



# CHILD RESCUE FROM BORE WELL AT AGRICULTURAL FIELD

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**ABSTRACT**— India being an agricultural land needs lot of water and rain water is not sufficient because of this they dig bore wells and when they don't find water they just keep the hole open because of this there are nearly 100's of cases of child falling into the bore wells every year. Though the government has made it compulsory to cover the hole with lid or a cap there are people who leave it open and go. The bore well holes can be just covered with the lid, but sometimes due to children throwing stones on it, the lid might brake and again it will be kept open without closing. This project mainly provides three easy and quick ways of rescuing a child :first one is by the use of Buzzer, the people near by the open bore well will know that the child has been fallen where before, it would take time to realize that the lost child could have fallen into the bore well secondly ,once the child being sensed by the sensor the message along with GPS location will be sent to the rescue team, police station ,land owner and the hospital where within less time the child can be rescued with not much of health issues. The last one is the use of the circular holder which protects the child from falling deeper into the bore well .Hence it becomes easy to rescue the child from few ft than nearly 800-1000 ft

**INDEX TERMS-** Child rescue from borewell at agricultural fields, Buzzer, Sensor,GSM,&GPS.

## 1.INTRODUCTION

A **bore well** is a narrow shaft bored in the ground, either vertically or horizontally. A borehole may be constructed for many different purposes, including the extraction of water, other liquids (such as petroleum) or gases (such as natural gas), as part of a geotechnical investigation, environmental site assessment, mineral exploration, temperature measurement, as a pilot hole for installing piers or underground utilities, for geothermal installations, or for underground storage of unwanted substances, e.g. in carbon capture and storage. India being an agricultural country, our farmers depends mainly on groundwater for irrigation. With increasing population, lesser land holdings and urbanization, deeper bore



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wells are dug for groundwater abstraction. A dry bore well during drilling can be water bearing after some time. You may check whether this has happened to your dry bore well. Any groundwater occurring in water-bearing fractures beyond 1000 feet will not be able to provide sustainable supply as nature takes very long time to fill back the empty fractures once again. It is therefore not advisable to go deeper in the same bore well. Recently, many accident reports of children (and even adults) falling in open bore-wells have appeared in the print and the electronic media. Very few of the victims have been saved in such accidents. In some of these cases the dead body of the subject could not be collected easily. Even if rescued late, most victims were reportedly injured. The rescue of these trapped children in an uncovered bore-well is not only difficult but also risky. A small delay in the rescue can lost the child his or her life. To overcome such problems of these rescue operations, we have an alternative (feasible) proposal. The main aim of this project is to give an innovative concept to handle the bore well rescue operations by developing a rescue system that is fast, economical, user-friendly and safe, which not only rescues a child but also prevents the child falling deeper into the bore well. This method includes INFRA-RED signals as the main feature to know that the child has been trapped and as soon as the buzzer makes the sound the people nearby are made alert of child being fallen in to the bore well and second most important element is the circular holder that gives high protection from falling deeper into the bore well. With the help of ARDUINO, GSM and GPS modem we can intimate the rescue system as soon as the child is being sensed and can be rescued within less time.

## **2.LITERATURE REVIEW**

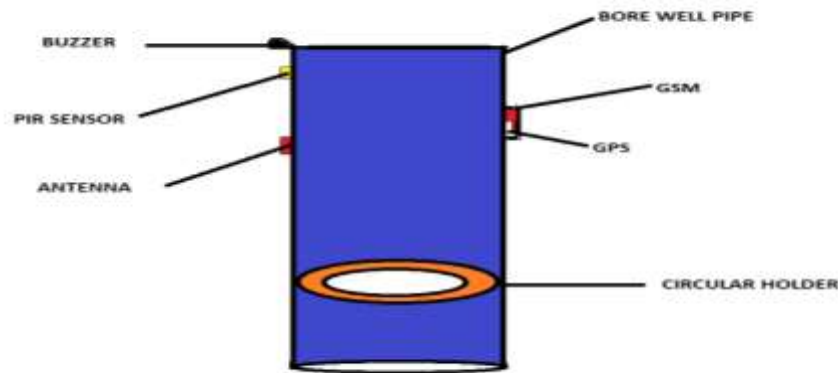
Due to drought and depletion of underground water more bore wells are drilled on the surface of the earth. Due to water scarcity, more bore wells are being sunk. In many areas, the bore wells are drilled and leaved as it as open without any proper covering. This abandoned bore wells have become death pits and started taking many innocent lives especially small children. Now a day's falling of children in bore wells are increasing due to the carelessness and playful activities of the children. The holes dugged for the bore wells are deep around 700 feet. In these cases, the rescue of children from such deepest bore wells is quite challenging. Many times, the rescue system for children from bore wells may risk the child life. Children often fall down in the bore well which have been left uncovered and get trapped. The rescue of these trapped children is not only difficult but also risky. A small delay in the rescue can cost the child his or her life. To lift the child out the narrow confines of the bore wells is also not very easy. The child who has suffered the trauma of the fall and is confined to a small area where, with a passage of time the supply of oxygen is also reduces. it analyzed that, in India for past few days, there have been several accidents of children falling into abandoned bore wells which is left uncovered and get trapped. Abandoned bore wells seems to be death pits for children. These bore wells in turn have started to take many innocent lives. In these cases, normal operation of child rescue is done by using big machines with large manpower involvement.

