

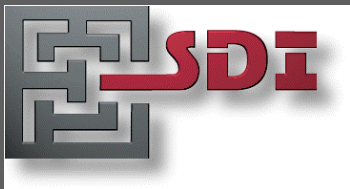
Rapid Screening Test Methods Characteristics & Limitations



March 12, 2002

Strategic Diagnostics, Inc.

**Paul R. Jackson
pjackson@sdix.com
410-569-5641**



www.sdix.com

**Rapid
Screening Test
Methods**

**Characteristics
& Limitations**

**Paul R. Jackson
pjackson@sdix.com
410-569-5641**



www.sdix.com

Objectives:

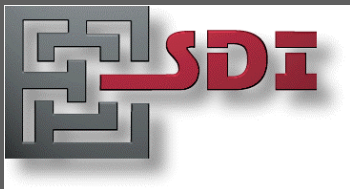
- 💧 **Rapid delineation of site contamination.**
- 💧 **Reduce number of samples that require lab analysis, especially when data validation is required.**
- 💧 **Utilize EPA SW-846 proven test methods.**
- 💧 **Cost reduction vs. all lab analysis or increased data points within same budget.**

Fixed-base Lab Methods VS. Information Value

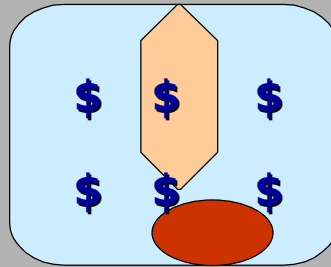
Rapid
Screening Test
Methods

Characteristics
& Limitations

Paul R. Jackson
pjackson@sdix.com
410-569-5641



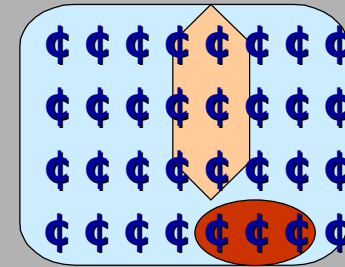
www.sdix.com



Few laboratory
data points=

Lower information value
of the data set

Less likely



Many field screening
data points=

Higher information
value of the data set

More likely



**Goal: A defensible site decision that
reflects the "true" site condition**

SW-846

Parameters Test Methods

Paul R. Jackson
pjackson@sdix.com
410-569-5641



www.sdix.com

Many regulated organic compounds:

💧 PCB's	4020
💧 PAH's	4035
💧 cPAH's	4035
💧 PCP	4010
💧 TPH	4030 & 9074
💧 VOH's	8535
💧 TTHM's	8530
💧 TNT	4050 & 8515
💧 RDX	4020 & 8510

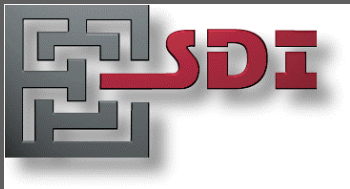
💧 *Over 50 Pesticide/Herbicide Systems:*

💧 Toxaphene	4040
💧 Chlordane	4041
💧 Atrazine	4670
💧 DDT	4042
💧 2,4-D	4015

Parameters Test Methods

- 💧 **Dioxin**
- 💧 **BTEX**
- 💧 **Nitrate**
- 💧 **Sulfate Reducing Bacteria**
- 💧 **BOD, COD, TOC, TSS, Nitrates & Surfactants in 1 minute by InSpectra®**
- 💧 **Toxicity by Microtox®**
- 💧 **Lead**

