop probabilities from the lognormal dataset. The lognormal distribution of the closest thirty wells and every well in the database resulted in the following probabilities: P10, P25, P50, P75, and P90 (Table 9).

Additionally, the Swanson Mean was available for those who choose to use it (Log-normal Solutions, 2012).

The Swanson mean is calculated using Equation13:

Swanson Mean = 0.3*P10+0.4*P50+0.3*P90…………………………...Equation 14

Example results from running the program are displayed in Table 9.

Sorting Criteria
All Subsea Tree Wells
No Well Test
No Casing Run

All Subsea Tree Wells	Total Days	NPT Days
10th Percentile	15.54	0
25th Percentile	18.7725	1.2775
50th Percentile	25.1	3.605
75th Percentile	30.8325	9.49
90th Percentile	51.033	32.71

All Subsea Tree Wells	TF Days	NPT%
10th Percentile	15.54	0.00
25th Percentile	17.495	6.81
50th Percentile	21.495	14.36
75th Percentile	21.3425	30.78
90th Percentile	18.323	64.10

Top 30 Subsea Tree Wells	Total Days	NPT Days
10th Percentile	20.803	1.495
25th Percentile	24.025	3.2025
50th Percentile	28.985	6.37
75th Percentile	36.475	16.65
90th Percentile	59.9	34.948

Top 30 Subsea Tree Wells	TF Days	NPT%
10th Percentile	19.308	7.19
25th Percentile	20.8225	13.33
50th Percentile	22.615	21.98
75th Percentile	19.825	45.65
90th Percentile	24.952	58.34

Probabilities	Total Days
P10	16.86
P25	23.14
P50	32.87
P75	46.71
P90	64.08

Swanson Mean	37.4309

Table 9: Example results from running program

To ensure there were no errors as to which parameters the data was sorted from, a sorting criteria box displays the inputs to the left of the results.

The process was repeated using 75 percent of the wells to train the data, and 25 percent of the wells to test the data. Entirely new relative impact values were obtained using the 126 wells. Maximum values for every parameter were taken after the Prediction Calculator was run against the eight different time combinations. The 42 test wells were then plugged into the developed program to test the reliability. While the average of the program results was still within 40 percent of the targets, approximately 33 percent, taking out 42 wells hindered the accuracy. Even without knowing the accuracy of the model, it is understood that more data used to train a model will produce better results. Thus, the original program will be used for the remainder of this study.

Input parameters for three Stone wells were used for quality control of the program: Dark Star, Liberty, and Terrapin. Prospect well names have been altered to protect Stone Energy confidentiality. Dark Star and Liberty were completed in early 2014, thus, program results could be compared to actual completion field days that were submitted to Dodson Datasystems. Unfortunately, Terrapin was planned to be completed in mid-2015, so field days were unavailable for a comparison. However, Terrapin's Approval for Expenditure (AFE) had already been completed and the normalized AFE days could be compared to the program results.

It is important to note that Dodson had a clear definition for the time breakdown, so that all time data was consistent throughout the wells in the database. AFE days needed to be normalized to subtract out BOP certification times, because many of the wells were pre-

Macondo and did not include BOP certification times. It would be impractical to estimate

completion time of a well if the data used in the analysis had different time definitions.

Chapter 4: Estimation Results

4.1 Introduction

A statistical time estimate is only as accurate as the data used in the analysis. Estimations in this study used data obtained from Dodson Datasystems. Thus, program developed in this study produced total completion time results, as Dodson Datasystems described it. Luckily, Dodson did an excellent job normalizing the data, so that there was consistency throughout the dataset. The clear definitions of the time segments ensured that there were no discrepancies of time data between the wells. BOP certification times were not included in the statistical time estimates, as they were not included in the Dodson data. Multiple wells were submitted to Dodson prior to the Macondo blowout, thus, they did not include BOP certification times. Wells submitted after the Macondo blowout were required to certify the BOPs, which took an additional two weeks on average.

The entire objective of this study was to estimate total completion time for deepwater Gulf of Mexico wells, based off of well attributes. A dataset where some wells included BOP certification times and some wells did not would severely skew the results of the time estimate. Dodson Datasystems mitigated this problem by normalizing the data and subtracting out the BOP certification times all together.

Operators typically included BOP certification time in their definition of total completion time, but these statistical estimates cannot be performed without enough data. For best results, approximately two weeks should be added to the total completion time after running the program.

4.2 Dark Star

Results of the analysis for the three wells were extremely consistent. Completion parameters for Dark Star were input into the program (Figure 13).

Input Categories	Inputs	Input Options					
Number of Intervals	1	1,2,3					
Interval Bottom Depth (MD)	9988'	Deepest Interval					
Rig Type	ss	SS,PF,DS	Semi Sub	Platform	Drill Ship		
Tree Type	ss	SS,SP,TL, PF, UK	Subsea	Spar	Tension Leg	Platform	Unknown
Production Casing Size	9.875"	Your Choice					
Production Casing Type	ln	FS, LN, LT	Full String of Casing	Liner	Liner Tieback		
Metallurgy	sc	SC,CS, NC, CB,UK	Super 13% Chrome	13% Chrome Stainless	Ni-Cr Alloy	Carbon Steel	Unknown
Mechanical Type	ss	D,S, SS, T	Dual	Single	Single Selective	Triple	
Interval Length	130'	Longest Interval					
Intelligent? Y/N	n	Y, N					
Hole Angle at Perf	13.62	Steepest Angle					
Completion Fluid Weight	13.00#	Heaviest Fluid					
Bottom Hole Temp > 300°	n	Y, N					
Squeezed	n	Y, N					
Sand Control Type	fp	FP,GP,HR,NS,OR ,SLO,UK,WP	Frac Pack	Gravel Pack	High Rate Water Pack	No Sand Control	
			Other	Screen & Liner Only	Unknown	Water Pack	

Figure 13: Input parameters for Dark Star with the acronyms and acronym descriptions to the right

The program was run using wells with subsea trees only and with well test times subtracted out. Percentile and probability results are displayed in Table 10.

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Sorting Criteria
All Subsea Tree Wells
No Well Test

All Subsea Tree Wells	Total Days	NPT Days
10th Percentile	20.09	0
25th Percentile	24.89	1.2775
50th Percentile	34.2	3.605
75th Percentile	47.93	9.49
90th Percentile	69.86	32.71

All Subsea Tree Wells	TF Days	NPT%
10th Percentile	20.09	0.00
25th Percentile	23.6125	5.13
50th Percentile	30.595	10.54
75th Percentile	38.44	19.80
90th Percentile	37.15	46.82

Top 30 Subsea Tree Wells	Total Days	NPT Days
10th Percentile	20.61	0
25th Percentile	24.89	1.08
50th Percentile	32	3.23
75th Percentile	38.66	4.07
90th Percentile	42.89	6.75

Top 30 Subsea Tree Wells	TF Days	NPT%
10th Percentile	20.61	0.00
25th Percentile	23.81	4.34
50th Percentile	28.77	10.09
75th Percentile	34.59	10.53
90th Percentile	36.14	15.74

Probabilities	Total Days
P10	20.14
P25	25.04
P50	31.90
P75	40.63
P90	50.53

Swanson Mean	33.961

Table 10: Dark Star time results after running the program

4.3 Liberty

Completion parameters for Liberty were input into the program (Figure 14).

Input Categories	Inputs	Input Options					
Number of Intervals	2	1,2,3					
Interval Bottom Depth (MD)	11,438'	Deepest Interval					
Rig Type	ss	SS,PF,DS	Semi Sub	Platform	Drill Ship		
Tree Type	ss	SS,SP,TL, PF, UK	Subsea	Spar	Tension Leg	Platform	Unknown
Production Casing Size	9.875"	Your Choice					
Production Casing Type	ln	FS, LN, LT	Full String of Casing	Liner	Liner Tieback		
Metallurgy	sc	SC,CS, NC, CB,UK	Super 13% Chrome	13% Chrome Stainless	Ni-Cr Alloy	Carbon Steel	Unknown
Mechanical Type	ss	D,S, SS, T	Dual	Single	Single Selective	Triple	
Interval Length	86	Longest Interval					
Intelligent? Y/N	y	Y, N					
Hole Angle at Perf	20.31	Steepest Angle					
Completion Fluid Weight	13.20#	Heaviest Fluid					
Bottom Hole Temp > 300°	n	Y, N					
Squeezed	n	Y, N					
Sand Control Type	fp	FP,GP,HR,NS,OR,SLO,UK,WP	Frac Pack	Gravel Pack	High Rate Water Pack	No Sand Control	
			Other	Screen & Liner Only	Unknown	Water Pack	

Figure 14: Input parameters for Liberty with the acronyms and acronym descriptions to the right

The program was run using wells with subsea trees only and with well test times subtracted out. Percentile and probability results are displayed in Table 11.

Sorting Criteria
All Subsea Tree Wells
No Well Test

All Subsea Tree Wells	Total Days	NPT Days
10th Percentile	20.09	0
25th Percentile	24.89	1.2775
50th Percentile	34.2	3.605
75th Percentile	47.93	9.49
90th Percentile	69.86	32.71

All Subsea Tree Wells	TF Days	NPT%
10th Percentile	20.09	0.00
25th Percentile	23.6125	5.13
50th Percentile	30.595	10.54
75th Percentile	38.44	19.80
90th Percentile	37.15	46.82

Top 30 Subsea Tree Wells	Total Days	NPT Days
10th Percentile	30.79	2.59
25th Percentile	35.15	3.48
50th Percentile	42.99	7.65
75th Percentile	64.25	17.74
90th Percentile	92.27	39.63

Top 30 Subsea Tree Wells	TF Days	NPT%
10th Percentile	28.2	8.41
25th Percentile	31.67	9.90
50th Percentile	35.34	17.79
75th Percentile	46.51	27.61
90th Percentile	52.64	42.95

Probabilities	Total Days
P10	26.54
P25	36.11
P50	50.84
P75	71.58
P90	97.40

Swanson Mean	57.518

Table 11: Liberty time results after running the program

4.4 Terrapin

Completion parameters for Terrapin were input into the program (Figure 15).

Input Categories	Inputs	Input Options					
Number of Intervals	2	1,2,3					
Interval Bottom Depth (MD)	19,125	Deepest Interval					
Rig Type	ss	SS,PF,DS	Semi Sub	Platform	Drill Ship		
Tree Type	ss	SS,SP,TL, PF, UK	Subsea	Spar	Tension Leg	Platform	Unknown
Production Casing Size	9.875"	Your Choice					
Production Casing Type	lt	FS, LN, LT	Full String of Casing	Liner	Liner Tieback		
Metallurgy	sc	SC,CS, NC, CB,UK	Super 13% Chrome	13% Chrome Stainless	Ni-Cr Alloy	Carbon Steel	Unknown
Mechanical Type	ss	D,S, SS, T	Dual	Single	Single Selective	Triple	
Interval Length	150'	Longest Interval					
Intelligent? Y/N	y	Y, N					
Hole Angle at Perf	0.00	Steepest Angle					
Completion Fluid Weight	16.00#	Heaviest Fluid					
Bottom Hole Temp > 300°	n	Y, N					
Squeezed	n	Y, N					
Sand Control Type	fp	FP,GP,HR,NS,OR ,SLO,UK,WP	Frac Pack	Gravel Pack	High Rate Water Pack	No Sand Control	
			Other	Screen & Liner Only	Unknown	Water Pack	

Figure 15: Input parameters for Terrapin with the acronyms and acronym descriptions to the right

The program was run using wells with subsea trees only and inclusive of all times.

