

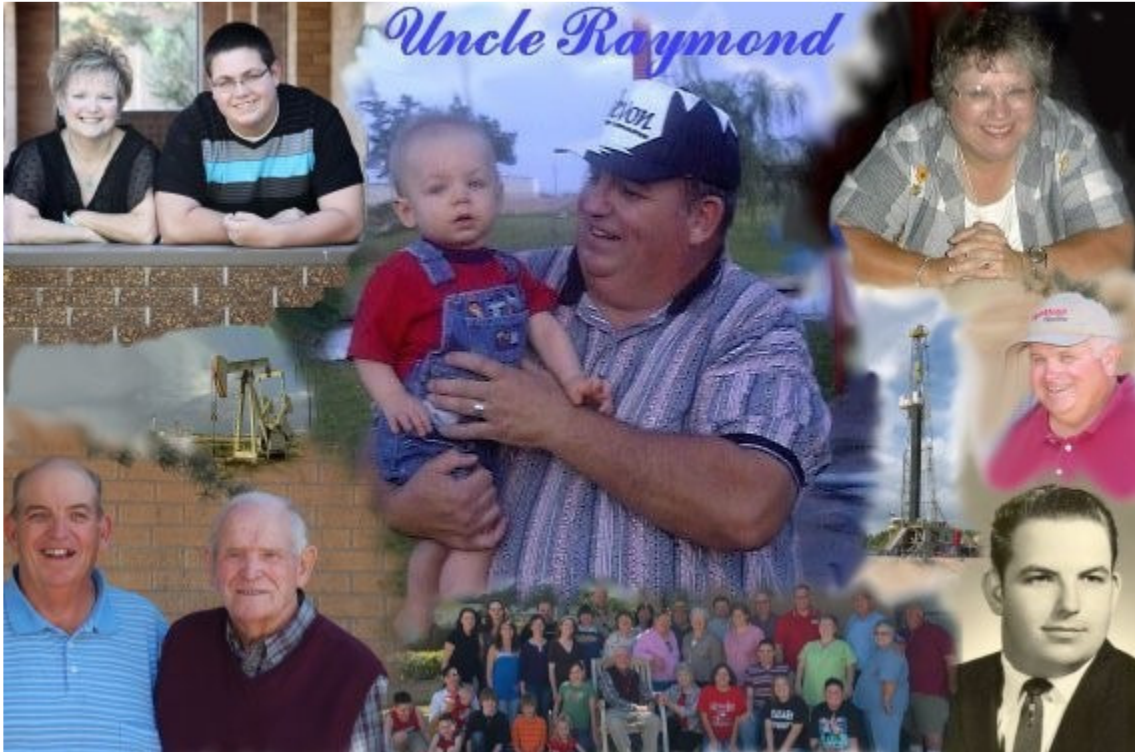
Uncle Raymond's Tool Box

Version X



Instructions for URTB

or URTB For Dummies



Burl W. Wylie

bwwhoutx@comcast.net

Most Frequently Asked Question

Question:

Why don't some of the tabs work? I click on them and nothing happens?

Answer:

When you first start the program the **Casing Tab, Annulus Tab, Bailers Tab, Strip Gun Perf Debris Tab, CBL Arrival Times Tab, Spinner Response Tab, and Dog Leg Tab** all need pipe sizes to perform calculations. These tabs will not respond until they have the parameters need to function.

Select your pipe sizes and everything is ready to go.

Table of Contents

Tubing Tab	Page 4
Casing Tab	Page 6
Annulus Tab	Page 7
Bailers Tab	Page 8
Strip Gun Perf Debris	Page 9
CBL Arrival Times	Page 10
Fluid Weight / PSI	Page 11
Sinker Bars	Page 12
Proppant Laden Fluid	Page 13
Down Hole Gas Rate	Page 15
Burl's Data Eliminator	Page 16
Pipe Free Point	Page 17
Spinner Response	Page 18
Dog Leg	Page 19
Partial Pressures	Page 20

Tubing Tab

I have tried to keep this program as simple as possible. Below is a picture of the opening screen from URTB.

The screenshot shows the 'Tubing' tab in the software. The 'Pipe Size' list on the left has '2.875' selected. The 'Pipe Weight' is set to '6.4', 'Pipe Grade' to 'L80', and 'Optional Minimum I. D.' to '2.313'. Below these inputs is a table with the following data:

	BBLs / FT	CuFt / Ft	Gals / Ft
Capacity	0.00578	0.03249	0.2431
Displacement Plugged	0.00802	0.04508	0.33723
Displacement Metal Only	0.00224	0.01258	0.09413
	Burst	Collapse	Axial
Strengths	10567	11165	144962

2-7/8" 6.4# L-80 has been selected.

