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July 12, 2013
REVISED June 19, 2015

This document incorporates responses to ADEM comments and supersedes the previous submittal of the letter in its entirety. The attachments associated with the April 24, 2015 submittal have not been changed.

Mr. Stephen A. Cobb, Chief
c/o Mrs. Brandi Little
Governmental Hazardous Waste Branch Land Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, Alabama 36130-1463

Via Email
Original to Follow by Mail

SUBJECT: Risk Management Plan, Revision 4 – Calculation of Risk Management-1 Risk-Based Target Levels to meet Alabama Risk-Based Corrective Action Guidance, McClellan, Anniston, Alabama

Dear Mr. Cobb:

The Alabama Department of Environmental Management (ADEM or Department) issued a series of informal comments from November 28, 2012 through March 1, 2013 to the McClellan Development Authority (MDA) regarding the Covenant associated with the Former Chemical Laundry and Motor Pool Area 1500, Parcel 94(7) (Chemical Laundry). An additional informal comment was provided on June 5, 2015. The purpose of this letter is to address questions related to the risk-based target levels (RBTLs) used to evaluate detected concentrations of compounds at McClellan.

Matrix Environmental Services, L.L.C. (MES) has calculated Risk Manangement-1 (RM-1) RBTLs in accordance with Alabama Risk-Based Corrective Action (ARBCA) Guidance Manual, Revision 2 (April 2008) on behalf of the MDA to meet the Department's request. Additionally, ADEM provided formal comments dated:

- August 22, 2013
- November 24, 2014
- Conference call conducted on April 9, 2015
- May 19, 2014
- April 2, 2015

Existing Clean-Up Levels

Per guidance provided by ADEM via email on January 22, 2013, MES intends to use the Clean-Up Standards shown in the existing ADEM-approved Corrective Measures Implementation Plans (CMI Plans) associated with each of the following sites:

- Former Small Weapons Repair Shop, Parcel 66(7)
- Training Area T-6 (Naylor Field), Parcel 183(6) and Cane Creek Training Area, Parcel 510(7)
- Landfill 3, Parcel 80(6) and Fill Area Northwest of Reilly Airfield, Parcel 229(7).

Therefore, **Table V.3 Groundwater Protection Standard** shown in the Cleanup Agreement AL4 210 020 562 (CA) will remain as is for the constituents associated with the above parcels. MDA acknowledges that if a clean-up level is greater than the unrestricted residential clean-up level defined in ARBCA a covenant will remain in place.

Notes and Decision Inputs Used for the Development of RBTLs

The following notes are made related to the calculation of RBTLs. These RBTLs will be applicable for sites without a currently approved CMI Plan.

- RBTL categories were expanded from ARBCA to include a mutagenic mode of action RBTL for the pathways involving receptors under 16 years of age, specifically the Child Resident and Adolescent Trespasser (Recreational User). Vinyl chloride is evaluated separately and was calculated manually with inputs from the EPA Regional Screening Level calculator. Mutagenic RBTLs were not required to be calculated for worker pathways because mutagenic adjustments are not applicable to adult receptors.
- No groundwater RBTLs were calculated for the Trespasser (Recreational User) or the Construction Worker as these receptors will not use Site groundwater.
- RBTLs for soil and sediment for the Trespasser (Recreational User) are the same, as the RM-1-specified exposure assumptions are the same.
- The inhalation pathway (volatilization into air while bathing) was only included for chemicals identified as Volatile Organic Compounds (VOCs).
- Inhalation RBTLs were calculated using the updated EPA methodology per USEPA Risk Assessment Guidance for Superfund (RAGS) Part F. These calculations differ slightly from those presented in the ARBCA guidance, as they do not include terms for inhalation rates or body weights.
- The permeability constants from the RSL tables dated May 2014 have been incorporated into the RBTL calculations.
- Groundwater RBTLs that are below promulgated MCLs will not be used as remediation goals. The proposed clean-up standard will be the MCL where one exists.
- Trichloroethylene (TCE) RBTLs were developed using the chemical-specific mutagenic equations. As noted above, because the proposed groundwater clean-up standard will default up to the MCL, the modified calculations would not affect groundwater remedial actions based on TCE.
- Per the informal comments received on February 20, 2013 and March 1, 2013, vapor intrusion scenarios should be included in the calculation of RBTLs. However, calculation

of these RBTLs would be based on many assumptions and unknown conditions. As an example, MDA does not have a means in which to predict the timeline for construction of buildings nor the concentrations of contaminants at the time of construction. Based on a discussion with ADEM on April 8, 2014, potential future vapor intrusion into structures to be built on the site will be managed on a site-specific basis. Land use controls will be used to manage potential vapor intrusion, as appropriate. Therefore, RBTLs assuming uncontrolled conditions have not been calculated.

- Per the informal comments received on December 18, 2012:
  - Showering times used for adult and child receptors under a reasonable maximum exposure scenario was 0.58 hr and 1 hour, respectively.
  - Dermal exposure to VOCs in water while bathing follows RAGS, Part E.
  - Age dependent adjustment factors and age-specific exposure estimates as required by EPA in the RSL equations were used for mutagenic chemical compounds, including vinyl chloride.
- Exposure via inhalation of particulates for residents and trespassers is negligible compared with other soil exposures due to the low particulate volatilization factor (VFp).
  - As an example, a comparison was made between the total quantity of soil a child would be exposed to both the ingestion and dust inhalation pathways.

    Ingestion: 200 mg/day (ADEM default)

    Inhalation: Calculated with ADEM defaults 9.76×10^{-12} kg soil/m^3 air x 10 hr/day x 0.5 m^3/hr x 10^6 mg soil/kg soil = 0.000049 mg/day
- Per the informal comment received on June 5, 2015, the final potential remedies for each site will be evaluated in the context of the total risks to ensure that the overall risk target of 1E-05 has been met for each potential receptor. A similar approach will be taken for total hazard, which must not exceed 1.0. However, unlike cancer risk, noncarcinogenic hazards may be evaluated separately for each target organ, with a total target Hazard Index of 1.0 for each organ system (in accordance with USEPA guidance and ARBCA Section 2.7).

Receptor Scenarios and Conceptual Site Model

Attachment 4 contains the Site-Wide Conceptual Site Exposure Model prepared in accordance with RAGS. Attachment 4 also contains Table 1 as well as Tables 4-1 through 4-6 as presented in RAGS, Part D, which outline the media, receptors and exposure pathways where RBTLs were calculated.

MDA notes that the fish ingestion pathway for the Adolescent Trespasser may potentially be complete. Due to the complexity of the decision inputs, this evaluation will be performed on a site-specific basis, as necessary.

An electronic copy of this document has been provided to Mrs. Brandi Little via e-mail and two hard copies will follow by mail. It has been a pleasure working with you on this program. Please contact me at (256) 847-0780 (Anniston) or (770) 594-0331 (Atlanta) should you have any questions or comments.

Sincerely,
MATRIX ENVIRONMENTAL SERVICES, LLC

Richard Satkin, P.G.
McClellan Program Manager

Enclosures: Attachment 1: Risk Algorithms (Formerly called Attachment C)
Attachment 2: Risk-Based Target Levels
Table 1. Groundwater RBTLs
Table 2. Soil RBTLs
Table 3. Surface Water RBTLs
Table 4. Sediment RBTLs
Attachment 3: Excel Files Used to Calculate RBTLs (on CD-ROM)
Attachment 4: Conceptual Site Model and Tables 1, 4-1 through 4-6 of RAGS

CC: Mrs. Brandi Little, ADEM (two paper copies and one electronic copy on CD-ROM)
Mr. Robin Scott, MDA (one paper copy)
Ms. Lisa Holstein, U.S. Army (one paper copy and one electronic copy on CD-ROM)
Ms. Jennifer Keys, MES (one paper copy)
Matrix Project File (two paper copies and two electronic copies on CD-ROM)

Attachment 1
Risk Algorithms

ATTACHMENT 1 – REVISED APRIL 13, 2014 (formerly Attachment C)
RISK ALGORITHMS

See Table C-1 for the variables and assigned values.

Soil/Sediment

Construction and Maintenance Workers

$$RBTL_{soil} = \frac{1}{\left(\frac{1}{RBTL_{ing}}\right) + \left(\frac{1}{RBTL_{der}}\right) + \left(\frac{1}{RBTL_{inh}}\right)} \quad (1)$$

Residents and Trespassers

$$RBTL_{soil} = \frac{1}{\left(\frac{1}{RBTL_{ing}}\right) + \left(\frac{1}{RBTL_{der}}\right)} \quad (2)$$

The equations shown below produce results in mg/kg. RBTLs for organics were multiplied by 1,000 to obtain results in µg/kg.

Pathway RBTLs

Ingestion - Carcinogenic effects

$$RBTL_{ing} = \frac{ELCR \; x \; BW \; x \; AT_c \; x \; 365 \; {}^{days}/_{yr}}{IR_s \; x \; ED \; x \; EF \; x \; 10^{-6} \; {}^{kg}/_{mg} \; x \; SF_o} \quad (3)$$

Ingestion - Noncarcinogenic effects

$$RBTL_{ing} = \frac{THQ \; x \; BW \; x \; RfD_o \; x \; AT_{nc} x \; 365 \; {}^{days}/_{yr}}{IR_s \; x \; ED \; x \; EF \; x \; 10^{-6} \; {}^{kg}/_{mg}} \quad (4)$$

Dermal - Carcinogenic effects

$$RBTL_{der} = \frac{ELCR \; x \; BW \; x \; AT_c x \; 365 \; {}^{days}/_{yr}}{SA \; x \; M \; x \; ABS \; x 10^{-6} \; {}^{kg}/_{mg} \; x \; ED \; x \; EF \; x \; SF_d} \quad (5)$$

Dermal - Noncarcinogenic effects

$$RBTL_{der} = \frac{THQ \; x \; BW \; x \; RfD_d \; x \; AT_{nc} x \; 365 \; {}^{days}/_{yr}}{A \; x \; M \; x \; ABS \; x 10^{-6} \; {}^{kg}/_{mg} \; x \; ED \; x \; EF} \quad (6)$$

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RISK ALGORITHMS

Inhalation - Carcinogenic effects

$$RBTL_{inh} = \frac{ELCR \; x AT_c x \; 365 \; {}^{days}/_{yr} \; x \; 24 \; {}^{hrs}/_{day}}{VF_p \; x 10^3 \; {}^{ug}/_{mg} \; x \; ET \; x \; ED \; x \; EF \; x \; IUR} \quad (7)$$

Inhalation - Noncarcinogenic effects

$$RBTL_{inh} = \frac{THQ \; x \; RfC \; x \; AT_c \; x \; 365 \; {}^{days}/_{yr} \; x \; 24 \; {}^{hrs}/_{day}}{VF_p \; x \; ET \; x \; ED \; x \; EF} \quad (8)$$

Mutagenic (MMOA) Chemicals

Ingestion

$$RBTL_{ing-MMOA} = RBTL_{ing} \text{ [from Equation 3] } x \; Mutagenic \; Scaling \; Ratio \quad (9)$$

Dermal

$$RBTL_{der-MMOA} = RBTL_{der} \text{ [from Equation 5] } x \; Mutagenic \; Scaling \; Ratio \quad (10)$$

Inhalation

$$RBTL_{inh-MMOA} = RBTL_{inh} \text{ [from Equation 7] } x \; Mutagenic \; Scaling \; Ratio \quad (11)$$

Ingestion Mutagenic Scaling Ratio:

Resident

$$IFSM_{adj} \left(\frac{489.5 \text{ mg-Year}}{\text{Kg-day}}\right) = \frac{ED_{0\text{-}2} \text{ (yr)} \times IRS_c \left(\frac{200 \text{ mg}}{\text{day}}\right) \times 10}{BW_c \text{ (15 Kg)}} + \frac{ED_{2\text{-}6} \text{ (yr)} \times IRS_c \left(\frac{200 \text{ mg}}{\text{day}}\right) \times 3}{BW_c \text{ (15 Kg)}} + \frac{ED_{6\text{-}16} \text{ (yr)} \times IRS_a \left(\frac{100 \text{ mg}}{\text{day}}\right) \times 3}{BW_a \text{ (70 Kg)}} + \frac{ED_{16\text{-}30} \text{ (yr)} \times IRS_a \left(\frac{100 \text{ mg}}{\text{day}}\right) \times 1}{BW_a \text{ (70 Kg)}}$$

$$Ratio = \frac{\left[ED_a \text{ (30 } yrs) x \; IRS_a \left(\frac{100 \; mg}{day}\right)\right] / BW_a (70 \; kg)}{489.5 \left(\frac{mg - year}{kg - day}\right)} = 0.0876 \quad (12)$$

Adolescent Trespasser

$$Ratio = \frac{BW_r \; (45 \; kg) \Big/ \left[IR_{sr} \left(100 \; mg_{day}\right) x \; ED_r \; (10 \; yrs) x \; 3\right]}{BW_a \; (70 \; kg) \Big/ \left[IR_{sr} \left(100 \; mg_{day}\right) x \; ED_a \; (30 \; yrs)\right]} = 0.643 \quad (13)$$

ATTACHMENT 1 – REVISED APRIL 13, 2014 (formerly Attachment C)
RISK ALGORITHMS

Dermal Mutagenic Scaling Ratio

Resident

$$DFSM_{adj}\left(\frac{1445\ mg\text{-}Year}{Kg\text{-}day}\right)=\frac{ED_{0\text{-}2}\,(yr)\times AF_c\left(\frac{0.2\ mg}{cm^2}\right)\times SA_c\left(\frac{2800\ cm^2}{day}\right)\times 10}{BW_c\,(15\ Kg)}+\frac{ED_{2\text{-}6}\,(yr)\times AF_c\left(\frac{0.2\ mg}{cm^2}\right)\times SA_c\left(\frac{2800\ cm^2}{day}\right)\times 3}{BW_c\,(15\ Kg)}+$$
$$\frac{ED_{6\text{-}16}\,(yr)\times AF_a\left(\frac{0.07\ mg}{cm^2}\right)\times SA_a\left(\frac{5700\ cm^2}{day}\right)\times 3}{BW_a\,(70\ Kg)}+\frac{ED_{16\text{-}30}\,(yr)\times AF_a\left(\frac{0.07\ mg}{cm^2}\right)\times SA_a\left(\frac{5700\ cm^2}{day}\right)\times 1}{BW_a\,(70\ Kg)}$$

$$Ratio=\frac{\left[ED_a\,(30\ yrs)x\ SA_a\left(5{,}700\ \frac{cm^2}{day}\right)x\ AF\left(\frac{0.2\ mg}{cm^2}\right)\right]}{BW_a(70\ kg)}}{1445\left(\frac{mg-year}{kg-day}\right)}=0.338 \quad (14)$$

Adolescent Trespasser

$$Ratio=\frac{\frac{\left[ED_a\,(30\ yrs)x\ SA_a\,(5{,}700\ cm^2)\ x\ AF_a\left(\frac{0.2\ mg}{cm^2}\right)\ x\ EF_a\,(350\ \frac{days}{yr}\right]}{BW_a(70\ kg)}}{\frac{\left[ED_r\,(10\ yrs)x\ SA_r\,(5{,}700\ cm^2)\ x\ AF_r\left(\frac{0.2\ mg}{cm^2}\right)\ x\ EF_r\ x\ 350\left(\frac{days}{yr}\right)x\ 3\right]}{BW_r(45\ kg)}}=0.643 \quad (15)$$

Soil RBTL for Vinyl Chloride (Residential RSL From Nov. 2013 RSL table)

Ingestion

$$SL_{res\text{-}soil\text{-}ca\text{-}vc\text{-}ing}\,(mg/kg)=\frac{TR}{\left(\frac{CSF_o\left(\frac{mg}{Kg\text{-}day}\right)^{-1}\times EF_r\left(\frac{350\ days}{year}\right)\times IFS_{adj}\left(\frac{114\ mg\text{-}yr}{kg\text{-}d}\right)\times\frac{10^{-6}Kg}{1\ mg}}{AT_r\left(\frac{365\ days}{year}\times LT\,(70\ years)\right)}\right)+\left(\frac{CSF_o\left(\frac{mg}{Kg\text{-}day}\right)^{-1}\times IRS_o\left(\frac{200\ mg}{day}\right)\times\frac{10^{-6}Kg}{1\ mg}}{BW_c\,(15\ kg)}\right)} \quad (16)$$

RISK ALGORITHMS

Dermal

$$SL_{res\text{-}sol\text{-}ca\text{-}vc\text{-}der}\left(mg/kg\right)=\frac{TR}{\left[\frac{CSF_o\left(\frac{mg}{Kg\text{-}day}\right)^{-1}}{GIABS}\times EF_r\left(\frac{350\ days}{year}\right)\times DFS_{adj}\left(\frac{361\ mg\text{-}yr}{kg\text{-}day}\right)\times ABS_d\times\frac{10^{-6}Kg}{1\ mg}\right]+\left[\frac{CSF_o\left(\frac{mg}{Kg\text{-}day}\right)^{-1}}{GIABS}\times SA_c\left(\frac{2800\ cm^2}{day}\right)\times AF_c\left(\frac{0.2\ mg}{cm^2}\right)\times ABS\times\frac{10^{-6}Kg}{1\ mg}\right]}$$

$$\frac{}{AT_r\left(\frac{365\ days}{year}\times LT\ (70\ years)\right)} \qquad \frac{}{BW_c\left(15\ kg\right)} \qquad (17)$$

Groundwater (Tapwater)/Surface Water

The equations shown below produce results in µg/L. RBTLs for inorganics were divided by 1,000 to obtain results in mg/L.