Percentile and probability results are displayed in Table 12.

Sorting Criteria
All Subsea Tree Wells
All Times

All Subsea Tree Wells	Total Days	NPT Days
10th Percentile	21.48	0
25th Percentile	27.53	1.2775
50th Percentile	37.4	3.605
75th Percentile	55.92	9.49
90th Percentile	76.94	32.71

All Subsea Tree Wells	TF Days	NPT%
10th Percentile	21.48	0.00
25th Percentile	26.2525	4.64
50th Percentile	33.795	9.64
75th Percentile	46.43	16.97
90th Percentile	44.23	42.51

Top 30 Subsea Tree Wells	Total Days	NPT Days
10th Percentile	33.37	2.59
25th Percentile	39.58	3.48
50th Percentile	45.01	7.65
75th Percentile	66.42	17.74
90th Percentile	115.08	39.63

Top 30 Subsea Tree Wells	TF Days	NPT%
10th Percentile	30.78	7.76
25th Percentile	36.1	8.79
50th Percentile	37.36	17.00
75th Percentile	48.68	26.71
90th Percentile	75.45	34.44

Probabilities	Total Days
P10	28.11
P25	38.38
P50	54.23
P75	76.64
P90	104.63

Swanson Mean	61.514

Table 12: Terrapin time results after running the program

Chapter 5: Conclusion

5.1 Discussion of Results

These results were meaningless without actual data to compare it to. For this study, it was determined that the 50th percentile was the most accurate representation of well time, as it eliminates the effect of outliers.

Previously, the 50th percentile was used as the AFE days and the 25th percentile as the TF days. However, the program can calculate the TF days by subtracting the NPT from the corresponding total time. Additionally, the probabilities can be used for the time estimation, as the results were similar to the percentiles. The program allows for the user to determine which values to use for the time estimation. Results from this study indicated that the most accurate representation of the actual field days was the 50th percentile, which was what the program was originally designed to do. The program 50th percentile results, normalized AFE days, and actual field days for the three Stone wells is displayed in Table 13.

			Dark Star
	New Database Estimate	**Normalized Plan Days (AFE)**	**Normalized Field Days**
Days	32	33.41	32.26
Days (% of Field)	**99.19%**	**96.56%**	

			Liberty
	New Database Estimate	**Normalized Plan Days (AFE)**	**Normalized Field Days**
Days	42.99	39.73	44.92
Days (% of Field)	**95.70%**	**88.45%**	

			Terrapin
	New Database Estimate	**Normalized Plan Days (AFE)**	**Normalized Field Days**
Days	45.01	46	
Days (% of Field)			

Table 13: Dark Star, Liberty, and Terrapin results compared to normalized AFE days and normalized field days

For Dark Star and Liberty, the program results were within five percent of the normalized field days. These were actually more accurate than the normalized planned AFE days, as shown in the "Days (% of Field)" row. For Terrapin, the program estimation was within one day of the planned AFE days.

Though the probabilities from the lognormal distribution did not give as accurate of results as the 50th percentile for Dark Star, Liberty, and Terrapin in this study, they will improve as the dataset increases. It is likely that the probability results will surpass the percentile results when it comes to accuracy when the dataset becomes more robust.

As stated earlier, the purpose of this study was to develop a program that could quickly estimate the amount of completion days within 40% accuracy. The results far

exceeded the original intention of the program. However, this is an ongoing study and there is still much work to be performed.

5.2 Future Work

As stated earlier, the goal of this project was not to be right, but just to be less wrong. Though the results of these three wells were within the 40% accuracy target, there is always room for improvement in statistics. Future addition of data to Dodson Datasystems will improve these estimations dramatically. This will improve the impact values that the data is sorted from. As well as have more wells in the system to increase the sample size of the statistical analysis. Eventually, there will be enough data so that the data can be filtered by more parameters than just tree location.

When a large enough amount of post-Macondo wells are added, the BOP certification times will be available to be included in the statistical time estimate. While the developed program has the capability of subtracting times from total times, it cannot add times in; these results would be erroneous. However, with more data, the sample datasets can be selected to only include specific times.

Additionally, the Prediction Calculator will give more consistent results without any data gaps that were discussed in the methods section, so there will be no need to take the maximum of all the parameters for the time segments (Microsoft, 2014).

The possibilities are endless to these statistical estimates with the addition of new data. However, for the foreseeable future, the program will just need to be updated approximately once a year with well data. When this occurs, this entire project needs to be repeated. The first step of this procedure will be rerunning the prediction calculator to obtain new impact values from neural networking. Every well in the database will need to be linked

to the new impact values, as will the prospect well data. The distribution will need to be reassessed, to ensure that the result probabilities are as accurate as possible.

In addition to annual updates of the deepwater statistical time estimate program, the deepwater drilling statistical time estimate needs to be updated. The entire process, with the exception of a few variations, will need to be repeated for Dodson Datasystems deepwater drilling database. The two programs will then be incorporated linked together in order to produce accurate well time estimates. With the addition of tangible equipment costs, rig rates, and spread rates, the program will be able to quickly provide total well costs.

Eventually, an entire new program will need to be developed around the data to apply additional sorting options. However, for the time being, this program is effective in quickly producing statistical time estimates for deepwater completions in the Gulf of Mexico within a 40% accuracy range.

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Appendix A

Dodson Datasystems Deepwater Completion Data

INTERVAL	INTERVAL_BOTTOM_DEPTH (FT)	RIG_TYPE	TREE_TYPE
2	25614	SS	SS
2	26892	SS	SS
2	16462	SS	SS
2	15672	SS	SS
3	12278	SS	SS
2	26513	SS	SS
2	21398	SS	SS
2	19300	SS	SS
2	15060	SS	SS
2	13060	SS	SS
2	16738	SS	SS
2	16458	SS	SS
2	13848	SS	SS
2	12422	SS	SS
2	11558	SS	SS
2	13848	SS	SS
1	25826	DS	SS
3	18811	SS	SS
1	25096	SS	SS
3	12518	SS	SS
2	12878	SS	SS
2	9064	SS	SS
1	18260	SS	SS
2	10052	SS	SS
1	22702	SS	SS
2	12452	SS	SS
1	16962	SS	SS
1	18420	SS	SS
2	12862	SS	SS
2	4864	SS	SS
2	17534	SS	SS
2	9664	SS	SS
2	13476	SS	SS
2	8566	SS	SS
1	11350	SS	SS

INTERVAL	INTERVAL_BOTTOM_DEPTH (FT)	RIG_TYPE	TREE_TYPE
2	9928	SS	SS
1	11780	SS	SS
1	7630	SS	SS
1	19840	DS	SS
1	20186	DS	SS
1	10008	SS	SS
1	10768	SS	SS
2	9990	SS	SS
1	14730	DS	SS
1	12194	SS	SS
1	11668	SS	SS
1	14730	DS	SS
1	10540	SS	SS
1	9600	DS	SS
1	8370	SS	SS
1	10046	SS	SS
1	9229	SS	SS
1	9072	SS	SS
1	8502	SS	SS
1	8968	SS	SS
1	10584	SS	SS
1	8468	SS	SS
1	10160	SS	SS
2	18274	PF	SP
2	17682	PF	SP
2	14806	PF	SP
3	17518	PF	SP
2	15641	PF	SP
1	16726	PF	SP
2	15306	PF	SP
1	14430	PF	SP
2	15330	PF	SP
2	15650	PF	SP
2	12688	PF	SP
2	17325	PF	SP
1	20837	PF	SP
2	13320	PF	SP
3	14712	PF	SP

INTERVAL	INTERVAL_BOTTOM_DEPTH (FT)	RIG_TYPE	TREE_TYPE
2	14212	PF	SP
1	18646	PF	SP
1	15258	PF	SP
1	17821	PF	SP
2	17080	PF	SP
1	18290	PF	SP
2	11522	PF	SP
2	15484	PF	SP
1	16400	PF	SP
3	10912	PF	SP
1	17821	PF	SP
1	15384	PF	SP
1	15865	PF	SP
1	12277	PF	SP
2	14170	PF	SP
1	15650	PF	SP
2	13716	PF	SP
2	9136	PF	SP
1	13648	PF	SP
2	13842	PF	SP
2	14750	PF	SP
1	13485	PF	SP
1	15507	PF	SP
1	16912	PF	SP
1	12810	PF	SP
1	12068	PF	SP
1	9824	PF	SP
1	14650	PF	SP
1	13274	PF	SP
3	13010	PF	TL
3	12480	PF	TL
3	12580	PF	TL
2	12400	PF	TL
3	11950	PF	TL
3	12206	PF	TL
2	22855	PF	PF
2	20147	PF	PF
1	18014	PF	PF

INTERVAL	INTERVAL_BOTTOM_DEPTH (FT)	RIG_TYPE	TREE_TYPE
1	30601	PF	PF
2	15780	PF	PF
1	31172	PF	PF
2	26280	PF	PF
1	10004	PF	PF
1	13192	PF	PF
2	12198	SS	PF
2	9648	PF	PF
1	11848	PF	PF
1	23539	PF	PF
1	13644	PF	PF
2	12702	PF	PF
1	9075	PF	PF
2	5100	PF	PF
2	13106	PF	PF
1	11824	PF	PF
1	26846	PF	PF
1	11348	PF	PF
1	21062	PF	PF
1	14084	PF	PF
1	16343	PF	PF
2	13223	PF	PF
1	13462	PF	PF
1	14496	PF	PF
1	10684	PF	PF
1	7922	PF	PF
1	7924	PF	PF
1	12729	PF	PF
1	11335	PF	PF
1	13862	PF	PF
1	11200	PF	PF
1	17258	PF	PF
1	15132	PF	PF
1	7315	PF	PF
1	13122	PF	PF
1	7208	PF	PF
1	10938	PF	PF
1	12350	PF	PF

INTERVAL	INTERVAL_BOTTOM_DEPTH (FT)	RIG_TYPE	TREE_TYPE
1	12974	PF	PF
1	10592	PF	PF
1	10286	PF	PF
1	6966	PF	PF
2	11552	PF	PF
1	12508	PF	PF
1	7330	SS	PF
1	6342	PF	PF
1	10923	PF	PF
1	7692	PF	PF
1	12282	PF	PF
1	10090	PF	PF
1	11384	PF	PF
1	10772	PF	PF
1	10712	PF	PF
2	10729	PF	PF
1	10112	PF	PF
2	18374	SS	UK
1	13410	SS	UK

PROD_CASING_SIZE_1 (IN)	PROD_CASING_TYPE	METALLURGY
7	LT	SC
7	LT	SC
7	LN	SC
9.625	LT	CS
9.625	LT	CS
9	LT	SC
9	LT	SC
7	LT	CS
7.625	LT	SC
9.875	FS	SC
9.625	LT	CS
9.875	FS	SC
7.625	LN	SC
9.625	FS	SC
7	LN	CS
9.875	LN	SC
9	LT	SC
7	LT	CS
7	LT	SC
7.625	LN	SC
9.625	FS	SC
9.625	LT	SC
7	LN	CS
9.875	FS	SC
7.625	LT	SC
9.625	FS	SC
7.625	LN	CS
9.625	LT	CS
9.875	FS	SC
9.625	LT	CS
9.625	FS	SC
9.875	FS	SC
9.625	FS	CS
9.875	FS	SC
7	FS	CS
9.625	FS	CS
9.625	FS	CS