Pick a pipe size from the list on the left. Click the down arrow on the Pipe Weight Box and select the proper weight. Click the Pipe Grade Box and select the grade. Then all the empty boxes will be filled with the values for the selection you have made.

If there is no tubing in the well, just select "None" from the list. You can then enter a Minimum I.D. in the Optional Minimum I.D. Box. This would be used only if there was an I.D. less than the casing in the well head or such.

You can also enter a more restrictive Minimum I.D. if you have selected a tubing size and you need to enter a smaller I.D. for a tubing nipple or other restriction.

About Button - A little information about the program and Uncle Raymond.

End Button - Will end the program and all calculations and values are cleared.

Casing Tab

Uncle Raymond's Tool Box Version 6

1. Pipe Size: 5.5
 2. Pipe Weight: 15.5 I.D."
 3. Pipe Grade: J55 Drift"

	BBLs / FT	CuFt / Ft	Gals / Ft
Capacity	0.0238	0.13363	0.9997
Displacement Plugged	0.02938	0.16498	1.2342
Displacement Metal Only	0.00558	0.03134	0.23449
	Burst	Collapse	Axial
Strengths	4813	4044	248274

Optional Displacement

End Of Tubing: 8000

Tbg Volume BBL's: 46.24

PBTD: 9000

Csg Volume BBL's: 23.80

Well Volume BBL's: 70.04

No allowance made for couplings

Burl W. Wylie
 bwwhoutx@comcast.net

5-1/2" 15.5# J-55 has been selected.

Only casing sizes with an I. D. large enough to accommodate the tubing are offered as choices. Please keep in mind that there has been **no consideration given to the couplings**. The tubing may fit, but if the tolerance is close and a beefy coupling is used, the tubing may not fit in that size of casing.

A new section of this tab is dedicated to the optional displacement calculations for the well bore. Just enter the depth of the tubing and PBTD. It will calculate the volume of the tubing, casing, and entire well.

Once you have made your selections on the Tubing and Casing Tabs, the Annulus Tab will become active.

Annulus Tab

Uncle Raymond's Tool Box Version 6

Burl's Data Eliminator Pipe Free Point Spinner Response Dog Leg Partial Pressure
CBL Arrival Times Fluid Weight / PSI Sinker Bars Proppant Laden Fluid Down Hole Gas Rate
Tubing Casing **Annulus** Bailers Strip Gun Perf Debris

Tubing = 2.875", 6.4#, L80
Casing = 5.5", 15.5#, J55

BBLs / Ft: 0.01578 CuFt / Ft: 0.08855 GALs / Ft: 0.66247 Radial Clearance "If Centered": 1.0375

Step #1: Volume Units: BBLS, CuFt, GALS

Step #2: Interval - Select or Type: 8000

Annular Volume: 126.24 BBL's

No allowance made for couplings

Burl W. Wylie
bwwhoutx@comcast.net

About End

The gray boxes in the upper, left corner indicate the pipe sizes you have chosen in the Tubing and Casing Tabs.

The white boxes across the center of the form indicate the volumes per foot of annulus in barrels, cubic feet, and gallons. The radial clearance is shown in the last box. Please note that the **program assumes the tubing to be centered**.

The option buttons, listed as Step #1, and combo box, listed as Step #2, can be used to calculate volumes for various lengths of annulus.

Step #1 - select the volume measurement you wish to use. In this case we want barrels.

Step #2 - Up to this point you have only been allowed to select data for entry. This box will allow you to select a predetermined number, or type a specific number into the box. If you need to calculate 10,539 feet of annulus, just enter 10539 into the box. **Do not use commas** in your numbers. Our example well had the tubing set at 8000 feet so our annular volume is approximately 126 bbls.

Bailers Tab

Casing : 5.5", 15.5#, J55 is being used in calculations.

Step #1 Step #2
 Depth of Fill Bailer O. D."
 2" Bailer

Bailer Length	10' Bailer	20' Bailer	30' Bailer	40' Bailer	50' Bailer
Gallons Per Run	1.25	2.50	3.75	5.00	6.25
Fill Per Run	1.25	2.50	3.75	5.00	6.25
Total Runs	16.00	8.00	5.33	4.00	3.20

All bailer calculations assume the use of a window sub above the top section.

Total Gallons To Dump Bail

Ratio of (Gallons of Water) to (Sacks of Cement) to obtain a 16.92 pounds per gallon slurry for dump bailing.

Gallons Water Sacks Cement

No allowance made for couplings

Burl W. Wylie
 bwwhoutx@comcast.net

Step #1 - Depth of Fill, This is a combo box. You can select a number or enter a number for the amount of fill you will be dumping.

Step #2 Bailer Diameter, The program will limit your selection of bailer O. D.'s that will fit through the Minimum I.D. you defined in the Tubing Tab.