Resident

$$RBTL_{GW}=\frac{1}{\left(\frac{1}{RBTL_{ing}}\right)+\left(\frac{1}{RBTL_{der}}\right)+\left(\frac{1}{RBTL_{inh}}\right)} \qquad (18)$$

Trespasser

$$RBTL_{GW\ or\ SW}=\frac{1}{\left(\frac{1}{RBTL_{ing}}\right)+\left(\frac{1}{RBTL_{der}}\right)} \qquad (19)$$

Commercial Worker

$$RBTL_{GW}=RBTL_{ing} \qquad (20)$$

Ingestion - Carcinogenic effects

$$RBTL_{ing}=\frac{ELCR\ x\ BW\ x\ AT_c x\ 365\ {}^{days}/_{yr}\ x\ 1000\ {}^{ug}/_{mg}}{IR_W\ x\ ED\ x\ EF\ x\ SF_o} \qquad (21)$$

Ingestion - Noncarcinogenic effects

$$RBTL_{ing}=\frac{THQ\ x\ BW\ x\ RfD_o\ x\ AT_{nc} x\ 365\ {}^{days}/_{yr}\ x\ 1000\ {}^{ug}/_{mg}}{IR_W\ x\ ED\ x\ EF} \qquad (22)$$

Dermal - Carcinogenic effects

$$DA_{event}\left({}^{ug}/_{cm^2-event}\right)=\frac{ELCR\ x\ BW\ x\ \ AT_c x\ 365\ {}^{days}/_{yr}\ x\ 1000\ {}^{ug}/_{mg}}{EV\ x\ \ ED\ x\ EF\ x\ SA\ x\ SF_d} \qquad (23)$$

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RISK ALGORITHMS

Dermal - Noncarcinogenic effects

$$DA_{event}\left({}^{ug}/_{cm^2-event}\right) = \frac{THQ\ x\ BW\ x\ RfD_d\ x\ AT_{nc}\ x\ 365\ {}^{days}/_{yr}\ x\ 1000\ {}^{ug}/_{mg}}{EV\ x\ ED\ x\ EF\ x\ SA} \quad (24)$$

(25)

Inorganics – Dermal

$$RBTL_{der} = \frac{DA_{event}\ \left(\frac{ug}{cm^2-event}\right) x\ 1000\ {}^{cm^3}/_{L}}{k_p\ x\ ET} \quad (26)$$

Organics - Dermal

If ET< t* (Scenario "A" in worksheets):

$$RBTL_{der} = \frac{DA_{event}\ \left(\frac{ug}{cm^2-event}\right) x\ 1000\ {}^{cm^3}/_{L}}{2\ x\ FA\ x\ k_p\ x\ \sqrt{\left(\frac{6\ x\ \tau\ x\ ET}{\pi}\right)}} \quad (27)$$

If ET> t* (Scenario "B" in worksheets):

$$RBTL_{der} = \frac{DA_{event}\ \left(\frac{ug}{cm^2-event}\right) x\ 1000\ {}^{cm^3}/_{L}}{FA\ x\ k_p\ x\ \left[\frac{ET}{(1+B)} + 2\tau\left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right]} \quad (28)$$

Inhalation - Carcinogenic effects

$$RBTL_{inh} = \frac{ELCR\ xAT_c x\ 365\ {}^{days}/_{yr}\ x\ 24\ {}^{hrs}/_{day}}{K\ \left({}^{m^3}/_{L}\right)\ x\ ET\ x\ ED\ x\ EF\ x\ IUR} \quad (29)$$

Inhalation - Noncarcinogenic effects

$$RBTL_{inh} = \frac{THQ\ x\ RfC\ x\ \ AT_c x\ 365\ {}^{days}/_{yr}\ x\ 24\ {}^{hrs}/_{day}}{K\ \left({}^{m^3}/_{L}\right)\ x10^3\ {}^{ug}/_{mg}\ x\ ET\ x\ ED\ x\ EF} \quad (30)$$

Mutagenic (MMOA) Chemicals

Ingestion

$$RBTL_{ing-MMOA} = RBTL_{ing}\ \text{[from Equation 20]}\ x\ Mutagenic\ Scaling\ Ratio \quad (31)$$

Dermal

$$RBTL_{der-MMOA} = RBTL_{der}\ \text{[from Equation 22]}\ x\ Mutagenic\ Scaling\ Ratio \quad (32)$$

RISK ALGORITHMS

Inhalation

$$\mathrm{RBTL}_{\mathrm{inh-MMOA}} = \mathrm{RBTL}_{\mathrm{inh}} \text{ [from Equation 28] x Mutagenic Scaling Ratio} \quad (33)$$

Ingestion Scaling Ratio for Water (Resident)

$$\mathrm{IFWM}_{\mathrm{adj}}\left(\frac{3.39\ \text{L-Year}}{\text{Kg-day}}\right) = \frac{\mathrm{ED}_{0\text{-}2}\,(\mathrm{yr}) \times \mathrm{IRW}_{c}\left(\frac{1\ \mathrm{L}}{\mathrm{day}}\right) \times 10}{\mathrm{BW}_{c}\,(15\ \mathrm{Kg})} + \frac{\mathrm{ED}_{2\text{-}6}\,(\mathrm{yr}) \times \mathrm{IRW}_{c}\left(\frac{1\ \mathrm{L}}{\mathrm{day}}\right) \times 3}{\mathrm{BW}_{c}\,(15\ \mathrm{Kg})} +$$

$$\frac{\mathrm{ED}_{6\text{-}16}\,(\mathrm{yr}) \times \mathrm{IRW}_{a}\left(\frac{2\ \mathrm{L}}{\mathrm{day}}\right) \times 3}{\mathrm{BW}_{a}\,(70\ \mathrm{Kg})} + \frac{\mathrm{ED}_{16\text{-}30}\,(\mathrm{yr}) \times \mathrm{IRW}_{a}\left(\frac{2\ \mathrm{L}}{\mathrm{day}}\right) \times 1}{\mathrm{BW}_{a}\,(70\ \mathrm{Kg})}$$

$$Ratio = \frac{\left[ED_a\ (30\ yrs) x\ IR_{wa}\ \left(2\ \frac{L}{day}\right)\right]}{BW_a(70\ kg)} \Big/ 3.39\ \left(\frac{L-year}{kg-day}\right) = 0.338 \quad (34)$$

Dermal Scaling Ratio for Water (Resident)

$$\mathrm{DFWM}_{\mathrm{adj}}\left(\frac{25394.29\ \text{events}\cdot\mathrm{cm}^2}{\mathrm{kg}}\right) = \left[\left(\frac{\mathrm{EV}_{0\text{-}2}\left(\frac{1\ \text{events}}{\mathrm{day}}\right) \times \mathrm{ED}_{0\text{-}2}\,(\text{years}) \times \mathrm{SA}_{c}\left(6{,}600\ \mathrm{cm}^2\right) \times 10}{\mathrm{BW}_{c}\,(15\ \mathrm{Kg})}\right) + \left(\frac{\mathrm{EV}_{2\text{-}6}\left(\frac{1\ \text{events}}{\mathrm{day}}\right) \times \mathrm{ED}_{2\text{-}6}\,(\text{years}) \times \mathrm{SA}_{c}\left(6{,}600\ \mathrm{cm}^2\right) \times 3}{\mathrm{BW}_{c}\,(15\ \mathrm{Kg})}\right) + \left(\frac{\mathrm{EV}_{6\text{-}16}\left(\frac{1\ \text{events}}{\mathrm{day}}\right) \times \mathrm{ED}_{6\text{-}16}\,(\text{years}) \times \mathrm{SA}_{a}\left(18{,}000\ \mathrm{cm}^2\right) \times 3}{\mathrm{BW}_{a}\,(70\ \mathrm{Kg})}\right) + \left(\frac{\mathrm{EV}_{16\text{-}30}\left(\frac{1\ \text{events}}{\mathrm{day}}\right) \times \mathrm{ED}_{16\text{-}30}\,(\text{years}) \times \mathrm{SA}_{a}\left(18{,}000\ \mathrm{cm}^2\right) \times 1}{\mathrm{BW}_{a}\,(70\ \mathrm{Kg})}\right)\right]$$

and:

$$\mathrm{ET}_{\mathrm{rwmadj}}\left(\frac{0.664\ \text{hours}}{\text{event}}\right) = \frac{\left(\mathrm{ET}_{0\text{-}2}\left(\frac{1\ \text{hours}}{\text{event}}\right) \times \mathrm{ED}_{0\text{-}2}\,(\text{years}) + \mathrm{ET}_{2\text{-}6}\left(\frac{1\ \text{hours}}{\text{event}}\right) \times \mathrm{ED}_{2\text{-}6}\,(\text{years}) + \mathrm{ET}_{6\text{-}16}\left(\frac{0.58\ \text{hours}}{\text{event}}\right) \times \mathrm{ED}_{5\text{-}16}\,(\text{years}) + \mathrm{ET}_{16\text{-}30}\left(\frac{0.58\ \text{hours}}{\text{event}}\right) \times \mathrm{ED}_{16\text{-}30}\,(\text{years})\right)}{\mathrm{ED}_{0\text{-}2}\,(\text{years}) + \mathrm{ED}_{2\text{-}6}\,(\text{years}) + \mathrm{ED}_{6\text{-}16}\,(\text{years}) + \mathrm{ED}_{16\text{-}30}\,(\text{years})}$$

$$Ratio = \frac{EV\ \left(1\ \frac{event}{day}\right) x\ ED_a\ (30\ yrs)\ x\ SA_a\ (18{,}000\ cm^2)\ x\ ET_a\left(0.58\ \frac{hr}{event}\right)}{BW_a\ (70\ kg)} \Big/ \left(25{,}394.29\ \left(\frac{events-yr-cm^2}{day-kg}\right)\ x\ 0.664\ \frac{hr}{day}\right) = 0.265 \quad (35)$$

Mutagenic Scaling Ratio for Adolescent Trespasser (surface water – ingestion and dermal) – scaled from carcinogenic RBTL for trespasser calculated with Equation 19 (note: all other MMOA RBTLs are scaled from the adult carcinogenic RBTLs)

⅓ (mutagenic multiplier for age 6-16 age group)

No additional mutagenic adjustment is required for vinyl chloride for the trespasser, since that adjustment only pertains to the 0-6-year age group.

Mutagenic Inhalation Scaling Ratio (Resident)

$$Ratio = \frac{ED_a\ (30\ years)}{[ED_{0-2}\ (2\ years) x\ 10]\ x\ [ED_{6-16}\ (14\ years) x\ 3]\ x\ \ [ED_{16-30}\ (14\ years) x\ 1]} = 0.395 \quad (36)$$

TABLE C-1
EXPOSURE VARIABLE SUMMARY

			Adult Resident		Child Resident		Commercial Worker		Construction Worker		Adolescent Trespasser	
Target Excess Lifetime Cancer Risk (ELCR)			1E-05	(1)	1E-05	(1)	1E-05	(1)	1E-05		1E-05	(1)
Target Hazard Quotient (HQ)			0.1	(1)	0.1	(1)	0.1	(1)	0.1		0.1	(1)
Averaging time (carc.)	AT_c	years	70	(1)	70	(1)	70	(1)	70	(1)	70	(1)
Averaging time (noncarc.)	AT_{nc}	years	30	(1)	6	(1)	25	(1)	1	(1)	10	(1)
Body weight	BW	Kg	70	(1)	15	(1)	70	(1)	70	(1)	45	(1)
Exposure duration	ED	years	30	(1)	6	(1)	25	(1)	1	(1)	10	(1)
Slope Factor (oral)	CSF_o	kg-day/mg	chemical specific									
Slope Factor (dermal)	CSF_o	kg-day/mg	chemical specific									
Inhalation Unit Risk	IUR	m^3/ug	chemical specific									
Reference Dose (oral)	RdD_o	mg/kg-day	chemical specific									
Reference Dose (dermal)	RdD_d	mg/kg-day	chemical specific									
Reference Concentration	RfC	mg/m^3	chemical specific									
Soil												
Ingestion rate	IR_S	mg/day	100	(1)	200	(1)	75	(1)	177	(1)	100	(1)
Adherence Factor	M	mg/cm^2-day	0.07	(1)	0.2	(1)	0.2	(1)	0.2	(1)	0.07	(2)
Skin surface area	SA	cm^2	5,700	(1)	2,800	(1)	5,700	(1)	5,700	(1)	5,700	(1)
Exposure frequency	EF	days/yr.	350	(1)	350	(1)	250	(1)	250	(1)	350	(1)
Exposure time	ET	hrs./day	-		-		10	(1)	10	(1)		
Particulate Volatilization Factor	VF_p	kg/m3	-		-		9.76E-07	(1,3)	9.76E-07	(1,3)	-	
Mutagenic Scaling Factor					0.0876	(4)					0.643	(4)
Mutagenic Dermal Scaling Factor					0.338	(4)					0.643	(4)
Groundwater												
Ingestion rate	IR_W	L/day	2	(1)	1	(1)	1	(1)	-		-	
Exposure time	ET	hr/day	0.58	(5)	1	(5)			-		-	
Event frequency	EV	events/day	1	(2,3)	1	(2)			-		-	
Skin surface area	SA	cm^2	18,000	(5)	6,600	(5)			-		-	
Exposure frequency	EF	days/yr.	350	(1)	350	(1)	250	(1)	-		-	
Volatilization factor from shower water to air	K	m^3/L	5E-01	(9)	5E-01	(9)			-		-	
Mutagenic Ingestion Scaling Factor			0.338	(4)								
Mutagenic Dermal Scaling Factor			0.265	(4)								
Mutagenic Inhalation (Ventilation) Scaling Factor			0.395	(4)								

TABLE C-1
EXPOSURE VARIABLE SUMMARY

			Adult Resident	Child Resident	Commercial Worker	Construction Worker	Adolescent Trespasser	
Surface water and Sediment								
Contact rate (SW ingestion)	CR	L/hr.	-	-	-	-	0.05	(1)
Exposure time	ET	hrs./day	-	-	-	-	1	(10)
Event frequency	EV	/day	-	-	-	-	1	(10)
Skin surface area	SA	cm^2	-	-	-	-	5,700	(1)
Exposure frequency	EF	days/yr.	-	-	-	-	350	(1)
Ingestion rate	IR_{Sed}	mg/day	-	-	-	-	100	(1)
Adherence Factor	M	mg/cm^2	-	-	-	-	0.07	(11)
Skin surface area	SA	cm^2	-	-	-	-	5,700	(11)
Mutagenic Scaling Factor							3	(4)

From EPA RAGS Part E	t*	=	Time to reach steady-state (hr)	Chemical-specific
(back-up worksheets):	τevent	=	Lag time per event (hr/event)	Chemical-specific
	B	=	Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis	Chemical-specific

Notes:

Dashes indicate that the pathway is not relevant for that receptor.

(1) ARBCA default (Table 3-1 of ARBCA guidance)
(2) USEPA default for ages 7 and up (RAGS Part E page 3-19)
(3) Per page B-10 or ARBCA guidance
(4) Calculated; see algorithms in Attachment C
(5) USEPA default (RAGS Part E, Exhibit 3-2)
(6) Assumes 30 seconds to wash hands
(7) Assumes worker washes hands 3 times per day during workday; based on 3-5 times per day (including non-occupational) as most common frequency for adults 18-65 (EPA Exposure Factors Handbook, Table 16-37)
(8) Area of hands and forearms; recommended values for adult males and females; forearms based on 45% of arms (Exposure Factors Handbook, 2011, Table 7-2)
(9) USEPA default (RSL calculator)
(10) Professional judgment
(11) Assumed same as for soil exposure

Attachment 2
Risk-Based Target Levels

Table 1 - Groundwater RBTLs
McClellan, Anniston, Alabama

Groundwater RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	RS-Child cancer	RS-Child noncancer	RS-Adult cancer	RS-Adult noncancer	RS mutagenic[(1)]	COM cancer	COM noncancer
VOC	GW	1,1,1,2-Tetrachloroethane	630-20-6	--	ug/L	6E+01	5E+01	3E+01	1E+02	--	1E+02	3E+02
VOC	GW	1,1,1-Trichloroethane	71-55-6	--	ug/L	--	2E+03	--	5E+03	--	--	2E+04
VOC	GW	1,1,2,2-Tetrachloroethane	79-34-5	--	ug/L	8E+00	3E+01	3E+00	6E+01	--	1E+01	2E+02
VOC	GW	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	76-13-1	--	ug/L	--	4E+04	1E+05	1E+05	--	--	3E+05
VOC	GW	1,1,2-Trichloroethane	79-00-5	--	ug/L	3E+01	9E-01	1E+01	2E+00	--	5E+01	4E+01
VOC	GW	1,1-Dichloroethane	75-34-3	--	ug/L	3E+02	3E+02	1E+02	7E+02	--	5E+02	2E+03
VOC	GW	1,1-Dichloroethene	75-35-4	--	ug/L	--	6E+01	--	1E+02	--	--	5E+02
VOC	GW	1,1-Dichloropropene	563-58-6	--	ug/L	--	--	--	--	--	--	--
VOC	GW	1,2,3-Trichlorobenzene	87-61-6	--	ug/L	--	1E+00	--	3E+00	--	--	8E+00
VOC	GW	1,2,3-Trichloropropane	96-18-4	M	ug/L	6E-02	1E+00	3E-02	3E+00	1E-02	1E-01	4E+01
VOC	GW	1,2,4-Trichlorobenzene	120-82-1	--	ug/L	3E+01	4E+00	1E+01	8E+00	--	1E+02	1E+02
VOC	GW	1,2,4-Trimethylbenzene	95-63-6	--	ug/L	--	4E+01	--	6E+01	--	--	--
VOC	GW	1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	M	ug/L	7E-01	2E-01	3E-01	7E-01	1E-01	4E+00	2E+00
VOC	GW	1,2-Dibromoethane (Ethylene dibromide or EDB)	106-93-4	--	ug/L	8E-01	1E+01	4E-01	2E+01	--	1E+00	9E+01
VOC	GW	1,2-Dichlorobenzene (o-Dichlorobenzene)	95-50-1	--	ug/L	--	8E+01	--	2E+02	--	--	9E+02
VOC	GW	1,2-Dichloroethane (EDC)	107-06-2	--	ug/L	2E+01	7E+00	8E+00	2E+01	--	3E+01	6E+01
VOC	GW	1,2-Dichloropropane	78-87-5	--	ug/L	4E+01	2E+01	2E+01	3E+01	--	8E+01	9E+02
VOC	GW	1,3,5-Trimethylbenzene	108-67-8	--	ug/L	--	2E+01	--	4E+01	--	--	1E+02
VOC	GW	1,3-Dichlorobenzene (m-Dichlorobenzene)	541-73-1	--	ug/L	--	--	--	--	--	--	--
VOC	GW	1,3-Dichloropropane	142-28-9	--	ug/L	--	3E+01	--	7E+01	--	--	2E+02
VOC	GW	1,4-Dichlorobenzene (p-Dichlorobenzene)	106-46-7	--	ug/L	1E+02	6E+01	6E+01	1E+02	--	5E+02	7E+02
VOC	GW	2,2-Dichloropropane	594-20-7	--	ug/L	--	--	--	--	--	--	--
VOC	GW	2-Butanone (Methyl Ethyl Ketone)	78-93-3	--	ug/L	--	9E+02	--	2E+03	--	--	6E+03
VOC	GW	2-Chlorotoluene (o-Chlorotoluene)	95-49-8	--	ug/L	--	3E+01	--	7E+01	--	--	2E+02
VOC	GW	2-Hexanone	591-78-6	--	ug/L	--	7E+00	--	2E+01	--	--	5E+01
VOC	GW	4-Chlorotoluene	106-43-4	--	ug/L	--	3E+01	--	7E+01	--	--	2E+02
VOC	GW	4-Methyl-2-pentanone (MIBK)	108-10-1	--	ug/L	--	1E+02	--	3E+02	--	--	8E+02
VOC	GW	Acetone	67-64-1	--	ug/L	--	1E+03	--	3E+03	--	--	9E+03
VOC	GW	Acetonitrile	75-05-8	--	ug/L	--	3E+02	--	5E+02	--	--	--
VOC	GW	Acrolein	107-02-8	--	ug/L	--	9E-02	--	2E-01	--	--	5E+00
VOC	GW	Acrylonitrile	107-13-1	--	ug/L	3E+00	9E+00	1E+00	2E+01	--	5E+00	4E+02
VOC	GW	Allyl Chloride	107-05-1	--	ug/L	7E+01	5E+00	3E+01	9E+00	--	1E+02	--
VOC	GW	Benzene	71-43-2	--	ug/L	3E+01	5E+00	1E+01	1E+01	--	5E+01	4E+01
VOC	GW	Bromobenzene	108-86-1	--	ug/L	--	1E+01	--	3E+01	--	--	8E+01
VOC	GW	Bromochloromethane	74-97-5	--	ug/L	--	2E+02	--	3E+02	--	--	--
VOC	GW	Bromodichloromethane	75-27-4	--	ug/L	2E+01	3E+01	1E+01	7E+01	--	5E+01	2E+02
VOC	GW	Bromoform (Tribromomethane)	75-25-2	--	ug/L	2E+02	3E+01	1E+02	7E+01	--	4E+02	2E+02
VOC	GW	Bromomethane (Methyl Bromide)	74-83-9	--	ug/L	--	2E+00	--	4E+00	--	--	1E+01
VOC	GW	Carbon disulfide	75-15-0	--	ug/L	--	1E+02	--	3E+02	--	--	1E+03
VOC	GW	Carbon Tetrachloride	56-23-5	--	ug/L	2E+01	5E+00	9E+00	1E+01	--	4E+01	4E+01
VOC	GW	Chlorobenzene (Monochlorobenzene)	108-90-7	--	ug/L	--	2E+01	--	5E+01	--	--	2E+02
VOC	GW	Chloroethane	75-00-3	--	ug/L	--	5E+04	--	9E+04	--	--	--
VOC	GW	Chloroform	67-66-3	--	ug/L	4E+01	1E+01	2E+01	3E+01	--	9E+01	1E+02
VOC	GW	Chloromethane (methyl chloride)	74-87-3	--	ug/L	--	5E+02	--	8E+02	--	--	--
VOC	GW	cis-1,2-Dichloroethene	156-59-2	--	ug/L	--	3E+00	--	7E+00	--	--	2E+01
VOC	GW	cis-1,3-Dichloropropene	10061-01-5	--	ug/L	--	--	--	--	--	--	--
VOC	GW	Dibromochloromethane	124-48-1	--	ug/L	2E+01	3E+01	8E+00	7E+01	--	3E+01	2E+02
VOC	GW	Dibromomethane	74-95-3	--	ug/L	--	9E+00	--	3E+01	--	--	1E+02
VOC	GW	Dichlorodifluoromethane	75-71-8	--	ug/L	--	2E+02	--	4E+02	--	--	2E+03
VOC	GW	Ethylbenzene	100-41-4	--	ug/L	1E+02	1E+02	5E+01	2E+02	--	3E+02	1E+03
VOC	GW	Formaldehyde	50-00-0	--	ug/L	4E+02	4E+01	2E+02	8E+01	--	--	2E+03
VOC	GW	Hexachlorobutadiene	87-68-3	--	ug/L	7E+00	5E-01	3E+00	1E+00	--	4E+01	1E+01
VOC	GW	Iodomethane	74-88-4	--	ug/L	--	--	--	--	--	--	--
VOC	GW	Isobutyl Alcohol (Isobutanol)	78-83-1	--	ug/L	--	5E+02	--	1E+03	--	--	3E+03
VOC	GW	Isopropylbenzene (Cumene)	98-82-8	--	ug/L	--	1E+02	--	4E+02	--	--	1E+03
VOC	GW	Methanol	67-56-1	--	ug/L	--	8E+02	--	2E+03	--	--	5E+03
VOC	GW	Methylene Chloride (Dichloromethane)	75-09-2	M	ug/L	9E+02	9E+00	4E+02	2E+01	2E+02	1E+03	6E+01
VOC	GW	Methyl-tert-butyl-ether (MTBE)	1634-04-4	--	ug/L	1E+03	2E+04	4E+02	3E+04	--	2E+03	--
VOC	GW	Naphthalene	91-20-3	--	ug/L	2E+02	8E+00	6E+01	2E+01	--	--	2E+02
VOC	GW	N-Butylbenzene	104-51-8	--	ug/L	--	8E+01	--	2E+02	--	--	5E+02
VOC	GW	N-Propylbenzene	103-65-1	--	ug/L	--	2E+02	--	4E+02	--	--	1E+03
VOC	GW	P-Isopropyltoluene (Cymene)	99-87-6	--	ug/L	--	--	--	--	--	--	--
VOC	GW	sec-Butylbenzene	135-9-88	--	ug/L	--	--	--	--	--	--	--
VOC	GW	Styrene	100-42-5	--	ug/L	--	2E+02	--	5E+02	--	--	2E+03