PROD_CASING_SIZE_1 (IN)	PROD_CASING_TYPE	METALLURGY
7.625	LN	CS
9.875	FS	SC
9.875	FS	SC
7	LT	CS
7	LN	CS
9.625	FS	CS
9.526	LN	CS
9.625	FS	CS
9.625	FS	CS
9.526	FS	CS
9.625	LT	SC
7.625	LT	CS
9.625	FS	CS
7.625	LN	CB
7.625	LN	CB
9.685	FS	CS
9.625	FS	CS
9.625	FS	CS
9.625	FS	CS
9.625	FS	CS
9.625	FS	CS
7	LT	SC
7.625	LT	SC
9.875	FS	SC
9.875	LT	SC
7.625	LN	CS
9.625	FS	NC
9.625	FS	CS
5.5	LN	CS
9.625	FS	CS
9.625	FS	CS
7.625	LN	CS
9.875	LT	SC
7	LN	CS
9.625	LT	CS
9.875	FS	SC
0	FS	SC
9.625	LT	CS

PROD_CASING_SIZE_1 (IN)	PROD_CASING_TYPE	METALLURGY
5	LN	CS
7.625	LT	SC
7.625	LN	CS
9.625	LT	CS
9.625	FS	SC
9.875	LT	SC
7.625	LN	CS
9.625	FS	SC
7	LN	SC
9.625	LT	SC
9.625	LT	CS
9.625	LT	CS
9.875	FS	SC
9.625	LT	CS
9.625	FS	CS
9.625	FS	SC
9.625	LT	CS
9.625	FS	SC
9.625	FS	CS
9.625	LT	CS
9.625	LN	SC
9.875	LT	CS
9.625	FS	SC
9.625	FS	SC
9.625	FS	SC
9.625	LT	CS
9.625	LT	CS
9.625	FS	CS
9.625	FS	CS
9.625	FS	CS
9.625	FS	CS
9.625	FS	CS
9.625	FS	CS
7	LN	CS
7	LN	CS
5.5	LN	CS
9.625	LT	NC
7.625	LN	CS

PROD_CASING_SIZE_1 (IN)	PROD_CASING_TYPE	METALLURGY
7	LT	CS
7	LN	CS
5.5	LT	CS
5	LN	CB
7	LT	CS
7	LT	CS
5	LN	CS
7	LN	CS
0	LN	CB
9.625	FS	CS
5.5	LN	CS
5	LN	CB
9.625	FS	CS
7	LN	CS
7	LN	CB
7	LN	UK
7	LN	CB
7.625	LN	CS
8.625	FS	CS
7	LN	CS
7	LN	CS
7	LN	CS
7	LT	CS
7	LN	CS
7	LN	CS
8.625	FS	CS
7	LN	CS
7	FS	CS
9.625	FS	CS
7	LN	CB
7	LN	CB
5	FS	CS
5	LN	CB
7	FS	CB
7	FS	CS
5	LN	UK
7	LN	CB
7	FS	CB

PROD_CASING_SIZE_1 (IN)	PROD_CASING_TYPE	METALLURGY
9.625	FS	CS
5	LN	CB
7	LN	UK
9.625	FS	CS
9.58	FS	CB
11.875	FS	CS
9.625	FS	CS
7	LN	UK
9.625	FS	CB
7	FS	CS
7.625	FS	CB
9.625	FS	CS
9.625	FS	CS
7	FS	UK
7.625	FS	CB
9.875	FS	SC
9.875	FS	SC

MECHANICAL_TYPE	INTERVAL_LENGTH (FT)	INTELLIGENT
SS	116	n
SS	100	n
SS	170	y
SS	122	y
SS	126	y
SS	144	n
SS	130	n
SS	120	y
SS	116	y
SS	93	y
SS	101	y
SS	187	y
SS	87	y
SS	93	y
SS	53	y
SS	87	y
SS	128	n
SS	128	y
S	110	n
SS	110	y
SS	86	y
SS	30	y
S	180	n
SS	148	y
S	88	n
SS	46	y
S	282	n
S	98	n
SS	30	y
SS	80	n
SS	94	y
SS	34	y
SS	56	y
SS	28	y
S	80	n
SS	98	y
S	70	n

MECHANICAL_TYPE	INTERVAL_LENGTH (FT)	INTELLIGENT
S	92	n
S	80	n
S	78	n
S	150	n
S	38	n
SS	22	y
S	46	y
S	50	n
S	112	n
S	46	y
S	50	n
S	113	n
S	78	n
S	20	n
S	45	n
S	127	n
S	82	n
S	100	n
S	108	n
S	28	n
S	62	n
SS	62	n
SS	69	n
SS	136	n
SS	127	n
SS	93	n
S	362	n
SS	86	y
S	118	n
SS	172	n
SS	100	n
SS	58	n
SS	101	n
S	273	n
SS	108	n
SS	44	n
S	116	n
S	80	n

MECHANICAL_TYPE	INTERVAL_LENGTH (FT)	INTELLIGENT
S	60	n
S	72	n
SS	39	n
S	70	n
SS	74	n
SS	38	n
S	140	n
SS	62	n
S	72	n
S	107	n
S	106	n
S	70	n
SS	33	n
S	100	n
SS	46	n
SS	44	n
S	80	n
D	98	n
SS	84	n
S	74	n
S	49	n
S	77	n
S	54	n
S	46	n
S	102	n
S	65	n
S	50	n
T	170	n
T	83	n
T	80	n
SS	92	n
T	105	n
T	64	n
SS	78	n
SS	100	n
S	112	n
S	80	n
SS	55	n

MECHANICAL_TYPE	INTERVAL_LENGTH (FT)	INTELLIGENT
S	152	n
SS	38	n
S	130	n
S	98	n
SS	58	n
SS	89	n
S	118	n
S	73	n
S	85	n
SS	93	n
S	26	n
SS	75	n
SS	77	n
S	50	n
S	74	n
S	100	n
S	72	n
S	34	n
S	33	n
D	38	n
S	62	n
S	46	n
S	102	n
S	100	n
S	112	n
S	37	n
S	56	n
S	20	n
S	78	n
S	106	n
S	72	n
S	67	n
S	0	n
S	122	n
S	21	n
S	38	n
S	40	n
S	110	n

MECHANICAL_TYPE	INTERVAL_LENGTH (FT)	INTELLIGENT
S	96	n
S	54	n
D	60	n
S	28	n
S	30	y
S	25	n
S	53	n
S	22	n
S	109	n
S	50	n
S	44	n
S	32	n
S	63	n
D	21	n
S	30	n
SS	182	n
S	34	n

HOLE_ANGLE_AT_PERF (°)	COMPL_FLUID_WEIGHT (PPG)
37	14.8
8	14.5
44	11.7
22	15.5
59.6	11.8
14.5	14.8
0	12.5
7.9	15.6
2.1	11.5
26	11.8
2	14.4
0	11.8
35.4	12.1
6	11.8
60	12.7
35.4	12.1
25.82	15.2
4	15.6
41.4	14
0	13
0.8	11.8
34.84	13
31	13.5
2.4	11.2
40.5	11.1
5.8	11.7
32	15.7
9	15.1
26.44	9.8
39	13
37.2	10.5
39	13
2.94	11.8
20.5	12.9
0	10.9
44.5	10.5
0	0

HOLE_ANGLE_AT_PERF (°)	COMPL_FLUID_WEIGHT (PPG)
0	14.6
17.44	10.4
18	10.4
54	9.4
0	12.7
12.6	10.3
44	10.7
0	0
6.5	10
44	10.7
31	10.5
67	10.3
18.15	11.3
1	14.4
0.39	14.8
15.5	10.5
29.5	11.3
46	10.6
0	10.2
1	10.8
1.36	10.8
26	14
45.8	11
21.62	13.4
16.31	12.7
67	13.5
48	13.4
49	11.9
47	13.5
20.79	11.8
55	11.8
2	13
24.4	11.1
66	12.9
41	13.1
48	11.1
63	11.7
63	13.5

HOLE_ANGLE_AT_PERF (°)	COMPL_FLUID_WEIGHT (PPG)
61	13.3
19.6	11.3
26	13.5
61	12.4
28	13.3
44.5	10.9
14	13.8
35.5	13.1
36.8	11.3
35	11.7
51	12.9
16	12.9
39	11.3
36	13
14.17	11.6
0.5	13.4
2	12.1
72.5	10.8
39	11.6
29	12.8
44.4	11
37.4	11.7
49.5	12.9
52.9	12.9
25	13.4
36	10.7
43.5	10.5
31	12.1
19	12.2
27	12.5
23	12.6
32	12.4
35	12.6
72	9.6
72	9.3
71	9.4
55	9.7
58	12.8

HOLE_ANGLE_AT_PERF (°)	COMPL_FLUID_WEIGHT (PPG)
59	10.7
59	9.6
36	17.4
68.4	9.5
30	11.6
28	16.9
27	9.5
72	10
0.1	10
0	9
2	17.1
18	8.5
43	9.9
1.4	8.6
67	9.5
5	13.7
67	9.7
55	9.2
57	9.8
18	9
44	8.9
56	8.6
38.3	9.2
71	11.7
49	9.7
54	9.8
26	10
58	8.7
33	8.8
0	8.8
0	9.2
23	9
34	8.6
64	9.3
59	12
29.64	10.5
58	9.8
0.03	8.6

HOLE_ANGLE_AT_PERF (°)	COMPL_FLUID_WEIGHT (PPG)
0.6	9.8
11	8.6
0	10
37	9.8
33.85	11.5
45	11.2
22	8.6
46	8.6
38	9.8
52	10.4
30.8	10
0	9.8
28	9.9
16	10
48	9.8
16.7	10.5
23.06	12.5

BOTTOM_HOLE_TEMP (>300°?)	PROD_CASING_SQUEEZED
n	n
n	n
n	n
n	n
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n	TRUE
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BOTTOM_HOLE_TEMP (>300°?)	PROD_CASING_SQUEEZED
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BOTTOM_HOLE_TEMP (>300°?)	PROD_CASING_SQUEEZED
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BOTTOM_HOLE_TEMP (>300°?)	PROD_CASING_SQUEEZED
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BOTTOM_HOLE_TEMP (>300°?)	PROD_CASING_SQUEEZED
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SAND_CONTROL_TYPE
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CASING_RUN_CEMENT_TIME (D)
17.6
9.4
7
13.13
25.5
21.6
14.9
3.3
25.9
8.7
12.56
3.6
34.29
23.6
3.75
7.52
29.9
12.3
16.6
27
5.8
26.33
11.08
4.08
10.6
6.1
9.35
32.13
6.7
4.23
8.81
3.94
6.5
8.7
15.88
4.8
9.69
5.64

CASING_RUN_CEMENT_TIME (D)
9.1
14.7
2
9.8
5
0
3.9
44.3
0
8.56
3
2
5.1
5.5
3
5
3
4.81
3.5
4.75
2.7
31
9.4
7.25
18.44
2.75
11.3
15.81
16
32.15
32.06
11.03
35.92
21.65
10
5.4
31.4
20.46