The chart will show the volume per run for various lengths of bailer and calculate the number of runs necessary to complete the job.

The Total Gallons To Dump Bail is number of gallons needed to run the job. If you use pre-packaged cement kits that are designed for a 16.92 pounds per gallon slurry, the last two boxes will back calculate the amount of water and cement you will be dumping in the well.

Note: Most cement kits do not use a slurry of 16.92 pounds per gallon. While not exact, this will get you close.

Strip Gun Perf Debris Tab

Uncle Raymond's Tool Box Version 6

Burl's Data Eliminator Pipe Free Point Spinner Response Dog Leg Partial Pressure
 CBL Arrival Times Fluid Weight / PSI Sinker Bars Proppant Laden Fluid Down Hole Gas Rate
 Tubing Casing Annulus Bailers **Strip Gun Perf Debris**

Casing : 5.5", 15.5#, J55 is being used in calculations. MIN. I.D = 2.313

Swing Jet - 1-3/8" x 3-3/4"....STK-3750-4019J
 Swing Jet - 1-11/16" x 3-7/8"....STK-4250-4028J
 Swing Jet - 1-11/16" x 4-1/2"....STK-4250-4019J
 Swing Jet - 2-1/8" x 5-3/8"....STK-5000-4019J

Shogun II - 1-11/16".....STP-1687-301E/BE
Shogun NT - 1-11/16".....STP-1687-401NT
 Shogun II - 2-1/8".....STP-2125-301E/BE
 Shogun NT - 2-1/8".....STP-2125-401NT
 Shogun NT - 2-1/2".....STP-2500-401NT

Shogun Link - 1-11/16".....STP-1687-301E/BE
 Shogun Link - 1-11/16".....STP-1687-401NT
 Shogun Link - 2-1/8".....STP-2125-301E/BE
 Shogun Link - 2-1/8".....STP-2125-401NT

Number of Charges
 Select or Type
 122

Estimated Fill
 0.74 Ft.

* Use for rough estimation only. This data is no longer supplied by the manufactures.

Burl W. Wylie
 bwwhoutx@comcast.net

No allowance made for couplings

About End

This section will help you estimate the amount of fill you can expect when perforating with strip, or completely expendable guns.

Step #1 - Select the charges to be used. For our example well we have chosen the 1-11/16" Owens Shogun NT.

Step #2 - Select or type the number of charges you will use. We need to shoot 122 holes.

Estimated fill will be indicated in the last box. We will have approximately 3/4 foot of perforating debris in the 5.5" casing when done.

I almost did not include this in URTB. I only have old data for Owen's Swing Jet and Shogun Systems. We all know this data will not be exact. But I think you will find it to be an excellent tool for roughly estimating fill from perforating debris.

For example: If you are planning on setting a plug and perforating a new zone 10 feet above that plug. If the debris data indicates there could be 9 feet of fill, you might want to reconsider the plug depth.

CBL Arrival Times Tab

Casing : 5.5", 15.5#, J55 is being used in calculations.

Step #1
Enter Hole Size >
Pipe O. D.

Formation Type And Porosity - Step #2
 Anhydrite Dolomite Limestone Sandstone Unconsolidated

Porosity

Step #3 - Fluid Type Step #4 - Tool Size

Arrival Times For CBL Tool - μ sec

	Fluid	Casing	Cement	Formation
3 Foot	567.00	237.15	368.76	292.16
5 Foot	945.00	351.15	568.76	432.76
6 Foot	1,134.00	408.15	668.76	503.06

No allowance made for couplings

Burl W. Wylie
bwwhoutx@comcast.net

About End

This section will use the casing dimensions along with information you supply to calculate the sonic arrival times of fluid, casing, cement, and formation over 3', 5', and 6' spacing. There are two potential problems in this section that you may be warned about. If you have minimum I.D. that is too small to run a CBL, or if you have entered a hole size (bit) that is too small for the pipe, you will be warned and the program will not allow you to continue. You will be required to go back to the Casing Tab and select a different pipe size or enter a bigger hole (bit) size.

Step #1:

Enter a hole (bit) size that is larger than the pipe. On our example we have entered a hole size of 7 inches.

Step #2:

Select the type of formation and porosity for that zone from the corresponding combo box. If you select Anhydrite, there is no corresponding porosity combo box. We have chosen a sandstone with 10 percent porosity.

Step #3:

Select the type of fluid in the well bore. We have selected a medium weight saltwater

#4:

Select the CBL tool size. Only tools that are smaller than the Min. I.D. are listed. In this case, we've selected a 1-11/16" O.D. CBL tool.