Table 1 - Groundwater RBTLs
McClellan, Anniston, Alabama

Groundwater RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	RS-Child cancer	RS-Child noncancer	RS-Adult cancer	RS-Adult noncancer	RS mutagenic[(1)]	COM cancer	COM noncancer
VOC	GW	tert-Butylbenzene	98-06-6	--	ug/L	--	--	--	--	--	--	--
VOC	GW	Tetrachloroethene (PCE)	127-18-4	--	ug/L	5E+02	6E+00	2E+02	1E+01	--	1E+03	6E+01
VOC	GW	Toluene	108-88-3	--	ug/L	--	9E+01	--	2E+02	--	--	8E+02
VOC	GW	trans-1,2-Dichloroethene	156-60-5	--	ug/L	--	3E+01	--	7E+01	--	--	2E+02
VOC	GW	trans-1,3-Dichloropropene	10061-02-6	--	ug/L	--	--	--	--	--	--	--
VOC	GW	Trans-1,4-Dichloro-2-Butene	110-57-6	--	ug/L	1E+00	--	5E-01	--	--	--	--
VOC	GW	Trichloroethene (TCE)	79-01-6	M	ug/L	3E+01	6E-01	2E+01	1E+00	4E+00	6E+01	5E+00
VOC	GW	Trichlorofluoromethane	75-69-4	--	ug/L	--	4E+02	--	8E+02	--	--	3E+03
VOC	GW	Vinyl Acetate	108-05-4	--	ug/L	--	6E+02	--	2E+03	--	--	1E+04
VOC	GW	Vinyl Chloride	75-01-4	M	ug/L	2E+00	4E+00	1E+00	1E+01	2E-01	4E+00	3E+01
VOC	GW	m,p-Xylene	136777-61-2	--	ug/L	--	--	--	--	--	--	--
VOC	GW	O-Xylene	95-47-6	--	ug/L	--	2E+02	--	7E+02	--	--	2E+03
VOC	GW	Xylenes (Total)	1330-20-7	--	ug/L	--	2E+02	--	7E+02	--	--	2E+03
RSK	GW	Carbon Dioxide	124-38-9	--	ug/L	--	--	--	--	--	--	--
RSK	GW	Ethane	74-84-0	--	ug/L	--	--	--	--	--	--	--
RSK	GW	Ethene	74-85-1	--	ug/L	--	--	--	--	--	--	--
RSK	GW	Methane	74-82-8	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	1,2,4-Trichlorobenzene	120-82-1	--	ug/L	3E+01	4E+00	1E+01	8E+00	--	1E+02	1E+02
SVOC	GW	1,2-Dichlorobenzene (o-Dichlorobenzene)	95-50-1	--	ug/L	--	8E+01	--	2E+02	--	--	9E+02
SVOC	GW	1,3-Dichlorobenzene (m-Dichlorobenzene)	541-73-1	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	1,4-Dichlorobenzene (p-Dichlorobenzene)	106-46-7	--	ug/L	1E+02	6E+01	9E+01	1E+02	--	5E+02	7E+02
SVOC	GW	2,3,4,6-Tetrachlorophenol	58-90-2	--	ug/L	--	5E+01	--	1E+02	--	--	3E+02
SVOC	GW	2,4,5-Trichlorophenol	95-95-4	--	ug/L	--	2E+02	--	4E+02	--	--	1E+03
SVOC	GW	2,4,6-Trichlorophenol	88-06-2	--	ug/L	1E+02	9E-01	4E+01	2E+00	--	3E+02	1E+01
SVOC	GW	2,4-Dichlorophenol	120-83-2	--	ug/L	--	3E+00	--	8E+00	--	--	3E+01
SVOC	GW	2,4-Dimethylphenol	105-67-9	--	ug/L	--	3E+01	--	6E+01	--	--	2E+02
SVOC	GW	2,4-Dinitrophenol	51-28-5	--	ug/L	--	3E+00	--	7E+00	--	--	2E+01
SVOC	GW	2,4-Dinitrotoluene	121-14-2	--	ug/L	6E+00	3E+00	3E+00	7E+00	--	9E+00	2E+01
SVOC	GW	2,6-Dimethylphenol	576-26-1	--	ug/L	--	9E-01	--	2E+00	--	--	6E+00
SVOC	GW	2,6-Dinitrotoluene	606-20-2	--	ug/L	--	1E+00	--	3E+00	--	--	1E+01
SVOC	GW	2-Chloronaphthalene (beta-Chloronapthalene)	91-58-7	--	ug/L	--	1E+02	--	3E+02	--	--	8E+02
SVOC	GW	2-Chlorophenol	95-57-8	--	ug/L	--	7E+00	--	2E+01	--	--	5E+01
SVOC	GW	2-Methylnaphthalene	91-57-6	--	ug/L	--	6E+00	--	1E+01	--	--	4E+01
SVOC	GW	2-Methylphenol (o-Cresol)	95-48-7	--	ug/L	--	7E+01	--	2E+02	--	--	5E+02
SVOC	GW	2-Nitroaniline	88-74-4	--	ug/L	--	2E+01	--	4E+01	--	--	1E+02
SVOC	GW	2-Nitrophenol	88-75-5	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	3,3-Dichlorobenzidine	91-94-1	--	ug/L	3E+00	--	1E+00	--	--	6E+00	--
SVOC	GW	3,4-Dimethylphenol	95-65-8	--	ug/L	--	1E+00	--	3E+00	--	--	1E+01
SVOC	GW	3-Chlorophenol (m-chlorophenol)	108-43-0	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	3-Methylphenol (m-Cresol)	108-39-4	--	ug/L	--	7E+01	--	2E+02	--	--	5E+02
SVOC	GW	3-NITROANILINE	99-09-2	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	4,6-Dinitro-2-Methylphenol	534-52-1	--	ug/L	--	1E-01	--	3E-01	--	--	8E-01
SVOC	GW	4-Bromophenyl Phenyl Ether	101-55-3	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	4-Chloro-3-methylphenol (p-Chloro-m-cresol)	59-50-7	--	ug/L	--	1E+02	--	3E+02	--	--	1E+03
SVOC	GW	4-Chloroaniline	106-47-8	--	ug/L	9E+00	6E+00	4E+00	1E+01	--	1E+01	4E+01
SVOC	GW	4-Chlorophenyl Phenyl Ether	7005-72-3	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	4-Methylphenol (p-Cresol)	106-44-5	--	ug/L	--	1E+02	--	3E+02	--	--	1E+03
SVOC	GW	4-Nitroaniline	100-01-6	--	ug/L	9E+01	6E+00	4E+01	1E+01	--	1E+02	4E+01
SVOC	GW	4-Nitrophenol (p-Nitrophenol)	100-02-7	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	Acenaphthene	83-32-9	--	ug/L	--	9E+01	--	2E+02	--	--	6E+02
SVOC	GW	Acenaphthylene	208-96-8	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	Aniline	62-53-3	--	ug/L	3E+02	1E+01	1E+02	3E+01	--	5E+02	7E+01
SVOC	GW	Anthracene	120-12-7	--	ug/L	--	5E+02	--	1E+03	--	--	3E+03
SVOC	GW	Azobenzene	103-33-3	--	ug/L	2E+01	--	8E+00	--	--	3E+01	--
SVOC	GW	Benzidine (1,2-Diphenylhydrazine)	92-87-5	M	ug/L	8E-03	5E+00	4E-03	1E+01	1E-03	1E-02	3E+01
SVOC	GW	Benzo(a)anthracene	56-55-3	M	ug/L	2E-01	--	7E-02	--	3E-02	4E+00	--
SVOC	GW	Benzo(a)pyrene	50-32-8	M	ug/L	1E-02	--	5E-03	--	2E-03	4E-01	--
SVOC	GW	Benzo(b)fluoranthene	205-99-2	M	ug/L	2E-01	--	8E-02	--	3E-02	4E+00	--
SVOC	GW	Benzo(g,h,i)perylene	191-24-2	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	Benzo(k)fluoranthene	207-08-9	M	ug/L	3E+01	--	1E+01	--	5E+00	4E+01	--
SVOC	GW	Benzoic acid	65-85-0	--	ug/L	--	6E+03	--	1E+04	--	--	4E+04
SVOC	GW	Benzyl Alcohol	100-51-6	--	ug/L	--	2E+02	--	4E+02	--	--	1E+03
SVOC	GW	Bis(2-Chloroethoxy)Methane	111-91-1	--	ug/L	--	5E+00	--	1E+01	--	--	3E+01
SVOC	GW	Bis(2-chloroethyl)ether	111-44-4	--	ug/L	2E+00	--	8E-01	--	--	3E+00	--

Table 1 - Groundwater RBTLs
McClellan, Anniston, Alabama

Groundwater RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	RS-Child cancer	RS-Child noncancer	RS-Adult cancer	RS-Adult noncancer	RS mutagenic[(1)]	COM cancer	COM noncancer
SVOC	GW	Bis(2-chloroisopropyl)ether	108-60-1	--	ug/L	3E+01	6E+01	1E+01	1E+02	--	4E+01	4E+02
SVOC	GW	Bis(2-ethylhexyl)phthalate	117-81-7	--	ug/L	2E+00	5E-01	9E-01	1E+00	--	2E+02	2E+02
SVOC	GW	Butyl benzyl phthalate	85-68-7	--	ug/L	1E+03	3E+02	4E+02	7E+02	--	2E+03	2E+03
SVOC	GW	Carbazole	86-74-8	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	Chlorobenzilate	510-15-6	--	ug/L	2E+01	3E+01	8E+00	7E+01	--	3E+01	2E+02
SVOC	GW	Chrysene	218-01-9	M	ug/L	2E+01	--	7E+00	--	2E+00	4E+02	--
SVOC	GW	Di (2-ethylhexyl) adipate	103-23-1	--	ug/L	2E+03	9E+02	7E+02	2E+03	--	2E+03	6E+03
SVOC	GW	Dibenzo(a,h)anthracene	53-70-3	M	ug/L	1E-02	--	5E-03	--	2E-03	4E-01	--
SVOC	GW	Dibenzofuran	132-64-9	--	ug/L	--	2E+00	--	4E+00	--	--	1E+01
SVOC	GW	Dichloroacetic acid	76-43-6	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	Diethyl phthalate	84-66-2	--	ug/L	--	1E+03	--	3E+03	--	--	8E+03
SVOC	GW	Dimethyl phthalate	131-11-3	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	Di-n-Butyl phthalate	84-74-2	--	ug/L	--	7E+01	--	2E+02	--	--	1E+03
SVOC	GW	Di-n-Octyl phthalate	117-84-0	--	ug/L	--	2E+01	--	4E+01	--	--	1E+02
SVOC	GW	Fluoranthene	206-44-0	--	ug/L	--	8E+00	--	2E+01	--	--	4E+02
SVOC	GW	Fluorene	86-73-7	--	ug/L	--	6E+01	--	1E+02	--	--	4E+02
SVOC	GW	Hexachlorobenzene	118-74-1	--	ug/L	1E-01	1E-01	5E-02	3E-01	--	2E+00	8E+00
SVOC	GW	Hexachlorobutadiene	87-68-3	--	ug/L	7E+00	5E-01	3E+00	1E+00	--	4E+01	1E+01
SVOC	GW	Hexachlorocyclopentadiene	77-47-4	--	ug/L	--	9E+00	--	2E+01	--	--	6E+01
SVOC	GW	Hexachloroethane	67-72-1	--	ug/L	2E+01	5E-01	1E+01	1E+00	--	7E+01	7E+00
SVOC	GW	Indeno(1,2,3-cd)pyrene	193-39-5	M	ug/L	1E-01	--	5E-02	--	2E-02	4E+00	--
SVOC	GW	Isophorone	78-59-1	--	ug/L	2E+03	3E+02	9E+02	7E+02	--	3E+03	2E+03
SVOC	GW	Monochloroacetic acid	79-11-8	--	ug/L	--	3E+00	--	7E+00	--	--	2E+01
SVOC	GW	Naphthalene	91-20-3	--	ug/L	2E+02	8E+00	--	2E+01	--	--	2E+02
SVOC	GW	Nitrobenzene	98-95-3	--	ug/L	--	3E+00	--	7E+00	--	--	2E+01
SVOC	GW	N-Nitrosodimethylamine	62-75-9	M	ug/L	4E-02	1E-02	2E-02	3E-02	7E-03	6E-02	8E-02
SVOC	GW	N-Nitroso di-n-propylamine	621-64-7	--	ug/L	3E-01	--	1E-01	--	--	4E-01	--
SVOC	GW	N-Nitrosodiphenylamine	86-30-6	--	ug/L	3E+02	--	1E+02	--	--	6E+02	--
SVOC	GW	Pentachlorobenzene	608-93-5	--	ug/L	--	1E+00	--	3E+00	--	--	8E+00
SVOC	GW	Pentachlorophenol	87-86-5	--	ug/L	9E-01	2E+00	4E-01	4E+00	--	7E+00	5E+01
SVOC	GW	Phenanthrene	85-01-8	--	ug/L	--	--	--	--	--	--	--
SVOC	GW	Phenol	108-95-2	--	ug/L	--	4E+02	--	1E+03	--	--	3E+03
SVOC	GW	Propylene glycol	57-55-6	--	ug/L	--	3E+04	--	7E+04	--	--	2E+05
SVOC	GW	Pyrene	129-00-0	--	ug/L	--	5E+01	--	1E+02	--	--	3E+02
SVOC	GW	Tetrahydrofuran	109-99-9	--	ug/L	--	1E+03	--	3E+03	--	--	9E+03
SVOC	GW	Trichloroacetic acid	76-03-9	--	ug/L	3E+01	3E+01	1E+01	7E+01	--	4E+01	2E+02
EXPL	GW	1,3,5-Trinitrobenzene	99-35-4	--	ug/L	--	5E+01	--	1E+02	--	--	3E+02
EXPL	GW	1,3-Dinitrobenzene	99-65-0	--	ug/L	--	2E-01	--	4E-01	--	--	1E+00
EXPL	GW	2,4,6-Trinitrotoluene	118-96-7	--	ug/L	6E+01	8E-01	3E+01	2E+00	--	1E+02	5E+00
EXPL	GW	2,4-Dinitrotoluene	121-14-2	--	ug/L	6E+00	3E+00	3E+00	7E+00	--	9E+00	2E+01
EXPL	GW	2,6-Dinitrotoluene	606-20-2	--	ug/L	--	1E+00	--	3E+00	--	--	1E+01
EXPL	GW	2-Amino-4,6-Dinitrotoluene	35572-78-2	--	ug/L	--	3E+00	--	7E+00	--	--	2E+01
EXPL	GW	2-Nitrotoluene	88-72-2	--	ug/L	8E+00	1E+00	4E+00	3E+00	--	1E+01	9E+00
EXPL	GW	3-Nitrotoluene	99-08-1	--	ug/L	--	2E-01	--	4E-01	--	--	1E+00
EXPL	GW	4-Amino-2,6-Dinitrotoluene	19406-51-0	--	ug/L	--	3E+00	--	7E+00	--	--	2E+01
EXPL	GW	4-Nitrotoluene	99-99-0	--	ug/L	1E+02	6E+00	5E+01	1E+01	--	2E+02	4E+01
EXPL	GW	HMX (Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine)	2691-41-0	--	ug/L	--	8E+01	--	2E+02	--	--	5E+02
EXPL	GW	Nitrobenzene	98-95-3	--	ug/L	--	3E+00	--	7E+00	--	--	2E+01
EXPL	GW	RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	121-82-4	--	ug/L	2E+01	5E+00	8E+00	1E+01	--	3E+01	3E+01
EXPL	GW	Tetryl (Trinitrophenylmethylnitramine)	479-45-8	--	ug/L	--	6E+00	--	1E+01	--	--	4E+01
PEST	GW	4,4'-DDD	72-54-8	--	ug/L	7E-01	--	3E-01	--	--	1E+01	--
PEST	GW	4,4'-DDE	72-55-9	--	ug/L	3E-01	--	1E-01	--	--	8E+00	--
PEST	GW	4,4'-DDT	50-29-3	--	ug/L	2E-01	3E-02	9E-02	7E-02	--	8E+00	5E+00
PEST	GW	Aldrin	309-00-2	--	ug/L	6E-03	2E-03	2E-03	5E-03	--	2E-01	3E-01
PEST	GW	alpha-BHC	319-84-6	--	ug/L	3E-01	1E+01	1E-01	3E+01	--	5E-01	8E+01
PEST	GW	Alpha-Chlordane	5103-71-9	--	ug/L	--	--	--	--	--	--	--
PEST	GW	beta-BHC	319-85-7	--	ug/L	1E+00	--	5E-01	--	--	2E+00	--
PEST	GW	Chlordane	12789-03-6	--	ug/L	5E+00	8E-01	2E+00	2E+00	--	8E+00	5E+00
PEST	GW	Chlorobenzilate	510-15-6	--	ug/L	2E+01	3E+01	8E+00	7E+01	--	3E+01	2E+02
PEST	GW	DELTA-BHC	319-86-8	--	ug/L	--	--	--	--	--	--	--
PEST	GW	Diallate	2303-16-4	--	ug/L	3E+01	--	1E+01	--	--	5E+01	--
PEST	GW	Dieldrin	60-57-1	--	ug/L	4E-02	3E-02	2E-02	6E-02	--	2E-01	5E-01
PEST	GW	Endosulfan I	959-98-8	--	ug/L	--	--	--	--	--	--	--
PEST	GW	Endosulfan II	33213-65-9	--	ug/L	--	--	--	--	--	--	--

