



Remote Oil Spill Detection & Monitoring Systems



InterOcean systems, inc.

Sensors, Systems, Solutions!!!

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**Oil Spill
Monitor
&
Alarm
System**

- **Detects Spills in Real Time
Providing Protection 24-7-365**
- **Accelerates Response Time
Preventing Costly Disasters**
- **Ideal Environmental Protection,
Safety & Compliance Tool**
- **Reliable Cost Effective Solution**
- **Insurance Against Disasters!**



Oil Spill Monitoring Station



- **Remote Oil Spill Monitor & Alarm**
- **Highly Sensitive Oil Sheen Detection**
- **Non Contact Sensor Optical - Above Water**
- **Fully Automated Integral, Self Contained Sensor, Power & Telemetry**
- **Maintenance Free**



Installation Example



Slick Sleuth™ Remote Oil Spill Monitoring Station

Radio Telemetry

- **Un-licensed Spread Spectrum**
- **or Customer Preferred**

Self Contained Solar Power

- **w/Internal Rechargeable Batteries**

Universal Mounting Bracket

- **Install on any Existing Structure**
- **(mounted to pier face in this photo)**

Optical Sensor

- **10 min. Automated Sampling Interval**
- **8° Conical Beam**
- **Highly Sensitive Sheen Detection**
- **Adjustable Detection Threshold**



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Installation Example



Slick Sleuth Oil Spill Detection Sensor

- **Downward Looking Above Water Sensor**
- **NO Fouling!**
 - Near-Zero Maintenance
 - Easy to Install & Operate
- **Reliable & Accurate Sensor**
 - Using Proven Method of Fluorescence Detection
 - 1 Micron Detection Sensitivity
- **All Weather, Light & Water Surface Conditions**

**Spill Sensor Mounted Independently on Piling (Near Fuel Pier)
Power and Communication supplied from Second Enclosure Installed Nearby**



Installation Example



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Spill Sensor Mounted at Oil Refinery.

Monitors/Controls Effluent Spillway & Oily Water Separator.

4-20mA Output. Collocated w/ 24 VDC solar Rechargeable Power supply.



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Applications

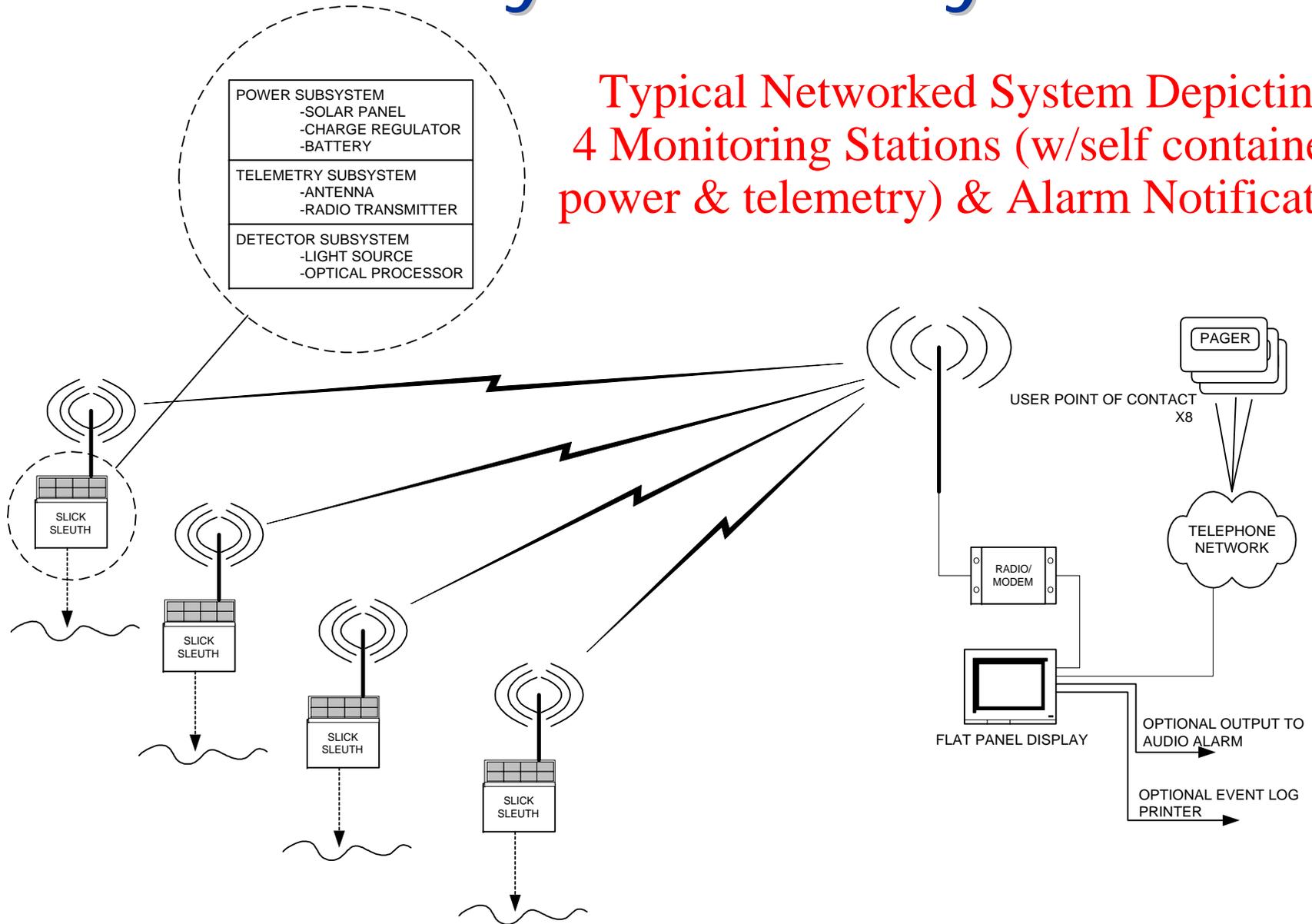
- Offshore Buoys & Rigs
- Fuel Storage & Transfer
- Refineries & Industrial
- Power Stations
- Stormwater Channels
- Outfalls & Spillways
- Cooling Water Intakes
- Retention Ponds
- Ports & Harbors
- Marinas & Basins
- Lakes & Freshwater
- Environmental Areas



