

Site <sup>1</sup>	Site Characterization						Remedial Design						Oxidant Delivery					Other Remediation Methods <i>piloted</i> or Implemented
	LNAPL <sup>2</sup>	Thickness of Smear Zone (ft)	Homogenous Injection Zone	K Value (cm/s)	Additional Analyses		TOD estimation <sup>5</sup>	Estimated Implementation parameters <sup>6</sup>		Pilot Testing		Type of Oxidant	Oxidant Delivery Method and Frequency <sup>9</sup>	Implement Per Design <sup>10</sup>	Vertical interval <sup>11</sup>	Sub-contractor used <sup>12</sup>		
					Analyses for extent of COC in soil <sup>3</sup>	ISCO-specific GW analyses <sup>4</sup>		ROI (feet)	Volume (gallons)	Bench-scale Test (TOD calculation) <sup>7</sup>	Field-scale Injection Test <sup>8</sup>							
											ROI (feet)						Volume (gallons)	
1	N	2	Y	1.00E+00	N	N	N	N	N	N	N	H <sub>2</sub> O <sub>2</sub> (19%)	GP (4 pts, 4 events - 60 days, 160 gals)	NA	N	N	GW rec, SVE	
2	N	10	Y	1.00E-08	Y	Y	N	5	13000	N	N	Modified Fentons, H <sub>2</sub> O <sub>2</sub> (35%) + catalyst	PP (175 pts, 1 event - 12 days, 13,960 gals)	Y	Y (10-20 ft)	Y	Excavation	
3	N	4	Y	3.00E-05	N	N	N	N	N	N	30	840 gals over 12 monthly inject	H <sub>2</sub> O <sub>2</sub> (19%)	GP (6 pts, 7 events - 120 days, 180 gals, ongoing)	Y	N	N	Excavation
4	N	2	Y	9.80E-07	N	N	N	10	N	N	N	Modified Fenton's, H <sub>2</sub> O <sub>2</sub> (9.25%) + iron catalyst	PC (31 pts, 1 of 2 yrs completed, 2500 gals/year)	NA	Y (8-12 ft)	Y	Excavation	
5	N	8	Y	9.00E-05	N	N	N	10	8000 gals in 20 pts over 3 events	N	N	N	Persulfate + catalyst	PP (20 pts, 3 events - 120 days, 5810 gals)	Y	N	Y	Excavation
6	N	4	Y	1.00E-04	N	N	N	N	N	N	23	720 gals over 360 days	H <sub>2</sub> O <sub>2</sub> (19%)	GP (5 pts, 10 events - 150 days, 422 gals)	N	N	N	Excavation, EFRs
7	N	2	N	1.00E-07	N	N	N	N	N	no TOD, treatability test only, 50% sol. at 32 gals/mo	N	N	H <sub>2</sub> O <sub>2</sub> (8%)	PP (4 pts, 6 events - 400 days, 64 gals/wk)	Y	N	N	AS, SVE, BV, Excavation, ORC in UST pit
8	N	4	Y	1.40E-03	N	Y	TOC, metals including iron, 9000 gals H <sub>2</sub> O <sub>2</sub> estimated	15	N	N	N	N	Fenton's, H <sub>2</sub> O <sub>2</sub> (15%) + FeSO <sub>4</sub>	PP (30 pts, 3 events - 180 days, 42818 gals H <sub>2</sub> O <sub>2</sub> + 6,094 gals FeSO <sub>4</sub> )	Y	N	N	Excavation, soil flushing
9	N	4	Y	1.40E-03	Y	Y	TOC, metals including iron, 22000 gals H <sub>2</sub> O <sub>2</sub> estimated	15-20	N	N	N	N	Fenton's, H <sub>2</sub> O <sub>2</sub> (5-10%) + FeSO <sub>4</sub> + H <sub>2</sub> SO <sub>4</sub>	PP (15 pts, 4 events - 150 days, 16800 gals H <sub>2</sub> O <sub>2</sub> )	N	N	N	SVE, Excavation, SVE
