

**IDEA4WATER Inc.**

## **Site Survey Report**

IDEA4WATER Inc.  
P.O. Box 748  
Clark Fork, ID 83811  
(208) 290-8811  
[info@idea4water.com](mailto:info@idea4water.com)

# Results

## **Introduction**

IDEA4WATER Inc. was contracted by Crystal Bradeen to perform a site survey at 1381 Highway 25 S, Kettle Falls, WA 99141. (Township 36N, Range 37, Section )

## **Purpose**

The objective of the investigation was to identify subsurface fractures that could contain underground water. The investigation consisted of an EMS and/or VLF survey. The investigation was successful in identifying a number of geophysical anomalies thought to be useful in finding water. The survey was conducted on September 31, 2022.

## **Water Survey**

It is a well known fact that fresh water often sits in fracture zones in rock structures. Finding these fractures are the key to obtaining positive results when drilling for water. Finding the best place to drill can radically reduce the costs of drilling.

Geophysical surveying methods were developed in the 1940s, 1950s and 1960s. The methods used since this time have become more sophisticated and with the evolution of digital technologies, geophysicists have had a chance to obtain and analyze information obtained and develop more accurate and meaningful results.

The technologies used in this survey are known for finding useful quantities of underground water that may be trapped in rock fractures and cavities. This enables us to be able to determine the best site for drilling a well. By utilizing the magnetic components of the electromagnetic field generated by VLF (very low frequency) transmitters, it is possible to locate anomalies which provide a view of what structures exist underground. This is done by comparing electrical resistances of structures which are created by using the low frequency waves that are sent out by military radio transmitters around the world.

## **Survey Design**

The EMS survey was conducted first and numerous potential water flows were discovered. The VLF survey area was then conducted. We conducted numerous runs along the flows to be certain that both technologies gave us information showing that we had water flows at those locations.

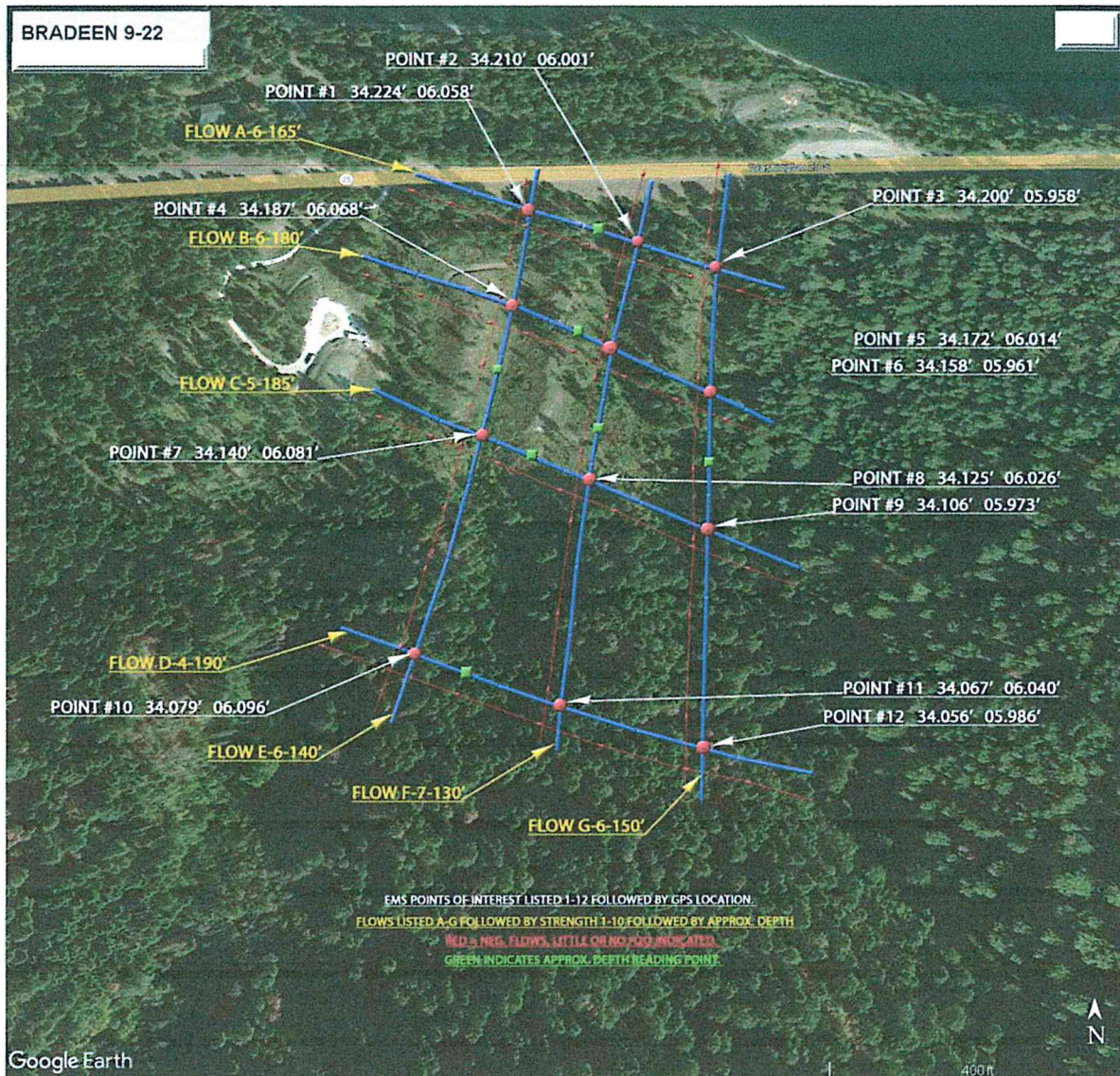
## **Results**

The EMS results are listed below. The blue flow lines indicate good signals which could hold the potential for water. The red flows indicate very little likelihood of containing significant water. The blue crossing points of the lines were of extreme interest as they are most likely to contain the largest volumes of water.

The VLF survey was conducted to pinpoint the location of the crossing points and to verify that water is being indicated by this technology also. The frequency used was 24.7 kHz. The profiles were run at 0/70 degrees.

The EMS and VLF were in total agreement and the 3 points determined to be the most likely to produce the best water were at GPS locations 34.222/06.000, 34.220/06.032, and 34.186/04.014. We anticipate finding water at these locations at 225 feet\* with a maximum drilling depth at each of these points of about 375 feet\*. All 3 locations were marked with 4' wooden stake.





### Interpretations

The EMS and VLF survey was successful in mapping several anomalies. While surveys can give information that can be somewhat ambiguous, there are a number of anomalies thought to be associated with underground water. The confidence in the results of the water prospecting survey are average.

### Drilling Recommendations

We recommend drilling at GPS locations 34.222/06.000, 34.220/06.032, and 34.186/04.014 to a depth of 225 feet\* with a maximum drilling depth of 375 feet\*. If adequate water is not obtained, we recommend Hydro fracturing the well. We believe that this will give the best volume of water for the money spent.

These results are respectfully submitted this 15th day of October, 2022.

Jesse Bopp, President

\* In the event that there is in excess of 50 feet of clay, this depth will increase by 150 feet.

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