Oil Spill Monitoring System Array



Typical Networked System Depicting 4 Monitoring Stations (w/self contained power & telemetry) & Alarm Notification





Slick Sleuth™



Wireless Data Communication

SLICK SLEUTH MONITOR
Setup Communications InterOcean

CORONADO

HARBOUR FRONT

POINT LOMA

Imperial Beach

UNUSED

UNUSED

Base Station

**900MHz, 2.4 GHz, or 5.8 GHz
Bi-Directional Communications using
Unlicensed Spread Spectrum Radios**

**Other telemetry methods include Cellular
(i.e. GSM) or Satellite (i.e. Iridium)**

Hardwire also an option where available



Slick Sleuth™

Oil Spill Software

-Monitors -Detects -Alarms



SLICK SLEUTH MONITOR
Setup Communications InterOcean

CORONADO
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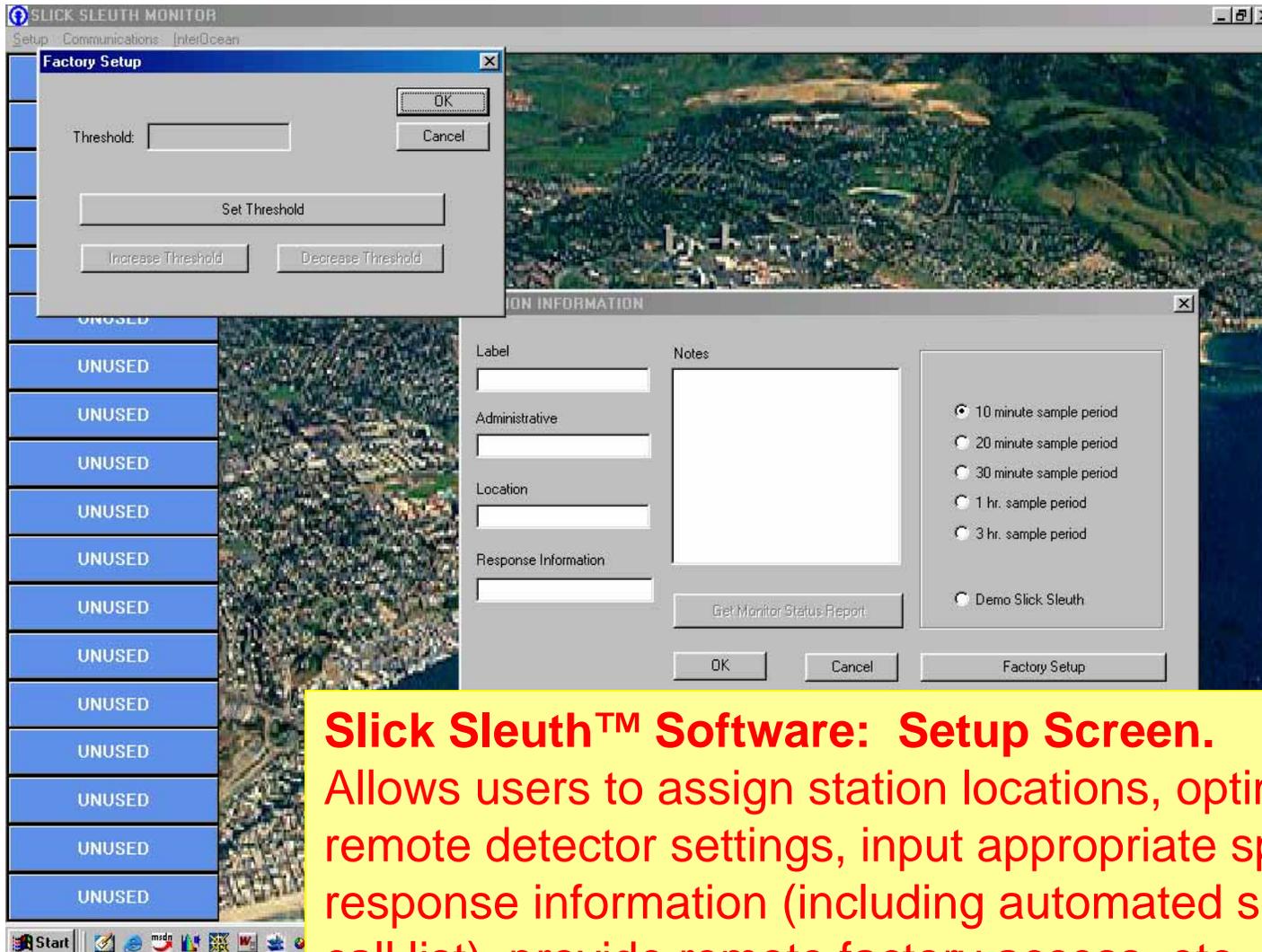
Screen Capture of Slick Sleuth™ Software.
Easy to Use, Point & Click, Graphic User Interface. Used for; Display, Outputs, Alarm, Data Archive, Centralized Response Information, and Network/Sensor System Control & Diagnostics.