Fluid Weight / PSI Tab

The screenshot shows the 'Fluid Weight / PSI' tab in 'Uncle Raymond's Tool Box Version 6'. The interface is organized into several sections:

- Menu Bar:** Contains tabs for Tubing, Casing, Annulus, Bailers, Strip Gun Perf Debris, Burl's Data Eliminator, Pipe Free Point, Spinner Response, Dog Leg, Partial Pressure, CBL Arrival Times, Fluid Weight / PSI (active), Sinkers Bars, Proppant Laden Fluid, and Down Hole Gas Rate.
- Step #1: Select Input Type.** A group box titled 'Input Measurement' contains four radio buttons:
 - Pounds Per Gallon
 - Specific Gravity g/cc
 - PSI / Ft
 - Pounds / CuFt
- Step #2: Enter Amount.** A text box contains '9.165' with the label 'Pounds / Gallon'. To its right, three text boxes show calculated values:
 - Specific Gravity: 1.099
 - PSI / Ft: 0.476
 - Pounds / CuFt: 68.554
 Dashed lines indicate the calculation flow from the input value to these three outputs.
- Step #3: Optional: Enter or select a fluid height if feet.** A dropdown menu shows '9000' with the label 'Fluid Height'. To its right, a text box shows '4,280.97' with the label 'Hydrostatic PSI'.
- Footer:** Includes a logo for 'wylie Curvite', contact information for 'Burl W. Wylie' (bwwhoutx@comcast.net), the text 'No allowance made for couplings', and 'About' and 'End' buttons.

This section of the program allows you to enter fluid weights in Pounds Per Gallon, Specific Gravity, PSI/foot, or Pounds/CuFt. It will then cross calculate the other values.

Step #1:

Select the category for the fluid measurement you wish to enter. PPG, SG, PSI/Ft, or Pounds/CuFt. In this case, we are using the default Pounds Per Gallon.

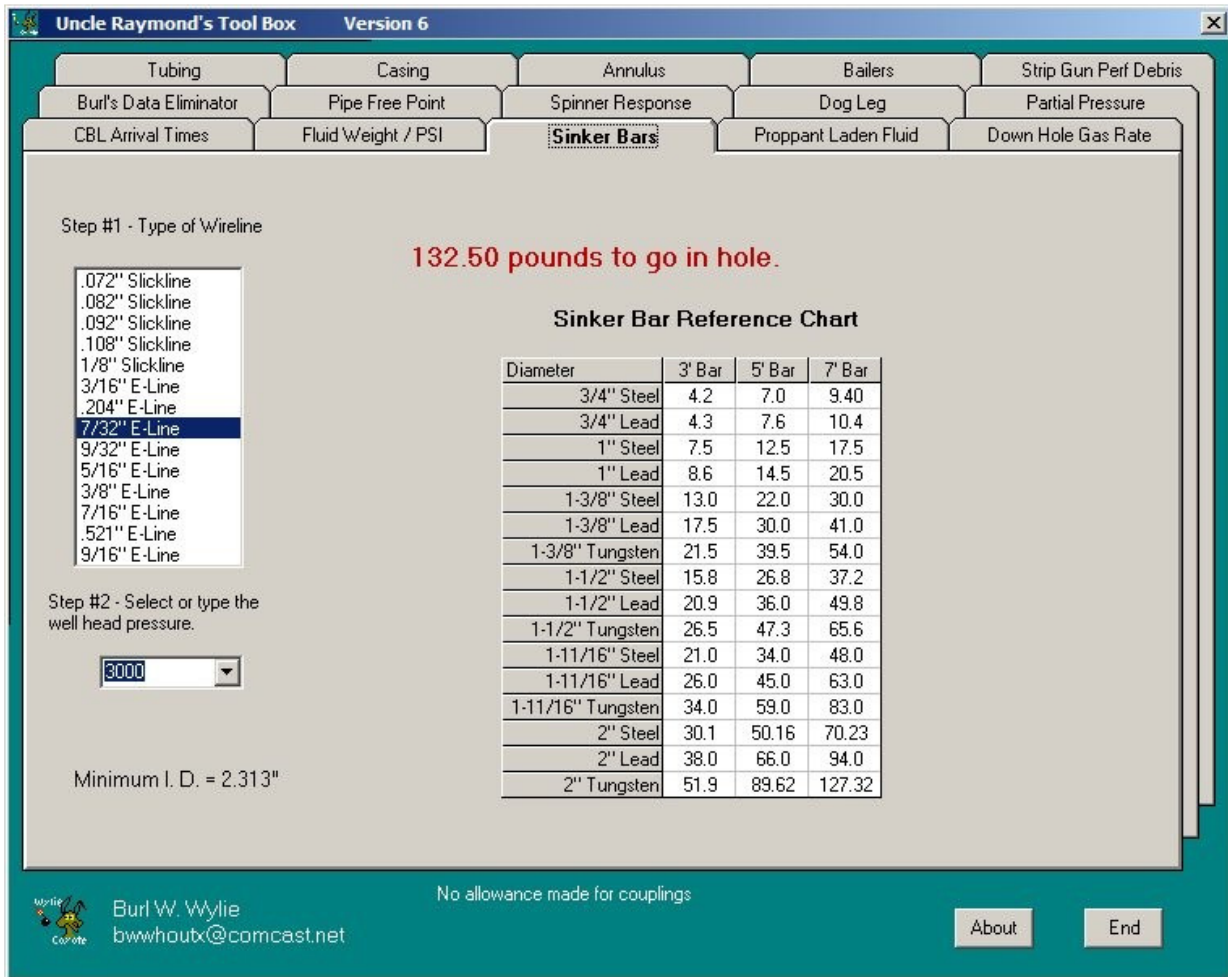
Step #2:

Enter a value into the text box. Let's see what 9.165 ppg saltwater would look like.

Step #3:

Select or enter a value for the height of the fluid column to calculate a hydrostatic pressure for a specific column of fluid. Our example well is 9000 feet and it would have a BHP of approximately 4281 psi.

Sinker Bars Tab



Uncle Raymond's Tool Box Version 6

Tubing Casing Annulus Bailers Strip Gun Perf Debris
 Burl's Data Eliminator Pipe Free Point Spinner Response Dog Leg Partial Pressure
 CBL Arrival Times Fluid Weight / PSI **Sinker Bars** Proppant Laden Fluid Down Hole Gas Rate

Step #1 - Type of Wireline

132.50 pounds to go in hole.

Sinker Bar Reference Chart

Diameter	3' Bar	5' Bar	7' Bar
3/4" Steel	4.2	7.0	9.40
3/4" Lead	4.3	7.6	10.4
1" Steel	7.5	12.5	17.5
1" Lead	8.6	14.5	20.5
1-3/8" Steel	13.0	22.0	30.0
1-3/8" Lead	17.5	30.0	41.0
1-3/8" Tungsten	21.5	39.5	54.0
1-1/2" Steel	15.8	26.8	37.2
1-1/2" Lead	20.9	36.0	49.8
1-1/2" Tungsten	26.5	47.3	65.6
1-11/16" Steel	21.0	34.0	48.0
1-11/16" Lead	26.0	45.0	63.0
1-11/16" Tungsten	34.0	59.0	83.0
2" Steel	30.1	50.16	70.23
2" Lead	38.0	66.0	94.0
2" Tungsten	51.9	89.62	127.32

Step #2 - Select or type the well head pressure.

3000

Minimum I. D. = 2.313"

No allowance made for couplings

Burl W. Wylie
 bwwhoutx@comcast.net

About End

This section will allow you to quickly calculate the weight needed to overcome the well head pressure and allow the logging equipment to be lowered out of the lubricator. Don't forget to calculate your highest expected pressure. **You may need more weight to safely come back out of the hole.**

Step #1:

Select the type of wireline being used. We're using 7/32" E-Line Step

#2:

Enter or select the well head pressure. Let's say we expect 3000 psi to be our maximum surface pressure.

We will need approximately 132.5 pounds of weight to safely work.

I've also included a reference chart of bar sizes and weights. While these values vary by company, they will be close enough for most your applications. There is also a Minimum I.D. reminder in the lower left hand corner of the tab.

Proppant Laden Fluid Tab

Step #1 - Select Proppant

Step #2 -
Enter base fluid density in pounds per gallon - PPG

Step #3 -
Select the amount of proppant in pounds proppant added (PPA) to slurry.

Proppant Specific Gravity	3.27
Proppant Bulk Density PPG	15.64
Solid Proppant Density - PPG	27.24
Total Gallons Sand & Fluid	1.37
Actual Proppant - PPG	7.31
Fluid In Slurry - PPG	6.22
Slurry Density - PPG	13.53

Trademarks listed are the property of Borden Chemical, Norton Alcoa, and Carbo Ceramics and should be treated as such.

No allowance made for couplings

Burl W. Wylie
bwwhoutx@comcast.net

About End

This section will help us calculate some characteristics of proppant laden fluid. First of all, let's try to get everyone on the same page. Even if it's the wrong page. While looking into the ways to calculate laden fluid densities, I received a lot of conflicting information. Especially with the term PPA (Pounds Proppant Added). It is my interpretation that this is **the amount of proppant added to each gallon**. Not the net sand per gallon after mixing. In my calculations, PPA is the sand added to each gallon, resulting in a volume of more than a gallon.

Whew! Glad that's over with.

Step #1:

Select the type of proppant to be added to the slurry.

Step #2:

Enter the weight per gallon of the base, slurry fluid.

