

TABLES

Table 1
Soil Analytical Results - Oleum Plant
Former Gopher Ordinance Works
Rosemount, Minnesota

Compound/Parameter	CAS No.	Sample Identifier																Residential Soil Reference Value (mg/kg)	Industrial Soil Reference Value (mg/kg)	Tier 1 Soil Leaching Value (mg/kg)
		OP-TP-1 (0-1)	OP-TP-1 (1-1.5)	OP-TP-1 (1.5-2)	OP-TP-1 (2)	OP-TP-2 Pipe	OP-TP-2 (0-1)	OP-TP-2A (0-1)	OP-TP-2-4	OP-TP-2-4 (A)	OP-TP-2-4 (B)	OP-TP-3 (2)	OP-TP-4 (0)	OP-TP-4 (1)	OP-TP-6 EAST CUL VERT	OP-TP-6 WEST CUL VERT				
Sample VOCs																				
Semi-Volatile Organic Compounds (mg/kg)																				
Acenaphthene	83-32-9	NA	NA	NA	NA	NA	ND (1.2)	NA	ND (0.4)	NA	NA	NA	NA	NA	NA	NA	1,200	5,260	50	
Benzofluoranthene	191-24-2	NA	NA	NA	NA	NA	ND (0.46)	NA	0.45	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE	
Fluoranthene	206-44-0	NA	NA	NA	NA	NA	ND (0.46)	NA	0.65	NA	NA	NA	NA	NA	NA	NA	1,080	6,800	295	
Indeno(1,2,3-cd)pyrene	193-59-5	NA	NA	NA	NA	NA	ND (0.46)	NA	0.48	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE	
Benzo(a)pyrene	85-01-8	NA	NA	NA	NA	NA	ND (0.46)	NA	0.69	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE	
Pyrene	129-00-0	NA	NA	NA	NA	NA	ND (0.46)	NA	0.99	NA	NA	NA	NA	NA	NA	NA	890	5,800	272	
Polychlorinated Biphenyls (PCBs) (mg/kg)																				
Total PCBs																		1.2	8	2.1
Metals (mg/kg)																				
Arsenic, Total	7440-38-2	2.4	2.8	2.7	4.6	NA	7.6	NA	1.4	NA	6.4	1.6	1.5	3.8	3.1	10	25	13.1		
Barium, Total	7440-41-7	56	67	48	83	NA	130	NA	33	NA	190	30	24	61	63	1,200	12,500	872		
Calcium, Total	7440-43-9	0.12	0.14	ND (0.12)	ND (0.12)	NA	0.26	NA	ND (0.12)	NA	0.21	ND (0.11)	0.13	0.15	0.23	35	250	4.4		
Chromium, Total	16905-83-1	13	14	9.3	18	NA	25	NA	9.5	NA	19	7.8	6.7	15	13	71	425	18		
Lead, Total	7439-97-1	1.7	2.1	4.0	6.2	NA	10	NA	4.1	NA	10	2.2	2.3	1.5	2.3	400	700	525		
Manganese, Total	7439-97-6	ND (0.10)	ND (0.11)	0.016	ND (0.12)	NA	0.047	NA	0.047	NA	0.033	ND (0.01)	ND (0.010)	0.038	0.072	0.7	2	1.6		
Selenium, Total	7782-49-2	ND (1.0)	ND (1.1)	ND (1.2)	ND (1.2)	NA	ND (1.4)	NA	ND (1.2)	NA	ND (1.2)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	170	1,250	1.5		
Silver, Total	7440-22-4	ND (0.52)	ND (0.57)	ND (0.58)	ND (0.58)	NA	ND (0.70)	NA	ND (0.67)	NA	ND (0.59)	ND (0.53)	ND (0.51)	ND (0.53)	ND (0.53)	170	1,250	3.9		
Explosives (mg/kg)																				
Total Nitro-Aromatic Compounds																		NE	NE	NE
Aniline																		NE	NE	NE
Other Parameters (mg/kg)																				
pH, Laboratory	11	10	8.9	NA	NA	NA	NA	NA	4.0	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE	
Nitrogen, nitrate	NA	NA	11,000	NA	NA	NA	NA	NA	ND (3.1)	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE	
Sulfide, soluble	140	NA	10,000	NA	NA	NA	NA	NA	12,000	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE	
Asbestos	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE	
Diesel Range Organics	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE	

NOTES:
mg/kg = Milligram per kilogram.
< = Compound/parameter was not detected above the laboratory reporting limit indicated.
NE = Not established.
NA = Not analyzed for this parameter.
SRV = 1999 Soil Reference Value established by the Minnesota Pollution Control Agency.
SLV = November 1999 Soil Leaching Value established by the Minnesota Pollution Control Agency.
* Standard for hexavalent chromium is provided.
** Benzofluoranthene (BbF) equivalent is a calculated value based on the weighted concentration and toxicity of the following compounds: benzofluoranthene, benzo(a)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
*** Individual standard not established, compound included in calculation of BAP equivalent.