Table 1 - Groundwater RBTLs
McClellan, Anniston, Alabama

Groundwater RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	RS-Child cancer	RS-Child noncancer	RS-Adult cancer	RS-Adult noncancer	RS mutagenic[(1)]	COM cancer	COM noncancer
PEST	GW	Endosulfan Sulfate	1031-07-8	--	ug/L	--	--	--	--	--	--	--
PEST	GW	Endrin	72-20-8	--	ug/L	--	2E-01	--	4E-01	--	--	3E+00
PEST	GW	Endrin Aldehyde	7421-93-4	--	ug/L	--	--	--	--	--	--	--
PEST	GW	Endrin Ketone	53494-70-5	--	ug/L	--	--	--	--	--	--	--
PEST	GW	gamma-BHC (Lindane)	58-89-9	--	ug/L	1E+00	3E-01	4E-01	6E-01	--	3E+00	3E+00
PEST	GW	Gamma-Chlordane	5103-74-2	--	ug/L	--	--	--	--	--	--	--
PEST	GW	Heptachlor	76-44-8	--	ug/L	5E-02	9E-02	2E-02	2E-01	--	6E-01	5E+00
PEST	GW	Heptachlor epoxide	1024-57-3	--	ug/L	2E-01	2E-02	9E-02	5E-02	--	3E-01	1E-01
PEST	GW	Kepone	143-50-0	--	ug/L	2E-01	5E-01	9E-02	1E+00	--	3E-01	3E+00
PEST	GW	Methoxychlor	72-43-5	--	ug/L	--	8E+00	--	2E+01	--	--	5E+01
PEST	GW	Toxaphene	8001-35-2	--	ug/L	4E-01	--	2E-01	--	--	3E+00	--
OPP	GW	Atrazine	1912-24-9	--	ug/L	8E+00	5E+01	4E+00	1E+02	--	1E+01	4E+02
OPP	GW	Chlorpyrifos	2921-88-2	--	ug/L	--	2E+00	--	4E+00	--	--	1E+01
OPP	GW	Dimethoate	60-51-5	--	ug/L	--	3E-01	--	7E-01	--	--	2E+00
OPP	GW	Disulfoton	298-04-4	--	ug/L	--	6E-02	--	1E-01	--	--	4E-01
OPP	GW	Malathion	121-75-5	--	ug/L	--	3E+01	--	7E+01	--	--	2E+02
OPP	GW	Methyl parathion	298-00-0	--	ug/L	--	4E-01	--	9E-01	--	--	3E+00
OPP	GW	Parathion	56-38-2	--	ug/L	--	5E+00	--	1E+01	--	--	6E+01
OPP	GW	Phorate	298-02-2	--	ug/L	--	3E-01	--	7E-01	--	--	2E+00
OPP	GW	Simazine	122-34-9	--	ug/L	2E+01	8E+00	7E+00	2E+01	--	2E+01	5E+01
OPP	GW	Sulfotepp (tetrathyldithiopyrophosphate)	3689-24-5	--	ug/L	--	8E-01	--	2E+00	--	--	5E+00
PCB	GW	PCB - Aroclor 1016	12674-11-2	--	ug/L	3E+01	1E-01	1E+01	3E-01	--	4E+01	7E-01
PCB	GW	PCB - Aroclor 1221	11104-28-2	--	ug/L	9E-01	--	4E-01	--	--	1E+00	--
PCB	GW	PCB - Aroclor 1232	11141-16-5	--	ug/L	9E-01	--	4E-01	--	--	1E+00	--
PCB	GW	PCB - Aroclor 1242	53469-21-9	--	ug/L	9E-01	--	4E-01	--	--	1E+00	--
PCB	GW	PCB - Aroclor 1248	12672-29-6	--	ug/L	9E-01	--	4E-01	--	--	1E+00	--
PCB	GW	PCB - Aroclor 1254	11097-69-1	--	ug/L	9E-01	3E-02	4E-01	7E-02	--	1E+00	2E-01
PCB	GW	PCB - Aroclor 1260	11096-82-5	--	ug/L	9E-01	--	4E-01	--	--	1E+00	--
PCB	GW	Total PCBs	1336-36-3	--	ug/L	9E-01	--	4E-01	--	--	1E+00	--
HERB	GW	2,4,5 TP (silvex) (2-(2,4,5-Trichlorophenoxy) propionic acid)	93-72-1	--	ug/L	--	1E+01	--	3E+01	--	--	8E+01
HERB	GW	2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7	--	ug/L	--	2E+01	--	4E+01	--	--	1E+02
HERB	GW	2,4-Dinitro-6-sec-butylphenol (Dinoseb)	88-85-7	--	ug/L	--	2E+00	--	4E+00	--	--	1E+01
HERB	GW	Alachlor	15972-60-8	--	ug/L	3E+01	2E+01	2E+01	4E+01	--	5E+01	1E+02
HERB	GW	Dalapon (2,2-dichloropropionic acid)	75-99-0	--	ug/L	--	5E+01	--	1E+02	--	--	3E+02
HERB	GW	Diquat	85-00-7	--	ug/L	--	3E+00	--	8E+00	--	--	2E+01
HERB	GW	Endothall	145-73-3	--	ug/L	--	3E+01	--	7E+01	--	--	2E+02
HERB	GW	Glyphosate	1071-83-6	--	ug/L	--	2E+02	--	4E+02	--	--	1E+03
HERB	GW	Picloram	1918-02-1	--	ug/L	--	1E+02	--	3E+02	--	--	7E+02
HERB	GW	Pronamide	23950-58-5	--	ug/L	--	1E+02	--	3E+02	--	--	8E+02
CARB	GW	Aldicarb	116-06-3	--	ug/L	--	2E+00	--	4E+00	--	--	1E+01

Table 1 - Groundwater RBTLs
McClellan, Anniston, Alabama

Groundwater RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	RS-Child cancer	RS-Child noncancer	RS-Adult cancer	RS-Adult noncancer	RS mutagenic[(1)]	COM cancer	COM noncancer
CARB	GW	Aldicarb Sulfone	1646-88-4	--	ug/L	--	2E+00	--	4E+00	--	--	1E+01
CARB	GW	Aldicarb Sulfoxide	1646-87-3	--	ug/L	--	--	--	--	--	--	--
CARB	GW	Carbofuran	1563-66-2	--	ug/L	--	8E+00	--	2E+01	--	--	5E+01
CARB	GW	Oxamyl (Vydate)	23135-22-0	--	ug/L	--	4E+01	--	9E+01	--	--	3E+02
DXN	GW	2,3,7,8 TCDD (Dioxin)	1746-01-6	--	ug/L	7E-07	1E-08	3E-07	1E-07	--	2E-05	7E-06
MET	GW	Aluminum	7429-90-5	--	mg/l	--	2E+00	--	4E+00	--	--	1E+01
MET	GW	Antimony	7440-36-0	--	mg/l	--	6E-04	--	1E-03	--	--	4E-03
MET	GW	Arsenic	7440-38-2	--	mg/l	1E-03	5E-04	6E-04	1E-03	--	2E-03	3E-03
MET	GW	Barium	7440-39-3	--	mg/l	--	3E-01	--	7E-01	--	--	2E+00
MET	GW	Beryllium	7440-41-7	--	mg/l	--	2E-03	--	7E-03	--	--	2E-02
MET	GW	Cadmium (water)	7440-43-9w	--	mg/l	--	--	--	--	--	--	--
MET	GW	Calcium	7440-70-2	--	mg/l	--	--	--	--	--	--	--
MET	GW	Chromium (III)	16065-83-1	--	mg/l	--	2E+00	--	5E+00	--	--	2E+01
MET	GW	Chromium (Total)	7440-47-3	--	mg/l	--	--	--	--	--	--	--
MET	GW	Chromium (VI)	18540-29-9	M	mg/l	2E-03	3E-03	1E-03	1E-02	5E-04	6E-03	3E-02
MET	GW	Cobalt	7440-48-4	--	mg/l	--	5E-04	--	1E-03	--	--	3E-03
MET	GW	Copper	7440-50-8	--	mg/l	--	6E-02	--	1E-01	--	--	4E-01
MET	GW	Iron	7439-89-6	--	mg/l	--	1E+00	--	3E+00	--	--	7E+00
MET	GW	Lead	7439-92-1	--	mg/l	--	--	--	--	--	--	--
MET	GW	Magnesium	7439-95-4	--	mg/l	--	--	--	--	--	--	--
MET	GW	Manganese (non-diet)	7439-96-5w	--	mg/l	--	4E-02	--	9E-02	--	--	2E-01
MET	GW	Mercury	7487-94-7	--	mg/l	--	4E-04	--	1E-03	--	--	3E-03
MET	GW	Mercury (methyl)	22967-92-6	--	mg/l	--	2E-04	--	4E-04	--	--	1E-03
MET	GW	Nickel	7440-02-0	--	mg/l	--	3E-02	--	7E-02	--	--	2E-01
MET	GW	Potassium	7440-09-7	--	mg/l	--	--	--	--	--	--	--
MET	GW	Selenium	7782-49-2	--	mg/l	--	8E-03	--	2E-02	--	--	5E-02
MET	GW	Silver	7440-22-4	--	mg/l	--	7E-03	--	2E-02	--	--	5E-02
MET	GW	Sodium	7440-23-5	--	mg/l	--	--	--	--	--	--	--
MET	GW	Strontium	7440-24-6	--	mg/l	--	9E-01	--	2E+00	--	--	6E+00
MET	GW	Thallium	7440-28-0	--	mg/l	--	2E-05	--	4E-05	--	--	1E-04
MET	GW	Tin	7440-31-5	--	mg/l	--	9E-01	--	2E+00	--	--	6E+00
MET	GW	Vanadium	7440-62-2	--	mg/l	--	--	--	--	--	--	--
MET	GW	Zinc	7440-66-6	--	mg/l	--	5E-01	--	1E+00	--	--	3E+00
INO	GW	Ammonia	7664-41-7	--	mg/l	--	--	--	--	--	--	--
INO	GW	Bromate	15541-45-4	--	mg/l	3E-03	6E-03	1E-03	1E-02	--	4E-03	4E-02
INO	GW	Chloramine (Monochloramine)	10599-90-3	--	mg/l	--	2E-01	--	4E-01	--	--	1E+00
INO	GW	Chloride	7647-14-5	--	mg/l	--	--	--	--	--	--	--
INO	GW	Chlorine	7782-50-5	--	mg/l	--	2E-01	--	4E-01	--	--	1E+00
INO	GW	Chlorine Dioxide	10049-04-4	--	mg/l	--	5E-02	--	1E-01	--	--	3E-01
INO	GW	Chlorite	7758-19-2	--	mg/l	--	5E-02	--	1E-01	--	--	3E-01
INO	GW	Cyanide (hydrogen)	74-90-8	--	mg/l	--	9E-04	--	2E-03	--	--	6E-03
INO	GW	Cyanide (free)	57-12-5	--	mg/l	--	9E-04	--	2E-03	--	--	6E-03
INO	GW	Cyanide (Total)	143-33-9	--	mg/l	--	2E-03	--	4E-03	--	--	1E-02
INO	GW	Fluoride	7681-49-4	--	mg/l	--	8E-02	--	2E-01	--	--	5E-01
INO	GW	Nitrate	14797-55-8	--	mg/l	--	2E+00	--	6E+00	--	--	2E+01
INO	GW	Nitrite	14797-65-0	--	mg/l	--	2E-01	--	4E-01	--	--	1E+00
INO	GW	Perchlorate	7601-90-3	--	mg/l	--	--	--	--	--	--	--
INO	GW	Sulfate	7757-82-6	--	mg/l	--	--	--	--	--	--	--

Notes:

1. Mutagenic cancer adjustments apply to all receptors up to the age of 16.
2. Italicized values exceed unity, and therefore no RBTL is applicable.
3. TCE and vinyl chloride mutagenic RBTLs are the EPA tapwater RSLs (November 2013) multiplied by 10 to adjust for 1E-05 ELCR target.

Legend:

µg/L = Micrograms per liter
mg/L = Milligrams per liter
CARB = Carbamate (EPA Method 8321)
COM = Commercial Worker - Adult
CW = Construction Worker - Adult
DXN = Dioxins
EXPL= Explosives
GW = Groundwater
HERB = Herbicides
INO = Miscellaneous inorganic parameters
MET = Metals
OPP = Organophosphorus pesticides
PCB = Polychlorinated biphenyls (Aroclors)
PEST = Pesticides
RBTL = Risk-Based Target Level
RS = Resident
RSK = Method RSK-175
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