Step #3:

Select the weight of proppant to be added to each gallon of slurry (PPA).

In our example above. We have selected CarboLite® as our proppant. The chart on the right indicates that proppant's specific gravity is 2.71. It's Bulk Density in ppg is 12.97 and its Solid Density (no air space) is 22.57 pounds per gallon.

In step 2 we entered 8.5 ppg for a near, fresh water base to the slurry.

In step 3 we selected 10 PPA to add 10 pounds of CarboProp® to every gallon of slurry. This results in a Total Volume of 1.37 gallons, Actual pounds per gallon of CarboProp® at 7.31, a fluid weight of 6.22 pounds per gallon, and a Slurry Density of 13.53 pounds per gallon.

Hint, if you want to get an idea of the ratio, or relationship of PPA to PPG Sand, just click up and down the list in step 3 to see how the slurry is changed.

Down Hole Gas Rate Tab

Uncle Raymond's Tool Box Version 6

Based On The Ideal Gas Law

Surface Rate MCF/Day	<input type="text" value="10000"/>
Surface Temperature 60° F Standard	<input type="text" value="60"/>
Surface Pressure 14.7 psi Standard	<input type="text" value="14.7"/>
Down Hole Temperature °F	<input type="text" value="225"/>
Down Hole Pressure psi	<input type="text" value="9850"/>
Down Hole Rate MCF/Day	19.66

This routine is based solely on the Ideal Gas Law. The results are not intended to be absolutely accurate. Use this routine to get a quick and dirty estimate of the volume occupied by gas production at down hole pressure and temperature. It will also estimate a down hole velocity of the compressed gas if you have selected a casing size on the Casing Tab.

Enter values in all the empty boxes and click the Run Button.

Down Hole Velocity At
100% Gas Rate
102.18 Ft/Min

No allowance made for couplings

Burl W. Wylie
bwwhoutx@comcast.net

This is based on the Ideal Gas Law and will give you a quick and dirty estimation of the down hole gas volume at pressure and temperature. It will also give you an estimated velocity if you have selected a casing size on the Casing Tab.

This is not intended to be definitive. There is no consideration given to gas composition, Z Factor, etc.... It's intended use is to get a quick and dirty estimate of the down hole conditions.

Step #1:

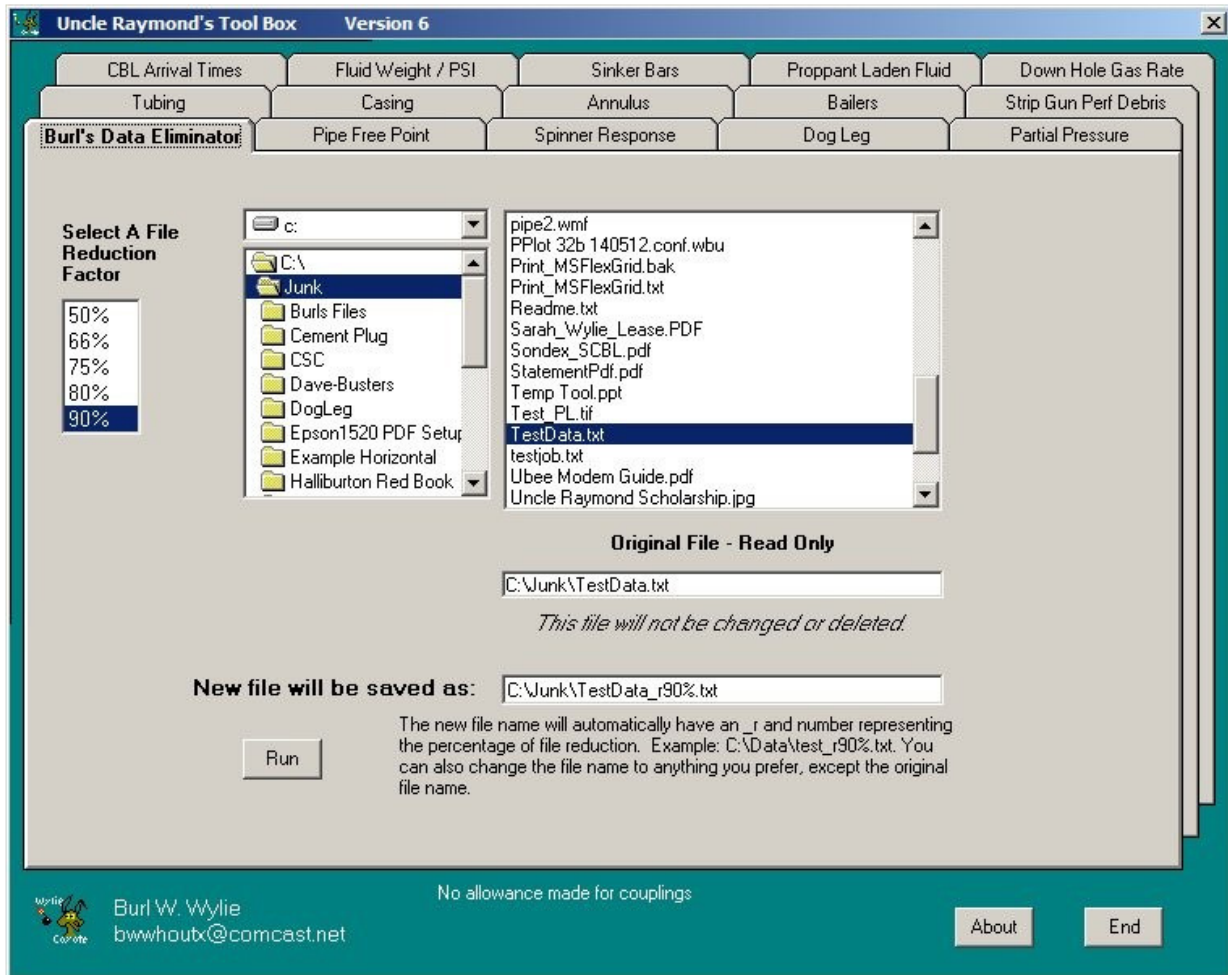
Fill in all the blank boxes with appropriate values.