CASING_RUN_CEMENT_TIME (D)
13.06
25.58
25.85
19.87
7.85
18.4
11.5
13.1
22.5
16.88
13.19
6.8
19.31
20.3
11.5
26.94
19.4
8.4
24.5
4.37
32
9.2
4.1
18.42
16.25
11.8
4.9
9.3
7.9
9.2
6.7
6
16.21
24.44
13
24.2
5.9
18.6

CASING_RUN_CEMENT_TIME (D)
9.54
17
22.8
9.7
10.5
3.8
11.42
13.9
4.54
22
13.8
22.23
16.1
6.9
1.3
13.63
13
17.77
2.4
2.8
8.5
8
14.75
6.3
7.27
1.8
5
4.5
5.69
2.94
6.8
7.6
12.9
3
2.2
3
4.9
7.94

CASING_RUN_CEMENT_TIME (D)
7.5
2.2
4.79
4.4
6.4
4.17
2.8
4.94
8.9
4.4
5.81
2.04
6.3
1.4
7.73
13.23

CASING_RUN_CEMENT_PROBLEM_TIME (D)	WELL_TEST_TIME (D)
1.2	2.9
0.4	0
0	2.7
0	8.09
0	3.3
2.4	26.5
2.7	2.1
0	1.8
0	1.8
1.1	3.3
0	3.59
0	5.96
0	3.5
2.8	1.3
0	0
0	0.31
21.3	14.2
1.3	0.9
0.6	3.3
0	0.79
0	2.3
0	0
0	4.13
0	2.58
0.7	1
0	5.9
0	1.38
0	2.21
0	2.3
0	0
0	3.04
0	3.5
0	3
0	0
0	3.9
0	41.2
0	1.96
0	0

CASING_RUN_CEMENT_PROBLEM_TIME (D)	WELL_TEST_TIME (D)
0	0.5
5.5	0.9
0	0
0	2.1
0	8.4
0	2.1
0	3.23
0	15.2
0	2.1
0	2.52
0	0
0	2
0	2.8
0	2.3
0	2.5
0	2.5
0	1
0	1.46
0	5.5
0	0
0	0
0	0
1.3	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
3.8	0
1.4	0.3
0	0
0	0

CASING_RUN_CEMENT_PROBLEM_TIME (D)	WELL_TEST_TIME (D)
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0.6	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0.1	0
0.2	0
0.5	0
0.5	0
0.3	0
0.3	0
0	1.19
0	2.65
0.7	8
0	6
0	0
0.7	9

CASING_RUN_CEMENT_PROBLEM_TIME (D)	WELL_TEST_TIME (D)
0	2
2.2	0.2
7	0
0	0
0.1	0
0	0
0	5
8.5	0
0	1.52
6.5	0
0	0
0	0.13
0	2.63
0	0
0	0
0	0
0	13.6
0	0.71
0	0
0	0
0	0
0	0
1.7	0.88
0.1	0
0	0
0	0
0	0
0	6.04
0	0
0	0
0.2	0
0	0
7	0
0	0
0	0
0	0
0	0
0	16.31

CASING_RUN_CEMENT_PROBLEM_TIME (D)	WELL_TEST_TIME (D)
0.8	0
0	0
0	3.25
0	8.1
0.1	0.4
0	0
0	0
0	0
0.5	0
0.9	4.8
0	2.98
0	2.48
0	0
0	0
0	3.1
0	1.79

WELL_TEST_PROBLEM_TIME (D)	TA_RE_ENTRY_TIME (D)
0.1	36.9
0	2.9
0	0
0	0
0	4.7
6	29.6
0	21
0	10
0	1.92
0.4	0
0	0
0	0.6
0	2.83
0	0
0	0
0	2.56
8.1	10.3
0	1.2
0.8	0.8
0	3.75
0	0.8
0	2.15
0	0
0	4.77
0	0
0	1.6
0	0
0	0
0	0
0	0
0	2.5
0	0.92
0	4.1
0	7.5
0	0
0	3.8
0	0
0	4.17

WELL_TEST_PROBLEM_TIME (D)	TA_RE_ENTRY_TIME (D)
0	1.5
0	1.2
0	0
0	2.5
0	1.4
0	2.3
0	0
0	0
0	20
0	2.9
0	0
0	1.5
0	0
0	0
0	1.5
0	1.5
0	1.5
0	0
0	2
0	0
0	4.7
0	2.77
0	2.3
0	1.54
0	0
0	0
0	3.1
0	0
0	2.1
0	2.98
0	0
0	2.3
0	0
0	0
0	31.5
0	3
0	0
0	2.29

WELL_TEST_PROBLEM_TIME (D)	TA_RE_ENTRY_TIME (D)
0	1.67
0	0
0	0
0	2.29
0	0.31
0	0
0	2.33
0	1.7
0	4.4
0	0
0	0
0	3.4
0	0
0	1.3
0	3.4
0	0
0	3.8
0	3.6
0	0
0	1.59
0	2.44
0	2.3
0	3.63
0	7.69
0	0
0	1.6
0	1.6
0	1.1
0	1.2
0	2.5
0	1.8
0	1.3
0	0
0	0
0	0
0	0
0	0
0	0

WELL_TEST_PROBLEM_TIME (D)	TA_RE_ENTRY_TIME (D)
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	1.33
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	1.1
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	8.8
0	0
0	0
0	0
0	0
0	0
0	0

WELL_TEST_PROBLEM_TIME (D)	TA_RE_ENTRY_TIME (D)
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	2
0	0.29
0	3.54

TA_RE_ENTRY_PROBLEM_TIME (D)	TOTAL COMPLETION TIME (D)
4.1	210
0.6	69.5
0	33.4
0	56.23
0	65.3
0.9	166.8
9.2	70.4
4.4	66.8
0	45.38
0	44.6
0	58.6
0	44.64
0	61.24
0	55
0	33.64
0	33.78
0	109.9
0	161.7
0	43.4
0	57.11
0	33.1
0	42.4
0	41.25
0	27.81
0	41.5
0	39.8
0	39.5
0	86.15
0	36.8
0	25.57
0	41.88
0	24.9
0	34.7
0	47.3
0	46.17
0	73.1
0	30.92
0	24.78

TA_RE_ENTRY_PROBLEM_TIME (D)	TOTAL COMPLETION TIME (D)
0	32.6
0	35.8
0	18
0	33.9
0	29.3
0	19.5
0	27.44
0	85.9
0	38
0	25.52
0	17.5
0	16
0	25.9
0	26.7
0	19
0	29
0	18.5
0	22.33
0	34
0	23.48
3.3	47.3
0	53.78
0.3	38.3
0	42.93
0	38.8
0	48.1
0	76.3
0	37.15
0	43.5
0	77.38
0	74.37
0	37.8
0	63.96
0	38.39
0	65.4
0	41.9
0	53
0	42.47

TA_RE_ENTRY_PROBLEM_TIME (D)	TOTAL COMPLETION TIME (D)
0	31.22
0	51.25
0	43.06
0	54.87
0	26.24
0	35.21
0	51.81
0	31.4
0	56
0	31.98
0	33.08
0	32.8
0	37.96
0	46.2
0	48.9
0	43.04
0	80.6
0	56.5
0	55.35
0	27.31
0	50.14
0	41
0	32.45
0	46.82
0	30.56
0	69.7
0	37.3
0	32.3
0	41.9
0.2	33.9
0	34.2
0	25.3
0	46.06
0	52.35
0	59.7
0	71.9
0	32.8
0	49.9

TA_RE_ENTRY_PROBLEM_TIME (D)	TOTAL COMPLETION TIME (D)
0	70.04
0	35.1
0	32.3
0	15.78
0	28
0	13.8
0	33.42
0	24.6
0	22.54
0	42.42
0	35.6
0	39.66
0	40.09
0	21.04
0	10.5
0	28.46
0	41
0	31.81
0	20.2
0	16.9
0	15.8
0	22.7
0	32.07
0	24.7
0	19.58
0	11.8
0	18.9
0	19.27
0	16.56
0	10.27
0	29.6
0	39
0	20.9
0	16.8
0	11.7
0	16.8
0	17.5
0	33.77

TA_RE_ENTRY_PROBLEM_TIME (D)	TOTAL COMPLETION TIME (D)
0	18.1
0	16
0	15.9
0	33.3
0	24
0	20.31
0	12.7
0	13.35
0	20.3
0	22.3
0	16.44
0	11.56
0	18.5
0	17.5
0	35.46
0	30.75

No ReEntry, No Well Test, No CSG Run (D)	No ReEntry, No Well Test (D)
147.2	166
56.2	66
23.7	30.7
35.01	48.14
31.8	57.3
79.8	103.8
20.5	38.1
47.3	50.6
15.76	41.66
31.1	40.9
42.45	55.01
34.48	38.08
20.62	54.91
27.3	53.7
29.89	33.64
23.39	30.91
26.1	77.3
146	159.6
21.3	38.5
25.57	52.57
24.2	30
13.92	40.25
26.04	37.12
16.38	20.46
29.2	40.5
26.2	32.3
28.77	38.12
51.81	83.94
27.8	34.5
21.34	25.57
27.53	36.34
16.54	20.48
21.1	27.6
31.1	39.8
26.39	42.27
23.3	28.1
19.27	28.96
14.97	20.61

No ReEntry, No Well Test, No CSG Run (D)	No ReEntry, No Well Test (D)
21.5	30.6
13.5	33.7
16	18
19.5	29.3
14.5	19.5
15.1	15.1
20.31	24.21
26.4	70.7
15.9	15.9
11.54	20.1
14.5	17.5
10.5	12.5
18	23.1
18.9	24.4
12	15
20	25
13	16
16.06	20.87
23	26.5
18.73	23.48
36.6	39.3
20.01	51.01
25	35.7
34.14	41.39
20.36	38.8
45.35	48.1
61.9	73.2
21.34	37.15
25.4	41.4
42.25	74.4
42.31	74.37
24.47	35.5
28.04	63.96
16.74	38.39
20.1	33.9
31.8	38.6
21.6	53
19.72	40.18

No ReEntry, No Well Test, No CSG Run (D)	No ReEntry, No Well Test (D)
16.49	29.55
25.67	51.25
17.21	43.06
32.71	52.58
18.08	25.93
16.81	35.21
37.98	49.48
16.6	29.7
29.1	51.6
15.1	31.98
19.89	33.08
22	29.4
18.65	37.96
24.6	44.9
34	45.5
16.1	43.04
57.4	76.8
44.5	52.9
30.85	55.35
21.35	25.72
15.7	47.7
29.5	38.7
24.72	28.82
20.71	39.13
14.31	30.56
56.3	68.1
30.7	35.7
21.7	31.2
32.3	40.7
21.5	31.2
25.4	32.4
17.7	24
28.66	44.87
25.26	49.7
38	51.7
41.7	65.9
26.9	32.8
21.6	40.9

No ReEntry, No Well Test, No CSG Run (D)	No ReEntry, No Well Test (D)
58.5	68.04
15.7	34.9
2.5	32.3
6.08	15.78
17.4	28
10	13.8
17	28.42
2.2	24.6
16.48	21.02
13.92	42.42
21.8	35.6
17.3	39.53
20.03	36.13
14.14	21.04
9.2	10.5
14.83	28.46
14.4	27.4
13.33	31.1
17.8	20.2
14.1	16.9
7.3	15.8
13.6	21.6
14.74	31.19
18.3	24.7
12.31	19.58
10	11.8
13.9	18.9
8.73	13.23
10.87	16.56
7.33	10.27
22.6	29.6
22.6	30.2
1	20.9
13.8	16.8
9.5	11.7
13.8	16.8
12.6	17.5
9.52	17.46

