

CHE INC.



CHRISTOHOUSTON ENERGY INC.

Watchdog System Overview

Watchdog, is designed to help energy companies monitor important status and performance parameters related to their remote pipeline operations without leaving their office. Watchdog has three primary functions - /

1. Provide pipe/soil potentials on either a weekly or monthly basis.
2. Monitor pipeline travelers to GPS coordinates and atomic clock time.
3. Provide alarms in the event that a pipe becomes damaged by digging, drilling, illegal tapping or terrorism.

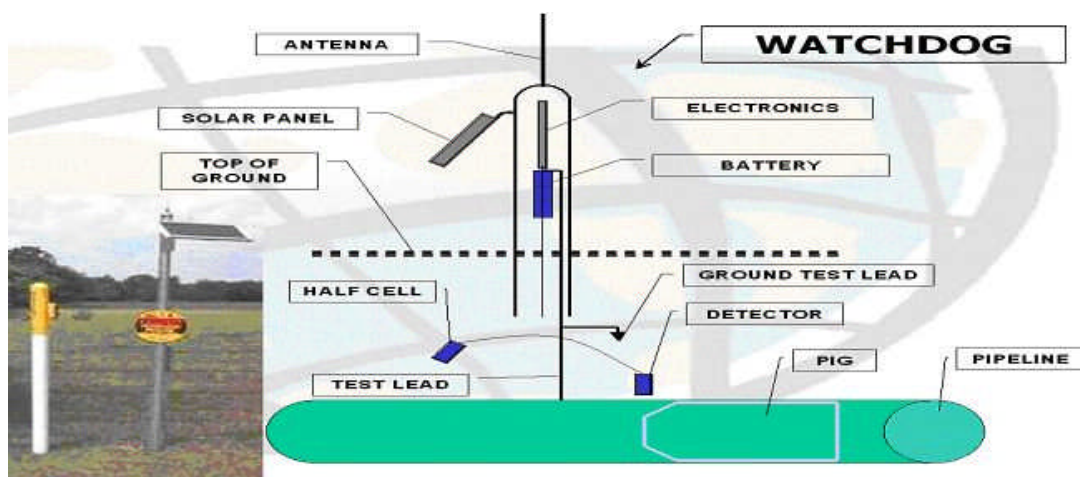
By using Watchdog to obtain this important information, energy companies can save substantial revenues by increasing efficiency, while improving the safety of their valuable assets.

Watchdog System:

The unit's communication may be carried out using low Earth Orbit Satellite System, CDPD, Radio or GSM so linking the field units to pipeline control centers.

“Watchdog” @ The Intelligent Pipeline Marker

- Transmit by Low Earth Orbit Satellite network the passage of a pig. Equipped with a magnetic circuit or a transmitter device.
- Transmit weekly, monthly reports of pipe/soil potentials or by command as required.
- Provide alarm in the event that the pipe is damaged through third party digging or terrorist attacks. The “Watchdog” unit includes whip antenna, rechargeable battery pack, solar charging panel and ST software package –Back Office.



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ORBCOMM is a satellite service provider offering high value, two way data and messaging communications. Since 1995, with the launch of two low-Earth orbit (LEO) satellites, ORBCOMM has processed over one million messages providing information on sensor monitoring, environmental conditions and two-way data communications on land and sea. Now fully operational since November 1998, with a constellation of 28 satellites..

The ORBCOMM LEO satellites, orbiting at approximately 500 miles above the earth to provide two-way global communications available to exploration, production and pipeline companies. Orbcmm now has a constellation of 28 satellites in low-Earth orbit and 14 gateway earth stations installed or under construction on five continents.

ORBCOMM is now able to provide fixed-site monitoring, mobile asset tracking and two-way messaging/wireless e-mail services on a global scale.

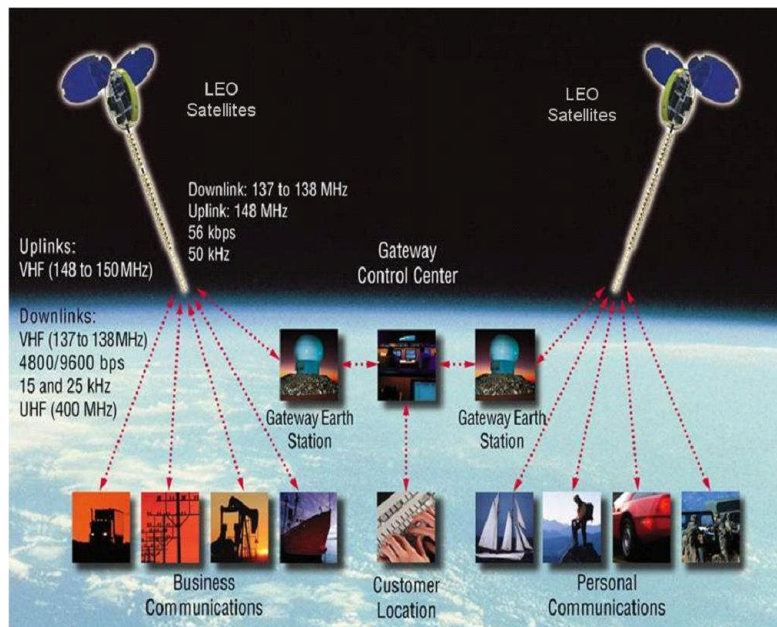
Global messaging

By using either a GSC 100 or a laptop with a satellite communicator connected to a serial port, E-mail messages (less than 1000 characters) can be sent to and received from anywhere in the world.

Data Communications

Using any of the Orbcmm communicators and an RTU data may be collected and sent through the Orbcmm network to anywhere in the world. Reporting can be on exception, a timed basis, by request or a combination

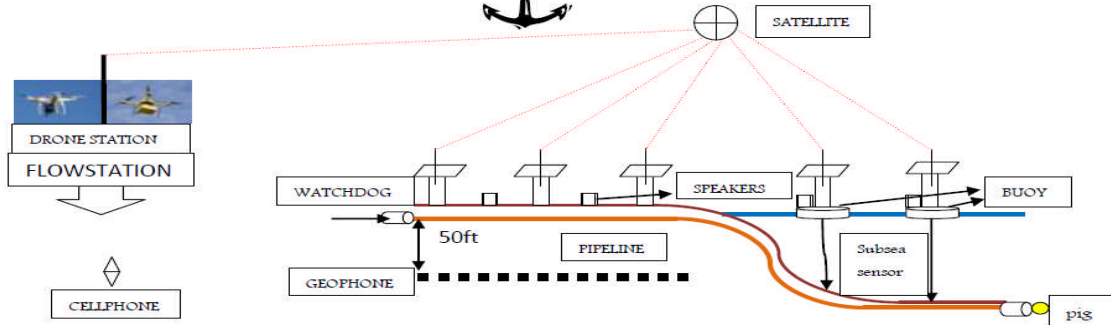
Provides global, remote, economical monitoring of pipelines by acquiring and transmitting data necessary for operations and safety of pipelines.



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"WATCHDOG" SYSTEM

Capable of

- Maintenance
- Security
- Surveillance and monitoring
- HSE

 CHRISTOHOUSTON ENERGY LIMITED 30 BOURDILLON ROAD IKOYI LAGOS 08163927361 www.choustonenergy.com		"WATCHDOG" PIPELINE MONITORING SCHEMAIC	
DATE:	08092015	DWG NO	XXX-XX0-1
		Rev	1.0
Scale	DRAWN	SHEET 1	
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WATCHDOG GENERAL SCHEMATIC.