Compound/Parameter	CAS No.	Sample Identifier												Residential Soil Reference Value (mg/kg)	Industrial Soil Reference Value (mg/kg)	Tier 1 Soil Leaching Value (mg/kg)			
		NA-TP-1 PIPE (F)	NA-TP-2 (Q-1)	NA-TP-2 (Q-1) (B)	NA-TP-2 (Z)	NA-TP-3 (Q-1)	NA-TP-3 PIPE	NA-TP-3 GASSET	NA-TP-3 GASSET (A)	NA-TP-3 GASSET (B)	NA-TP-3 BRICK MORTAR (A)	NA-TP-3 BRICK MORTAR (B)	NA-TP-3 WOOD				NA-TP-4 DRY WELL		
Asbestos, Total	7440-38-2	2.7	NA	7.5	5.1	9.1	14	NA	NA	NA	NA	NA	NA	NA	NA	10	25	15.1	
Barium, Total	7440-41-7	42	NA	120	120	29	47	NA	NA	NA	NA	NA	NA	NA	NA	1,200	12,500	842	
Cadmium, Total	7440-43-9	0.17	NA	0.15	0.17	0.13	0.54	NA	NA	NA	NA	NA	NA	NA	NA	35	250	4.4	
Chromium, Total	16865-83-1	9.6	NA	36	15	88	36	NA	NA	NA	NA	NA	NA	NA	NA	71*	425*	18*	
Lead, Total	7439-92-1	39	NA	93	11	48	310	NA	NA	NA	NA	NA	NA	NA	NA	400	700	525	
Manganese, Total	7439-97-6	0.47	NA	0.037	0.026	0.023	0.29	NA	NA	NA	NA	NA	NA	NA	NA	0.7	2	1.6	
Selenium, Total	7782-49-2	ND (0.0)	NA	ND (1.2)	ND (1.2)	ND (1.2)	1.1	NA	NA	NA	NA	NA	NA	NA	NA	170	1,250	1.5	
Silver, Total	7440-22-4	ND (0.52)	NA	ND (0.58)	ND (0.59)	ND (0.59)	ND (0.53)	NA	NA	NA	NA	NA	NA	NA	NA	170	1,250	3.9	
Explosives (mg/kg)																			
Total Nitro-Aromatic Compounds																			
Airline	62-53-3	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other Parameters (mg/kg)																			
Nitrogen, nitrate		36	NA	ND (2.9)	NA	ND (3.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Subtle soluble		2,900	NA	54	NA	68	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Asbestos		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel Range Organics		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:
 mg/kg = Milligrams per kilogram
 < = I Compound/parameter was not detected above the laboratory reporting limit indicated.
 NE = Not established.
 NA = Not analyzed for this parameter.
 SRV = 1999 Soil Reference Value (SRV) established by the Minnesota Pollution Control Agency.
 SLV = November 1999 Soil Leaching Value established by the Minnesota Pollution Control Agency.
 * Standard for hexavalent chromium is provided.
 ** Benzene(pyrone (Bp)) equivalent is a calculated value based on the weighted concentration and toxicity of the following compounds: benzene(a), benzene(b), benzene(c), benzene(d), benzene(e), benzene(f), benzene(g), benzene(h), benzene(i), benzene(j), benzene(k), benzene(l), benzene(m), benzene(n), benzene(o), benzene(p), benzene(q), benzene(r), benzene(s), benzene(t), benzene(u), benzene(v), benzene(w), benzene(x), benzene(y), benzene(z), benzene(aa), benzene(ab), benzene(ac), benzene(ad), benzene(ae), benzene(af), benzene(ag), benzene(ah), benzene(ai), benzene(aj), benzene(ak), benzene(al), benzene(am), benzene(an), benzene(ao), benzene(ap), benzene(aq), benzene(ar), benzene(as), benzene(at), benzene(au), benzene(av), benzene(aw), benzene(ax), benzene(ay), benzene(az), benzene(ba), benzene(bb), benzene(bc), benzene(bd), benzene(be), benzene(bf), benzene(bg), benzene(bh), benzene(bi), benzene(bj), benzene(bk), benzene(bl), benzene(bm), benzene(bn), benzene(bo), benzene(bp), benzene(bq), benzene(br), benzene(bs), benzene(bt), benzene(bu), benzene(bv), benzene(bw), benzene(bx), benzene(by), benzene(bz), benzene(ca), benzene(cb), benzene(cc), benzene(cd), benzene(ce), benzene(cf), benzene(cg), benzene(ch), benzene(ci), benzene(cj), benzene(ck), benzene(cl), benzene(cm), benzene(cn), benzene(co), benzene(cp), benzene(cq), benzene(cr), benzene(cs), benzene(ct), benzene(cu), benzene(cv), benzene(cw), benzene(cx), benzene(cy), benzene(cz), benzene(da), benzene(db), benzene(dc), benzene(dd), benzene(de), benzene(df), benzene(dg), benzene(dh), benzene(di), benzene(dj), benzene(dk), benzene(dl), benzene(dm), benzene(dn), benzene(do), benzene(dp), benzene(dq), benzene(dr), benzene(ds), benzene(dt), benzene(du), benzene(dv), benzene(dw), benzene(dx), benzene(dy), benzene(dz), benzene(ea), benzene(eb), benzene(ec), benzene(ed), benzene(ee), benzene(ef), benzene(eg), benzene(eh), benzene(ei), benzene(ej), benzene(ek), benzene(el), benzene(em), benzene(en), benzene(eo), benzene(ep), benzene(eq), benzene(er), benzene(es), benzene(et), benzene(eu), benzene(ev), benzene(ew), benzene(ex), benzene(ey), benzene(ez), benzene(fa), benzene(fb), benzene(fc), benzene(fd), benzene(fe), benzene(ff), benzene(fg), benzene(fh), benzene(fi), benzene(fj), benzene(fk), benzene(fl), benzene(fm), benzene(fn), benzene(fo), benzene(fp), benzene(fq), benzene(fr), benzene(fs), benzene(ft), benzene(fu), benzene(fv), benzene(fw), benzene(fx), benzene(fy), benzene(fz), benzene(ga), benzene(gb), benzene(gc), benzene(gd), benzene(ge), benzene(gf), benzene(gg), benzene(gh), benzene(gi), benzene(gj), benzene(gk), benzene(gl), benzene(gm), benzene(gn), benzene(go), benzene(gp), benzene(gq), benzene(gr), benzene(gs), benzene(gt), benzene(gu), benzene(gv), benzene(gw), benzene(gx), benzene(gy), benzene(gz), benzene(ha), benzene(hb), benzene(hc), benzene(hd), benzene(he), benzene(hf), benzene(hg), benzene(hh), benzene(hi), benzene(hj), benzene(hk), benzene(hl), benzene(hm), benzene(hn), benzene(ho), benzene(hp), benzene(hq), benzene(hr), benzene(hs), benzene(ht), benzene(hu), benzene(hv), benzene(hw), benzene(hx), benzene(hy), benzene(hz), benzene(ia), benzene(ib), benzene(ic), benzene(id), benzene(ie), benzene(if), benzene(ig), benzene(ih), benzene(ii), benzene(ij), benzene(ik), benzene(il), benzene(im), benzene(in), benzene(io), benzene(ip), benzene(iq), benzene(ir), benzene(is), benzene(it), benzene(iu), benzene(iv), benzene(iw), benzene(ix), benzene(iy), benzene(iz), benzene(ja), benzene(jb), benzene(jc), benzene(jd), benzene(je), benzene(jf), benzene(jg), benzene(jh), benzene(ji), benzene(jj), benzene(jk), benzene(jl), benzene(jm), benzene(jn), benzene(jo), benzene(jp), benzene(jq), benzene(jr), benzene(js), benzene(jt), benzene(ju), benzene(jv), benzene(jw), benzene(jx), benzene(jy), benzene(jz), benzene(ka), benzene(kb), benzene(kc), benzene(kd), benzene(ke), benzene(kf), benzene(kg), benzene(kh), benzene(ki), benzene(kj), benzene(kl), benzene(km), benzene(kn), benzene(ko), benzene(kp), benzene(kq), benzene(kr), benzene(ks), benzene(kt), benzene(ku), benzene(kv), benzene(kw), benzene(kx), benzene(ky), benzene(kz), benzene(la), benzene(lb), benzene(lc), benzene(ld), benzene(le), benzene(lf), benzene(lg), benzene(lh), benzene(li), benzene(lj), benzene(lk), benzene(ll), benzene(lm), benzene(ln), benzene(lo), benzene(lp), benzene(lq), benzene(lr), benzene(ls), benzene(lt), benzene(lu), benzene(lv), benzene(lw), benzene(lx), benzene(ly), benzene(lz), benzene(ma), benzene(mb), benzene(mc), benzene(md), benzene(me), benzene(mf), benzene(mg), benzene(mh), benzene(mi), benzene(mj), benzene(mk), benzene(ml), benzene(mn), benzene(mo), benzene(mp), benzene(mq), benzene(mr), benzene(ms), benzene(mt), benzene(mu), benzene(mv), benzene(mw), benzene(mx), benzene(my), benzene(mz), benzene(na), benzene(nb), benzene(nc), benzene(nd), benzene(ne), benzene(nf), benzene(nh), benzene(ni), benzene(nj), benzene(nk), benzene(nl), benzene(nm), benzene(no), benzene(np), benzene(nq), benzene(nr), benzene(ns), benzene(nt), benzene(nu), benzene(nv), benzene(nw), benzene(nx), benzene(ny), benzene(nz), benzene(oc), benzene(od), benzene(oe), benzene(of), benzene(og), benzene(oh), benzene(oi), benzene(oj), benzene(ok), benzene(ol), benzene(om), benzene(on), benzene(oo), benzene(op), benzene(oq), benzene(or), benzene(os), benzene(ot), benzene(ou), benzene(ov), benzene(ow), benzene(ox), benzene(oy), benzene(oz), benzene(pa), benzene(pb), benzene(pc), benzene(pd), benzene(pe), benzene(pf), benzene(pg), benzene(ph), benzene(pi), benzene(pj), benzene(pk), benzene(pl), benzene(pm), benzene(pn), benzene(po), benzene(pp), benzene(pq), benzene(pr), benzene(ps), benzene(pt), benzene(pu), benzene(pv), benzene(pw), benzene(px), benzene(py), benzene(pz), benzene(qa), benzene(qb), benzene(qc), benzene(qd), benzene(qe), benzene(qf), benzene(qg), benzene(qh), benzene(qi), benzene(qj), benzene(qk), benzene(ql), benzene(qm), benzene(qn), benzene(qo), benzene(qp), benzene(qq), benzene(qr), benzene(qs), benzene/qt), benzene(qu), benzene(qv), benzene(qw), benzene(qx), benzene(qy), benzene(qz), benzene(ra), benzene(rb), benzene(rc), benzene(rd), benzene(re), benzene(rf), benzene(rh), benzene(ri), benzene(rj), benzene(rk), benzene(rl), benzene(rm), benzene(rn), benzene(ro), benzene(rp), benzene(rq), benzene(rr), benzene(rs), benzene(rt), benzene(ru), benzene(rv), benzene(rw), benzene(rx), benzene(ry), benzene(rz), benzene(sa), benzene(sb), benzene(sc), benzene(sd), benzene(se), benzene(sf), benzene(sh), benzene(si), benzene(sj), benzene(sk), benzene(sl), benzene(sm), benzene(sn), benzene(so), benzene(sp), benzene(sq), benzene(sr), benzene(ss), benzene(st), benzene(su), benzene(sv), benzene(sw), benzene(sx), benzene(sy), benzene(sz), benzene(ta), benzene(tb), benzene(tc), benzene(td), benzene(te), benzene(tf), benzene(th), benzene(ti), benzene(tj), benzene(tk), benzene(tl), benzene(tm), benzene(tn), benzene(to), benzene(tp), benzene(tq), benzene(tr), benzene(ts), benzene(tu), benzene(tv), benzene(tw), benzene(tx), benzene(ty), benzene(tz), benzene(ua), benzene(ub), benzene(uc), benzene(ud), benzene(ue), benzene(uf), benzene(uh), benzene(ui), benzene(uj), benzene(uk), benzene(ul), benzene(um), benzene(un), benzene(uo), benzene(up), benzene(uq), benzene(ur), benzene(us), benzene(ut), benzene(uv), benzene(uw), benzene(ux), benzene(uy), benzene(uz), benzene(va), benzene(vb), benzene(vc), benzene(vd), benzene(ve), benzene(vf), benzene(vh), benzene(vi), benzene(vj), benzene(vk), benzene(vl), benzene(vm), benzene(vn), benzene(vo), benzene(vp), benzene(vq), benzene(vr), benzene(vs), benzene(vt), benzene(vu), benzene(vv), benzene(vw), benzene(vx), benzene(vy), benzene(vz), benzene(wa), benzene(wb), benzene(wc), benzene(wd), benzene(we), benzene(wf), benzene(wh), benzene(wi), benzene(wj), benzene(wk), benzene(wl), benzene(wm), benzene(wn), benzene(wo), benzene(wp), benzene(wq), benzene(wr), benzene(ws), benzene(wt), benzene(wu), benzene(wv), benzene(wy), benzene(wz), benzene(xa), benzene(xb), benzene(xc), benzene(xd), benzene(xe), benzene(xf), benzene(xh), benzene(xi), benzene(xj), benzene(xk), benzene(xl), benzene(xm), benzene(xn), benzene(xo), benzene(xp), benzene(xq), benzene(xr), benzene(xs), benzene(xt), benzene(xu), benzene(xv), benzene(xw), benzene(xy), benzene(xz), benzene(ya), benzene(yb), benzene(yc), benzene(yd), benzene(ye), benzene(yf), benzene(yh), benzene(yi), benzene(yj), benzene(yk), benzene(yl), benzene(ym), benzene(yn), benzene(yo), benzene(yp), benzene(yq), benzene(yr), benzene(ys), benzene(yt), benzene(yu), benzene(yv), benzene(yw), benzene(za), benzene(zb), benzene(zc), benzene(zd), benzene(ze), benzene(zf), benzene(zh), benzene(zi), benzene(zj), benzene(zk), benzene(zl), benzene(zm), benzene(zn), benzene(zo), benzene(zp), benzene(zq), benzene(zr), benzene(zs), benzene(zt), benzene(zu), benzene(zv), benzene(zw), benzene(zx), benzene(zy), benzene(zz).