The rescue process to save the child from bore well is a very long and complicated process. It is time taking process and also risky in various ways. So, the aim of the project is to prevent the children from falling in to the bore wells. Our Paper implies a new design which has a buzzer kept at top of bore well hole which alerts the near by people saying that a child has been fallen into the bore well. According to the survey done in Karnataka there are approximately 3000 open bore wells and Most recent reports indicate that accidental deaths of children up to 14years due to fall in pits and manholes have gone up from 175 in 2010, to 192 in 2011 and 194 in 2012. In October 19<sup>th</sup> 2016 a 6 year old girl could not be

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saved and in 2019 a boy was rescued from 70-ft bore well in Madhya Pradesh. Hence this project is introduced to rescue the child from open bore well within less time.

### 3. BLOCK DIAGRAM



**Fig .1 Block Diagram**

The block diagram shows how the different components are being placed on the bore well pipe. The buzzer is at the mouth of the bore well pipe which is connected to the PIR sensor, this will be helpful which alerts the nearby people by beeping the sound which indicates a caution of something has happened. The PIR sensor which is placed few inches below the buzzer senses the motion of the object as soon as the object is being sensed the buzzer gets on and the GSM and GPS system gets activated. For GSM and GPS to work the code will be fed into the arduino. Once the GSM and GPS are initialized they send the emergency message and location with the help of antenna. As soon as the child is detected the GSM and GPS gets activated and the message through the GSM and the location through the GPS is being shared to the rescue team through the satellite connection. Mean while the circular Holder which is placed below few feet of the bore well pipe holds the child from falling deeper into the bore well.

The below mention diagram gives the working flow of the system. Initially when the sensor detects any motion in the system it immediately respond to it by initializing the GSM and GPS with the help of arduino. The function of the sensor it depends of the IR signal if PIR is one then LED 1 will be ON which activates the Buzzer. Once the Buzzer gets ON it alerts the surrounding area. As GSM and GPS will be initialized at the beginning once the PIR is high it responds to it by sending messages through GSM and sharing the current location through GPS else no action will be taken. If IR cap is present than LED 2 will glow otherwise it will be off this is connected to the relay for inserting the motor inside the bore well. For GSM and GPS to work particular number will be fed in the code. Here for coding C language has been used which is dumped into the arduino.