Table 2. Soil RBTLs
McClellan, Anniston, Alabama

Soil RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	RS-Child cancer	RS-Child noncancer	RS-Adult cancer	RS-Adult noncancer	RS mutagenic[(1)]	TSA cancer	TSA noncancer	TSA mutagenic[(1)]	COM cancer	COM noncancer	CW cancer	CW noncancer
VOC	Soil	1,1,1,2-Tetrachloroethane	630-20-6	--	ug/kg	4E+05	2E+05	7E+05	2E+06	--	1E+06	1E+06	--	1E+06	4E+06	1E+07	2E+06
VOC	Soil	1,1,1-Trichloroethane	71-55-6	--	ug/kg	--	2E+07	--	1E+08	--	--	9E+07	--	--	2E+08	--	1E+08
VOC	Soil	1,1,2,2-Tetrachloroethane	79-34-5	--	ug/kg	5E+04	2E+05	9E+04	1E+06	--	2E+05	9E+05	--	2E+05	3E+06	2E+06	1E+06
VOC	Soil	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	76-13-1	--	ug/kg	--	2E+08	--	*2E+09*	--	--	*1E+09*	--	--	*3E+09*	--	*1E+09*
VOC	Soil	1,1,2-Trichloroethane	79-00-5	--	ug/kg	2E+05	3E+04	3E+05	3E+05	--	6E+05	2E+05	--	6E+05	6E+04	7E+06	7E+03
VOC	Soil	1,1-Dichloroethane	75-34-3	--	ug/kg	2E+06	2E+06	3E+06	1E+07	--	6E+06	9E+06	--	6E+06	3E+07	7E+07	1E+07
VOC	Soil	1,1-Dichloroethene	75-35-4	--	ug/kg	--	4E+05	--	4E+06	--	--	2E+06	--	--	6E+06	--	3E+06
VOC	Soil	1,1-Dichloropropene	563-58-6	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
VOC	Soil	1,2,3-Trichlorobenzene	87-61-6	--	ug/kg	--	5E+03	--	4E+04	--	--	3E+04	--	--	4E+04	--	3E+04
VOC	Soil	1,2,3-Trichloropropane	96-18-4	M	ug/kg	3E+02	3E+04	--	3E+05	5E+01	1E+03	2E+05	7E+02	1E+03	9E+04	1E+04	1E+04
VOC	Soil	1,2,4-Trichlorobenzene	120-82-1	--	ug/kg	3E+05	8E+04	6E+05	7E+05	--	1E+06	5E+05	--	1E+06	5E+05	1E+07	7E+04
VOC	Soil	1,2,4-Trimethylbenzene	95-63-6	--	ug/kg	--	--	--	--	--	--	--	--	--	3E+06	--	3E+05
VOC	Soil	1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	M	ug/kg	1E+04	2E+03	2E+04	1E+04	2E+03	4E+04	9E+03	3E+04	1E+04	2E+04	2E+05	7E+03
VOC	Soil	1,2-Dibromoethane (Ethylene dibromide or EDB)	106-93-4	--	ug/kg	5E+03	7E+04	9E+03	7E+05	--	2E+04	4E+05	--	2E+04	9E+05	2E+05	3E+05
VOC	Soil	1,2-Dichlorobenzene (o-Dichlorobenzene)	95-50-1	--	ug/kg	--	7E+05	--	7E+06	--	--	4E+06	--	--	1E+07	--	5E+06
VOC	Soil	1,2-Dichloroethane (EDC)	107-06-2	--	ug/kg	1E+05	5E+04	2E+05	4E+05	--	4E+05	3E+05	--	4E+05	6E+05	4E+06	3E+05
VOC	Soil	1,2-Dichloropropane	78-87-5	--	ug/kg	3E+05	7E+05	5E+05	7E+06	--	9E+05	4E+06	--	1E+06	1E+06	1E+07	1E+05
VOC	Soil	1,3,5-Trimethylbenzene	108-67-8	--	ug/kg	--	8E+04	--	7E+05	--	--	5E+05	--	--	1E+06	--	6E+05
VOC	Soil	1,3-Dichlorobenzene (m-Dichlorobenzene)	541-73-1	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
VOC	Soil	1,3-Dichloropropane	142-28-9	--	ug/kg	--	2E+05	--	1E+06	--	--	9E+05	--	--	3E+06	--	1E+06
VOC	Soil	1,4-Dichlorobenzene (p-Dichlorobenzene)	106-46-7	--	ug/kg	2E+06	5E+05	3E+06	5E+06	--	6E+06	3E+06	--	4E+06	9E+06	6E+07	4E+06
VOC	Soil	2,2-Dichloropropane	594-20-7	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
VOC	Soil	2-Butanone (Methyl Ethyl Ketone)	78-93-3	--	ug/kg	--	5E+06	--	4E+07	--	--	3E+07	--	--	8E+07	--	3E+07
VOC	Soil	2-Chlorotoluene (o-Chlorotoluene)	95-49-8	--	ug/kg	--	2E+05	--	1E+06	--	--	9E+05	--	--	3E+06	--	1E+06
VOC	Soil	2-Hexanone	591-78-6	--	ug/kg	--	4E+04	--	4E+05	--	--	2E+05	--	--	6E+05	--	3E+05
VOC	Soil	4-Chlorotoluene	106-43-4	--	ug/kg	--	2E+05	--	1E+06	--	--	9E+05	--	--	3E+06	--	1E+06
VOC	Soil	4-Methyl-2-pentanone (MIBK)	108-10-1	--	ug/kg	--	6E+05	--	6E+06	--	--	4E+06	--	--	1E+07	--	5E+06
VOC	Soil	Acetone	67-64-1	--	ug/kg	--	7E+06	--	7E+07	--	--	4E+07	--	--	1E+08	--	5E+07
VOC	Soil	Acetonitrile	75-05-8	--	ug/kg	--	--	--	--	--	--	--	--	--	2E+07	--	2E+06
VOC	Soil	Acrolein	107-02-8	--	ug/kg	--	4E+03	--	4E+04	--	--	2E+04	--	--	6E+03	--	7E+02
VOC	Soil	Acrylonitrile	107-13-1	--	ug/kg	2E+04	3E+05	3E+04	3E+06	--	6E+04	2E+06	--	7E+04	6E+05	7E+05	7E+04
VOC	Soil	Allyl Chloride	107-05-1	--	ug/kg	4E+05	--	8E+05	--	--	2E+06	--	--	2E+06	4E+05	2E+07	4E+04
VOC	Soil	Benzene	71-43-2	--	ug/kg	2E+05	3E+04	3E+05	3E+05	--	6E+05	2E+05	--	7E+05	5E+05	7E+06	2E+05
VOC	Soil	Bromobenzene	108-86-1	--	ug/kg	--	6E+04	--	6E+05	--	--	4E+05	--	--	1E+06	--	5E+05
VOC	Soil	Bromochloromethane	74-97-5	--	ug/kg	--	--	--	--	--	--	--	--	--	1E+07	--	1E+06
VOC	Soil	Bromodichloromethane	75-27-4	--	ug/kg	1E+05	2E+05	3E+05	1E+06	--	5E+05	9E+05	--	5E+05	3E+06	6E+06	1E+06
VOC	Soil	Bromoform (Tribromomethane)	75-25-2	--	ug/kg	9E+05	1E+05	2E+06	1E+06	--	3E+06	7E+05	--	2E+06	1E+06	3E+07	7E+05
VOC	Soil	Bromomethane (Methyl Bromide)	74-83-9	--	ug/kg	--	1E+04	--	1E+05	--	--	7E+04	--	--	2E+05	--	8E+04
VOC	Soil	Carbon disulfide	75-15-0	--	ug/kg	--	8E+05	--	7E+06	--	--	5E+06	--	--	1E+07	--	6E+06
VOC	Soil	Carbon Tetrachloride	56-23-5	--	ug/kg	1E+05	3E+04	2E+05	3E+05	--	5E+05	2E+05	--	5E+05	5E+05	6E+06	2E+05
VOC	Soil	Chlorobenzene (Monochlorobenzene)	108-90-7	--	ug/kg	--	2E+05	--	1E+06	--	--	9E+05	--	--	2E+06	--	1E+06
VOC	Soil	Chloroethane	75-00-3	--	ug/kg	--	--	--	--	--	--	--	--	--	*4E+09*	--	4E+08
VOC	Soil	Chloroform	67-66-3	--	ug/kg	3E+05	8E+04	5E+05	7E+05	--	1E+06	5E+05	--	1E+06	1E+06	1E+07	6E+05
VOC	Soil	Chloromethane (methyl chloride)	74-87-3	--	ug/kg	--	--	--	--	--	--	--	--	--	3E+07	--	3E+06
VOC	Soil	cis-1,2-Dichloroethene	156-59-2	--	ug/kg	--	2E+04	--	1E+05	--	--	9E+04	--	--	3E+05	--	1E+05
VOC	Soil	cis-1,3-Dichloropropene	10061-01-5	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
VOC	Soil	Dibromochloromethane	124-48-1	--	ug/kg	8E+04	1E+05	1E+05	1E+06	--	3E+05	7E+05	--	2E+05	1E+06	3E+06	7E+05
VOC	Soil	Dibromomethane	74-95-3	--	ug/kg	--	8E+04	--	7E+05	--	--	5E+05	--	--	7E+05	--	1E+05
VOC	Soil	Dichlorodifluoromethane	75-71-8	--	ug/kg	--	2E+06	--	1E+07	--	--	9E+06	--	--	2E+07	--	4E+06
VOC	Soil	Ethylbenzene	100-41-4	--	ug/kg	8E+05	8E+05	2E+06	7E+06	--	3E+06	5E+06	--	3E+06	1E+07	4E+07	6E+06
VOC	Soil	Formaldehyde	50-00-0	--	ug/kg	--	1E+06	--	1E+07	--	--	7E+06	--	8E+06	3E+06	2E+08	3E+05
VOC	Soil	Hexachlorobutadiene	87-68-3	--	ug/kg	9E+04	6E+03	2E+05	5E+04	--	3E+05	3E+04	--	2E+05	5E+04	3E+06	4E+04
VOC	Soil	Iodomethane	74-88-4	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
VOC	Soil	Isobutyl Alcohol (Isobutanol)	78-83-1	--	ug/kg	--	2E+06	--	2E+07	--	--	1E+07	--	--	2E+07	--	1E+07
VOC	Soil	Isopropylbenzene (Cumene)	98-82-8	--	ug/kg	--	8E+05	--	7E+06	--	--	5E+06	--	--	1E+07	--	6E+06
VOC	Soil	Methanol	67-56-1	--	ug/kg	--	3E+06	--	3E+07	--	--	2E+07	--	--	3E+07	--	2E+07
VOC	Soil	Methylene Chloride (Dichloromethane)	75-09-2	M	ug/kg	5E+06	5E+04	9E+06	4E+05	7E+05	2E+07	3E+05	1E+07	2E+07	8E+05	2E+08	3E+05
VOC	Soil	Methyl-tert-butyl-ether (MTBE)	1634-04-4	--	ug/kg	5E+06	--	9E+06	--	--	2E+07	--	--	2E+07	*1E+09*	2E+08	1E+08
VOC	Soil	Naphthalene	91-20-3	--	ug/kg	--	1E+05	--	1E+06	--	--	6E+05	--	3E+06	5E+05	7E+07	9E+04
VOC	Soil	N-Butylbenzene	104-51-8	--	ug/kg	--	4E+05	--	4E+06	--	--	2E+06	--	--	7E+06	--	3E+06
VOC	Soil	N-Propylbenzene	103-65-1	--	ug/kg	--	6E+05	--	5E+06	--	--	3E+06	--	--	5E+06	--	3E+06
VOC	Soil	P-Isopropyltoluene (Cymene)	99-87-6	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--

Table 2. Soil RBTLs
McClellan, Anniston, Alabama

Soil RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	RS-Child cancer	RS-Child noncancer	RS-Adult cancer	RS-Adult noncancer	RS mutagenic[(1)]	TSA cancer	TSA noncancer	TSA mutagenic[(1)]	COM cancer	COM noncancer	CW cancer	CW noncancer
VOC	Soil	sec-Butylbenzene	135-9-88	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
VOC	Soil	Styrene	100-42-5	--	ug/kg	--	2E+06	--	1E+07	--	--	9E+06	--	--	3E+07	--	1E+07
VOC	Soil	tert-Butylbenzene	98-06-6	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
VOC	Soil	Tetrachloroethene (PCE)	127-18-4	--	ug/kg	4E+06	5E+04	8E+06	4E+05	--	2E+07	3E+05	--	2E+07	8E+05	2E+08	3E+05
VOC	Soil	Toluene	108-88-3	--	ug/kg	--	6E+05	--	6E+06	--	--	4E+06	--	--	1E+07	--	5E+06
VOC	Soil	trans-1,2-Dichloroethene	156-60-5	--	ug/kg	--	2E+05	--	1E+06	--	--	9E+05	--	--	2E+06	--	1E+06
VOC	Soil	trans-1,3-Dichloropropene	10061-02-6	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
VOC	Soil	Trans-1,4-Dichloro-2-Butene	110-57-6	--	ug/kg	--	--	--	--	--	--	--	--	2E+04	--	6E+05	--
VOC	Soil	Trichloroethene (TCE)	79-01-6	M	ug/kg	2E+05	4E+03	4E+05	4E+04	9E+03	7E+05	2E+04	8E+05	8E+05	6E+04	9E+06	3E+04
VOC	Soil	Trichlorofluoromethane	75-69-4	--	ug/kg	--	2E+06	--	2E+07	--	--	1E+07	--	--	4E+07	--	2E+07
VOC	Soil	Vinyl Acetate	108-05-4	--	ug/kg	--	8E+06	--	7E+07	--	--	5E+07	--	--	5E+07	--	7E+06
VOC	Soil	Vinyl Chloride	75-01-4	M	ug/kg	1E+04	2E+04	2E+04	2E+05	6E+02	5E+04	1E+05	5E+04	5E+04	4E+05	6E+05	2E+05
VOC	Soil	m,p-Xylene	136777-61-2	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
VOC	Soil	O-Xylene	95-47-6	--	ug/kg	--	2E+06	--	1E+07	--	--	9E+06	--	--	2E+07	--	4E+06
VOC	Soil	Xylenes (Total)	1330-20-7	--	ug/kg	--	2E+06	--	1E+07	--	--	9E+06	--	--	2E+07	--	4E+06
RSK	Soil	Carbon Dioxide	124-38-9	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
RSK	Soil	Ethane	74-84-0	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
RSK	Soil	Ethene	74-85-1	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
RSK	Soil	Methane	74-82-8	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	1,2,4-Trichlorobenzene	120-82-1	--	ug/kg	3E+05	8E+04	6E+05	7E+05	--	1E+06	5E+05	--	1E+06	5E+05	1E+07	7E+04
SVOC	Soil	1,2-Dichlorobenzene (o-Dichlorobenzene)	95-50-1	--	ug/kg	--	7E+05	--	7E+06	--	--	4E+06	--	--	1E+07	--	5E+06
SVOC	Soil	1,3-Dichlorobenzene (m-Dichlorobenzene)	541-73-1	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	1,4-Dichlorobenzene (p-Dichlorobenzene)	106-46-7	--	ug/kg	2E+06	5E+05	3E+06	5E+06	--	6E+06	3E+06	--	4E+06	9E+06	6E+07	4E+06
SVOC	Soil	2,3,4,6-Tetrachlorophenol	58-90-2	--	ug/kg	--	2E+05	--	2E+06	--	--	1E+06	--	--	2E+06	--	1E+06
SVOC	Soil	2,4,5-Trichlorophenol	95-95-4	--	ug/kg	--	6E+05	--	5E+06	--	--	3E+06	--	--	5E+06	--	4E+06
SVOC	Soil	2,4,6-Trichlorophenol	88-06-2	--	ug/kg	6E+05	6E+03	1E+06	5E+04	--	2E+06	3E+04	--	1E+06	5E+04	2E+07	4E+04
SVOC	Soil	2,4-Dichlorophenol	120-83-2	--	ug/kg	--	2E+04	--	2E+05	--	--	1E+05	--	--	2E+05	--	1E+05
SVOC	Soil	2,4-Dimethylphenol	105-67-9	--	ug/kg	--	1E+05	--	1E+06	--	--	7E+05	--	--	1E+06	--	7E+05
SVOC	Soil	2,4-Dinitrophenol	51-28-5	--	ug/kg	--	1E+04	--	1E+05	--	--	7E+04	--	--	1E+05	--	7E+04
SVOC	Soil	2,4-Dinitrotoluene	121-14-2	--	ug/kg	2E+04	1E+04	4E+04	1E+05	--	8E+04	7E+04	--	5E+04	1E+05	8E+05	7E+04
SVOC	Soil	2,6-Dimethylphenol	576-26-1	--	ug/kg	--	4E+03	--	3E+04	--	--	2E+04	--	--	3E+04	--	2E+04
SVOC	Soil	2,6-Dinitrotoluene	606-20-2	--	ug/kg	--	6E+03	--	5E+04	--	--	3E+04	--	--	5E+04	--	4E+04
SVOC	Soil	2-Chloronaphthalene (beta-Chloronapthalene)	91-58-7	--	ug/kg	--	6E+05	--	6E+06	--	--	4E+06	--	--	1E+07	--	5E+06
SVOC	Soil	2-Chlorophenol	95-57-8	--	ug/kg	--	4E+04	--	4E+05	--	--	2E+05	--	--	7E+05	--	3E+05
SVOC	Soil	2-Methylnaphthalene	91-57-6	--	ug/kg	--	2E+04	--	2E+05	--	--	1E+05	--	--	2E+05	--	1E+05
SVOC	Soil	2-Methylphenol (o-Cresol)	95-48-7	--	ug/kg	--	3E+05	--	3E+06	--	--	2E+06	--	--	3E+06	--	2E+06
SVOC	Soil	2-Nitroaniline	88-74-4	--	ug/kg	--	6E+04	--	5E+05	--	--	3E+05	--	--	2E+04	--	2E+03
SVOC	Soil	2-Nitrophenol	88-75-5	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	3,3-Dichlorobenzidine	91-94-1	--	ug/kg	2E+04	--	3E+04	--	--	5E+04	--	--	3E+04	--	5E+05	--
SVOC	Soil	3,4-Dimethylphenol	95-65-8	--	ug/kg	--	6E+03	--	5E+04	--	--	3E+04	--	--	5E+04	--	4E+04
SVOC	Soil	3-Chlorophenol (m-chlorophenol)	108-43-0	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	3-Methylphenol (m-Cresol)	108-39-4	--	ug/kg	--	3E+05	--	3E+06	--	--	2E+06	--	--	3E+06	--	2E+06
SVOC	Soil	3-NITROANILINE	99-09-2	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	4,6-Dinitro-2-Methylphenol	534-52-1	--	ug/kg	--	5E+02	--	4E+03	--	--	3E+03	--	--	4E+03	--	3E+03
SVOC	Soil	4-Bromophenyl Phenyl Ether	101-55-3	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	4-Chloro-3-methylphenol (p-Chloro-m-cresol)	59-50-7	--	ug/kg	--	6E+05	--	5E+06	--	--	3E+06	--	--	5E+06	--	4E+06
SVOC	Soil	4-Chloroaniline	106-47-8	--	ug/kg	4E+04	2E+04	6E+04	2E+05	--	1E+05	1E+05	--	8E+04	2E+05	1E+06	1E+05
SVOC	Soil	4-Chlorophenyl Phenyl Ether	7005-72-3	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	4-Methylphenol (p-Cresol)	106-44-5	--	ug/kg	--	6E+05	--	5E+06	--	--	3E+06	--	--	5E+06	--	3E+06
SVOC	Soil	4-Nitroaniline	100-01-6	--	ug/kg	4E+05	2E+04	6E+05	2E+05	--	1E+06	1E+05	--	8E+05	2E+05	1E+07	9E+04
SVOC	Soil	4-Nitrophenol (p-Nitrophenol)	100-02-7	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	Acenaphthene	83-32-9	--	ug/kg	--	3E+05	--	3E+06	--	--	2E+06	--	--	3E+06	--	2E+06
SVOC	Soil	Acenaphthylene	208-96-8	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	Aniline	62-53-3	--	ug/kg	1E+06	4E+04	2E+06	4E+05	--	4E+06	2E+05	--	3E+06	2E+05	4E+07	3E+04
SVOC	Soil	Anthracene	120-12-7	--	ug/kg	--	2E+06	--	1E+07	--	--	9E+06	--	--	1E+07	--	9E+06
SVOC	Soil	Azobenzene	103-33-3	--	ug/kg	8E+04	--	2E+05	--	--	3E+05	--	--	3E+05	--	4E+06	--
SVOC	Soil	Benzidine (1,2-Diphenylhydrazine)	92-87-5	M	ug/kg	3E+01	2E+04	5E+01	2E+05	6E+00	1E+02	1E+05	7E+01	6E+01	2E+05	1E+03	1E+05
SVOC	Soil	Benzo(a)anthracene	56-55-3	M	ug/kg	9E+03	--	2E+04	--	2E+03	3E+04	--	2E+04	2E+04	--	3E+05	--
SVOC	Soil	Benzo(a)pyrene	50-32-8	M	ug/kg	9E+02	--	2E+03	--	2E+02	3E+03	--	2E+03	2E+03	--	3E+04	--
SVOC	Soil	Benzo(b)fluoranthene	205-99-2	M	ug/kg	9E+03	--	2E+04	--	2E+03	3E+04	--	2E+04	2E+04	--	3E+05	--
SVOC	Soil	Benzo(g,h,i)perylene	191-24-2	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	Benzo(k)fluoranthene	207-08-9	M	ug/kg	9E+04	--	2E+05	--	2E+04	3E+05	--	2E+05	1E+05	--	3E+06	--