Compound/Parameter	CAS No.	Test PG-BQ-TP-12 Below Culvert Subsamples										Residential Soil Reference Value (mg/kg)	Industrial Soil Reference Value (mg/kg)	Tier 1 Soil Leaching Value (mg/kg)						
		BQ-TP-10 WOOD 12/31/02	BQ-TP-11 (0-1) 12/31/02	BQ-TP-12 BELOW CULVERT 12/31/02	BQ-TP-12 BELOW CULVERT (B) 12/31/02	BQ-TP-12 INSIDE CULVERT 12/31/02	BQ-TP-12 WOOD 12/31/02	BQ-TP-11 (0-1) 12/31/02	BQ-TP-14 (0-1) 12/31/02	BQ-TP-15 (0-1) (A) 12/31/02	BQ-TP-15 (0-1) (B) 12/31/02				BQ-TP-14 WOOD 12/31/02	BQ-TP-16 (0-1) 12/31/02	BQ-TP-18 (0-1) 12/31/02	BQ-TP-18 (4-5) 12/31/02		
Total VOCs		NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE	
Semi-Volatile Organic Compounds (mg/kg)																				
Axanthylene	83-32-9	ND (25)	NA	ND (0.99)	NA	ND (0.92)	940	NA	NA	ND (1.1)	NA	NA	ND (4.2)	NA	NA	ND (1.0)	1,200	3,200	50	
Benzene	120-12-7	ND (1.0)	NA	ND (0.4)	NA	ND (0.37)	880	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	7,880	45,400	942	
Benzofluoranthene	56-55-3	ND (1.0)	NA	ND (0.4)	NA	0.66	430	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	***	***	***	
Benzofluoranthene	205-99-2	ND (1.0)	NA	ND (0.4)	NA	1.8	ND (230)	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	***	***	***	
Benzofluoranthene	207-08-9	ND (1.0)	NA	ND (0.4)	NA	1.6	460	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	NE	NE	NE	
Benzofluoranthene	191-24-2	ND (1.0)	NA	ND (0.4)	NA	0.89	ND (320)	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	***	***	***	
Benzofluoranthene	30-32-8	ND (1.0)	NA	ND (0.4)	NA	1.3	310	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	104	310	NE	
Benzofluoranthene	218-01-9	ND (1.0)	NA	ND (0.4)	NA	1.0	520	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	1,080	6,800	393	
Chrysene	132-64-9	ND (1.0)	NA	ND (0.4)	NA	0.81	1,600	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	330	4,120	47	
Fluorene	206-44-0	ND (1.0)	NA	ND (0.4)	NA	1.0	ND (320)	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	NE	NE	NE	
Fluorene	86-73-7	ND (1.0)	NA	ND (0.4)	NA	ND (0.37)	450	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	NE	NE	NE	
Fluorene (2,3-difluorene)	193-39-5	ND (1.0)	NA	ND (0.4)	NA	ND (0.37)	860	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	NE	NE	NE	
Fluorene (2,3-difluorene)	91-57-6	ND (1.0)	NA	ND (0.4)	NA	ND (0.37)	2,100	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	NE	NE	NE	
Fluorene	85-01-8	ND (1.0)	NA	ND (0.4)	NA	1.3	2,300	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	880	5,800	272	
Phenanthrene	129-00-0	ND (1.0)	NA	ND (0.4)	NA	1.82	47.5	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	2	4	2	
Pyrene	129-00-0	ND	NA	0	NA	1.82	47.5	NA	NA	ND (0.42)	NA	NA	ND (4.2)	NA	NA	ND (0.4)	NE	NE	NE	
Polyhalogenated Biphenyls (PCBs) (mg/kg)																				
Total PCBs		NA	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE
Mutagens (mg/kg)																				
Acenaphthene	7440-38-2	NA	4.4	5.7	NA	4.7	NA	6.0	NA	5.3	NA	4.9	NA	4.1	NA	5.0	10	25	15.1	
Acenaphthene	7440-41-7	NA	97	110	NA	110	NA	140	NA	160	NA	160	NA	160	NA	91	44	1,200	842	
Acenaphthene	7440-43-9	NA	0.14	0.12	NA	0.12	NA	0.17	NA	0.24	NA	0.24	NA	0.24	NA	0.2	35	250	4.4	
Acenaphthene	16065-83-1	NA	1.4	1.8	NA	1.6	NA	2.2	NA	2.1	NA	3.1	NA	1.7	NA	1.6	71*	425*	18*	
Acenaphthene	7439-92-1	NA	6.9	9.9	NA	1.7	NA	3.9	NA	1.0	NA	0.078	NA	3.90	NA	2.7	400	700	525	
Acenaphthene	7439-97-6	NA	0.028	0.022	NA	0.034	NA	0.037	NA	0.028	NA	0.022	NA	0.03	NA	0.029	0.7	2	1.6	
Acenaphthene	7182-49-2	NA	ND (1.1)	ND (1.2)	NA	ND (1.1)	NA	ND (1.2)	NA	ND (1.2)	NA	ND (1.3)	NA	ND (1.3)	NA	ND (1.2)	170	1,250	1.5	
Acenaphthene	7440-27-4	NA	ND (0.55)	ND (0.60)	NA	ND (0.55)	NA	ND (0.62)	NA	ND (0.60)	NA	ND (0.64)	NA	ND (0.64)	NA	ND (0.60)	170	1,250	1.9	
Other Parameters (mg/kg)																				
Ammonia	62-53-1	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE
Other Parameters		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE
pH Laboratory		NA	NA	7.2	NA	NA	NA	NA	NA	NA	NA	7.3	NA	NA	NA	NA	NA	NE	NE	NE
Nitrogen, nitrate		NA	NA	ND (3.0)	NA	42	NA	NA	NA	NA	NA	ND (0.2)	NA	NA	NA	NA	NA	NE	NE	NE
Sulfate, soluble		NA	NA	ND (48)	NA	64	NA	NA	NA	NA	NA	62	NA	NA	NA	NA	NA	NE	NE	NE
Asbestos		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE
Gasoline Range Organics		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE
Diesel Range Organics		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE

NOTES:
mg/kg = Milligrams per kilogram.
< = Compound/parameter was not detected above the laboratory reporting limit indicated.
NA = Not analyzed for this parameter.
SRV = 1999 Soil Reference Value (SRV) established by the Minnesota Pollution Control Agency.
SLV = November 1999 Soil Leaching Value established by the Minnesota Pollution Control Agency.
* = Standard for hexavalent chromium is provided.
** Benzofluoranthene (BzF) equivalent is a calculated value based on the weighted concentration and toxicity of the following compounds: benzofluoranthene, benzofluoranthene, benzofluoranthene, benzofluoranthene, benzofluoranthene, benzofluoranthene, benzofluoranthene, benzofluoranthene, benzofluoranthene, benzofluoranthene.
*** Individual standard not established, compound included in calculation of BzF equivalent.
Sliding indicates sample result exceeded residential SRV.

Compound/Parameter	CAS No.	Sample Identifier										Residential Soil Reference Value (mg/kg)	Industrial Soil Reference Value (mg/kg)	T1 Soil Leaching Value (mg/kg)			
		WWTP-TP-1015 (B)	WWTP-TP-1110 (A)	WWTP-TP-1110 (B)	WWTP-TP-12 SL-AG	WWTP-TP-12 T-N	WWTP-TP-12 ASBESTOS	WWTP-TP-12 4-5 TEASH PIT P12 (A)	WWTP-TP-12 4-5 TEASH PIT P12	WWTP-TP-12 ELECTRICAL INSULATION	WWTP-TP-13 (B-1) (B)						
Volatile Organic Compounds (mg/kg)																	
Acetone	67-64-1	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	ND (11)	ND (11)	NA	NA	NA	1.3	1,000	0.7
Benzene	71-43-2	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	ND (11)	ND (11)	NA	NA	NA	0.17	4	0.034
n-Butylbenzene	104-51-8	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	ND (11)	ND (11)	NA	NA	NA	0.041	25	1
sec-Butylbenzene	135-98-8	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	ND (11)	ND (11)	NA	NA	NA	0.071	200	4.7
Ethylbenzene	106-41-4	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	ND (11)	ND (11)	NA	NA	NA	0.13	30	18
Isopropylbenzene (Cumene)	98-82-8	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	ND (11)	ND (11)	NA	NA	NA	0.11	NE	NE
n-Propylbenzene	99-87-6	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	300	ND (11)	NA	NA	NA	3.2	30	30
n-Propyltoluene	91-20-3	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	NA	ND (11)	NA	NA	NA	4.5	107	6.4
o-Xylene	103-65-1	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	NA	ND (11)	NA	NA	NA	1.4	5	0.31
Toluene	108-88-3	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	NA	ND (11)	NA	NA	NA	0.35	4	NE
1,2,4-Trimethylbenzene	95-63-6	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	NA	ND (11)	NA	NA	NA	4.7	110	45
1,3,5-Trimethylbenzene	108-67-8	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	NA	ND (11)	NA	NA	NA	2.2	248	45
m,p-Xylenes	108-38-9/106-42-3	ND (0.39)	NA	ND (0.29)	NA	NA	NA	NA	NA	NA	ND (11)	NA	NA	NA	2.2	248	45
Semi-Volatile Organic Compounds (mg/kg)																	
Acetophenone	83-32-9	ND (0.98)	ND (0.95)	ND (0.38)	NA	1,900	ND (470)	1,900	NA	NA	ND (900)	NA	NA	NA	ND (38)	1,200	50
Anthracene	120-12-7	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	3,600	ND (1.90)	3,600	NA	NA	1,100	NA	NA	NA	32	7,880	942
Benzo(a)anthracene	56-55-3	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	2,600	ND (1.90)	2,600	NA	NA	1,100	NA	NA	NA	38	NA	NA
Benzo(b)fluoranthene	205-99-2	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	1,500	ND (1.90)	1,500	NA	NA	760	NA	NA	NA	28	NA	NA
Benzo(k)fluoranthene	207-08-9	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	2,500	ND (1.90)	2,500	NA	NA	940	NA	NA	NA	39	NA	NA
Benzo(a,h)pyrene	191-34-2	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	1,100	ND (1.90)	1,100	NA	NA	450	NA	NA	NA	20	NA	NA
Benzo(b)pyrene	50-32-8	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	2,200	ND (1.90)	2,200	NA	NA	930	NA	NA	NA	36	700	NE
Carbazole	86-74-8	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	1,700	ND (1.90)	1,700	NA	NA	ND (600)	NA	NA	NA	ND (15)	NE	NE
4-Chlorophenyl phenyl ether	7005-72-3	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	2,400	ND (470)	2,400	NA	NA	ND (900)	NA	NA	NA	36	NE	NE