No ReEntry, No Well Test, No CSG Run (D)	No ReEntry, No Well Test (D)
9.8	18.1
13.8	16
7.86	12.65
20.8	25.2
17.1	23.6
16.14	20.31
9.9	12.7
8.41	13.35
10.9	20.3
12.2	17.5
7.65	13.46
7.04	9.08
12.2	18.5
14.1	15.5
24.34	32.07
12.19	25.42

No ReEntry, No CSG Run (D)	No ReEntry (D)	No Well Test, No CSG Run (D)
150.2	169	188.2
56.2	66	59.7
26.4	33.4	23.7
43.1	56.23	35.01
35.1	60.6	36.5
112.3	136.3	110.3
22.6	40.2	50.7
49.1	52.4	61.7
17.56	43.46	17.68
34.8	44.6	31.1
46.04	58.6	42.45
40.44	44.04	35.08
24.12	58.41	23.45
28.6	55	27.3
29.89	33.64	29.89
23.7	31.22	25.95
48.4	99.6	36.4
146.9	160.5	147.2
25.4	42.6	22.1
26.36	53.36	29.32
26.5	32.3	25
13.92	40.25	16.07
30.17	41.25	26.04
18.96	23.04	21.15
30.2	41.5	29.2
32.1	38.2	27.8
30.15	39.5	28.77
54.02	86.15	51.81
30.1	36.8	27.8
21.34	25.57	21.34
30.57	39.38	30.03
20.04	23.98	17.46
24.1	30.6	25.2
31.1	39.8	38.6
30.29	46.17	26.39
64.5	69.3	27.1
21.23	30.92	19.27
14.97	20.61	19.14

No ReEntry, No CSG Run (D)	No ReEntry (D)	No Well Test, No CSG Run (D)
22	31.1	23
14.4	34.6	14.7
16	18	16
21.6	31.4	22
22.9	27.9	15.9
17.2	17.2	17.4
23.54	27.44	20.31
41.6	85.9	26.4
18	18	35.9
14.06	22.62	14.44
14.5	17.5	14.5
12.5	14.5	12
20.8	25.9	18
21.2	26.7	18.9
14.5	17.5	13.5
22.5	27.5	21.5
14	17	14.5
17.52	22.33	16.06
28.5	32	25
18.73	23.48	18.73
36.6	39.3	44.6
20.01	51.01	22.78
25	35.7	27.6
34.14	41.39	35.68
20.36	38.8	20.36
45.35	48.1	45.35
61.9	73.2	65
21.34	37.15	21.34
25.4	41.4	27.5
42.25	74.4	45.23
42.31	74.37	42.31
24.47	35.5	26.77
28.04	63.96	28.04
16.74	38.39	16.74
20.1	33.9	51.6
32.1	38.9	34.8
21.6	53	21.6
19.72	40.18	22.01

No ReEntry, No CSG Run (D)	No ReEntry (D)	No Well Test, No CSG Run (D)
16.49	29.55	18.16
25.67	51.25	25.67
17.21	43.06	17.21
32.71	52.58	35
18.08	25.93	18.39
16.81	35.21	16.81
37.98	49.48	40.31
16.6	29.7	18.3
29.1	51.6	33.5
15.1	31.98	15.1
19.89	33.08	19.89
22	29.4	25.4
18.65	37.96	18.65
24.6	44.9	25.9
34	45.5	37.4
16.1	43.04	16.1
57.4	76.8	61.2
44.5	52.9	48.1
30.85	55.35	30.85
21.35	25.72	22.94
15.7	47.7	18.14
29.5	38.7	31.8
24.72	28.82	28.35
20.71	39.13	28.4
14.31	30.56	14.31
56.3	68.1	57.9
30.7	35.7	32.3
21.7	31.2	22.8
32.3	40.7	33.5
21.5	31.2	24.2
25.4	32.4	27.2
17.7	24	19
29.85	46.06	28.66
27.91	52.35	25.26
46	59.7	38
47.7	71.9	41.7
26.9	32.8	26.9
30.6	49.9	21.6

No ReEntry, No CSG Run (D)	No ReEntry (D)	No Well Test, No CSG Run (D)
60.5	70.04	58.5
15.9	35.1	15.7
2.5	32.3	2.5
6.08	15.78	6.08
17.4	28	17.4
10	13.8	10
22	33.42	17
2.2	24.6	2.2
18	22.54	16.48
13.92	42.42	13.92
21.8	35.6	21.8
17.43	39.66	17.3
22.66	38.76	21.36
14.14	21.04	14.14
9.2	10.5	9.2
14.83	28.46	14.83
28	41	14.4
14.04	31.81	13.33
17.8	20.2	17.8
14.1	16.9	14.1
7.3	15.8	7.3
13.6	21.6	14.7
15.62	32.07	14.74
18.3	24.7	18.3
12.31	19.58	12.31
10	11.8	10
13.9	18.9	13.9
14.77	19.27	8.73
10.87	16.56	10.87
7.33	10.27	7.33
22.6	29.6	22.6
22.6	30.2	31.4
1	20.9	1
13.8	16.8	13.8
9.5	11.7	9.5
13.8	16.8	13.8
12.6	17.5	12.6
25.83	33.77	9.52

No ReEntry, No CSG Run (D)	No ReEntry (D)	No Well Test, No CSG Run (D)
9.8	18.1	9.8
13.8	16	13.8
11.11	15.9	7.86
28.9	33.3	20.8
17.5	24	17.1
16.14	20.31	16.14
9.9	12.7	9.9
8.41	13.35	8.41
10.9	20.3	10.9
17	22.3	12.2
10.63	16.44	7.65
9.52	11.56	7.04
12.2	18.5	12.2
14.1	15.5	16.1
27.44	35.17	24.63
13.98	27.21	15.73

No Well Test (D)	No CSG Run (D)	UNSCHEDULED_TROUBLE_TIME (D)
207	191.2	108.2
69.5	59.7	33.9
30.7	26.4	0
48.14	43.1	14.69
62	39.8	8.5
134.3	142.8	38.8
68.3	52.8	17.2
65	63.5	32.2
43.58	19.48	10
40.9	34.8	15
55.01	46.04	13.04
38.68	41.04	17.92
57.74	26.95	5.4
53.7	28.6	6.8
33.64	29.89	6.04
33.47	26.26	2.71
87.6	58.7	47.1
160.8	148.1	70.8
39.3	26.2	6
56.32	30.11	14.88
30.8	27.3	3.3
42.4	16.07	4.81
37.12	30.17	4.02
25.23	23.73	3.17
40.5	30.2	2.9
33.9	33.7	6.7
38.12	30.15	3.02
83.94	54.02	34.52
34.5	30.1	0
25.57	21.34	1.52
38.84	33.07	3.71
21.4	20.96	1.27
31.7	28.2	1
47.3	38.6	2.6
42.27	30.29	9.46
31.9	68.3	3.3
28.96	21.23	3.88
24.78	19.14	1.02

No Well Test (D)	No CSG Run (D)	UNSCHEDULED_TROUBLE_TIME (D)
32.1	23.5	2.9
34.9	15.6	7.2
18	16	0
31.8	24.1	3.5
20.9	24.3	4.7
17.4	19.5	0
24.21	23.54	3.29
70.7	41.6	0
35.9	38	0
23	16.96	4.08
17.5	14.5	0
14	14	0.5
23.1	20.8	0
24.4	21.2	0
16.5	16	0
26.5	24	9.5
17.5	15.5	1.3
20.87	17.52	0.35
28.5	30.5	3
23.48	18.73	3.4
47.3	44.6	7.1
53.78	22.78	0
38.3	27.6	2.7
42.93	35.68	0
38.8	20.36	3.56
48.1	45.35	0
76.3	65	17.8
37.15	21.34	15.54
43.5	27.5	0.9
77.38	45.23	15.83
74.37	42.31	25.12
37.8	26.77	0
63.96	28.04	26.71
38.39	16.74	9.12
65.4	51.6	3.8
41.6	35.1	2.8
53	21.6	19.46
42.47	22.01	4.79

No Well Test (D)	No CSG Run (D)	UNSCHEDULED_TROUBLE_TIME (D)
31.22	18.16	0
51.25	25.67	12.39
43.06	17.21	6.98
54.87	35	6
26.24	18.39	0
35.21	16.81	4.25
51.81	40.31	9.21
31.4	18.3	0
56	33.5	6.3
31.98	15.1	2.52
33.08	19.89	4.06
32.8	25.4	1.8
37.96	18.65	9.52
46.2	25.9	5.8
48.9	37.4	3.8
43.04	16.1	7.38
80.6	61.2	29.3
56.5	48.1	19.6
55.35	30.85	8.92
27.31	22.94	0
50.14	18.14	13.93
41	31.8	7.7
32.45	28.35	3.83
46.82	28.4	6.92
30.56	14.31	4.98
69.7	57.9	37.7
37.3	32.3	8.2
32.3	22.8	0.3
41.9	33.5	0.6
33.9	24.2	1.4
34.2	27.2	1.7
25.3	19	0.4
44.87	29.85	6.09
49.7	27.91	6.5
51.7	46	14.4
65.9	47.7	0
32.8	26.9	5.8
40.9	30.6	1.6

No Well Test (D)	No CSG Run (D)	UNSCHEDULED_TROUBLE_TIME (D)
68.04	60.5	25.23
34.9	15.9	5.8
32.3	2.5	7.2
15.78	6.08	0
28	17.4	1.5
13.8	10	1.6
28.42	22	1.58
24.6	2.2	8.5
21.02	18	0.62
42.42	13.92	10.5
35.6	21.8	0.4
39.53	17.43	15.38
37.46	23.99	5.13
21.04	14.14	2.06
10.5	9.2	2.1
28.46	14.83	4.25
27.4	28	0
31.1	14.04	4.88
20.2	17.8	1.9
16.9	14.1	0.6
15.8	7.3	0
22.7	14.7	1.7
31.19	15.62	5.74
24.7	18.3	2.4
19.58	12.31	1.42
11.8	10	3.6
18.9	13.9	2.2
13.23	14.77	0.06
16.56	10.87	0.48
10.27	7.33	0.1
29.6	22.6	9.1
39	31.4	0
20.9	1	7.3
16.8	13.8	0
11.7	9.5	0.4
16.8	13.8	0.8
17.5	12.6	1.3
17.46	25.83	0

No Well Test (D)	No CSG Run (D)	UNSCHEDULED_TROUBLE_TIME (D)
18.1	9.8	2.7
16	13.8	0.3
12.65	11.11	0.75
25.2	28.9	3.73
23.6	17.5	5.9
20.31	16.14	0
12.7	9.9	0.5
13.35	8.41	2.23
20.3	10.9	0.5
17.5	17	1.1
13.46	10.63	1.08
9.08	9.52	0.15
18.5	12.2	0
17.5	16.1	0
32.36	27.73	6.54
28.96	17.52	1.13

Appendix B

Computer Programming Code

```vba
Sub NoSort()
'
' NoSort Macro
'


'
 ActiveWorkbook.Worksheets("Day Calculator").Select
    Range("H43").Select
    If ActiveCell = 61 Then
    ActiveWorkbook.Worksheets("Weighted Values Total").Select


    Range("A91:JN259").Select
    Range("JN91").Activate
    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR
    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _
        Range("JN92:JN259"), SortOn:=xlSortOnValues, Order:=xlAscending, _
        DataOption:=xlSortNormal
    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort
        .SetRange Range("A91:JN259")
        .Header = xlYes
        .MatchCase = False
        .Orientation = xlTopToBottom
        .SortMethod = xlPinYin
        .Apply
    End With
```