Step #2:

Press the Run Button.

For our example, we have indicated that our surface rate is 10000 mcf/day (10MMcd/day), the down hole temperature is about 225 degrees Fahrenheit, and the bottom hole pressure is approximately 9850 psi. The 10,000,000 cubic feet at one atmosphere and 60 degrees Fahrenheit will only occupy approximately 19.66 mcf at down hole conditions. In addition, it will only have a velocity of approximately 102 feet per minute in the 5-1/2" casing.

Burl's Data Eliminator



This program that will reduce the size of any ASCII, or text, file. How many times has some someone presented you with a ridiculous amount of data in a file when a 1/10th as much would be sufficient?

Step #1:

Select the desired file reduction factor.

Step #2:

Navigate to the desired file using the drive, folder, and file selection boxes.

Step #3:

Click on the Run Button.

The program will open your original file on a "Read Only" basis. It will not change the contents of the original. The output file will have the original name with an "_r" followed by a number and "%".

Example: We've selected the file C:\Data\TestData.txt . The output file will be named C:\Data\TestData_r90%.txt and it will be reduced by 90 percent. You can change the output file name to anything you wish, **except the original file name.**

Pipe Free Point

Uncle Raymond's Tool Box Version 6

CBL Arrival Times Fluid Weight / PSI Sinker Bars Proppant Laden Fluid Down Hole Gas Rate
Tubing Casing Annulus Bailers Strip Gun Perf Debris
Burl's Data Eliminator **Pipe Free Point** Spinner Response Dog Leg Partial Pressure

Step 1 - Select Type of Pipe
 Pipe
 Drill Pipe
 Coil Tubing

Step 2 - Select Size of Pipe
2.875

Step 3 - Select Pipe Weight or CT Wall Thickness
6.5

Step 4 - Enter Pipe Stretch in Inches
30

Step 5 - Select, or enter, pull over pipe weight
35000

3,882.86'

Minimum Length of Free Pipe. No consideration has been given to pipe friction.
Oil Country Tubular Products Edition 54 - Youngs Modulus of Elasticity, page 67
National Tube Division - United States Steel Corporation Copyright 1954
Coil Tubing Information: Tenaris Coiled Tubes - <http://www.tenaris.com>

No allowance made for couplings

Burl W. Wylie
bwwhoutx@comcast.net

About End

This program that will estimate the minimum amount of free pipe in the wellbore.

Step #1:

Select the type of pipe (Pipe / Drill Pipe / Coil Tubing).

Step #2:

Select the size of the pipe.

Step #3:

Select the pipe weight or coil tubing wall thickness.

Step #4:

Enter the pipe stretch in inches.

Step #5:

Select, or enter, the pull applied in excess of the pipe weight.

Information used for this program was obtained from "Oil Country Tubular Products Edition 54", Youngs Modulus of Elasticity, page 67. National Tube Division - United States Steel Corporation Copyright 1954.

Spinner Response

Uncle Raymond's Tool Box Version 6

CBL Arrival Times Fluid Weight / PSI Sinker Bars Proppant Laden Fluid Down Hole Gas Rate
Tubing Casing Annulus Bailers Strip Gun Perf Debris
Burl's Data Eliminator Pipe Free Point **Spinner Response** Dog Leg Partial Pressure

Casing : 5.5", 15.5#, J55 is being used in calculations.