Chrysene	218-01-9	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	2,100	ND (1.90)	2,100	NA	NA	1,000	NA	NA	NA	ND (15)	104	810
Dibenzofuran	132-64-9	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	2,100	ND (1.90)	2,100	NA	NA	ND (660)	NA	NA	NA	ND (15)	2,440	16,500
Di-n-butylphthalate	84-74-2	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	ND (700)	ND (700)	ND (700)	NA	NA	ND (660)	NA	NA	NA	ND (15)	NE	NE
2,4-Dinitrophenol	51-28-5	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	ND (1,800)	ND (1,800)	ND (1,800)	NA	NA	ND (660)	NA	NA	NA	ND (15)	NE	NE
di-n-butylphthalate	117-84-0	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	ND (700)	ND (700)	ND (700)	NA	NA	ND (660)	NA	NA	NA	ND (15)	520	3,700
Fluorenone	206-44-0	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	8,600	ND (700)	8,600	NA	NA	3,100	NA	NA	NA	110	1,980	6,800
Fluorenylacetone	85-71-7	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	3,200	ND (700)	3,200	NA	NA	540	NA	NA	NA	16	830	4,130
Indeno(1,2,3-cd)pyrene	193-39-5	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	1,400	ND (700)	1,400	NA	NA	570	NA	NA	NA	22	NE	0.16
Isophthalic acid	78-59-1	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	1,100	ND (700)	1,100	NA	NA	ND (360)	NA	NA	NA	ND (15)	NE	NE
2-Methylnaphthalene	91-57-6	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	1,100	ND (700)	1,100	NA	NA	ND (360)	NA	NA	NA	7.5	28	7.5
Naphthalene	91-20-3	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	3,600	ND (360)	3,600	NA	NA	2,500	NA	NA	NA	97	NE	NE
Phenanthrene	85-01-8	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	11,800	ND (360)	11,800	NA	NA	2,500	NA	NA	NA	89	890	5,800
Pyrene	129-00-0	ND (0.39)	ND (0.38)	ND (1.90)	ND (1.90)	6,400	ND (360)	6,400	NA	NA	2,700	NA	NA	NA	2	272	272
Polychlorinated Biphenyls (PCBs) (mg/kg)																	
PCB 1016	NA	ND (0.97)	ND (0.95)	ND (0.38)	NA	ND (0.66)	ND (0.66)	ND (0.66)	NA	NA	ND (0.56)	NA	NA	NA	ND (1.2)	NE	NE
PCB 121	NA	ND (0.97)	ND (0.95)	ND (0.38)	NA	ND (0.66)	ND (0.66)	ND (0.66)	NA	NA	ND (0.56)	NA	NA	NA	ND (1.2)	NE	NE
PCB 122	NA	ND (0.97)	ND (0.95)	ND (0.38)	NA	ND (0.66)	ND (0.66)	ND (0.66)	NA	NA	ND (0.56)	NA	NA	NA	ND (1.2)	NE	NE
PCB 124	NA	ND (0.97)	ND (0.95)	ND (0.38)	NA	ND (0.66)	ND (0.66)	ND (0.66)	NA	NA	ND (0.56)	NA	NA	NA	ND (1.2)	NE	NE
PCB 128	NA	ND (0.97)	ND (0.95)	ND (0.38)	NA	ND (0.66)	ND (0.66)	ND (0.66)	NA	NA	ND (0.56)	NA	NA	NA	ND (1.2)	NE	NE
PCB 154	NA	ND (0.97)	ND (0.95)	ND (0.38)	NA	ND (0.66)	ND (0.66)	ND (0.66)	NA	NA	ND (0.56)	NA	NA	NA	ND (1.2)	NE	NE
PCB 180	NA	ND (0.97)	ND (0.95)	ND (0.38)	NA	ND (0.66)	ND (0.66)	ND (0.66)	NA	NA	ND (0.56)	NA	NA	NA	ND (1.2)	NE	NE
Total PCBs																	
Total PCBs	1336-36-3	ND	ND	ND	NA	ND	ND	ND	NA	NA	0.18	NA	NA	NA	2.7	8	2.1
Metal (mg/kg)																	
Arsenic, Total	7440-38-2	3.4	3.4	3.4	NA	5.5	NA	5.5	NA	NA	84	NA	NA	NA	10	25	15.1
Barium, Total	7440-41-7	73	73	73	NA	18	NA	18	NA	NA	95	NA	NA	NA	1,200	12,500	842
Calcium, Total	7440-43-9	0.12	0.12	0.12	NA	0.43	NA	0.43	NA	NA	0.81	NA	NA	NA	35	250	4.4
Chromium, Total	16065-83-1	11	11	11	NA	11	NA	11	NA	NA	17	NA	NA	NA	71*	425*	18*
Cadmium, Total	7439-97-1	94	94	94	NA	94	NA	94	NA	NA	150	NA	NA	NA	400	700	595
Copper, Total	7439-97-6	0.08	0.08	0.08	NA	0.08	NA	0.08	NA	NA	0.45	NA	NA	NA	0.7	2	1.6
Mercury, Total	7182-49-2	ND (1.1)	ND (1.1)	ND (1.1)	NA	ND (1.1)	NA	ND (1.1)	NA	NA	ND (1.1)	NA	NA	NA	1.250	1,250	1.5
Selenium, Total	7440-22-4	ND (0.57)	ND (0.57)	ND (0.57)	NA	ND (0.64)	NA	ND (0.64)	NA	NA	0.08	NA	NA	NA	170	1,250	3.9
Explosives (mg/kg)																	
Total Nitro Aromatic Compounds	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NE	NE
Ammonium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NE	NE
Other Parameters (mg/kg)																	
pH Laboratory	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NE	NE
Sulfide, soluble	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20%	NA	NA	NA	NA	NE	NE
Sulfide, insoluble	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20%	NA	NA	NA	NA	NE	NE
Asbestos	NA	NA	ND (4.3)	NA	NA	NA	NA	NA	NA	NA	56,000	NA	NA	NA	NA	NE	NE