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "No Sort"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AD87").Select

ActiveCell.FormulaR1C1 = "No TA ReEntry"

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R259C81,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R259C81,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R259C81,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R259C81,0.75)"

Range("AG87").Select

```
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R259C81,0.9)"

Range("AJ83").Select

Sheets("Weighted Values Total").Select

Range("AD82:AH88").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False


Sheets("No Entry No Test No Run").Select

Range("F9:F13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 54 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

   Range("EC92:EC259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

   DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

   .SetRange Range("A91:JN259")

   .Header = xlYes

   .MatchCase = False

   .Orientation = xlTopToBottom

   .SortMethod = xlPinYin

   .Apply
```

```
End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "All Times"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Sort"

Range("AD87").Select

ActiveCell.CLEAR


Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R259C80,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R259C80,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R259C80,0.5)"
```

```
Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R259C80,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R259C80,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AH88").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False


    Sheets("Total Time Dist").Select

Range("F9:F13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 55 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

   Range("EW92:EW259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

   DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

   .SetRange Range("A91:JN259")

   .Header = xlYes

   .MatchCase = False

   .Orientation = xlTopToBottom
```

.SortMethod = xlPinYin

.Apply

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Sort"

Range("AD87").Select

ActiveCell.CLEAR

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R259C88,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R259C88,0.25)"

```vba
Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R259C88,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R259C88,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R259C88,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AH88").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False


    Sheets("No Casing Run").Select

Range("F9:F13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 56 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("FR92:FR259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin
```

.Apply

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Sort"

Range("AD87").Select

ActiveCell.CLEAR

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R259C87,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R259C87,0.25)"

Range("AG85").Select

```
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R259C87,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R259C87,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R259C87,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AH88").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False


    Sheets("No Well Test").Select

Range("F9:F13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 58 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("GL92:GL259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply
```

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Sort"

Range("AD87").Select

ActiveCell.CLEAR

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R259C84,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R259C84,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R259C84,0.5)"

```
Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R259C84,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R259C84,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AH88").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False


    Sheets("No Re Entry").Select

Range("F9:F13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 57 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("HF92:HF259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With
```

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AD87").Select

ActiveCell.FormulaR1C1 = "No Sort"

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R259C85,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R259C85,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R259C85,0.5)"

Range("AG86").Select

```
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R259C85,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R259C85,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AH88").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False


Sheets("No Test No Run").Select

Range("F9:F13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 60 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("HZ92:HZ259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select
```

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AD87").Select

ActiveCell.FormulaR1C1 = "No Sort"

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R259C83,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R259C83,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R259C83,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R259C83,0.75)"

Range("AG87").Select

```vba
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R259C83,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AH88").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False


Sheets("No Entry No Run").Select

Range("F9:F13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 59 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("IT92:IT259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD83").Select
```

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AD87").Select

ActiveCell.FormulaR1C1 = "No Sort"

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R259C82,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R259C82,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R259C82,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R259C82,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R259C82,0.9)"

Sheets("Weighted Values Total").Select

```
Range("AD82:AH88").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False


    Sheets("No Entry No Test").Select

Range("F9:F13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False

End If


End Sub

No Sort CODE
```

```vba
Sub AllWells2()
'
' AllWells2 Macro
'


'

    ActiveWorkbook.Worksheets("Day Calculator").Select

    Range("H43").Select

    If ActiveCell = 36 Then

    ActiveWorkbook.Worksheets("Weighted Values Total").Select


    Range("A91:JN259").Select

    Range("JN91").Activate

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

        Range("DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

        DataOption:=xlSortNormal

    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

        .SetRange Range("A91:JN259")

        .Header = xlYes

        .MatchCase = False

        .Orientation = xlTopToBottom

        .SortMethod = xlPinYin

        .Apply

    End With
```

```
Range("AF82").Select

ActiveCell.FormulaR1C1 = "Top 100 Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AD87").Select

ActiveCell.FormulaR1C1 = "No TA ReEntry"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

   Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"


Range("AG83").Select
```

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R191C81,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R191C81,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R191C81,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R191C81,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R191C81,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R121C81,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R121C81,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R121C81,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R121C81,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R121C81,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

```
Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"


    Sheets("Weighted Values Total").Select

Range("AD82:AK88").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Entry No Test No Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False


End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 29 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False
```

```
.Orientation = xlTopToBottom

.SortMethod = xlPinYin

.Apply

End With



Range("AF82").Select

ActiveCell.FormulaR1C1 = "Top 100 Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "All Times"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"
```

Range("AD87").Select

ActiveCell.CLEAR

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R191C80,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R191C80,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R191C80,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R191C80,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R191C80,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R121C80,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R121C80,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R121C80,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R121C80,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R121C80,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

```
Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"


   Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
   :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("Total Time Dist").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
   :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 30 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort
```

```vba
    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "Top 100 Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

   Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select
```

ActiveCell.FormulaR1C1 = "Total Days"

Range("AD87").Select

ActiveCell.CLEAR

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R191C88,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R191C88,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R191C88,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R191C88,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R191C88,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R121C88,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R121C88,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R121C88,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R121C88,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R121C88,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False

Sheets("No Casing Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

```
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 31 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort
```

```
    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "Top 100 Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select
```

```
ActiveCell.FormulaR1C1 = "Total Days"

ActiveCell.CLEAR



Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R191C87,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R191C87,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R191C87,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R191C87,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R191C87,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R121C87,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R121C87,0.25)"

Range("AJ85").Select
```

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R121C87,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R121C87,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R121C87,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

```
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"


Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Well Test").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False
```

End If

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 33 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes
```

```
    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "Top 100 Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"

ActiveCell.CLEAR
```

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R191C84,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R191C84,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R191C84,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R191C84,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R191C84,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R121C84,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R121C84,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R121C84,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R121C84,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R121C84,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

```vba
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"


Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Re Entry").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```vba
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 32 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom
```

```vba
.SortMethod = xlPinYin

.Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "Top 100 Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"
```

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R191C85,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R191C85,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R191C85,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R191C85,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R191C85,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R121C85,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R121C85,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R121C85,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R121C85,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R121C85,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

```
Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"


Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Test No Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 35 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

   Range("DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

   DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

   .SetRange Range("A91:JN259")

   .Header = xlYes

   .MatchCase = False

   .Orientation = xlTopToBottom

   .SortMethod = xlPinYin

   .Apply
```

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "Top 100 Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

   Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R191C83,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R191C83,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R191C83,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R191C83,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R191C83,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R121C83,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R121C83,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R121C83,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R121C83,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R121C83,0.9)"

```
Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select
```

```
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"


Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Entry No Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 34 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select
```

```
ActiveCell.FormulaR1C1 = "Top 100 Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

   Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"



Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R191C82,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault
```

```vba
Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R191C82,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R191C82,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R191C82,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R191C82,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R121C82,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R121C82,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R121C82,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R121C82,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R121C83,0.9)"


Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.1)"
```

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R191C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C1:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"

```vba
    Sheets("Weighted Values Total").Select

    Range("AD82:AK87").Select

    Selection.Copy

    Sheets("Day Calculator").Select

    Range("B45").Select

    Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
        :=False, Transpose:=False

    Application.CutCopyMode = False


    Sheets("No Entry No Test").Select

    Range("B9:B13").Select

    Selection.Copy

    Sheets("Day Calculator").Select

    Range("K46").Select

    Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
        :=False, Transpose:=False

    Application.CutCopyMode = False

    End If


End Sub

Sub Surface2()
'

' Surface2 Macro

'
```

```vba
'

    ActiveWorkbook.Worksheets("Day Calculator").Select

    Range("H43").Select

    If ActiveCell = 53 Then

    ActiveWorkbook.Worksheets("Weighted Values Total").Select


    Range("A91:JN259").Select

    Range("JN91").Activate

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

        "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

        "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

        "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

        xlSortNormal

    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

        .SetRange Range("A91:JN259")

        .Header = xlYes

        .MatchCase = False

        .Orientation = xlTopToBottom

        .SortMethod = xlPinYin

        .Apply

    End With

    Range("A150:JN259").Select
```

```
ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A150:JN259")

    .Header = xlGuess

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "Surface Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AD87").Select
```

```vba
ActiveCell.FormulaR1C1 = "No TA ReEntry"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"


Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R259C81,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R259C81,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R259C81,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R259C81,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R259C81,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R179C81,0.1)"
```

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R179C81,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R179C81,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R179C81,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R179C81,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AK88").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

   :=True, Transpose:=False

Application.CutCopyMode = False

Sheets("No Entry No Test No Run").Select

Range("B9:B13").Select

```
Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 46 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select
```

```vba
    Range("A91:JN259").Select

    Range("JN91").Activate

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

        "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

        "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

        "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

        xlSortNormal

    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

        .SetRange Range("A91:JN259")

        .Header = xlYes

        .MatchCase = False

        .Orientation = xlTopToBottom

        .SortMethod = xlPinYin

        .Apply

    End With

    Range("A150:JN259").Select

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

        Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

        DataOption:=xlSortNormal

    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

        .SetRange Range("A150:JN259")
```

```
      .Header = xlGuess

      .MatchCase = False

      .Orientation = xlTopToBottom

      .SortMethod = xlPinYin

      .Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface TreeWells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "All Times"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

   Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"
```

```
Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R259C80,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R259C80,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R259C80,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R259C80,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R259C80,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R179C80,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R179C80,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R179C80,0.5)"

Range("AJ86").Select
```

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R179C80,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R179C80,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

```
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"


    Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("Total Time Dist").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 47 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _
```

```
        "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _
        xlSortNormal
    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort
        .SetRange Range("A91:JN259")
        .Header = xlYes
        .MatchCase = False
        .Orientation = xlTopToBottom
        .SortMethod = xlPinYin
        .Apply
    End With
    Range("A150:JN259").Select
    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR
    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _
        Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _
        DataOption:=xlSortNormal
    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort
        .SetRange Range("A150:JN259")
        .Header = xlGuess
        .MatchCase = False
        .Orientation = xlTopToBottom
        .SortMethod = xlPinYin
        .Apply
    End With
    Range("AF82").Select
    ActiveCell.FormulaR1C1 = "All Surface Tree Wells"
```

```
Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Wells"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"



Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R259C88,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R259C88,0.25)"
```

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R259C88,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R259C88,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R259C88,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R179C88,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R179C88,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R179C88,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R179C88,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R179C88,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

```
Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Casing Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```vba
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 48 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("A150:JN259").Select

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR
```

```
ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A150:JN259")

    .Header = xlGuess

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"
```

```
    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"




Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R259C87,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R259C87,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R259C87,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R259C87,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R259C87,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R179C87,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select
```

```
Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R179C87,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R179C87,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R179C87,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R179C87,0.9)"


    Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select
```

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False

    Sheets("No Well Test").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

```vba
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False
Application.CutCopyMode = False
End If
```

```vba
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 50 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _
```

```
        "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

        "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

        xlSortNormal

    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

        .SetRange Range("A91:JN259")

        .Header = xlYes

        .MatchCase = False

        .Orientation = xlTopToBottom

        .SortMethod = xlPinYin

        .Apply

    End With

    Range("A150:JN259").Select

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

        Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

        DataOption:=xlSortNormal

    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

        .SetRange Range("A150:JN259")