Spinner Magnets Spinner Resolution 0.125
Spinner Switches

Spinner Slope
Water Rate BPD
Velocity (ft/min) 23.34
100% Spinner Response RPS 1.17
Minimum Detectable Entry **85.68**

Spinner's Minimum Response

The "Water Rate BPD" is the trigger for this tab. If you make any changes to the pipe size, Spinner Magnets, Spinner Switches, or Spinner Slope, you must change or click on the Water Rate for the values to be recalculated.

Any entry, less than the Minimum Detectable Entry, will not be seen on the Spinner Log.

No allowance made for couplings

Burl W. Wylie
bwwhoutb@comcast.net

About End

This program that will calculate your spinner resolution and estimate the minimum, detectable entry for that spinner in water.

Step #1:

Select number of spinner magnets.

Step #2:

Select the number of spinner switches. The Spinner Resolution will be indicated

Step #3:

Select the Spinner Slope. 0.05 is the default and should not be changed unless you know what you are doing.

Step #4:

The water rate in BPD. The Velocity, 100 Percent Spinner Response, and Minimum Detectable Entry will be calculated. On this example, any fluid entries below 86 BPD will not be seen by the spinner.

Dog Leg

The screenshot shows the 'Dog Leg' tab in the software. The interface includes a diagram of a pipe in a well with a dog leg, and input fields for 'Tool O.D.' (3.125) and 'Degrees / 100'' (21.3). The output text states: 'Tools will drag if the length is => 18.09''. The software title is 'Uncle Raymond's Tool Box Version 6' and the author is 'Burl W. Wylie'.

Uncle Raymond's Tool Box Version 6

CBL Arrival Times Fluid Weight / PSI Sinker Bars Proppant Laden Fluid Down Hole Gas Rate
Tubing Casing Annulus Bailers Strip Gun Perf Debris
Burl's Data Eliminator Pipe Free Point Spinner Response **Dog Leg** Partial Pressure

Casing : 5.5", 15.5#, J55 is being used in calculations.
The Pipe I.D. is 4.95"

Tool O.D.

Degrees / 100'

Tools will drag if the length is => 18.09'.

No allowance made for couplings

Burl W. Wylie
bwwhoutx@comcast.net

About End

This program that will calculate the maximum length of a tool to pass through a dog leg in the well.

Step #1:

Enter the O.D. of the tool in inches. The Tool O.D. must be smaller than the Casing I.D.

Step #2:

Enter the degrees change per 100' at the dog leg. The program will calculate the length of tool that will drag at mid point. Your tool must be shorter than the indicated length.

Example:

We have entered a tool O.D. of 3.125" and a dog leg with 21.3 degrees per 100'. Any tools 18' or longer will likely not make it through the dog leg.

Partial Pressures

The screenshot shows a software window titled "Uncle Raymond's Tool Box Version 6". It features a menu bar with options: CBL Arrival Times, Fluid Weight / PSI, Sinker Bars, Proppant Laden Fluid, Down Hole Gas Rate, Tubing, Casing, Annulus, Bailers, Strip Gun Perf Debris, Burl's Data Eliminator, Pipe Free Point, Spinner Response, Dog Leg, and Partial Pressure. The "Partial Pressure" option is selected. The main area is divided into two columns: "Hydrogen Sulfide" and "Carbon Dioxide". Under "Hydrogen Sulfide", there is a text label "H2S ppm" followed by a text input field containing the value "65". Below this, a note states: "NACE specifies this concentration of H2S to be corrosive at, or above 769.23 psi." Under "Carbon Dioxide", there is a text label "CO2 %" followed by a text input field containing the value "2.1". Below this, a note states: "NACE specifies this concentration of CO2 to be corrosive at, or above 1,523.81 psi." A large red warning message is displayed in the center: "High Danger: H2S concentrations greater than 50 ppm CAN KILL YOU! You could expect severe respiratory tract irritation, acute conjunctivitis, shock, convulsions, coma, and possible death." At the bottom left, there is a logo for "Wylie Corvite" and contact information for "Burl W. Wylie" with email "bwwhoutx@comcast.net". At the bottom center, it says "No allowance made for couplings". At the bottom right, there are "About" and "End" buttons.

This program that will calculate the pressure at which H₂S and CO₂ become corrosive according to NACE.

Step #1:

Enter the H₂S concentration in ppm or CO₂ concentration in percentage.

Results:

The pressure at which the substance is corrosive is indicated. In our example, 65 ppm H₂S becomes corrosive at 770 psi. 2.1 percent CO₂ becomes corrosive at about 1,524 psi.

WARNING:

H₂S can KILL YOU. You don't "TRY" anything with high pressure, thermonuclear weapons, or hydrogen sulfide. Analyze and plan to mitigate the dangers. There are **NO SECOND CHANCES!**