Table 2. Soil RBTLs
McClellan, Anniston, Alabama

Soil RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	RS-Child cancer	RS-Child noncancer	RS-Adult cancer	RS-Adult noncancer	RS mutagenic[(1)]	TSA cancer	TSA noncancer	TSA mutagenic[(1)]	COM cancer	COM noncancer	CW cancer	CW noncancer
SVOC	Soil	Benzoic acid	65-85-0	--	ug/kg	--	2E+07	--	2E+08	--	--	1E+08	--	--	2E+08	--	1E+08
SVOC	Soil	Benzyl Alcohol	100-51-6	--	ug/kg	--	6E+05	--	5E+06	--	--	3E+06	--	--	5E+06	--	4E+06
SVOC	Soil	Bis(2-Chloroethoxy)Methane	111-91-1	--	ug/kg	--	2E+04	--	2E+05	--	--	1E+05	--	--	2E+05	--	1E+05
SVOC	Soil	Bis(2-chloroethyl)ether	111-44-4	--	ug/kg	8E+03	--	2E+04	--	--	3E+04	--	--	3E+04	--	4E+05	--
SVOC	Soil	Bis(2-chloroisopropyl)ether	108-60-1	--	ug/kg	1E+05	3E+05	2E+05	3E+06	--	5E+05	2E+06	--	5E+05	5E+06	6E+06	2E+06
SVOC	Soil	Bis(2-ethylhexyl)phthalate	117-81-7	--	ug/kg	5E+05	1E+05	9E+05	1E+06	--	2E+06	7E+05	--	1E+06	1E+06	2E+07	7E+05
SVOC	Soil	Butyl benzyl phthalate	85-68-7	--	ug/kg	4E+06	1E+06	6E+06	1E+07	--	1E+07	7E+06	--	8E+06	1E+07	1E+08	7E+06
SVOC	Soil	Carbazole	86-74-8	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	Chlorobenzilate	510-15-6	--	ug/kg	6E+04	1E+05	1E+05	1E+06	--	2E+05	7E+05	--	1E+05	1E+06	2E+06	7E+05
SVOC	Soil	Chrysene	218-01-9	M	ug/kg	9E+05	--	2E+06	--	2E+05	3E+06	--	2E+06	1E+06	--	3E+07	--
SVOC	Soil	Di (2-ethylhexyl) adipate	103-23-1	--	ug/kg	6E+06	4E+06	1E+07	3E+07	--	2E+07	2E+07	--	1E+07	3E+07	2E+08	2E+07
SVOC	Soil	Dibenzo(a,h)anthracene	53-70-3	M	ug/kg	9E+02	--	2E+03	--	2E+02	3E+03	--	2E+03	2E+03	--	3E+04	--
SVOC	Soil	Dibenzofuran	132-64-9	--	ug/kg	--	8E+03	--	7E+04	--	--	5E+04	--	--	1E+05	--	6E+04
SVOC	Soil	Dichloroacetic acid	76-43-6	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	Diethyl phthalate	84-66-2	--	ug/kg	--	5E+06	--	4E+07	--	--	3E+07	--	--	4E+07	--	3E+07
SVOC	Soil	Dimethyl phthalate	131-11-3	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	Di-n-Butyl phthalate	84-74-2	--	ug/kg	--	6E+05	--	5E+06	--	--	3E+06	--	--	5E+06	--	4E+06
SVOC	Soil	Di-n-Octyl phthalate	117-84-0	--	ug/kg	--	7E+04	--	6E+05	--	--	4E+05	--	--	6E+05	--	4E+05
SVOC	Soil	Fluoranthene	206-44-0	--	ug/kg	--	2E+05	--	2E+06	--	--	1E+06	--	--	2E+06	--	1E+06
SVOC	Soil	Fluorene	86-73-7	--	ug/kg	--	2E+05	--	2E+06	--	--	1E+06	--	--	2E+06	--	1E+06
SVOC	Soil	Hexachlorobenzene	118-74-1	--	ug/kg	4E+03	5E+03	8E+03	4E+04	--	1E+04	3E+04	--	9E+03	4E+04	1E+05	3E+04
SVOC	Soil	Hexachlorobutadiene	87-68-3	--	ug/kg	9E+04	6E+03	2E+05	5E+04	--	3E+05	3E+04	--	2E+05	5E+04	3E+06	4E+04
SVOC	Soil	Hexachlorocyclopentadiene	77-47-4	--	ug/kg	--	4E+04	--	3E+05	--	--	2E+05	--	--	6E+04	--	7E+03
SVOC	Soil	Hexachloroethane	67-72-1	--	ug/kg	2E+05	4E+03	3E+05	4E+04	--	6E+05	2E+04	--	4E+05	4E+04	6E+06	2E+04
SVOC	Soil	Indeno(1,2,3-cd)pyrene	193-39-5	M	ug/kg	9E+03	--	2E+04	--	2E+03	3E+04	--	2E+04	2E+04	--	3E+05	--
SVOC	Soil	Isophorone	78-59-1	--	ug/kg	8E+06	1E+06	1E+07	1E+07	--	2E+07	7E+06	--	2E+07	1E+07	3E+08	6E+06
SVOC	Soil	Monochloroacetic acid	79-11-8	--	ug/kg	--	1E+04	--	1E+05	--	--	7E+04	--	--	1E+05	--	7E+04
SVOC	Soil	Naphthalene	91-20-3	--	ug/kg	--	1E+05	--	1E+06	--	--	6E+05	--	3E+06	5E+05	7E+07	9E+04
SVOC	Soil	Nitrobenzene	98-95-3	--	ug/kg	--	2E+04	--	1E+05	--	--	9E+04	--	3E+06	3E+05	6E+07	1E+05
SVOC	Soil	N-Nitrosodimethylamine	62-75-9	M	ug/kg	1E+02	5E+01	2E+02	4E+02	3E+01	5E+02	3E+02	3E+02	3E+02	4E+02	5E+03	2E+02
SVOC	Soil	N-Nitroso di-n-propylamine	621-64-7	--	ug/kg	1E+03	--	2E+03	--	--	3E+03	--	--	2E+03	--	3E+04	--
SVOC	Soil	N-Nitrosodiphenylamine	86-30-6	--	ug/kg	1E+06	--	2E+06	--	--	5E+06	--	--	3E+06	--	5E+07	--
SVOC	Soil	Pentachlorobenzene	608-93-5	--	ug/kg	--	5E+03	--	4E+04	--	--	3E+04	--	--	4E+04	--	3E+04
SVOC	Soil	Pentachlorophenol	87-86-5	--	ug/kg	1E+04	2E+04	2E+04	2E+05	--	4E+04	1E+05	--	2E+04	1E+05	4E+05	1E+05
SVOC	Soil	Phenanthrene	85-01-8	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
SVOC	Soil	Phenol	108-95-2	--	ug/kg	--	2E+06	--	2E+07	--	--	1E+07	--	--	1E+07	--	4E+06
SVOC	Soil	Propylene glycol	57-55-6	--	ug/kg	--	1E+08	--	*1E+09*	--	--	7E+08	--	--	*1E+09*	--	7E+08
SVOC	Soil	Pyrene	129-00-0	--	ug/kg	--	2E+05	--	1E+06	--	--	9E+05	--	--	1E+06	--	9E+05
SVOC	Soil	Tetrahydrofuran	109-99-9	--	ug/kg	--	5E+06	--	5E+07	--	--	3E+07	--	--	5E+07	--	2E+07
SVOC	Soil	Trichloroacetic acid	76-03-9	--	ug/kg	1E+05	1E+05	2E+05	1E+06	--	3E+05	7E+05	--	2E+05	1E+06	4E+06	7E+05
EXPL	Soil	1,3,5-Trinitrobenzene	99-35-4	--	ug/kg	--	2E+05	--	2E+06	--	--	1E+06	--	--	3E+06	--	2E+06
EXPL	Soil	1,3-Dinitrobenzene	99-65-0	--	ug/kg	--	6E+02	--	5E+03	--	--	3E+03	--	--	5E+03	--	4E+03
EXPL	Soil	2,4,6-Trinitrotoluene	118-96-7	--	ug/kg	3E+05	4E+03	5E+05	3E+04	--	1E+06	2E+04	--	9E+05	5E+04	1E+07	2E+04
EXPL	Soil	2,4-Dinitrotoluene	121-14-2	--	ug/kg	2E+04	1E+04	4E+04	1E+05	--	8E+04	7E+04	--	5E+04	1E+05	8E+05	7E+04
EXPL	Soil	2,6-Dinitrotoluene	606-20-2	--	ug/kg	--	6E+03	--	5E+04	--	--	3E+04	--	--	5E+04	--	4E+04
EXPL	Soil	2-Amino-4,6-Dinitrotoluene	35572-78-2	--	ug/kg	--	2E+04	--	1E+05	--	--	9E+04	--	--	2E+05	--	1E+05
EXPL	Soil	2-Nitrotoluene	88-72-2	--	ug/kg	4E+04	7E+03	8E+04	7E+04	--	1E+05	4E+04	--	2E+05	1E+05	2E+06	5E+04
EXPL	Soil	3-Nitrotoluene	99-08-1	--	ug/kg	--	6E+02	--	5E+03	--	--	3E+03	--	--	5E+03	--	4E+03
EXPL	Soil	4-Amino-2,6-Dinitrotoluene	19406-51-0	--	ug/kg	--	2E+04	--	1E+05	--	--	9E+04	--	--	2E+05	--	1E+05
EXPL	Soil	4-Nitrotoluene	99-99-0	--	ug/kg	4E+05	2E+04	8E+05	2E+05	--	1E+06	1E+05	--	9E+05	2E+05	2E+07	1E+05
EXPL	Soil	HMX (Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine)	2691-41-0	--	ug/kg	--	4E+05	--	4E+06	--	--	2E+06	--	--	6E+06	--	3E+06
EXPL	Soil	Nitrobenzene	98-95-3	--	ug/kg	--	2E+04	--	1E+05	--	--	9E+04	--	3E+06	3E+05	6E+07	1E+05
EXPL	Soil	RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	121-82-4	--	ug/kg	8E+04	2E+04	1E+05	2E+05	--	3E+05	1E+05	--	3E+05	3E+05	3E+06	2E+05
EXPL	Soil	Tetryl (Trinitrophenylmethylnitramine)	479-45-8	--	ug/kg	--	2E+04	--	2E+05	--	--	1E+05	--	--	2E+05	--	1E+05
PEST	Soil	4,4'-DDD	72-54-8	--	ug/kg	3E+04	--	5E+04	--	--	1E+05	--	--	6E+04	--	1E+06	--
PEST	Soil	4,4'-DDE	72-55-9	--	ug/kg	2E+04	--	4E+04	--	--	7E+04	--	--	4E+04	--	7E+05	--
PEST	Soil	4,4'-DDT	50-29-3	--	ug/kg	2E+04	4E+03	4E+04	3E+04	--	9E+04	2E+04	--	7E+04	5E+04	1E+06	2E+04
PEST	Soil	Aldrin	309-00-2	--	ug/kg	4E+02	2E+02	7E+02	2E+03	--	1E+03	1E+03	--	9E+02	2E+03	1E+04	1E+03
PEST	Soil	alpha-BHC	319-84-6	--	ug/kg	1E+03	5E+04	2E+03	4E+05	--	4E+03	3E+05	--	2E+03	4E+05	4E+04	3E+05
PEST	Soil	Alpha-Chlordane	5103-71-9	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
PEST	Soil	beta-BHC	319-85-7	--	ug/kg	4E+03	--	7E+03	--	--	1E+04	--	--	8E+03	--	1E+05	--
PEST	Soil	Chlordane	12789-03-6	--	ug/kg	2E+04	4E+03	4E+04	3E+04	--	8E+04	2E+04	--	6E+04	4E+04	9E+05	1E+04

Table 2. Soil RBTLs
McClellan, Anniston, Alabama

Soil RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	RS-Child cancer	RS-Child noncancer	RS-Adult cancer	RS-Adult noncancer	RS mutagenic[(1)]	TSA cancer	TSA noncancer	TSA mutagenic[(1)]	COM cancer	COM noncancer	CW cancer	CW noncancer
PEST	Soil	Chlorobenzilate	510-15-6	--	ug/kg	6E+04	1E+05	1E+05	1E+06	--	2E+05	7E+05	--	1E+05	1E+06	2E+06	7E+05
PEST	Soil	DELTA-BHC	319-86-8	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
PEST	Soil	Diallate	2303-16-4	--	ug/kg	1E+05	--	2E+05	--	--	4E+05	--	--	2E+05	--	4E+06	--
PEST	Soil	Dieldrin	60-57-1	--	ug/kg	4E+02	3E+02	8E+02	3E+03	--	1E+03	2E+03	--	9E+02	3E+03	1E+04	2E+03
PEST	Soil	Endosulfan I	959-98-8	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
PEST	Soil	Endosulfan II	33213-65-9	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
PEST	Soil	Endosulfan Sulfate	1031-07-8	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
PEST	Soil	Endrin	72-20-8	--	ug/kg	--	2E+03	--	2E+04	--	--	1E+04	--	--	2E+04	--	1E+04
PEST	Soil	Endrin Aldehyde	7421-93-4	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
PEST	Soil	Endrin Ketone	53494-70-5	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
PEST	Soil	gamma-BHC (Lindane)	58-89-9	--	ug/kg	7E+03	2E+03	1E+04	2E+04	--	3E+04	1E+04	--	2E+04	3E+04	3E+05	1E+04
PEST	Soil	Gamma-Chlordane	5103-74-2	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
PEST	Soil	Heptachlor	76-44-8	--	ug/kg	2E+03	3E+03	3E+03	3E+04	--	5E+03	2E+04	--	3E+03	3E+04	5E+04	2E+04
PEST	Soil	Heptachlor epoxide	1024-57-3	--	ug/kg	8E+02	8E+01	1E+03	7E+02	--	3E+03	4E+02	--	2E+03	7E+02	3E+04	5E+02
PEST	Soil	Kepone	143-50-0	--	ug/kg	7E+02	2E+03	1E+03	2E+04	--	2E+03	1E+04	--	1E+03	2E+04	2E+04	1E+04
PEST	Soil	Methoxychlor	72-43-5	--	ug/kg	--	3E+04	--	3E+05	--	--	2E+05	--	--	3E+05	--	2E+05
PEST	Soil	Toxaphene	8001-35-2	--	ug/kg	6E+03	--	1E+04	--	--	2E+04	--	--	1E+04	--	2E+05	--
OPP	Soil	Atrazine	1912-24-9	--	ug/kg	3E+04	2E+05	5E+04	2E+06	--	1E+05	1E+06	--	7E+04	2E+06	1E+06	1E+06
OPP	Soil	Chlorpyrifos	2921-88-2	--	ug/kg	--	6E+03	--	5E+04	--	--	3E+04	--	--	5E+04	--	4E+04
OPP	Soil	Dimethoate	60-51-5	--	ug/kg	--	1E+03	--	1E+04	--	--	7E+03	--	--	1E+04	--	7E+03
OPP	Soil	Disulfoton	298-04-4	--	ug/kg	--	2E+02	--	2E+03	--	--	1E+03	--	--	2E+03	--	1E+03
OPP	Soil	Malathion	121-75-5	--	ug/kg	--	1E+05	--	1E+06	--	--	7E+05	--	--	1E+06	--	7E+05
OPP	Soil	Methyl parathion	298-00-0	--	ug/kg	--	2E+03	--	1E+04	--	--	8E+03	--	--	1E+04	--	9E+03
OPP	Soil	Parathion	56-38-2	--	ug/kg	--	4E+04	--	3E+05	--	--	2E+05	--	--	3E+05	--	2E+05
OPP	Soil	Phorate	298-02-2	--	ug/kg	--	1E+03	--	1E+04	--	--	7E+03	--	--	1E+04	--	7E+03
OPP	Soil	Simazine	122-34-9	--	ug/kg	6E+04	3E+04	1E+05	3E+05	--	2E+05	2E+05	--	1E+05	3E+05	2E+06	2E+05
OPP	Soil	Sulfotepp (tetrathyldithiopyrophosphate)	3689-24-5	--	ug/kg	--	3E+03	--	3E+04	--	--	2E+04	--	--	3E+04	--	2E+04
PCB	Soil	PCB - Aroclor 1016	12674-11-2	--	ug/kg	9E+04	4E+02	2E+05	3E+03	--	3E+05	2E+03	--	2E+05	3E+03	3E+06	2E+03
PCB	Soil	PCB - Aroclor 1221	11104-28-2	--	ug/kg	3E+03	--	5E+03	--	--	1E+04	--	--	6E+03	--	1E+05	--
PCB	Soil	PCB - Aroclor 1232	11141-16-5	--	ug/kg	3E+03	--	5E+03	--	--	1E+04	--	--	6E+03	--	1E+05	--
PCB	Soil	PCB - Aroclor 1242	53469-21-9	--	ug/kg	3E+03	--	5E+03	--	--	1E+04	--	--	6E+03	--	1E+05	--
PCB	Soil	PCB - Aroclor 1248	12672-29-6	--	ug/kg	3E+03	--	5E+03	--	--	1E+04	--	--	6E+03	--	1E+05	--
PCB	Soil	PCB - Aroclor 1254	11097-69-1	--	ug/kg	3E+03	1E+02	5E+03	9E+02	--	1E+04	6E+02	--	6E+03	9E+02	1E+05	6E+02
PCB	Soil	PCB - Aroclor 1260	11096-82-5	--	ug/kg	3E+03	--	5E+03	--	--	1E+04	--	--	6E+03	--	1E+05	--
PCB	Soil	Total PCBs	1336-36-3	--	ug/kg	3E+03	--	5E+03	--	--	1E+04	--	--	6E+03	--	1E+05	--
HERB	Soil	2,4,5 TP (silvex) (2-(2,4,5-Trichlorophenoxy) propionic acid)	93-72-1	--	ug/kg	--	5E+04	--	4E+05	--	--	3E+05	--	--	4E+05	--	3E+05
HERB	Soil	2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7	--	ug/kg	--	7E+04	--	6E+05	--	--	4E+05	--	--	8E+05	--	4E+05
HERB	Soil	2,4-Dinitro-6-sec-butylphenol (Dinoseb)	88-85-7	--	ug/kg	--	6E+03	--	5E+04	--	--	3E+04	--	--	5E+04	--	4E+04
HERB	Soil	Alachlor	15972-60-8	--	ug/kg	1E+05	6E+04	2E+05	5E+05	--	4E+05	3E+05	--	3E+05	5E+05	4E+06	4E+05
HERB	Soil	Dalapon (2,2-dichloropropionic acid)	75-99-0	--	ug/kg	--	2E+05	--	2E+06	--	--	1E+06	--	--	2E+06	--	1E+06
HERB	Soil	Diquat	85-00-7	--	ug/kg	--	1E+04	--	1E+05	--	--	7E+04	--	--	1E+05	--	8E+04
HERB	Soil	Endothall	145-73-3	--	ug/kg	--	1E+05	--	1E+06	--	--	7E+05	--	--	1E+06	--	7E+05
HERB	Soil	Glyphosate	1071-83-6	--	ug/kg	--	6E+05	--	5E+06	--	--	3E+06	--	--	5E+06	--	4E+06
HERB	Soil	Picloram	1918-02-1	--	ug/kg	--	4E+05	--	4E+06	--	--	2E+06	--	--	4E+06	--	2E+06
HERB	Soil	Pronamide	23950-58-5	--	ug/kg	--	5E+05	--	4E+06	--	--	3E+06	--	--	4E+06	--	3E+06
CARB	Soil	Aldicarb	116-06-3	--	ug/kg	--	6E+03	--	5E+04	--	--	3E+04	--	--	5E+04	--	4E+04
CARB	Soil	Aldicarb Sulfone	1646-88-4	--	ug/kg	--	6E+03	--	5E+04	--	--	3E+04	--	--	5E+04	--	4E+04
CARB	Soil	Aldicarb Sulfoxide	1646-87-3	--	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--
CARB	Soil	Carbofuran	1563-66-2	--	ug/kg	--	3E+04	--	3E+05	--	--	2E+05	--	--	3E+05	--	2E+05
CARB	Soil	Oxamyl (Vydate)	23135-22-0	--	ug/kg	--	2E+05	--	1E+06	--	--	8E+05	--	--	1E+06	--	9E+05
DXN	Soil	2,3,7,8 TCDD (Dioxin)	1746-01-6	--	ug/kg	6E-02	5E-03	1E-01	5E-02	--	2E-01	3E-02	--	2E-01	7E-02	3E+00	3E-02
MET	Soil	Aluminum	7429-90-5	--	mg/kg	--	8E+03	--	7E+04	--	--	5E+04	--	--	2E+03	--	2E+02
MET	Soil	Antimony	7440-36-0	--	mg/kg	--	3E+00	--	3E+01	--	--	2E+01	--	--	5E+01	--	2E+01
MET	Soil	Arsenic	7440-38-2	--	mg/kg	6E+00	2E+00	1E+01	2E+01	--	2E+01	1E+01	--	1E+01	5E+00	2E+02	5E-01
MET	Soil	Barium	7440-39-3	--	mg/kg	--	2E+03	--	1E+04	--	--	9E+03	--	--	2E+02	--	2E+01
MET	Soil	Beryllium	7440-41-7	--	mg/kg	--	2E+01	--	1E+02	--	--	9E+01	--	4E+01	7E+00	1E+03	7E-01
MET	Soil	Cadmium	7440-43-9d	--	mg/kg	--	7E+00	--	6E+01	--	--	4E+01	--	6E+01	7E+00	1E+03	7E-01
MET	Soil	Calcium	7440-70-2	--	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
MET	Soil	Chromium (III)	16065-83-1	--	mg/kg	--	1E+04	--	1E+05	--	--	7E+04	--	--	2E+05	--	9E+04
MET	Soil	Chromium (Total)	7440-47-3	--	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
MET	Soil	Chromium (VI)	18540-29-9	M	mg/kg	2E+01	2E+01	3E+01	2E+02	3E+00	7E+01	1E+02	4E+01	1E+00	3E+01	3E+01	4E+00
MET	Soil	Cobalt	7440-48-4	--	mg/kg	--	2E+00	--	2E+01	--	--	1E+01	--	1E+01	2E+00	3E+02	2E-01

