OXY TEKNOLOGIES INC.

OxyTek™ Case Study 100077: Parkland Development, Milton, Alberta

The Challenge:

- This property originally operated as a glass fret plant and was re-developed as parkland in conjunction with an adjacent residential development.
- Soils contained elevated levels of the F2 and F3 fractions of PHC.
- Lead concentrations were at hazardous levels requiring off-site disposal as hazardous waste.

The OxyTek Solution:

- The PHC impacted soils were treated ex-situ using OxyTek-L™. Once treated, the soils met Regulatory criteria and remained on-site for future re-use.
- Lead contaminated soils were treated using OxyTek™-ADT. Concentrations of lead were reduced to non-hazardous levels making the soils suitable for disposal at a licensed landfill.
- Significant cost savings were realized by all stakeholders.

Ex-situ treatment of soils impacted with heavy metals, at hazardous levels, using OxyTek™-ADT. PHC impacted soils were also treated ex-situ, using OxyTek-L™.

Background:

The site previously operated as a glass fret plant and was being redeveloped as parkland associated with an adjacent residential development. Testing by others delineated that soils on-site were impacted by organics and inorganics. F2 and F3 fractions of PHC were at non-hazardous levels and initial concentrations of PHC were at a maximum of 3,880 and 4,300 ppm respectively. Initial bulk concentrations of lead were up to 95,200 ppm, and testing for the Regulation 558 leachate parameters classified the soils as having hazardous concentrations of lead.

Ex-situ treatment of PHC impacted soils using OxyTek-L™

Process:

OxyTek-L™ was applied to the impacted soils reducing the levels of the F2 and F3 fractions of PHC to meet Regulatory criteria. Only one treatment of these soils was required to achieve Regulatory criteria. OxyTek™-ADT technology was used to reduce concentrations of lead to non-hazardous levels allowing the soils to be disposed of as non-hazardous waste at the landfill site.

The site remediation was completed to meet Ontario Ministry of the Environment (MOE) Regulation 153, Table 2 criteria for residential / institutional / parkland property use criteria. Regulatory criteria were achieved within 45 days of project start up.

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Soil Concentrations Pre-Treatment and Post-Treatment using OxyTek-L™

	PARAMETERS:	
	TPH F2 (C_{11} – C_{16})	**TPH F3 (C_{16} – C_{34})**
Regulations* :	150	400
Maximum concentrations in ppm:		
Pre-treatment	**3,880**	**4,300**
Post-treatment	<150	<400

All values in ug/L – ppm – parts per million MDL – method detection limit
< – below detection limit **Parameter exceedence**
*MOE O.Reg. 153/04 – Table 2 – Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Residential / Institutional / Parkland Property Use.

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Soil Concentrations Pre-Treatment and Post-Treatment using OxyTek™-ADT

	PARAMETERS:	
	Bulk Lead	**TCLP Lead**
Regulations* :	200	5.0
Maximum concentrations in ppm:		
Pre-treatment	**95,200**	**6.2**
Post-treatment	<200	<5.0

All values in ug/L – ppm – parts per million MDL – method detection limit
< – below detection limit **Parameter exceedence**
*MOE O.Reg. 558, September 20, 2000 / O.Reg 347 – General – Waste Management Regulation, June 1993

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