

## Reference Projects - Remediation of Contaminated Sites

REF. NO	PROJECT DESCRIPTION	PROJECT RESULTS	SITE LOCATION	CUSTOMER /INVESTOR/	CONTRACTOR /PREDECESSOR/
1	Outsourcing of the Duna Refinery Biological Wastewater Treatment plant in Szazhalombatta, Hungary.	<ul style="list-style-type: none"> <li>- Responsible for obtaining U.S. Trade Development Administration (USTDA) grants for feasibility study and organization of international tender for the Design, Build, Finance and Operation (DBFO) of new wastewater treatment plant for the Duna Refinery</li> <li>- Resulted in award to Earth Tech, Inc.</li> </ul>	Duna Refinery Szazhalombatta  Hungary	MOL Plc.	CEVA Hungary Ltd.
2	Remediation of two refinery wastewater settling ponds containing approximately 280,000 metric tons of contaminated water and petroleum hydrocarbon residuals (sludge) from the refineries' biological wastewater treatment plant.	<ul style="list-style-type: none"> <li>- Installation and operation of devices to divert flow and pump water/sludge to a newly constructed temporary treatment facility to process waster layers to meet standards for discharge to the Danube, separate oil/water/solids via decanter centrifuges; return oil to the refinery. Lined impoundments were constructed for interim storage of solids and bottom sludge prior to processing through patented "CEMIX" technology for use as alternative fuels for utilities and cement kilns.</li> <li>- Total project management included coordination of foreign technicians, design, construction, permitting, logistics, excavation, monitoring and quality assurance.</li> </ul>	Duna Refinery Szazhalombatta  Hungary	MOL Plc. /  Earth Tech Hungary Ltd.	CEVA Hungary Ltd.
3	Remediation of open storage pits containing approximately 20,000 metric	<ul style="list-style-type: none"> <li>- Installation and operation of technology to neutralize and process wastes into alternative fuels for utilities and cement kilns.</li> </ul>	Duna Refinery Szazhalombatta	MOL Plc.	CEVA Hungary Ltd.

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	tons of complex petroleum hydrocarbon residuals (PHC) and maleic acid from petroleum refining and soil. Materials were neutral to acidic and it was necessary to contain and treat runoff water.	- Total project management included coordination of foreign technicians, design, construction, permitting, logistics, excavation, monitoring and quality assurance.	Hungary		
4	Provide installation for the processing and separation of approximately 15,000 tons of petroleum hydrocarbon residuals (PHC) and water stored in open lagoons in Zalaegerszeg, Hungary.	- Installation and operation of three – phase centrifuge to separate oil for return to refinery, water to WWTP and clean solids for disposal.  - Total project management included coordination of foreign technicians, design, construction, permitting, logistics, excavation, monitoring, and quality assurance.	Zalaegerszeg Refinery  Hungary	MOL Plc.	CEVA Hungary Ltd.
5	Remediation of a site containing 100,000 metric tons of historical refinery tars stored in open unlined lagoons. Materials were acidic and runoff water had to be contained and treated. The scope of work was to develop an environmentally accepted method to recycle the tars and soils.	- Installation and operation of technology to neutralize and process wastes into alternative fuels for utilities and cement kilns.  - Total project management included coordination of foreign technicians, design, construction, permitting, logistics, excavation, monitoring, and quality assurance.	Csepel Base  Hungary	MOL Plc.	CEVA Hungary Ltd.
7	Remediation of a site containing approximately 100,000 tons of refinery	- Collection and treatment of PHC/acidic runoff water.	Csepel Base  Hungary	MOL Plc.	CEVA Hungary Ltd.

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	tars and unknown quantities of contaminated soil stored in open unlined lagoons. Materials were acidic and runoff water had to be contained and treated.	<ul style="list-style-type: none"> <li>- Quality control and containment of contaminated soil for future thermal treatment.</li> <li>- Total project management included coordination of foreign technicians, design, construction, permitting, logistics, excavation, monitoring, and quality assurance.</li> </ul>			
8	Cleaning of 10000 m <sup>3</sup> crude oil storage tanks and separation of tank bottom sludges with centrifuges	Storage tank cleaning and sludge treatment by separation of oil-water-solids, recovery of crude oil, contaminated water treatment and discharge, disposal of solid contaminants.	<p>Ercsi - Adria Pipeline pumping Station</p> <p>Hungary</p>	MOL Plc	CEVA Hungary Ltd.
9	Remediation of a site contaminated by an oil spill on rail tracks operated by MAV, the Hungarian Railway company in the city of Budapest.	<p>Remedial techniques:</p> <ul style="list-style-type: none"> <li>- excavation of polluted soil and subsequent off-site bioremediation</li> <li>- in-situ bioremediation</li> </ul>	<p>Ferencvarosi Rail Station</p> <p>Budapest,</p> <p>Hungary</p>	<p>MAV Rt.</p> <p>Hungarian Railway</p>	CEVA Hungary Ltd.
10	Remediation of site contaminated with heavy oil.	Clean up and disposal of contaminated oil and soil offsite.	<p>Tolna</p> <p>Hungary</p>	TOLNATEX Ltd.	CEVA Hungary Ltd.
11	Remediation of auto parts manufacturing site contaminated with heavy metals.	Clean up and disposal of heavy metal contaminated geological medium and waste.	<p>Veszprem</p> <p>Hungary</p>	Bakony Autoalkatreszgyarto Rt.	CEVA Hungary Ltd.
12	Remediation of an industrial site containing organ-	Applied remedial techniques:	District IV, City of Budapest	BONUM Ltd.	CEVA Hungary Ltd.