10	N	1	Y	1.00E-04	N	N	N	N	N	N	70	660 gals over 12 injections	Fenton's, H <sub>2</sub> O <sub>2</sub> (19%) + FeSO <sub>4</sub>	GP (7 pts, 7 events - 270 days, 350 gals H <sub>2</sub> O <sub>2</sub> )	N	N	N	Biorem, MNA, SVE
11	N	6	N	1.00E-05	N	N	N	N	N	N	25	15120 gals over 28 monthly inj	H <sub>2</sub> O <sub>2</sub> (19%)	GP (6 pts, 4 events - 120 days, 120 gals)	N	N	N	AS, SVE
12	N	3	Y	3.00E-07	N	N	N	N	N	N	45-80	960 gals over 12 months	H <sub>2</sub> O <sub>2</sub> (19%)	GP (8 pts, 11 events - 240 days, 800 gals)	N	N	N	AS, SVE, ORC socks
13	N	2	Y	8.00E-06	N	N	N	N	N	N	25	32 gals per event	H <sub>2</sub> O <sub>2</sub> (17%)	GP (4 pts, 5 events - 150 days, 192 gals)	Y	N	N	Excavation, EFRs
14	N	2.5	N	4.00E-04	N	Y	N	N	N	no TOD, treatability test only	10	3000 gals over 5 events	H <sub>2</sub> O <sub>2</sub> (35%) + FeSO <sub>4</sub> (15%)	PP (32 pts, 2 events - 20 days, 1200 gals)	N	N	Y	Excavation
15	Y	5	Y	1.00E-03	N	Y	N	N	N	no TOD, treatability test only	5	3600 gals over 2 events	Fenton's, H <sub>2</sub> O <sub>2</sub> (20%) + persulfate + chelated iron	PP (18 pts, 3 events - 30 days, 7200 gals)	Y	Y (40-45 ft)	Y	Excavation, EFRs
16	N	3	Y	1.00E-05	N	N	N	N	N	N	N	N	H2O2 (19%)	GP (2 vert pts, 1 horiz pt, 6 events - 180 days, 510 gals)	NA	N	N	SVE, Excavation, MNA
17	N	5	Y	1.00E-03	N	N	N	15	1200	N	N	N	Modified Fenton's (H <sub>2</sub> O <sub>2</sub> at 12% + chelated iron)	PP (14 pts, 3 events - 7 days, 2090 gals)	Y	Y (15-18 ft)	Y	SVE, AS, SVE, EFRs
18	N	5	Y	1.00E-07	N	N	N	N	600 gals over 12 monthly events	N	N	N	H2O2 (19%)	GP (5 pts, 10 events - 250 days, 500 gals)	Y	N	N	Excavation, AS, SVE, O2 diff, MNA
19	N	1.5	Y	4.00E-09	N	N	N	N	N	N	N	N	H2O2 (19%)	GP (2 pts, 5 events - 120 days, 50 gals)	NA	N	N	Excavation
20	N	5	N	1.00E-06	N	N	N	9	1600 lbs	N	N	N	Modified Fentons, H <sub>2</sub> O <sub>2</sub> (35%) + catalyst	PP (57 pts, 1 event - 7 days, 1600 lbs)	Y	Y (10-20 ft)	Y	Excavation, MNA

<sup>1</sup> Successful sites are bolded

<sup>2</sup> LNAPL present within 4 quarters prior to ISCO injection

<sup>3</sup> Collected additional soil analyses for COC extent and TOC

<sup>4</sup> Collected ISCO-specific groundwater analyses

<sup>5</sup> Total oxidant demand estimated from soil and GW data

<sup>6</sup> Estimated injection volume and ROI from physical parameters

<sup>7</sup> Total oxidant demand calculated from bench-scale pilot

<sup>8</sup> Injection ROI and volume determined from field-scale pilot

<sup>9</sup> Gravity-feed periodic frequency = GP, pressurized periodic frequency = PP, pressurized continuous system = PC

<sup>10</sup> Oxidant was delivered per remedial design

<sup>11</sup> Oxidant delivered to multiple vertical intervals

<sup>12</sup> Subcontractor used for oxidant preparation and injection of oxidant