Slick Sleuth™

Oil Spill Software

-Monitors -Detects -Alarms



Slick Sleuth™ Software: Setup Screen.
Allows users to assign station locations, optimize remote detector settings, input appropriate spill response information (including automated spill alert call list), provide remote factory access, etc.



Slick Sleuth™

Oil Spill Software

-Monitors -Detects -Alarms



The screenshot displays the Slick Sleuth Monitor software interface. On the left, a vertical sidebar lists monitoring stations: CORONADO (green), HARBOUR FRONT (green), POINT LOMA (red), Imperial Beach (green), and two UNUSED stations (blue). The main area shows an aerial map of San Francisco Bay with four sensor locations marked by colored squares: a red square at Point Loma, and three green squares at Coronado, Harbour Front, and Imperial Beach. An inset table in the bottom right provides detailed real-time data for each station.

Station Number	Station Location	Position Lat/Long	Detection Status	Today's Date	Time of Sampling	Next Sched Sampling	Actual Reading	Factory Threshhold	Baseline Setting	ComLink Status	Sensor Status	Flash Level	Power Status	Station Voltage
1	Coronado	117° 13' 10" 32° 42' 46"	ok	6-May-03	15:20:00	15:30:00	243	1,000	226	ok	ok	100%	ok	12.18v
2	Harbor Front	117° 10' 20" 32° 43' 00"	ok	6-May-03	15:20:02	15:30:02	360	1,000	334	ok	ok	100%	ok	13.19v
3	Pt Loma	117° 14' 25" 32° 41' 41"	DETECTION	6-May-03	15:20:04	15:30:04	15,662	1,000	228	ok	ok	100%	ok	12.90v
4	Imperial Beach	117° 07' 33" 32° 36' 28"	ok	6-May-03	15:20:06	15:30:06	408	1,000	403	ok	ok	100%	ok	13.15v

Slick Sleuth™ Software Monitoring Screen: Showing an Oil Spill Detection (graphically pinpointed in red). The Inset Table Automatically Displays Detailed Real Time Information for Each Remote Station.



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Open	Unused													
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Slick Sleuth™ Software Monitoring Grid:

Available to users as an overlay 'window' (see inset previous slide), the monitoring grid provides a snapshot of all monitoring stations in the network. By clicking on any particular station number, the user may instantly pull up emergency response information, as well as modify setup parameters, view station history, etc.



Slick Sleuth™

Oil Spill Software

-Monitors -Detects -Alarms



Slick Sleuth™ Software Screen Capture:
Example for Oil Barge Spill Monitoring Project.



Integrated Systems



Slick Sleuth™ is Designed for Seamless Integration

with...

- Environmental / METOC Monitoring Systems
- Docking Systems
- Vessel Traffic Systems
- Port Security Systems
- Facility Control & Actuation (SCADA) Systems
- Pipeline or Process Fluid Monitoring Systems





Integrated Systems



MultiParameter Monitoring Systems

User Specified Sensors, including::

- **Oil Spill Detection & Alarm**
- **Mooring Load Monitor**
- **Current Speed & Direction**
- **Directional Wave & Tide**
- **Wind & Atmospheric Conditions**
- **Air & Sea Temperature**
- **Conductivity, Salinity, Turbidity**
- **Water Quality, Trace Metals**
- **Video, and Many More**





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