

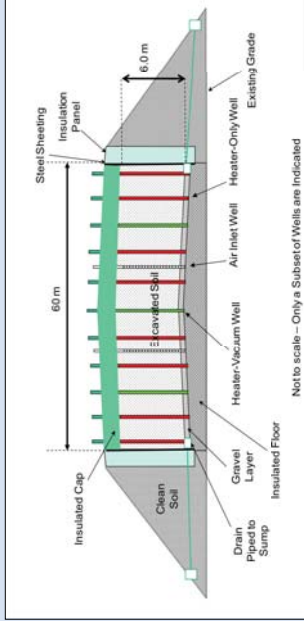
IPTD Pile Construction



Acknowledgements



The Danang Airbase project was funded by USAID and USAID has approved TerraTherm's use of project data for this presentation.

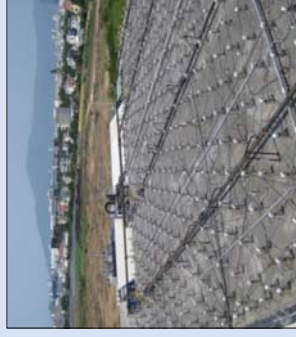
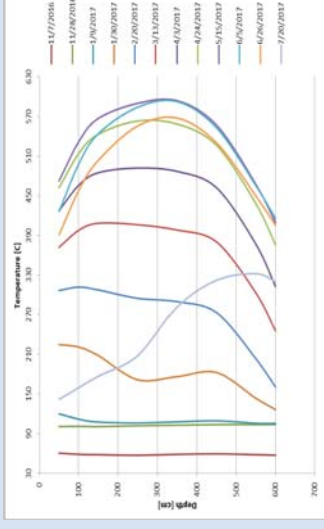


IPTD Treatment at 335°C

Time & Temperature Ensure Results

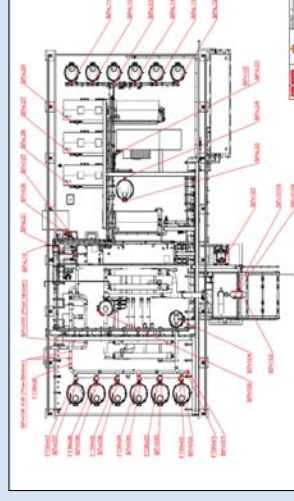
IPTD Treatment

- 87,000 m3 soil
- Treated in 2 phases
- Target: 325°C, 21 days
- Goal: 150 ppt TEQ Dioxin



Extensive Monitoring

- > 450 temperature sensors
- Vapor/liquid effluent monitoring
- Post-treatment hot soil sampling



Results

Phase 1

Location	Dioxin Concentration (TEQ pg/g [ppt])
Phase 1 IPTD samples, 0-1m	51.5
IPTD, sub-decision unit A, 0-1m	95.6
IPTD, sub-decision unit B, 0-1m	36.3
IPTD, sub-decision unit C, 0-1m	91
IPTD, sub-decision unit D, 0-1m	1.9
IPTD, sub-decision unit E, 0-1m	2.4
IPTD, sub-decision unit F, 0-1m	1.1
IPTD, sub-decision unit G, 0-1m	16
IPTD, sub-decision unit H, 0-1m	143
Phase 1 IPTD samples, 1-2m	0.332
Phase 1 IPTD samples, 2-3m decision unit, triplicate	0.237, 2.34, 0.27
Phase 1 IPTD samples, 3-4m	0.304
Phase 1 IPTD samples, 4-5m	0.0918
Phase 1 IPTD samples, 5-6m	0.981 (lab dup 0.819)
Phase 1 IPTD samples, 2-3m decision unit, replicate	0.264, 0.234
Mean Post-treatment Phase 1 IPTD	8.9

Phase 2

Location	Dioxin Concentration (TEQ pg/g [ppt])
Post-treatment Phase 2 IPTD, decision unit 0-1 m, triplicate	0.198, 0.212, 0.237
Post-treatment Phase 2 IPTD, decision unit 1-2 m	0.198
Post-treatment Phase 2 IPTD, decision unit 2-3 m	0.199
Post-treatment Phase 2 IPTD, decision unit 3-4 m	0.197
Post-treatment Phase 2 IPTD, decision unit 4-5 m	0.194
Post-treatment Phase 2 IPTD, decision unit 5-6m	0.199
Post-treatment Phase 2 IPTD, decision unit 0-1 m, replicate	0.195, 0.191
Mean Post-treatment Phase 2 IPTD	0.199

Post-Treatment Results

- Ph 1: >90–97% DRE
- Ph 2: >99.99% DRE
- **All samples below 150 ppt TEQ goal**

ISTD & IPTD Technology

Demonstrated to successfully treat dioxins, PCBs, pesticides and other POPs.

For more information, please contact TerraTherm: Jim Galligan, jgalligan@terraetherm.com