Table 2. Soil RBTLs
McClellan, Anniston, Alabama

Soil RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	RS-Child cancer	RS-Child noncancer	RS-Adult cancer	RS-Adult noncancer	RS mutagenic[(1)]	TSA cancer	TSA noncancer	TSA mutagenic[(1)]	COM cancer	COM noncancer	CW cancer	CW noncancer
MET	Soil	Copper	7440-50-8	--	mg/kg	--	3E+02	--	3E+03	--	--	2E+03	--	--	5E+03	--	2E+03
MET	Soil	Iron	7439-89-6	--	mg/kg	--	5E+03	--	5E+04	--	--	3E+04	--	--	1E+05	--	4E+04
MET	Soil	Lead	7439-92-1	--	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
MET	Soil	Magnesium	7439-95-4	--	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
MET	Soil	Manganese	7439-96-5w	--	mg/kg	--	2E+02	--	2E+03	--	--	1E+03	--	--	2E+01	--	2E+00
MET	Soil	Mercury	7487-94-7	--	mg/kg	--	2E+00	--	2E+01	--	--	1E+01	--	--	3E+01	--	1E+01
MET	Soil	Mercury (methyl)	22967-92-6	--	mg/kg	--	8E-01	--	7E+00	--	--	5E+00	--	--	1E+01	--	6E+00
MET	Soil	Nickel	7440-02-0	--	mg/kg	--	2E+02	--	1E+03	--	--	9E+02	--	4E+02	3E+01	1E+04	3E+00
MET	Soil	Potassium	7440-09-7	--	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
MET	Soil	Selenium	7782-49-2	--	mg/kg	--	4E+01	--	4E+02	--	--	2E+02	--	--	6E+02	--	3E+02
MET	Soil	Silver	7440-22-4	--	mg/kg	--	4E+01	--	4E+02	--	--	2E+02	--	--	7E+02	--	3E+02
MET	Soil	Sodium	7440-23-5	--	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
MET	Soil	Strontium	7440-24-6	--	mg/kg	--	5E+03	--	4E+04	--	--	3E+04	--	--	8E+04	--	3E+04
MET	Soil	Thallium	7440-28-0	--	mg/kg	--	8E-02	--	7E-01	--	--	5E-01	--	--	1E+00	--	6E-01
MET	Soil	Tin	7440-31-5	--	mg/kg	--	5E+03	--	4E+04	--	--	3E+04	--	--	8E+04	--	3E+04
MET	Soil	Vanadium	7440-62-2	--	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
MET	Soil	Zinc	7440-66-6	--	mg/kg	--	2E+03	--	2E+04	--	--	1E+04	--	--	4E+04	--	2E+04
INO	Soil	Ammonia	7664-41-7	--	mg/kg	--	--	--	--	--	--	--	--	--	4E+04	--	4E+03
INO	Soil	Bromate	15541-45-4	--	mg/kg	1E+01	3E+01	2E+01	3E+02	--	5E+01	2E+02	--	5E+01	5E+02	6E+02	2E+02
INO	Soil	Chloramine (Monochloramine)	10599-90-3	--	mg/kg	--	8E+02	--	7E+03	--	--	5E+03	--	--	1E+04	--	6E+03
INO	Soil	Chloride	7647-14-5	--	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
INO	Soil	Chlorine	7782-50-5	--	mg/kg	--	8E+02	--	7E+03	--	--	5E+03	--	--	5E+01	--	5E+00
INO	Soil	Chlorine Dioxide	10049-04-4	--	mg/kg	--	2E+02	--	2E+03	--	--	1E+03	--	--	7E+01	--	7E+00
INO	Soil	Chlorite	7758-19-2	--	mg/kg	--	2E+02	--	2E+03	--	--	1E+03	--	--	4E+03	--	2E+03
INO	Soil	Cyanide (hydrogen)	74-90-8	--	mg/kg	--	5E+00	--	4E+01	--	--	3E+01	--	--	6E+01	--	3E+01
INO	Soil	Cyanide (free)	57-12-5	--	mg/kg	--	5E+00	--	4E+01	--	--	3E+01	--	--	6E+01	--	3E+01
INO	Soil	Cyanide (Total)	143-33-9	--	mg/kg	--	8E+00	--	7E+01	--	--	5E+01	--	--	1E+02	--	6E+01
INO	Soil	Fluoride	7681-49-4	--	mg/kg	--	4E+02	--	4E+03	--	--	2E+03	--	--	3E+03	--	5E+02
INO	Soil	Nitrate	14797-55-8	--	mg/kg	--	1E+04	--	1E+05	--	--	8E+04	--	--	2E+05	--	9E+04
INO	Soil	Nitrite	14797-65-0	--	mg/kg	--	8E+02	--	7E+03	--	--	5E+03	--	--	1E+04	--	6E+03
INO	Soil	Perchlorate	7601-90-3	--	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--
INO	Soil	Sulfate	7757-82-6	--	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

1. Mutagenic cancer adjustments apply to all receptors up to the age of 16.
2. Italicized values exceed unity, and therefore no RBTL is applicable.
3. TCE and vinyl chloride mutagenic residential RBTLs for soil are the EPA residential soil RSLs (November 2013) multiplied by 10 to adjust for 1E-05 ELCR target.
4. TCE trespasser soil and sediment RBTLs for soil calculated with the EPA RSL calculator. Vinyl chloride does not require a mutagenic adjustment for the trespasser age group.

Legend:

µg/kg = Micrograms per kilogram
mg/kg = Milligrams per kilogram
CARB = Carbamate (EPA Method 8321)
COM = Commercial Worker - Adult
CW = Construction Worker - Adult
DXN = Dioxins
EXPL = Explosives
HERB = Herbicides
INO = Miscellaneous inorganic parameters
MET = Metals
OPP = Organophosphorus pesticides
PCB = Polychlorinated biphenyls (Aroclors)
PEST = Pesticides
RBTL = Risk-Based Target Level
RS = Resident
RSK = Method RSK-175
TSA = Trespasser - Adolescent
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

Table 3. Surface Water RBTLs
McClellan, Anniston, Alabama

Surface Water RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	TSA cancer	TSA noncancer	TSA mutagenic[1]
VOC	SW	1,1,1,2-Tetrachloroethane	630-20-6	--	ug/L	3E+03	3E+03	--
VOC	SW	1,1,1-Trichloroethane	71-55-6	--	ug/L	--	2E+04	--
VOC	SW	1,1,2,2-Tetrachloroethane	79-34-5	--	ug/L	1E+02	2E+02	--
VOC	SW	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	76-13-1	--	ug/L	--	3E+06	--
VOC	SW	1,1,2-Trichloroethane	79-00-5	--	ug/L	5E+02	2E+02	--
VOC	SW	1,1-Dichloroethane	75-34-3	--	ug/L	5E+03	8E+03	--
VOC	SW	1,1-Dichloroethene	75-35-4	--	ug/L	--	1E+03	--
VOC	SW	1,1-Dichloropropene	563-58-6	--	ug/L	--	--	--
VOC	SW	1,2,3-Trichlorobenzene	87-61-6	--	ug/L	--	8E+01	--
VOC	SW	1,2,3-Trichloropropane	96-18-4	M	ug/L	2E+00	4E+02	7E-01
VOC	SW	1,2,4-Trichlorobenzene	120-82-1	--	ug/L	9E+01	4E+01	--
VOC	SW	1,2,4-Trimethylbenzene	95-63-6	--	ug/L	--	--	--
VOC	SW	1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	M	ug/L	8E+01	2E+01	3E+01
VOC	SW	1,2-Dibromoethane (Ethylene dibromide or EDB)	106-93-4	--	ug/L	2E+01	4E+02	--
VOC	SW	1,2-Dichlorobenzene (o-Dichlorobenzene)	95-50-1	--	ug/L	--	7E+02	--
VOC	SW	1,2-Dichloroethane (EDC)	107-06-2	--	ug/L	4E+02	3E+02	--
VOC	SW	1,2-Dichloropropane	78-87-5	--	ug/L	7E+02	3E+03	--
VOC	SW	1,3,5-Trimethylbenzene	108-67-8	--	ug/L	--	9E+02	--
VOC	SW	1,3-Dichlorobenzene (m-Dichlorobenzene)	541-73-1	--	ug/L	--	--	--
VOC	SW	1,3-Dichloropropane	142-28-9	--	ug/L	--	2E+03	--
VOC	SW	1,4-Dichlorobenzene (p-Dichlorobenzene)	106-46-7	--	ug/L	9E+02	5E+02	--
VOC	SW	2,2-Dichloropropane	594-20-7	--	ug/L	--	--	--
VOC	SW	2-Butanone (Methyl Ethyl Ketone)	78-93-3	--	ug/L	--	5E+04	--
VOC	SW	2-Chlorotoluene (o-Chlorotoluene)	95-49-8	--	ug/L	--	2E+03	--
VOC	SW	2-Hexanone	591-78-6	--	ug/L	--	5E+02	--
VOC	SW	4-Chlorotoluene	106-43-4	--	ug/L	--	2E+03	--
VOC	SW	4-Methyl-2-pentanone (MIBK)	108-10-1	--	ug/L	--	5E+03	--
VOC	SW	Acetone	67-64-1	--	ug/L	--	8E+04	--
VOC	SW	Acetonitrile	75-05-8	--	ug/L	--	--	--
VOC	SW	Acrolein	107-02-8	--	ug/L	--	4E+01	--
VOC	SW	Acrylonitrile	107-13-1	--	ug/L	1E+02	3E+03	--
VOC	SW	Allyl Chloride	107-05-1	--	ug/L	1E+03	--	--
VOC	SW	Benzene	71-43-2	--	ug/L	3E+02	1E+02	--
VOC	SW	Bromobenzene	108-86-1	--	ug/L	--	8E+02	--
VOC	SW	Bromochloromethane	74-97-5	--	ug/L	--	--	--
VOC	SW	Bromodichloromethane	75-27-4	--	ug/L	5E+02	9E+02	--
VOC	SW	Bromoform (Tribromomethane)	75-25-2	--	ug/L	4E+03	8E+02	--
VOC	SW	Bromomethane (Methyl Bromide)	74-83-9	--	ug/L	--	8E+01	--
VOC	SW	Carbon disulfide	75-15-0	--	ug/L	--	3E+03	--
VOC	SW	Carbon Tetrachloride	56-23-5	--	ug/L	2E+02	7E+01	--
VOC	SW	Chlorobenzene (Monochlorobenzene)	108-90-7	--	ug/L	--	3E+02	--
VOC	SW	Chloroethane	75-00-3	--	ug/L	--	--	--
VOC	SW	Chloroform	67-66-3	--	ug/L	8E+02	4E+02	--
VOC	SW	Chloromethane (methyl chloride)	74-87-3	--	ug/L	--	--	--
VOC	SW	cis-1,2-Dichloroethene	156-59-2	--	ug/L	--	2E+02	--
VOC	SW	cis-1,3-Dichloropropene	10061-01-5	--	ug/L	--	--	--
VOC	SW	Dibromochloromethane	124-48-1	--	ug/L	4E+02	9E+02	--
VOC	SW	Dibromomethane	74-95-3	--	ug/L	--	9E+02	--
VOC	SW	Dichlorodifluoromethane	75-71-8	--	ug/L	--	6E+03	--
VOC	SW	Ethylbenzene	100-41-4	--	ug/L	5E+02	8E+02	--
VOC	SW	Formaldehyde	50-00-0	--	ug/L	--	1E+04	--
VOC	SW	Hexachlorobutadiene	87-68-3	--	ug/L	2E+01	2E+00	--
VOC	SW	Iodomethane	74-88-4	--	ug/L	--	--	--
VOC	SW	Isobutyl Alcohol (Isobutanol)	78-83-1	--	ug/L	--	3E+04	--
VOC	SW	Isopropylbenzene (Cumene)	98-82-8	--	ug/L	--	9E+03	--
VOC	SW	Methanol	67-56-1	--	ug/L	--	4E+04	--
VOC	SW	Methylene Chloride (Dichloromethane)	75-09-2	M	ug/L	2E+04	3E+02	7E+03

Table 3. Surface Water RBTLs
McClellan, Anniston, Alabama

Surface Water RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	TSA cancer	TSA noncancer	TSA mutagenic[1]
VOC	SW	Methyl-tert-butyl-ether (MTBE)	1634-04-4	--	ug/L	4E+04	--	--
VOC	SW	Naphthalene	91-20-3	--	ug/L	--	2E+02	--
VOC	SW	N-Butylbenzene	104-51-8	--	ug/L	--	5E+03	--
VOC	SW	N-Propylbenzene	103-65-1	--	ug/L	--	9E+03	--
VOC	SW	P-Isopropyltoluene (Cymene)	99-87-6	--	ug/L	--	--	--
VOC	SW	sec-Butylbenzene	135-9-88	--	ug/L	--	--	--
VOC	SW	Styrene	100-42-5	--	ug/L	--	2E+03	--
VOC	SW	tert-Butylbenzene	98-06-6	--	ug/L	--	--	--
VOC	SW	Tetrachloroethene (PCE)	127-18-4	--	ug/L	3E+03	5E+01	--
VOC	SW	Toluene	108-88-3	--	ug/L	--	1E+03	--
VOC	SW	trans-1,2-Dichloroethene	156-60-5	--	ug/L	--	2E+03	--
VOC	SW	trans-1,3-Dichloropropene	10061-02-6	--	ug/L	--	--	--
VOC	SW	Trans-1,4-Dichloro-2-Butene	110-57-6	--	ug/L	--	--	--
VOC	SW	Trichloroethene (TCE)	79-01-6	M	ug/L	4E+02	1E+01	3E+02
VOC	SW	Trichlorofluoromethane	75-69-4	--	ug/L	--	7E+03	--
VOC	SW	Vinyl Acetate	108-05-4	--	ug/L	--	9E+04	--
VOC	SW	Vinyl Chloride	75-01-4	M	ug/L	4E+01	1E+02	4E+01
VOC	SW	m,p-Xylene	136777-61-2	--	ug/L	--	--	--
VOC	SW	O-Xylene	95-47-6	--	ug/L	--	2E+04	--
VOC	SW	Xylenes (Total)	1330-20-7	--	ug/L	--	2E+04	--
RSK	SW	Carbon Dioxide	124-38-9	--	ug/L	--	--	--
RSK	SW	Ethane	74-84-0	--	ug/L	--	--	--
RSK	SW	Ethene	74-85-1	--	ug/L	--	--	--
RSK	SW	Methane	74-82-8	--	ug/L	--	--	--
SVOC	SW	1,2,4-Trichlorobenzene	120-82-1	--	ug/L	9E+01	4E+01	--
SVOC	SW	1,2-Dichlorobenzene (o-Dichlorobenzene)	95-50-1	--	ug/L	--	7E+02	--
SVOC	SW	1,3-Dichlorobenzene (m-Dichlorobenzene)	541-73-1	--	ug/L	--	--	--
SVOC	SW	1,4-Dichlorobenzene (p-Dichlorobenzene)	106-46-7	--	ug/L	9E+02	5E+02	--
SVOC	SW	2,3,4,6-Tetrachlorophenol	58-90-2	--	ug/L	--	3E+03	--
SVOC	SW	2,4,5-Trichlorophenol	95-95-4	--	ug/L	--	9E+03	--
SVOC	SW	2,4,6-Trichlorophenol	88-06-2	--	ug/L	4E+02	7E+00	--
SVOC	SW	2,4-Dichlorophenol	120-83-2	--	ug/L	--	4E+01	--
SVOC	SW	2,4-Dimethylphenol	105-67-9	--	ug/L	--	5E+02	--
SVOC	SW	2,4-Dinitrophenol	51-28-5	--	ug/L	--	1E+02	--
SVOC	SW	2,4-Dinitrotoluene	121-14-2	--	ug/L	1E+02	9E+01	--
SVOC	SW	2,6-Dimethylphenol	576-26-1	--	ug/L	--	6E+01	--
SVOC	SW	2,6-Dinitrotoluene	606-20-2	--	ug/L	--	4E+01	--
SVOC	SW	2-Chloronaphthalene (beta-Chloronapthalene)	91-58-7	--	ug/L	--	8E+03	--
SVOC	SW	2-Chlorophenol	95-57-8	--	ug/L	--	2E+02	--
SVOC	SW	2-Methylnaphthalene	91-57-6	--	ug/L	--	4E+02	--
SVOC	SW	2-Methylphenol (o-Cresol)	95-48-7	--	ug/L	--	2E+03	--
SVOC	SW	2-Nitroaniline	88-74-4	--	ug/L	--	9E+02	--
SVOC	SW	2-Nitrophenol	88-75-5	--	ug/L	--	--	--
SVOC	SW	3,3-Dichlorobenzidine	91-94-1	--	ug/L	2E+01	--	--
SVOC	SW	3,4-Dimethylphenol	95-65-8	--	ug/L	--	3E+01	--
SVOC	SW	3-Chlorophenol (m-chlorophenol)	108-43-0	--	ug/L	--	--	--
SVOC	SW	3-Methylphenol (m-Cresol)	108-39-4	--	ug/L	--	2E+03	--
SVOC	SW	3-NITROANILINE	99-09-2	--	ug/L	--	--	--
SVOC	SW	4,6-Dinitro-2-Methylphenol	534-52-1	--	ug/L	--	3E+00	--
SVOC	SW	4-Bromophenyl Phenyl Ether	101-55-3	--	ug/L	--	--	--
SVOC	SW	4-Chloro-3-methylphenol (p-Chloro-m-cresol)	59-50-7	--	ug/L	--	1E+03	--
SVOC	SW	4-Chloroaniline	106-47-8	--	ug/L	3E+02	4E+02	--
SVOC	SW	4-Chlorophenyl Phenyl Ether	7005-72-3	--	ug/L	--	--	--
SVOC	SW	4-Methylphenol (p-Cresol)	106-44-5	--	ug/L	--	4E+03	--
SVOC	SW	4-Nitroaniline	100-01-6	--	ug/L	3E+03	4E+02	--
SVOC	SW	4-Nitrophenol (p-Nitrophenol)	100-02-7	--	ug/L	--	--	--
SVOC	SW	Acenaphthene	83-32-9	--	ug/L	--	6E+03	--