NOTES:
mg/kg = Milligrams per kilogram.
< = Compound/parameter was not detected above the laboratory reporting limit indicated.
NE = Not established.
NA = Not analyzed for this parameter.
SRV = 1999 Soil Reference Value (SRV) established by the Minnesota Pollution Control Agency.
SLV = November 1999 Soil Leaching Value established by the Minnesota Pollution Control Agency.
* Standard for hexavalent chromium is provided.
** Benzofluoranthene (BbF) equivalent is a calculated value based on the weighted concentration and toxicity of the following compounds: benzo(a)anthracene, benzo(k)fluoranthene, benzo(b)fluoranthene, benzo(e)fluoranthene, benzo(g)herylene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
*** Individual standard not established, compound included in calculation of BbF equivalent.
Shading indicates sample exceeds residential SRV.

Compound/Parameter	CAS No.	Sample Identifier											Residential Soil Reference Value (mg/kg)	Industrial Soil Reference Value (mg/kg)	Tier 1 Soil Leaching Value (mg/kg)		
		WWTP-TP-13 (0-1) (A)	WWTP-TP-13 (1-2)	WWTP-TP-14 (0-2)	WWTP-TP-17 & 18 2	WWTP-TP-17 & 18 2 (A)	WWTP-TP-17 & 18 2 (B)	WWTP-TP-19 (2)	WWTP-TP-20 2 (B)	WWTP-TP-22 (0-2)	WWTP-TP-23 (0-1)	WWTP-TP-24 (0-1)					
Volatiles Organic Compounds (mg/kg)																	
Acetone	67-64-1	NA	NA	NA	NA	NA	NA	ND (0.29)	NA	NA	ND (0.80)	NA	NA	NA	320	1,000	0.7
Benzene	71-43-2	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	1.5	4	0.034
m-Xylene	101-31-8	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	25	92	NE
o-Xylene	135-98-8	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	200	70	1
p-Xylene	106-41-4	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	200	200	4.7
Ethyl Benzene	98-87-8	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	30	87	18
Isopropylbenzene (Cumene)	99-87-6	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	NE	NE	NE
p-Isopropylbenzene	91-20-3	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	10	28	7.5
Vegethalene	103-65-1	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	30	93	NE
n-Propylbenzene	108-88-3	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	107	309	107
Toluene	95-63-4	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	5	10	6.4
1,2,4-Trimethylbenzene	108-67-8	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	4	10	0.31
1,3,5-Trimethylbenzene	108-38-3/106-42-3	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	110	248	45
m,p-Xylenes	95-47-6	NA	NA	NA	NA	NA	NA	ND (0.029)	NA	NA	ND (0.038)	NA	NA	NA	110	248	45
Semi-Volatile Organic Compounds (mg/kg)																	
Acenaphthene	83-32-9	ND (3.7)	NA	ND (6.1)	NA	ND (9.70)	NA	ND (0.4)	NA	ND (1.3)	NA	NA	NA	1,200	5,260	50	
Anthracene	120-12-7	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	7,880	45,000	942	
Benzofluoranthene	56-55-3	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	NE	NE	NE	
Benzokjelloranthene	205-99-2	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	NE	NE	NE	
Benzofluoranthene	207-08-9	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	NE	NE	NE	
Benzokjelloranthene	191-24-2	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	NE	NE	NE	
Benzofluoranthene	50-32-8	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	700	1,310	NE	
Benzofluoranthene	86-74-8	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	NE	NE	NE	
Chrysene	7005-72-3	ND (3.7)	NA	ND (6.1)	NA	ND (9.70)	NA	ND (0.4)	NA	ND (1.3)	NA	NA	NA	NE	NE	NE	
4-Chlorophenyl-phenylether	218-01-9	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	104	810	NE	
Dibenzofuran	132-64-9	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	2,440	16,300	23	
di-n-butylphthalate	84-74-2	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	NE	NE	NE	
2,4-Dinitrophenol	51-28-5	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	NE	NE	NE	
di-n-octylphthalate	117-84-0	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	520	3,700	0.014	
Fluoranthene	206-44-0	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	1,080	6,800	295	
Fluorene	86-73-7	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	850	4,130	4.7	
Fluorene	193-59-5	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	NE	NE	NE	
Indeno(1,2,3-cd)pyrene	78-59-1	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	NE	NE	NE	
Ispiprene	91-57-6	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	10	28	7.5	
2-Methylnaphthalene	91-20-3	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	NE	NE	NE	
Naphthalene	85-01-8	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	NE	NE	NE	
Phenanthrene	129-00-0	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	890	5,800	272	
Pyrene	129-00-0	ND (1.5)	NA	ND (2.4)	NA	ND (0.38)	NA	ND (0.4)	NA	ND (0.5)	NA	NA	NA	2	4	2	
BaP Equivalent**																	
Polychlorinated Biphenyls (PCBs) (mg/kg)																	
PCB 1016		ND (0.056)	NA	NA	NA	ND (0.058)	NA	NA	NA	ND (0.075)	NA	NA	NA	NE	NE	NE	
PCB 1221		ND (0.056)	NA	NA	NA	ND (0.058)	NA	NA	NA	ND (0.075)	NA	NA	NA	NE	NE	NE	
PCB 1232		ND (0.056)	NA	NA	NA	ND (0.058)	NA	NA	NA	ND (0.075)	NA	NA	NA	NE	NE	NE	
PCB 1242		ND (0.056)	NA	NA	NA	ND (0.058)	NA	NA	NA	ND (0.075)	NA	NA	NA	NE	NE	NE	
PCB 1248		ND (0.056)	NA	NA	NA	ND (0.058)	NA	NA	NA	ND (0.075)	NA	NA	NA	NE	NE	NE	
PCB 1254		ND (0.056)	NA	NA	NA	ND (0.058)	NA	NA	NA	ND (0.075)	NA	NA	NA	NE	NE	NE	
PCB 1260		ND (0.056)	NA	NA	NA	ND (0.058)	NA	NA	NA	ND (0.075)	NA	NA	NA	NE	NE	NE	
Total PCBs	1336-56-3	ND	NA	NA	NA	ND	NA	NA	NA	ND	NA	NA	NA	1.2	8	2.1	
Metals (mg/kg)																	
Arsenic, Total	7440-38-2	4.8	4.1	3.6	NA	3.9	NA	2.3	4.9	4.5	4.9	NA	NA	10	25	13.1	
Barium, Total	7440-41-7	190	80	79	NA	91	NA	55	120	110	130	NA	NA	1,200	12,500	842	
Cadmium, Total	7440-43-9	0.12	0.16	0.18	NA	ND (0.12)	NA	0.28	0.61	0.14	0.19	NA	NA	35	250	4.4	
Chromium, Total	16065-83-1	18	18	7.2	NA	13	NA	9	14	16	15	NA	NA	425	790	18*	
Lead, Total	7439-92-1	8.0	5.6	11	NA	6.6	NA	17	41	7.4	12	NA	NA	400	700	52*	
Manganese, Total	7439-97-6	29	0.025	30	NA	23	NA	430	590	20	0.027	NA	NA	0.7	2	1.6	
Selenium, Total	7782-49-2	1.4	ND (1.1)	ND (1.1)	NA	ND (1.2)	NA	12	1.1	ND (1.2)	ND (1.2)	NA	NA	170	1,250	1.5	
Silver, Total	7440-22-4	ND (5.9)	NA	ND (5.9)	NA	ND (0.59)	NA	NA	1.1	ND (0.59)	ND (0.59)	NA	NA	170	1,250	3.9	
Explosives (mg/kg)																	
Total Nitro-Aromatic Compounds		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE	
Anthracene	62-53-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NE	NE	NE	
Other Parameters (mg/kg)																	
pH Laboratory		7.0	NA	NA	NA	6.8	NA	NA	NA	NA	7.7	NA	NA	NE	NE	NE	
Nitrogen, nitrate	ND(28)	NA	NA	NA	NA	4.5	NA	NA	NA	ND(38)	NA	NA	NA	NE	NE	NE	
Sulfate, soluble	50	NA	NA	NA	NA	51	NA	NA	NA	69	NA	NA	NA	NE	NE	NE	
Asbestos	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA	NA	NA	NE	NE	NE	
Diesel Range Organics	24	NA	NA	ND(99)	NA	ND(42)	NA	NA	8.0	NA	NA	NA	NA	NE	NE	NE	