### 3.1 FLOW DIAGRAM

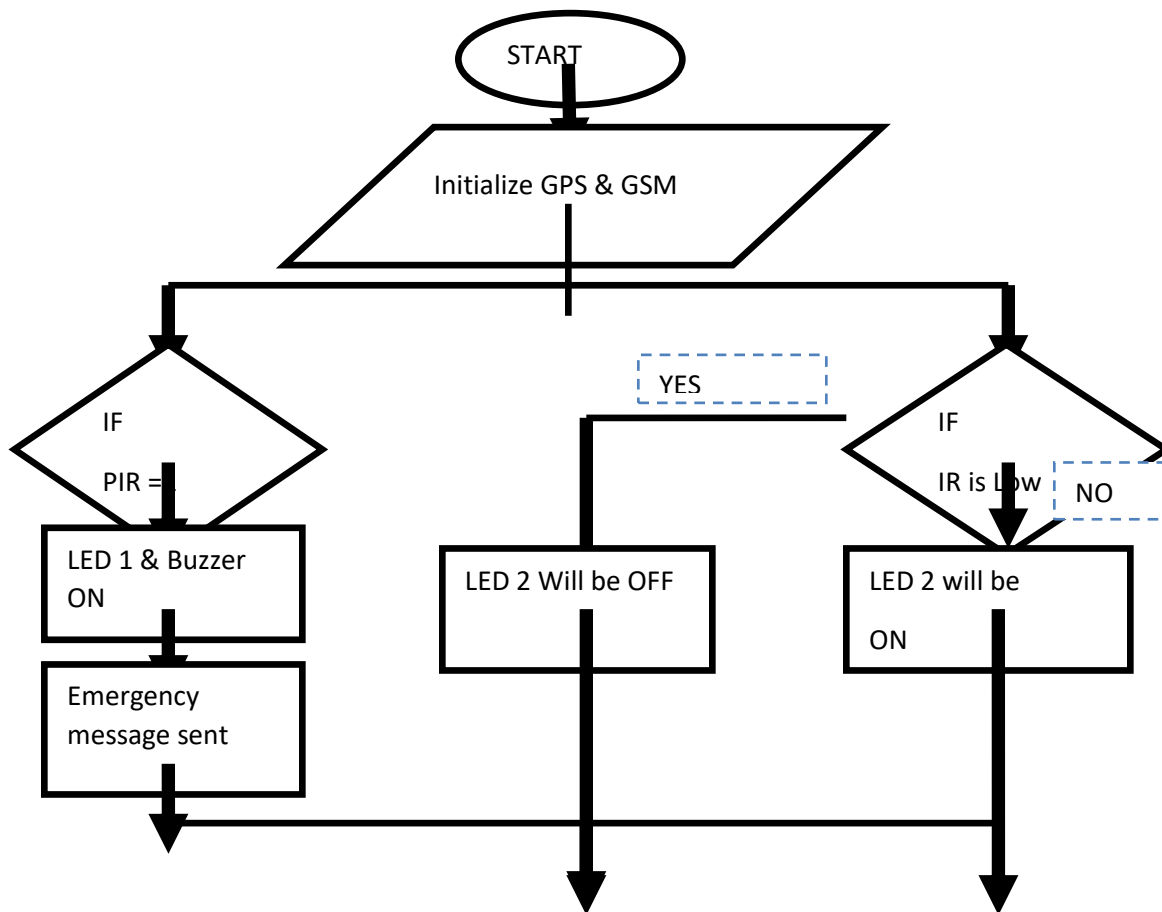
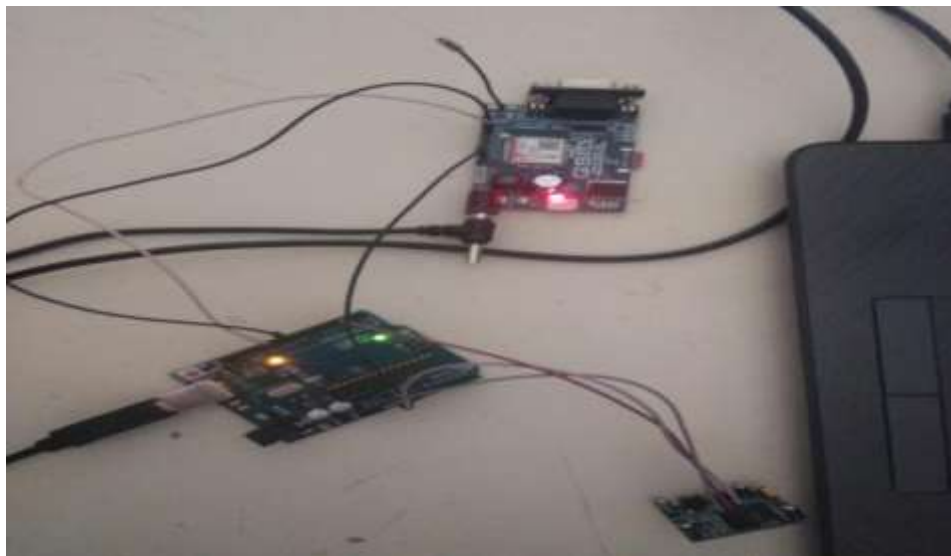


Fig. .2 Flow Chart

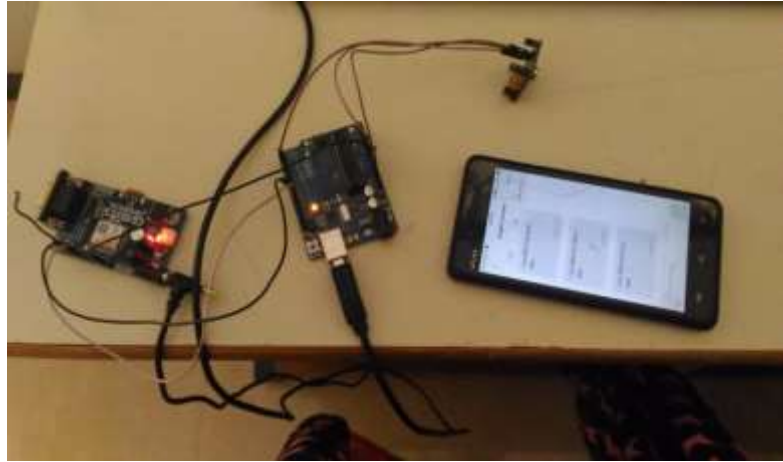
## RESULTS



**Interfacing Arduino with sensor and buzzer**



**Interfacing Arduino with GSM and Sensor**



### **Interfacing of Arduino with GSM and GPS**

#### **CONCLUSION**

Human life is precious. Our bore well child rescue system is a significant attempt to save the life of the victim of bore well accidents. Besides this the unique Capability of the system is informing the rescue system very soon and holding the child from falling deeper. With this project we would like to conclude that this is the one of the smartest way to rescue the child within less time.

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