        .Header = xlGuess

        .MatchCase = False

        .Orientation = xlTopToBottom

        .SortMethod = xlPinYin

        .Apply
```

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

  Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AD87").Select

ActiveCell.CLEAR

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R259C84,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R259C84,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R259C84,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R259C84,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R259C84,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R179C84,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R179C84,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R179C84,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R179C84,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R179C84,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

```vba
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"


Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Re Entry").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```vba
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 49 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom
```

```vba
    .SortMethod = xlPinYin

    .Apply

End With

Range("A150:JN259").Select

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A150:JN259")

    .Header = xlGuess

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AD85").Select
```

```vba
ActiveCell.FormulaR1C1 = "No Well Test"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

   Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"



Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R259C85,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R259C85,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R259C85,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R259C85,0.75)"

Range("AG87").Select
```

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R259C85,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R179C85,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R179C85,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R179C85,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R179C85,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R179C85,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

   :=False, Transpose:=False

Application.CutCopyMode = False

```
Sheets("No Test No Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 52 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select
```

```
Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("A150:JN259").Select

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A150:JN259")

    .Header = xlGuess
```

```vba
    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"
```

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R259C83,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R259C83,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R259C83,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R259C83,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R259C83,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R179C83,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R179C83,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R179C83,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R179C83,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R179C83,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

```vba
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"


Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Entry No Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 51 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")
```

```
        .Header = xlYes

        .MatchCase = False

        .Orientation = xlTopToBottom

        .SortMethod = xlPinYin

        .Apply

    End With

    Range("A150:JN259").Select

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

        Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

        DataOption:=xlSortNormal

    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

        .SetRange Range("A150:JN259")

        .Header = xlGuess

        .MatchCase = False

        .Orientation = xlTopToBottom

        .SortMethod = xlPinYin

        .Apply

    End With

    Range("AF82").Select

    ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

    Range("AI82").Select

    ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

    Range("AD83").Select

    ActiveCell.FormulaR1C1 = "Sorting Criteria"
```

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

   Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R259C82,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R259C82,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R259C82,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R259C82,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R259C82,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R179C82,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R179C82,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R179C82,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R179C82,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R179C82,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

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```
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

Sheets("No Entry No Test").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If


End Sub

Sort All Wells Macro
```

```vba
Sub Maximum()

'




    ActiveWorkbook.Worksheets("Day Calculator").Select

    Range("H43").Select

    If ActiveCell = 45 Then

    ActiveWorkbook.Worksheets("Weighted Values Total").Select


    Range("A91:JN259").Select
```

```vba
Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Subsea Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select
```

```
ActiveCell.FormulaR1C1 = "Subsea Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AD87").Select

ActiveCell.FormulaR1C1 = "No TA ReEntry"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

   Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"




Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R149C81,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R149C81,0.25)"

Range("AG85").Select
```

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R149C81,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R149C81,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R149C81,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R121C81,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R121C81,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R121C81,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R121C81,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C81:R121C81,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"

    Sheets("Weighted Values Total").Select

Range("AD82:Ak88").Select

Selection.Copy

Sheets("Day Calculator").Select

```
Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Entry No Test No Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```vba
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 38 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With
```

```
Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Subsea TreeWells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "All Times"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

   Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"




Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R149C80,0.1)"
```

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R149C80,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R149C80,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R149C80,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R149C80,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R121C80,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R121C80,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R121C80,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R121C80,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C80:R121C80,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

```
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"


    Sheets("Weighted Values Total").Select

Range("AD82:Ak87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("Total Time Dist").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```vba
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 39 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")
```

```
    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Subsea Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Subsea Wells"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"
```

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R149C88,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R149C88,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R149C88,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R149C88,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R149C88,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R121C88,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R121C88,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R121C88,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R121C88,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C88:R121C88,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:Ak87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

   :=False, Transpose:=False

Application.CutCopyMode = False

Sheets("No Casing Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

   :=False, Transpose:=False

Application.CutCopyMode = False

End If

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 40 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal
```

```
With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Subsea Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"
```

```
Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"


Range("AD87").Select

ActiveCell.CLEAR



Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R149C87,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R149C87,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R149C87,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R149C87,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R149C87,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R121C87,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select
```

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R121C87,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R121C87,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R121C87,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C87:R121C87,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:Ak87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

   :=False, Transpose:=False

Application.CutCopyMode = False

Sheets("No Well Test").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

```vba
    Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
        :=False, Transpose:=False
    Application.CutCopyMode = False
    End If
```

```vba
    ActiveWorkbook.Worksheets("Day Calculator").Select

    Range("H43").Select

    If ActiveCell = 42 Then

    ActiveWorkbook.Worksheets("Weighted Values Total").Select


    Range("A91:JN259").Select

    Range("JN91").Activate

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _
        "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _
```

```
    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Subsea Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AH82").Select
```

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

   Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AD87").Select

ActiveCell.CLEAR

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R149C84,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R149C84,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R149C84,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R149C84,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R149C84,0.9)"

253

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R121C84,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R121C84,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R121C84,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R121C84,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C84:R121C84,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:Ak87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

  :=False, Transpose:=False

Application.CutCopyMode = False

```
    Sheets("No Re Entry").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 41 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select
```

```
Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Subsea Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select
```

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ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R149C85,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R149C85,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R149C85,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R149C85,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R149C85,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R121C85,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R121C85,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R121C85,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R121C85,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C85:R121C85,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:Ak87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

```
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False
Application.CutCopyMode = False


    Sheets("No Test No Run").Select
Range("B9:B13").Select
Selection.Copy
Sheets("Day Calculator").Select
Range("k46").Select
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False
Application.CutCopyMode = False
End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select
Range("H43").Select
If ActiveCell = 44 Then
```

```
ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Subsea Tree Wells"
```

```vba
Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"




Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R149C83,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select
```

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R149C83,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R149C83,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R149C83,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R149C83,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R121C83,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R121C83,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R121C83,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R121C83,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C83:R121C83,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

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```
Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"


Sheets("Weighted Values Total").Select

Range("AD82:Ak87").Select
```

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

   :=False, Transpose:=False

Application.CutCopyMode = False

   Sheets("No Entry No Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

   :=False, Transpose:=False

Application.CutCopyMode = False

End If

```vba
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 43 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select
```

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Subsea Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Subsea Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

   Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R149C82,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R149C82,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R149C82,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R149C82,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R149C82,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R121C82,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R121C82,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R121C82,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R121C82,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C82:R121C82,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R149C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R92C91:R121C91,0.9)"

```
Sheets("Weighted Values Total").Select

Range("AD82:Ak87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Entry No Test").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False

End If




End Sub

Subsea Sort
```

```vba
Sub Surface2()
'
' Surface2 Macro
'


'
    ActiveWorkbook.Worksheets("Day Calculator").Select

    Range("H43").Select

    If ActiveCell = 53 Then

    ActiveWorkbook.Worksheets("Weighted Values Total").Select


    Range("A91:JN259").Select

    Range("JN91").Activate

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

        "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

        "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

        "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

        xlSortNormal

    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

        .SetRange Range("A91:JN259")

        .Header = xlYes

        .MatchCase = False
```

```vba
    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("A150:JN259").Select

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A150:JN259")

    .Header = xlGuess

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "Surface Tree Wells"
```

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AD87").Select

ActiveCell.FormulaR1C1 = "No TA ReEntry"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R259C81,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R259C81,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R259C81,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R259C81,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R259C81,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R179C81,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R179C81,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R179C81,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R179C81,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C81:R179C81,0.9)"

   Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

```
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"


    Sheets("Weighted Values Total").Select

Range("AD82:AK88").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
```

```
    :=True, Transpose:=False

Application.CutCopyMode = False


Sheets("No Entry No Test No Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("K46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```vba
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 46 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("A150:JN259").Select

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR
```

```
ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A150:JN259")

    .Header = xlGuess

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With


Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface TreeWells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "All Times"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select
```

```
ActiveCell.FormulaR1C1 = "NPT Days"

    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"




Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R259C80,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R259C80,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R259C80,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R259C80,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R259C80,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R179C80,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select
```

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R179C80,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R179C80,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R179C80,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C80:R179C80,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"

    Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False

Sheets("Total Time Dist").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

```vba
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False
Application.CutCopyMode = False
End If
```

```vba
ActiveWorkbook.Worksheets("Day Calculator").Select
Range("H43").Select
If ActiveCell = 47 Then
ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select
Range("JN91").Activate
ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR
```

```
    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

        .SetRange Range("A91:JN259")

        .Header = xlYes

        .MatchCase = False

        .Orientation = xlTopToBottom

        .SortMethod = xlPinYin

        .Apply

    End With

    Range("A150:JN259").Select

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

        Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

        DataOption:=xlSortNormal

    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

        .SetRange Range("A150:JN259")

        .Header = xlGuess

        .MatchCase = False

        .Orientation = xlTopToBottom
```

```
    .SortMethod = xlPinYin

    .Apply

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Wells"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"



Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R259C88,0.1)"
```

```
Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R259C88,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R259C88,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R259C88,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R259C88,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R179C88,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R179C88,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R179C88,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R179C88,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C88:R179C88,0.9)"
```

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

```
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"


Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Casing Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 48 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom
```

```vba
    .SortMethod = xlPinYin

    .Apply

 End With

 Range("A150:JN259").Select

 ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

 ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

 With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A150:JN259")

    .Header = xlGuess

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

 End With

 Range("AF82").Select

 ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

 Range("AI82").Select

 ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

 Range("AD83").Select

 ActiveCell.FormulaR1C1 = "Sorting Criteria"

 Range("AD84").Select

 ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

 Range("AD85").Select
```

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R259C87,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R259C87,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R259C87,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R259C87,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R259C87,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R179C87,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R179C87,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R179C87,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R179C87,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C87:R179C87,0.9)"

   Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

   :=False, Transpose:=False

Application.CutCopyMode = False

```
    Sheets("No Well Test").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```



```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 50 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select
```

```
Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("A150:JN259").Select

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A150:JN259")

    .Header = xlGuess
```

```
   .MatchCase = False

   .Orientation = xlTopToBottom

   .SortMethod = xlPinYin

   .Apply

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

   Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AD87").Select

ActiveCell.CLEAR
```

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R259C84,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R259C84,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R259C84,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R259C84,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R259C84,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R179C84,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R179C84,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R179C84,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R179C84,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C84:R179C84,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

```vba
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"


Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Re Entry").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select

If ActiveCell = 49 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort
```

```
        .SetRange Range("A91:JN259")

        .Header = xlYes

        .MatchCase = False

        .Orientation = xlTopToBottom

        .SortMethod = xlPinYin

        .Apply

    End With

    Range("A150:JN259").Select

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

        Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

        DataOption:=xlSortNormal

    With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

        .SetRange Range("A150:JN259")

        .Header = xlGuess

        .MatchCase = False

        .Orientation = xlTopToBottom

        .SortMethod = xlPinYin

        .Apply

    End With

    Range("AF82").Select

    ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

    Range("AI82").Select

    ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

    Range("AD83").Select
```

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R259C85,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R259C85,0.25)"

Range("AG85").Select

```
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R259C85,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R259C85,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R259C85,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R179C85,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R179C85,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R179C85,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R179C85,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C85:R179C85,0.9)"


 Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select
```

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