Paul R. Jackson
pjackson@sdix.com
410-569-5641

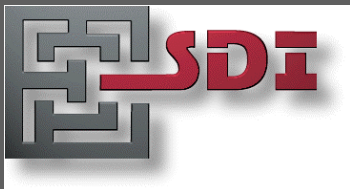


www.sdix.com



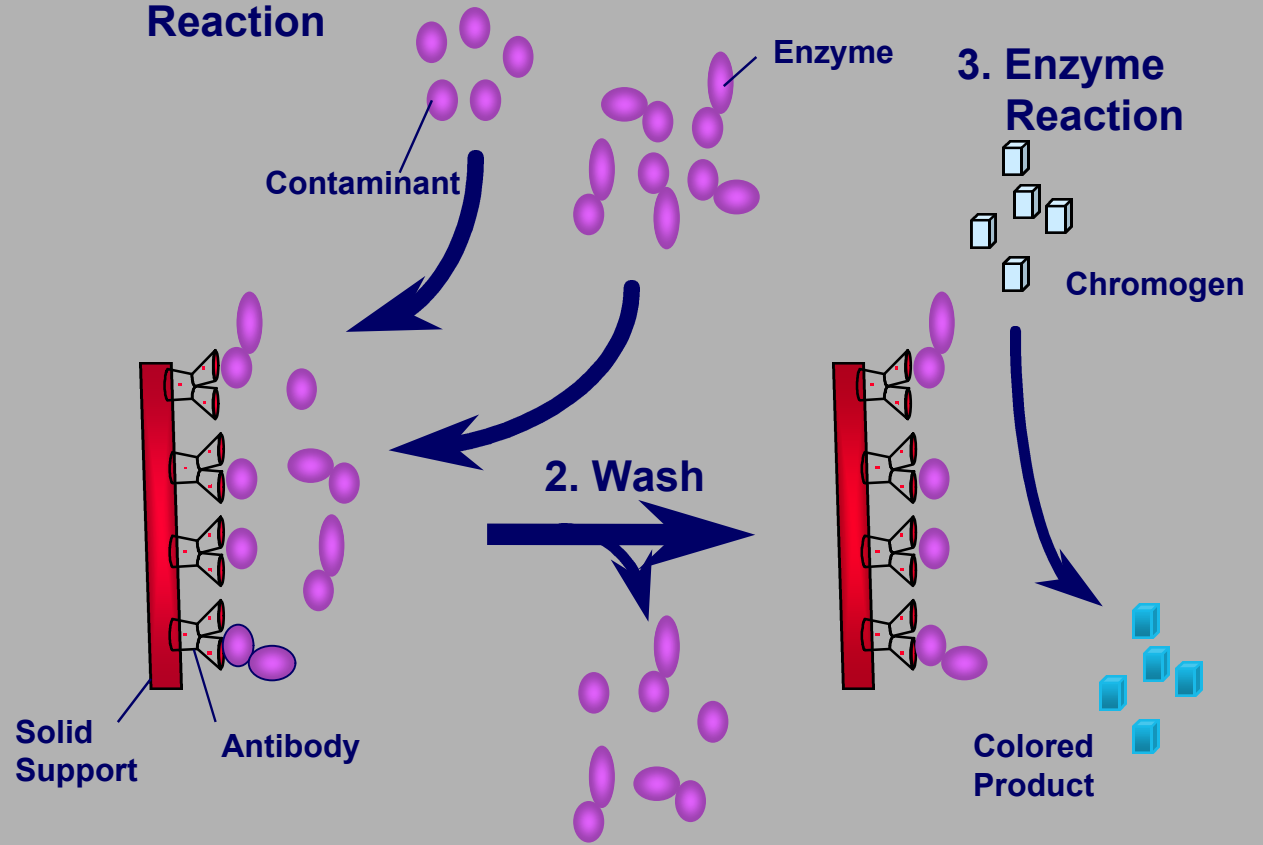
Immunoassay ELISA Principle

Paul R. Jackson
pjackson@sdix.com
410-569-5641



www.sdix.com

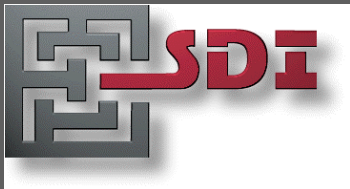
1. Immunochemical Reaction





Limitations Characteristics

Paul R. Jackson
pjackson@sdix.com
410-569-5641



www.sdix.com

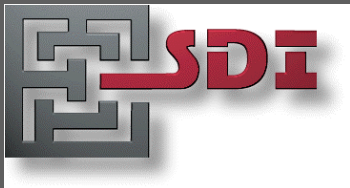
- 💧 **IA is additive of compounds present to which system has sensitivity - does not provide data point for individual compounds.**
- 💧 **Moisture in a soil/sediment - limited ability to perform moisture content in the field.**
- 💧 **Clay - can provide an extraction limitation for some parameters.**
- 💧 **TPH - the presence of more than 1 petroleum product can cause matrix interference with several systems.**



Limitations Characteristics

- **Analytical history or a correlation study is required for determination of field screening method viability.**
- **10% split sampling for applicable lab method analysis recommended as another form of QC for all field screening methods.**

Paul R. Jackson
pjackson@sdix.com
410-569-5641

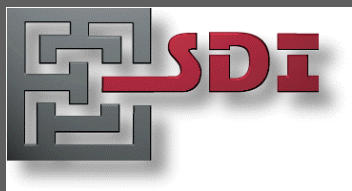


www.sdix.com



PCB's

Paul R. Jackson
pjackson@sdix.com
410-569-5641



www.sdix.com





PCB's

System	Characteristics	PCB's			
		Soil	Water	Wipes	Concrete
D TECH [®]	Qualitative & Semi-quantitative 1-4 samples/run 20 minutes/run	0.5 ppm	N/A	10 µg/wipe	N/A
EnSys [®]	Semi-quantitative 1-10 samples/run 30 minutes/run	0.5 ppm	50 ppb	5 µg/wipe	0.5 ppm
EnviroGard [®]	Semi-quantitative 1-14 samples/run 30 minutes/run	1 ppm	1 ppb	10 µg/wipe	N/A
RaPID Assay [®]	Quantitative & Semi-quantitative 1-50 samples/run 60 minutes/run	0.5 ppm	0.2 ppb	5 µg/wipe	0.5 ppm

Paul R. Jackson
pjackson@sdix.com
410-569-5641



www.sdix.com



Summary

Screening test systems provide

- 💧 **U.S. EPA SW-846 Test Methods**
- 💧 **Recognizable cost benefits**
- 💧 **QC proven data**
- 💧 **Rapid delineation of contamination**
- 💧 **Ability to make key decisions in the field**
- 💧 **Systems designed to meet most any project delineation requirements**

Paul R. Jackson
pjackson@sdix.com
410-569-5641



www.sdix.com

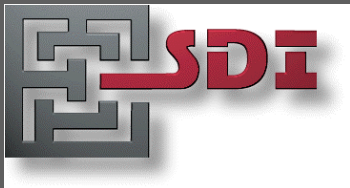


Questions

Paul Jackson
Strategic Diagnostics, Inc.

(410) 569-5641
pjackson@sdix.com

Paul R. Jackson
pjackson@sdix.com
410-569-5641



www.sdix.com