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	ic chemicals and petroleum hydrocarbons. Project included excavation and removal of underground tanks/bunkers, soils and debris.	- excavation of polluted soils/debris and subsequent off-site bioremediation	Hungary		
13	Remediation of a site containing approximately 90,000 tons of refinery tars and unknown quantities of contaminated soil stored in open unlined lagoons. Materials were acidic and runoff water had to be contained and treated.	<ul style="list-style-type: none"> <li>- Installation and operation of technology to process PHC wastes into liquid and solid alternative fuels for utilities and cement kilns. Return of portion of liquid fuel for reuse at refinery.</li> <li>- Total project management included coordination of foreign technicians, design, construction, permitting, logistics, excavation, monitoring, and quality assurance.</li> </ul>	<p>Nyirbogdany Refinery</p> <p>Hungary</p>	MOL Plc.	CEVA Hungary Ltd.
14	Remediation of a site containing 40,000 tons of refinery tars and unknown quantities of contaminated soil stored in open unlined lagoons. Materials were acidic and runoff water had to be contained and treated.	<ul style="list-style-type: none"> <li>- Collection and treatment of PHC/acidic runoff water.</li> <li>- Quality control and containment of contaminated soil for future thermal treatment.</li> <li>- Total project management included coordination of foreign technicians, design, construction, permitting, logistics, excavation, monitoring, and quality assurance.</li> </ul>	<p>Nyirbogdany Refinery</p> <p>Hungary</p>	MOL Plc.	CEVA Hungary Ltd.
15	Provide installation for the processing and disposal of approximately 150,000 tons of petroleum hydrocarbon residuals (PHC)	- Installation and operation of three – phase centrifuges to separate oil for return to refinery, water to WWTP and PHC solids for process into alternative fuels and raw materials for cement kilns.	<p>Ploiesti</p> <p>Romania</p>	<p>Steaua Romana Refinery</p> <p>&amp;</p>	CEVA International, Inc.

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	stored in open lagoons in the Ploiesti, Romania region.	- Total project management included coordination of foreign technicians, design, construction, permitting, logistics, excavation, monitoring, and quality assurance.		Holcim Cement	
16	Environmental remediation of four military camps, Bosnia/Herzegovina	<p>- Excavation, on-site bioremediation and final disposal of soil contaminated with fuels during military operations of Canadian army in Bosnia and Herzegovina.</p> <p>- Excavation performed at four military camps (Velika Kladusa, Zgon, Drvar, Glamoc), soil transported to the biotreatment facility installed in Velika Kladusa. 5 000 tons of contaminated soil were successfully treated – the target limits according to the Canadian guidance (fractional TPH analyses) were met.</p> <p>- Total project management included coordination of foreign technicians, design, construction, permitting, logistics, excavation, monitoring, and quality assurance.</p>	Bosnia and Herzegovina	Canadian Ministry of Defence / SFOR	CEVA International, Inc./  subcontractor: Dekonta a.s.
17	Developed regional facility for the processing and disposal of more than 750,000 tons of petroleum hydrocarbon residuals (PHC) plus soils stored in open and closed lagoons in Ploiesti and Pitesti, Romania regions.	<p>- Installation and operation of technology to process PHC wastes into alternative fuels and raw materials for cement kilns. Removal and separation of wastes from lagoons and tank bottoms.</p> <p>- Total project management included coordination of foreign technicians, design, construction, permitting, logistics, excavation, monitoring, and quality assurance.</p>	Campulung and Ploiesti, Romania	S.A. Cimus S.C. & Holcim Cement and Vega (Rompetrol), Arpechim, Petrobrazi and Petrotel refineries.	CEVA International, Inc.

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18	Remediation of several unlined pits used to store heavy petroleum products. Approximately 150,000 m <sup>3</sup> of PHC contaminated soils, 75,000 m <sup>3</sup> of groundwater and 7000 m <sup>3</sup> of free floating petroleum.	<p>Applied remedial techniques:</p> <ul style="list-style-type: none"> <li>- excavation of polluted soil and subsequent off site bioremediation</li> <li>- Low Temperature Thermal Desorption</li> <li>- in situ bioremediation</li> <li>- groundwater pumping-and-treatment</li> </ul>	<p>District XVIII, City of Budapest  Hungary</p>	<p>District XVIII, City of Budapest</p>	<p>CEVA Hungary Ltd.</p>
19	Clean up and dismantling of several 10000 m <sup>3</sup> oil storage tanks and pipe systems for Belapatfalva Cement Plant due to closure and demolition of the whole plant.	<p>Clean up and recycling of tank bottom sludges, scrap metal from demolition. Clean up of concrete sewer system, rail unloading area.</p>	<p>Belapatfalva  Hungary</p>	<p>BÉCEM Rt.</p>	<p>CEVA Hungary Ltd.</p>