```
Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Test No Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

```
ActiveWorkbook.Worksheets("Day Calculator").Select

Range("H43").Select
```

```
If ActiveCell = 52 Then

ActiveWorkbook.Worksheets("Weighted Values Total").Select


Range("A91:JN259").Select

Range("JN91").Activate

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

    "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

    "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

    xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("A150:JN259").Select

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _
```

```
    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A150:JN259")

    .Header = xlGuess

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Casing Run"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"
```

```
    Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"



Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R259C83,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R259C83,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R259C83,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R259C83,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R259C83,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R179C83,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select
```

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R179C83,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R179C83,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R179C83,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C83:R179C83,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

```
Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False

Application.CutCopyMode = False


Sheets("No Entry No Run").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
    :=False, Transpose:=False
```

```
    Application.CutCopyMode = False

End If
```

```
    ActiveWorkbook.Worksheets("Day Calculator").Select

    Range("H43").Select

    If ActiveCell = 51 Then

    ActiveWorkbook.Worksheets("Weighted Values Total").Select

    Range("A91:JN259").Select

    Range("JN91").Activate

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

        "AJ92:AJ259"), SortOn:=xlSortOnValues, Order:=xlAscending, CustomOrder:= _

        "SS,SP,TL,PF,UK", DataOption:=xlSortNormal

    ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add
Key:=Range( _

        "DI92:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:= _

        xlSortNormal
```

```
With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A91:JN259")

    .Header = xlYes

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("A150:JN259").Select

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.CLEAR

ActiveWorkbook.Worksheets("Weighted Values Total").Sort.SortFields.Add Key:= _

    Range("DI150:DI259"), SortOn:=xlSortOnValues, Order:=xlAscending, _

    DataOption:=xlSortNormal

With ActiveWorkbook.Worksheets("Weighted Values Total").Sort

    .SetRange Range("A150:JN259")

    .Header = xlGuess

    .MatchCase = False

    .Orientation = xlTopToBottom

    .SortMethod = xlPinYin

    .Apply

End With

Range("AF82").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AI82").Select

ActiveCell.FormulaR1C1 = "Top 30 Surface Tree Wells"
```

Range("AD83").Select

ActiveCell.FormulaR1C1 = "Sorting Criteria"

Range("AD84").Select

ActiveCell.FormulaR1C1 = "All Surface Tree Wells"

Range("AD85").Select

ActiveCell.FormulaR1C1 = "No Re Entry"

Range("AD86").Select

ActiveCell.FormulaR1C1 = "No Well Test"

Range("AH82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AK82").Select

ActiveCell.FormulaR1C1 = "NPT Days"

Range("AG82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AJ82").Select

ActiveCell.FormulaR1C1 = "Total Days"

Range("AG83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R259C82,0.1)"

Range("AG83").Select

Selection.AutoFill Destination:=Range("AG83:AG87"), Type:=xlFillDefault

Range("AG83:AG87").Select

Range("AG84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R259C82,0.25)"

Range("AG85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R259C82,0.5)"

Range("AG86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R259C82,0.75)"

Range("AG87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R259C82,0.9)"

Range("AJ83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R179C82,0.1)"

Range("AJ83").Select

Selection.AutoFill Destination:=Range("AJ83:AJ87"), Type:=xlFillDefault

Range("AJ83:AJ87").Select

Range("AJ84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R179C82,0.25)"

Range("AJ85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R179C82,0.5)"

Range("AJ86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R179C82,0.75)"

Range("AJ87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C82:R179C82,0.9)"

Range("AH83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.1)"

Range("AH83").Select

Selection.AutoFill Destination:=Range("AH83:AH87"), Type:=xlFillDefault

Range("AH83:AH87").Select

Range("AH84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.25)"

Range("AH85").Select

```
ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.5)"

Range("AH86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.75)"

Range("AH87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R259C91,0.9)"

Range("AK83").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.1)"

Range("AK83").Select

Selection.AutoFill Destination:=Range("AK83:AK87"), Type:=xlFillDefault

Range("AK83:AK87").Select

Range("AK84").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.25)"

Range("AK85").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.5)"

Range("AK86").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.75)"

Range("AK87").Select

ActiveCell.FormulaR1C1 = "=PERCENTILE.INC(R150C91:R179C91,0.9)"

Sheets("Weighted Values Total").Select

Range("AD82:AK87").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("B45").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False
```

315

```
Application.CutCopyMode = False

Sheets("No Entry No Test").Select

Range("B9:B13").Select

Selection.Copy

Sheets("Day Calculator").Select

Range("k46").Select

Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _

    :=False, Transpose:=False

Application.CutCopyMode = False

End If
```

End Sub

SURFACE SORT

```vba
Sub CLEAR()
'
' CLEAR Macro
'

'
    ActiveWorkbook.Worksheets("Weighted Values Total").Select
    Range("AD82:AD88").Select
    Application.CutCopyMode = False
    Selection.ClearContents


    Range("AD82:AI82").Select
    Application.CutCopyMode = False
    Selection.ClearContents


    Range("AG82:AG88").Select
    Application.CutCopyMode = False
    Selection.ClearContents


    Range("AJ82:AJ88").Select
    Application.CutCopyMode = False
    Selection.ClearContents


    ActiveWorkbook.Worksheets("Day Calculator").Select
    Range("B45:I51").Select
```

```
    Range("H45").Activate

    Application.CutCopyMode = False

    Selection.ClearContents




End Sub
```

Appendix C

Copyright Compliance

Your welcome!

Please keep me in the loop. As you have said, your plan is to use the data where the is not any issues with confidentiality.

Maybe, when you're ready, you can send me a sample of what you have in mind.

Thanks,

Ted

Ted,

That is great news! I was planning on abiding those stipulations anyways. I have to provide written conformation to the school before I can get it published. I am doing research right now to see if this email chain is enough.

I really appreciate you getting that information for me.

Thanks,

Paul Robinson

Deepwater Engineer Intern

STONE
ENERGY

625 E. Kaliste Saloom Rd.

Lafayette, LA 70508

Direct Line: (337) 521-0289

Cell: (337) 445-9492

From: Dodson, Ted [mailto:Ted.Dodson@ihs.com]

Sent: Monday, September 08, 2014 2:59 PM

To: Robinson, Paul [Intern]

Subject: RE: Completion Project

Paul,

I just received the go ahead for permission to use the IHS Offshore Completion data

for your Thesis with these two stipulations:

1. Attribution for IHS

2. Send me a copy before it is published for review.

Ted

No need for apologies, Ted. I really appreciate you following up with them.

Thanks,

Paul

Checking – I put in the request last week. Sorry for the delay –

Ted

Good morning Ted,

I hate to keep bothering you, but I am just checking in to see if you had heard anything about the use of the IHS/Dodson data for my thesis. Let me know if you want to schedule another phone call.

Thanks,

Paul Robinson

Deepwater Engineer Intern

STONE
ENERGY

625 E. Kaliste Saloom Rd.

Lafayette, LA 70508

Direct Line: (337) 521-0289

Cell: (337) 445-9492

From: Dodson, Ted [mailto:Ted.Dodson@ihs.com]

Sent: Thursday, September 04, 2014 7:34 AM

To: Robinson, Paul [Intern]

Subject: RE: Completion Project

Paul,

I am checking today on the status of your request and will follow up when I get a reply (should be today). Sorry for the delay, but I am on it.

I would be interested in hearing your ideas. Will later this afternoon (about 2:00 PM) be a good time to call you?

Best Regards,

Ted

From: Robinson, Paul [Intern] [mailto:RobinsonPK@StoneEnergy.com]

Sent: Thursday, September 04, 2014 6:58 AM

To: Dodson, Ted

Subject: RE: Completion Project

Ted,

I have not heard from anyone about the ability to use the IHS/Dodson data for my

thesis. Do you know who I could get in touch with to get some more information on the

subject? I have a few ideas that I wanted to run by y'all, as well. Thanks for all the help.

Paul

From: Dodson, Ted [mailto:Ted.Dodson@ihs.com]

Sent: Wednesday, August 27, 2014 12:12 PM

To: Robinson, Paul [Intern]

Subject: RE: Completion Project

Paul,

Before we were acquired my IHS, I would have been happy to encourage you to use

our information for your thesis. Now that we are part of IHS, it is not my call any longer.

I will forward your request to the right person, and follow up by making sure they get

with you.

Regards,

Ted

Ted Dodson

Principal Customer Solutions Advisor

Drilling and Completions Performance SME

17177 Preston Rd. | Dallas, TX 75248

Phone: 214-601-2122

Ted.Dodson@ihs.com

From: Robinson, Paul [Intern] [mailto:RobinsonPK@StoneEnergy.com]

Sent: Wednesday, August 27, 2014 9:51 AM

To: Dodson, Ted

Subject: Completion Project

Ted,

I have been working with your deepwater completion data this summer for a project with Stone. I was going to try to write a thesis over the project, but I wanted to get your permission first.

- I will use 168 wells

- All information that could give away the operator will be censored (well name, operator, API #, and so forth)

- I would just need 15 of the well parameters and all the time data

- Obviously, Dodson and IHS would be referenced throughout the thesis

Please let me know if this is okay, and if I need to contact someone else.

Thanks,

Paul Robinson

Deepwater Engineer Intern

STONE ENERGY

625 E. Kaliste Saloom Rd.

Lafayette, LA 70508

Direct Line: (337) 521-0289

Cell: (337) 445-9492

Robinson, Paul K. Bachelor of Science, University of Mississippi, Fall 2010; Master
of Science, University of Louisiana at Lafayette, Fall 2014
Major: Engineering, Petroleum Engineering option
Title of Thesis: Field Case Study of Statistical and Artificial Intelligence Methodologies: An
Integrated Approach for Predicting Completion Time in Deepwater Gulf of Mexico
Thesis Director: Dr. Fathi Boukadi
Pages in Thesis: 340; Words in Abstract: 238

ABSTRACT

Predicting completion time in deepwater wells is an imminent necessity in the

modern well construction cycle. The primary objective of this thesis is to present a novel

integrated approach of statistical analysis and neural networking to identify well

characteristics for their impact on total time to complete a well.

Using a neural network, fifteen crucial attributes from the Dodson Database were

used in this study and analyzed for relative impact with respect to time. These attributes

included primary parameters such as well depth and interval number. Wells in the database

were assigned a value, depending on their fifteen attributes, that correlated to length of time

to complete.

The program designated prospect wells a value using the same time weighted impact

system, as well as the same impact parameters. Wells within the database with most similar

values to the prospects were used in the statistical analysis for total completion time.

Actual data were used for the 15 parameters in the program for "Dark Star," "Liberty," and

"Terrapin" to test the reliability of the statistical analysis. Estimates for "Dark Star" and

"Liberty," which were completed in 2014, were within 5% of field completion time.

"Terrapin" is yet to be completed; however, the programs estimate was within 3% of the

Approval For Expenditure (AFE). With access to the data provided by Stone Energy as one

of the active operators in GOM, this thesis presents a valuable methodology to estimate

completion time.

Biographical Sketch

Paul Robinson was born April 1, 1988 in Chattanooga, Tennessee. He graduated from the University of Mississippi with a B.S. in Geological Engineering in December, 2010. He received his Engineering Intern license in April 2012, upon completing the Fundamentals of Engineering Exam. He worked for Marion Environmental, Inc. for two and a half years prior to starting his post-graduate education at the University of Louisiana at Lafayette in August, 2013. While attending graduate school, Paul was hired as a deepwater engineering intern for Stone Energy in December, 2013. He is currently still attending graduate school and working as an intern for Stone Energy. He will receive a Master of Science in Engineering, Petroleum Engineering option from that University in December, 2014.