NOTES:

- mg/kg = Milligrams per Kilogram.
- < = Compound/parameter was not detected above the laboratory reporting limit indicated.
- NE = Not established.
- NA = Not analyzed for this parameter.
- SRV = 1999 Soil Reference Value (SRV) established by the Minnesota Pollution Control Agency.
- SLV = November 1999 Soil Leaching Value established by the Minnesota Pollution Control Agency.
- ** Standard for hexavalent chromium is provided.
- *** Benzofluoranthene (BzF) equivalent is a calculated value based on the weighted concentration and toxicity of the following compounds: benzofluoranthene, benzofluoranthene, benzofluoranthene, chrysene, dibenzofluoranthene, indeno(1,2,3-cd)pyrene.
- **** Individual standard not established, compound included in calculation of BzF equivalent.
- Shading indicates sample exceeds residential SRV.

Table 5
Soil Analytical Results - Primary Settling Basin and Machine Shop
Former Gopher Ordnance Works
Rosemount, Minnesota

Compound/Parameter	CAS No.	Sample Identifier					Residential Soil Reference Value (mg/kg)	Industrial Soil Reference	Tier I Soil Leaching Value
		PSB-TP-1 (3-4) 1/13/03	PSB-TP-2 (6) 1/13/03	MS-TP-1 (5) 1/13/03	MS-TP-2 1/13/03	MS-TP-2 1/13/03			
Compound/Parameter									
Volatile Organic Compounds (ug/l)		ND	NA	NA	NA	NE	NE	NE	
Total VOCs		ND	NA	NA	NA	NE	NE	NE	
Semi-Volatile Organic Compounds (ug/l)		ND	NA	NA	NA	NE	NE	NE	
Total SVOCs		ND	NA	NA	NA	NE	NE	NE	
Polychlorinated Biphenyls (PCBs) (ug/l)	1336-36-3	ND	NA	NA	NA	1.2	8	2.1	
Total PCBs									
Metals (mg/kg)									
Arsenic, Total	7440-38-2	5.6	3.3	4.1	NA	10	25	15.1	
Barium, Total	7440-41-7	420	99	110	NA	1,200	12,500	842	
Cadmium, Total	7440-43-9	0.73	0.17	0.13	NA	35	250	4.4	
Chromium, Total	16065-83-1	23	12	14	NA	71*	425*	18*	
Lead, Total	7439-92-1	13	6.2	6.5	NA	400	700	525	
Mercury, Total	7439-97-6	0.22	0.11	0.022	NA	0.7	2	1.6	
Selenium, Total	7782-49-2	1.6	ND (1.1)	ND (1.2)	NA	170	1,250	1.5	
Silver, Total	7440-22-4	ND (0.76)	ND (0.57)	ND (0.60)	NA	170	1,250	3.9	
Explosives (mg/kg)									
2,4-Dinitrotoluene		0.75	0.37	NA	NA	50	335	0.001	
2,6-Dinitrotoluene		0.88	0.52	NA	NA	25	175	0.001	
m-Nitrotoluene		0.59	0.33	NA	NA	NE	NE	NE	
o-Nitrotoluene		6.03	2.75	NA	NA	NE	NE	NE	
Aniline		ND	ND	NA	NA	NE	NE	NE	
Other Parameters (mg/kg)									
Asbestos		ND	NA	NA	NA	NE	NE	NE	
Nitrogen as Nitrate		ND (3.8)	ND (2.9)	NA	NA	NE	NE	NE	
Soluble Sulfate		NA	50	NA	NA	NE	NE	NE	
pH, Laboratory		7.1	8.1	NA	NA	NE	NE	NE	
Diesel Range Organics		ND (5.8)	NA	ND (4.4)	ND (3.7)	NE	NE	NE	

NOTES:
mg/kg = Milligrams per kilogram.
< = Compound/parameter was not detected above the laboratory reporting limit indicated.
NE = Not established.
NA = Not analyzed for this parameter.
SRV = 1999 Soil Reference Value established by the Minnesota Pollution Control Agency.
SLV = November 1999 Soil Leaching Value established by the Minnesota Pollution Control Agency.
* Standard for hexavalent chromium is provided.
** Benzofluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, debenzo(a,h)anthracene, indeno(1,2,3-c,d)pyrene.
*** Individual standard not established, compound included in calculation of BaP equivalent.