WATER INFORMATION DAY – EYRE PENINSULA - MARCH, 2020..

1. When contemplating the installation of a water reticulation scheme, carefully consider whether there is **ANY** possibility or likelihood this may be extended at any time in the future, and allow for this extension in all your planning deliberations.

2. Carefully and very accurately measure the static rise (or fall) in the ground level over which this scheme has to be installed, as well as the total distances involved.

3. Quantify the amount of water you will require daily. Always use summer time maximum water requirements as the basis for your calculations.

4. From these known factors, calculate the size(s) of pipe you will need to install. If you are not sure, always seek competent help in this regard.

5. Do not skimp on pipe size. Do it once and do it properly.
   (I always contend the reticulation of water and the running of electric power supply are similar in their requirements. If you do it right and follow the rules right from inception, you will always get the results you are seeking.)

6. As stated in 5 above, don't skimp on pipe size. It is a fact that if you double the size of your pipe, under the same set of circumstance, you will obtain nearly 4 times the quantity of water. Mathematically, this is absolutely correct: in actual practice, it is not quite, due to the fact that frictional losses within the pipe work need to be taken into account.
   And **never, never use ¾" piping (or its equivalent size in metric pipe) as a main feed or trunk line**. It has absolutely hopeless flow capabilities.

7. Most rural water reticulation schemes utilise the use of HDPE – High Density Polyethylene Piping – most commonly now referred as "Poly Pipe".
   Over the years, this product has become increasingly better, both in quality and performance.

   The following are a few useful points for you to consider with the use and installation of your Polyethylene Pipe:

   a. **Always** choose a pipe manufacturer who uses virgin materials in their entire manufacturing process. Virtually all reputable manufacturers of Class 12.5 and Class 16 Pipes use entirely virgin materials.

      However, most manufacturers of Class 6 and Class 8 (Rural Grade Polythene Pipe) now utilise a percentage of recycled material within this process, and this may tend to limit the effective life of your pipe somewhat.

      Always bury your piping. There are many good reasons for doing this, but

These also act as a 'buffer' supply in the event of pumping equipment or mains supply failure.

11. Plan and implement any water scheme to the very best of your ability, and it will always work for you.

12. Always seek competent advice in all phases of any system planning. Our advices we always consider, are priceless. That is we do not charge for this and we are only too pleased to assist wherever we can at any time.

13. And I am sure that other Companies within this industry operate similarly.

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THE PRINCIPLES OF PUMPING:

In selecting a pump for any water reticulation requirement you may have, there are three basic factors you must consider which will enable you to purchase a pump unit which will meet and deliver to your requirements and expectations.

Firstly, there is the **CAPACITY** required of the pump. It is quite surprising really as to how few people have any realistic perception of what volume or capacity of water they need.

So a realistic determination as to the quantity of water required should be set down before any further calculations are proceeded with.

Having decided upon the capacity, you then need to accurately determine the **STATIC HEAD** of your proposed system. which is the vertical height from the water supply point to the highest point of your delivery pipe line.

Static Head must be considered in two parts viz, **Suction Head** and **Delivery Head.**

The static Suction Head is the vertical height from the lowest point of your water supply level to your proposed pump site.

Static Head is of course, the vertical height from the pump site to the highest point of the delivery pipe.

Taking Static Suction Head firstly, this is the vertical height the pump has to lift or suck water from the supply. Pumps of almost any persuasion are designed to push water, and this they do very efficiently. On the other hand, pumps do have a varying ability to suck water as well. To understand this and to see why, it is necessary to have some knowledge as to how a pump works.

The spinning impellor (or rotor) within the pump body discharges water already in the pump housing, thereby reducing the pressure not only in the housing, but also in the suction pipe between the pump and the water supply.

The atmospheric pressure (which in most places averages around 1 Bar = 100Kpa = 14.7 psi), is constantly forcing down on the water and as the pressure in the suction pipe is reduced, the atmospheric pressure will force water up the suction pipe.

The majority of pumps can reduce the pressure in the suction pipe to enable them to operate quite effectively on a suction lift within the 3.5 to 5.5 metre range. (Certain models of pumps can operate to a suction lift of up to 8 metres).

We cannot overemphasise pumps operate far more efficiently in pushing water, and as their suction capability is limited, the pump unit should be sited as close to the water supply as is practically possible, thereby incurring only a minimum of suction lift.

(b). The average of the water pressure available.

So calculate the total delivery pipe distance: the Static Delivery Height of this system: the quantity of water required at the furthest delivery point, plus any Demand Pressure requirement, and it is not a difficult equation to calculate the appropriate size and type of piping required to effectively and efficiently supply your water requirement.

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Should you be requiring further information, please feel free to contact Warren Dickie on 0427 828235 (M).