Table 3. Surface Water RBTLs
McClellan, Anniston, Alabama

Surface Water RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	TSA cancer	TSA noncancer	TSA mutagenic[1]
SVOC	SW	Acenaphthylene	208-96-8	--	ug/L	--	--	--
SVOC	SW	Aniline	62-53-3	--	ug/L	8E+03	5E+02	--
SVOC	SW	Anthracene	120-12-7	--	ug/L	--	3E+04	--
SVOC	SW	Azobenzene	103-33-3	--	ug/L	6E+02	--	--
SVOC	SW	Benzidine (1,2-Diphenylhydrazine)	92-87-5	M	ug/L	2E-01	2E+02	7E-02
SVOC	SW	Benzo(a)anthracene	56-55-3	M	ug/L	4E-01	--	1E-01
SVOC	SW	Benzo(a)pyrene	50-32-8	M	ug/L	2E-02	--	8E-03
SVOC	SW	Benzo(b)fluoranthene	205-99-2	M	ug/L	4E-01	--	1E-01
SVOC	SW	Benzo(g,h,i)perylene	191-24-2	--	ug/L	--	--	--
SVOC	SW	Benzo(k)fluoranthene	207-08-9	M	ug/L	9E+02	--	3E+02
SVOC	SW	Benzoic acid	65-85-0	--	ug/L	--	2E+05	--
SVOC	SW	Benzyl Alcohol	100-51-6	--	ug/L	--	9E+03	--
SVOC	SW	Bis(2-Chloroethoxy)Methane	111-91-1	--	ug/L	--	3E+02	--
SVOC	SW	Bis(2-chloroethyl)ether	111-44-4	--	ug/L	4E+01	--	--
SVOC	SW	Bis(2-chloroisopropyl)ether	108-60-1	--	ug/L	9E+02	4E+03	--
SVOC	SW	Bis(2-ethylhexyl)phthalate	117-81-7	--	ug/L	4E+00	2E+00	--
SVOC	SW	Butyl benzyl phthalate	85-68-7	--	ug/L	3E+04	2E+04	--
SVOC	SW	Carbazole	86-74-8	--	ug/L	--	--	--
SVOC	SW	Chlorobenzilate	510-15-6	--	ug/L	6E+02	2E+03	--
SVOC	SW	Chrysene	218-01-9	M	ug/L	3E+01	--	1E+01
SVOC	SW	Di (2-ethylhexyl) adipate	103-23-1	--	ug/L	5E+04	6E+04	--
SVOC	SW	Dibenzo(a,h)anthracene	53-70-3	M	ug/L	3E-02	--	8E-03
SVOC	SW	Dibenzofuran	132-64-9	--	ug/L	--	9E+01	--
SVOC	SW	Dichloroacetic acid	76-43-6	--	ug/L	--	--	--
SVOC	SW	Diethyl phthalate	84-66-2	--	ug/L	--	3E+04	--
SVOC	SW	Dimethyl phthalate	131-11-3	--	ug/L	--	--	--
SVOC	SW	Di-n-Butyl phthalate	84-74-2	--	ug/L	--	4E+02	--
SVOC	SW	Di-n-Octyl phthalate	117-84-0	--	ug/L	--	1E+03	--
SVOC	SW	Fluoranthene	206-44-0	--	ug/L	--	3E+01	--
SVOC	SW	Fluorene	86-73-7	--	ug/L	--	4E+03	--
SVOC	SW	Hexachlorobenzene	118-74-1	--	ug/L	3E-01	5E-01	--
SVOC	SW	Hexachlorobutadiene	87-68-3	--	ug/L	2E+01	2E+00	--
SVOC	SW	Hexachlorocyclopentadiene	77-47-4	--	ug/L	--	6E+02	--
SVOC	SW	Hexachloroethane	67-72-1	--	ug/L	8E+01	3E+00	--
SVOC	SW	Indeno(1,2,3-cd)pyrene	193-39-5	M	ug/L	2E-01	--	8E-02
SVOC	SW	Isophorone	78-59-1	--	ug/L	4E+04	1E+04	--
SVOC	SW	Monochloroacetic acid	79-11-8	--	ug/L	--	2E+02	--
SVOC	SW	Naphthalene	91-20-3	--	ug/L	--	2E+02	--
SVOC	SW	Nitrobenzene	98-95-3	--	ug/L	--	2E+02	--
SVOC	SW	N-Nitrosodimethylamine	62-75-9	M	ug/L	1E+00	7E-01	4E-01
SVOC	SW	N-Nitroso di-n-propylamine	621-64-7	--	ug/L	6E+00	--	--
SVOC	SW	N-Nitrosodiphenylamine	86-30-6	--	ug/L	2E+03	--	--
SVOC	SW	Pentachlorobenzene	608-93-5	--	ug/L	--	8E+01	--
SVOC	SW	Pentachlorophenol	87-86-5	--	ug/L	2E+00	7E+00	--
SVOC	SW	Phenanthrene	85-01-8	--	ug/L	--	--	--
SVOC	SW	Phenol	108-95-2	--	ug/L	--	2E+04	--
SVOC	SW	Propylene glycol	57-55-6	--	ug/L	--	2E+06	--
SVOC	SW	Pyrene	129-00-0	--	ug/L	--	3E+03	--
SVOC	SW	Tetrahydrofuran	109-99-9	--	ug/L	--	8E+04	--
SVOC	SW	Trichloroacetic acid	76-03-9	--	ug/L	9E+02	2E+03	--
EXPL	SW	1,3,5-Trinitrobenzene	99-35-4	--	ug/L	--	3E+03	--
EXPL	SW	1,3-Dinitrobenzene	99-65-0	--	ug/L	--	9E+00	--
EXPL	SW	2,4,6-Trinitrotoluene	118-96-7	--	ug/L	2E+03	5E+01	--
EXPL	SW	2,4-Dinitrotoluene	121-14-2	--	ug/L	1E+02	9E+01	--
EXPL	SW	2,6-Dinitrotoluene	606-20-2	--	ug/L	--	4E+01	--
EXPL	SW	2-Amino-4,6-Dinitrotoluene	35572-78-2	--	ug/L	--	2E+02	--
EXPL	SW	2-Nitrotoluene	88-72-2	--	ug/L	3E+02	8E+01	--

Table 3. Surface Water RBTLs
McClellan, Anniston, Alabama

Surface Water RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	TSA cancer	TSA noncancer	TSA mutagenic[1]
EXPL	SW	3-Nitrotoluene	99-08-1	--	ug/L	--	9E+00	--
EXPL	SW	4-Amino-2,6-Dinitrotoluene	19406-51-0	--	ug/L	--	2E+02	--
EXPL	SW	4-Nitrotoluene	99-99-0	--	ug/L	4E+03	4E+02	--
EXPL	SW	HMX (Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine)	2691-41-0	--	ug/L	--	5E+03	--
EXPL	SW	Nitrobenzene	98-95-3	--	ug/L	--	2E+02	--
EXPL	SW	RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	121-82-4	--	ug/L	6E+02	3E+02	--
EXPL	SW	Tetryl (Trinitrophenylmethylnitramine)	479-45-8	--	ug/L	--	4E+02	--
PEST	SW	4,4'-DDD	72-54-8	--	ug/L	2E+00	--	--
PEST	SW	4,4'-DDE	72-55-9	--	ug/L	6E-01	--	--
PEST	SW	4,4'-DDT	50-29-3	--	ug/L	4E-01	1E-01	--
PEST	SW	Aldrin	309-00-2	--	ug/L	1E-02	9E-03	--
PEST	SW	alpha-BHC	319-84-6	--	ug/L	1E+01	8E+02	--
PEST	SW	Alpha-Chlordane	5103-71-9	--	ug/L	--	--	--
PEST	SW	beta-BHC	319-85-7	--	ug/L	4E+01	--	--
PEST	SW	Chlordane	12789-03-6	--	ug/L	2E+02	5E+01	--
PEST	SW	Chlorobenzilate	510-15-6	--	ug/L	6E+02	2E+03	--
PEST	SW	DELTA-BHC	319-86-8	--	ug/L	--	--	--
PEST	SW	Diallate	2303-16-4	--	ug/L	1E+03	--	--
PEST	SW	Dieldrin	60-57-1	--	ug/L	1E-01	1E-01	--
PEST	SW	Endosulfan I	959-98-8	--	ug/L	--	--	--
PEST	SW	Endosulfan II	33213-65-9	--	ug/L	--	--	--
PEST	SW	Endosulfan Sulfate	1031-07-8	--	ug/L	--	--	--
PEST	SW	Endrin	72-20-8	--	ug/L	--	9E-01	--
PEST	SW	Endrin Aldehyde	7421-93-4	--	ug/L	--	--	--
PEST	SW	Endrin Ketone	53494-70-5	--	ug/L	--	--	--
PEST	SW	gamma-BHC (Lindane)	58-89-9	--	ug/L	4E+00	2E+00	--
PEST	SW	Gamma-Chlordane	5103-74-2	--	ug/L	--	--	--
PEST	SW	Heptachlor	76-44-8	--	ug/L	1E-01	4E-01	--
PEST	SW	Heptachlor epoxide	1024-57-3	--	ug/L	7E+00	1E+00	--
PEST	SW	Kepone	143-50-0	--	ug/L	7E+00	3E+01	--
PEST	SW	Methoxychlor	72-43-5	--	ug/L	--	5E+02	--
PEST	SW	Toxaphene	8001-35-2	--	ug/L	1E+00	--	--
OPP	SW	Atrazine	1912-24-9	--	ug/L	3E+02	3E+03	--
OPP	SW	Chlorpyrifos	2921-88-2	--	ug/L	--	9E+01	--
OPP	SW	Dimethoate	60-51-5	--	ug/L	--	2E+01	--
OPP	SW	Disulfoton	298-04-4	--	ug/L	--	4E+00	--
OPP	SW	Malathion	121-75-5	--	ug/L	--	2E+03	--
OPP	SW	Methyl parathion	298-00-0	--	ug/L	--	2E+01	--
OPP	SW	Parathion	56-38-2	--	ug/L	--	6E+01	--
OPP	SW	Phorate	298-02-2	--	ug/L	--	2E+01	--
OPP	SW	Simazine	122-34-9	--	ug/L	5E+02	5E+02	--
OPP	SW	Sulfotepp (tetrathyldithiopyrophosphate)	3689-24-5	--	ug/L	--	5E+01	--
PCB	SW	PCB - Aroclor 1016	12674-11-2	--	ug/L	9E+02	7E+00	--
PCB	SW	PCB - Aroclor 1221	11104-28-2	--	ug/L	3E+01	--	--
PCB	SW	PCB - Aroclor 1232	11141-16-5	--	ug/L	3E+01	--	--
PCB	SW	PCB - Aroclor 1242	53469-21-9	--	ug/L	3E+01	--	--
PCB	SW	PCB - Aroclor 1248	12672-29-6	--	ug/L	3E+01	--	--
PCB	SW	PCB - Aroclor 1254	11097-69-1	--	ug/L	3E+01	2E+00	--
PCB	SW	PCB - Aroclor 1260	11096-82-5	--	ug/L	3E+01	--	--
PCB	SW	Total PCBs	1336-36-3	--	ug/L	3E+01	--	--
HERB	SW	2,4,5 TP (silvex) (2-(2,4,5-Trichlorophenoxy) propionic acid)	93-72-1	--	ug/L	--	8E+02	--
HERB	SW	2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7	--	ug/L	--	9E+02	--
HERB	SW	2,4-Dinitro-6-sec-butylphenol (Dinoseb)	88-85-7	--	ug/L	--	9E+01	--
HERB	SW	Alachlor	15972-60-8	--	ug/L	1E+03	9E+02	--
HERB	SW	Dalapon (2,2-dichloropropionic acid)	75-99-0	--	ug/L	--	3E+03	--
HERB	SW	Diquat	85-00-7	--	ug/L	--	2E+02	--
HERB	SW	Endothall	145-73-3	--	ug/L	--	2E+03	--

Table 3. Surface Water RBTLs
McClellan, Anniston, Alabama

Surface Water RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	TSA cancer	TSA noncancer	TSA mutagenic[1]
HERB	SW	Glyphosate	1071-83-6	--	ug/L	--	9E+03	--
HERB	SW	Picloram	1918-02-1	--	ug/L	--	7E+03	--
HERB	SW	Pronamide	23950-58-5	--	ug/L	--	7E+03	--
CARB	SW	Aldicarb	116-06-3	--	ug/L	--	9E+01	--
CARB	SW	Aldicarb Sulfone	1646-88-4	--	ug/L	--	9E+01	--
CARB	SW	Aldicarb Sulfoxide	1646-87-3	--	ug/L	--	--	--
CARB	SW	Carbofuran	1563-66-2	--	ug/L	--	5E+02	--
CARB	SW	Oxamyl (Vydate)	23135-22-0	--	ug/L	--	2E+03	--
DXN	SW	2,3,7,8 TCDD (Dioxin)	1746-01-6	--	ug/L	2E-06	2E-07	--
MET	SW	Aluminum	7429-90-5	--	mg/l	--	9E+01	--
MET	SW	Antimony	7440-36-0	--	mg/l	--	4E-02	--
MET	SW	Arsenic	7440-38-2	--	mg/l	4E-02	3E-02	--
MET	SW	Barium	7440-39-3	--	mg/l	--	1E+01	--
MET	SW	Beryllium	7440-41-7	--	mg/l	--	1E-02	--
MET	SW	Cadmium (water)	7440-43-9w	--	mg/l	--	--	--
MET	SW	Calcium	7440-70-2	--	mg/l	--	--	--
MET	SW	Chromium (III)	16065-83-1	--	mg/l	--	2E+01	--
MET	SW	Chromium (Total)	7440-47-3	--	mg/l	--	--	--
MET	SW	Chromium (VI)	18540-29-9	M	mg/l	1E-02	3E-02	4E-03
MET	SW	Cobalt	7440-48-4	--	mg/l	--	3E-02	--
MET	SW	Copper	7440-50-8	--	mg/l	--	4E+00	--
MET	SW	Iron	7439-89-6	--	mg/l	--	7E+01	--
MET	SW	Lead	7439-92-1	--	mg/l	--	--	--
MET	SW	Magnesium	7439-95-4	--	mg/l	--	--	--
MET	SW	Manganese (non-diet)	7439-96-5w	--	mg/l	--	2E+00	--
MET	SW	Mercury	7487-94-7	--	mg/l	--	2E-02	--
MET	SW	Mercury (methyl)	22967-92-6	--	mg/l	--	9E-03	--
MET	SW	Nickel	7440-02-0	--	mg/l	--	2E+00	--
MET	SW	Potassium	7440-09-7	--	mg/l	--	--	--
MET	SW	Selenium	7782-49-2	--	mg/l	--	5E-01	--
MET	SW	Silver	7440-22-4	--	mg/l	--	3E-01	--
MET	SW	Sodium	7440-23-5	--	mg/l	--	--	--
MET	SW	Strontium	7440-24-6	--	mg/l	--	6E+01	--
MET	SW	Thallium	7440-28-0	--	mg/l	--	9E-04	--
MET	SW	Tin	7440-31-5	--	mg/l	--	6E+01	--
MET	SW	Vanadium	7440-62-2	--	mg/l	--	--	--
MET	SW	Zinc	7440-66-6	--	mg/l	--	3E+01	--
INO	SW	Ammonia	7664-41-7	--	mg/l	--	--	--
INO	SW	Bromate	15541-45-4	--	mg/l	8E-02	4E-01	--
INO	SW	Chloramine (Monochloramine)	10599-90-3	--	mg/l	--	9E+00	--
INO	SW	Chloride	7647-14-5	--	mg/l	--	--	--
INO	SW	Chlorine	7782-50-5	--	mg/l	--	9E+00	--
INO	SW	Chlorine Dioxide	10049-04-4	--	mg/l	--	3E+00	--
INO	SW	Chlorite	7758-19-2	--	mg/l	--	3E+00	--
INO	SW	Cyanide (hydrogen)	74-90-8	--	mg/l	--	6E-02	--
INO	SW	Cyanide (free)	57-12-5	--	mg/l	--	6E-02	--
INO	SW	Cyanide (Total)	143-33-9	--	mg/l	--	9E-02	--
INO	SW	Fluoride	7681-49-4	--	mg/l	--	5E+00	--
INO	SW	Nitrate	14797-55-8	--	mg/l	--	2E+02	--
INO	SW	Nitrite	14797-65-0	--	mg/l	--	9E+00	--
INO	SW	Perchlorate	7601-90-3	--	mg/l	--	--	--
INO	SW	Sulfate	7757-82-6	--	mg/l	--	--	--

Notes:

1. Mutagenic cancer adjustments apply to all receptors up to the age of 16.
2. Italicized values exceed unity, and therefore no RBTL is applicable.

Table 3. Surface Water RBTLs
McClellan, Anniston, Alabama

Surface Water RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	TSA cancer	TSA noncancer	TSA mutagenic[(1)]

Legend:

µg/L = Micrograms per liter
mg/L = Milligrams per liter
CARB = Carbamate (EPA Method 8321)
DXN = Dioxins
EXPL = Explosives
HERB = Herbicides
INO = Miscellaneous inorganic parameters
MET = Metals
OPP = Organophosphorus pesticides
PCB = Polychlorinated biphenyls (Aroclors)
PEST = Pesticides
RBTL = Risk-Based Target Level
RSK = Method RSK-175
TSA = Trespasser - Adolescent
SVOC = Semivolatile Organic Compound
SW = Surface Water
VOC = Volatile Organic Compound

Table 4. Sediment RBTLs
McClellan, Anniston, Alabama

Sediment RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	TSA cancer	TSA noncancer	TSA mutagenic[(1)]
VOC	Sediment	1,1,1,2-Tetrachloroethane	630-20-6	--	ug/kg	1E+06	1E+06	--
VOC	Sediment	1,1,1-Trichloroethane	71-55-6	--	ug/kg	--	9E+07	--
VOC	Sediment	1,1,2,2-Tetrachloroethane	79-34-5	--	ug/kg	2E+05	9E+05	--
VOC	Sediment	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	76-13-1	--	ug/kg	--	*1E+09*	--
VOC	Sediment	1,1,2-Trichloroethane	79-00-5	--	ug/kg	6E+05	2E+05	--
VOC	Sediment	1,1-Dichloroethane	75-34-3	--	ug/kg	6E+06	9E+06	--
VOC	Sediment	1,1-Dichloroethene	75-35-4	--	ug/kg	--	2E+06	--
VOC	Sediment	1,1-Dichloropropene	563-58-6	--	ug/kg	--	--	--
VOC	Sediment	1,2,3-Trichlorobenzene	87-61-6	--	ug/kg	--	3E+04	--
VOC	Sediment	1,2,3-Trichloropropane	96-18-4	M	ug/kg	1E+03	2E+05	7E+02
VOC	Sediment	1,2,4-Trichlorobenzene	120-82-1	--	ug/kg	1E+06	5E+05	--
VOC	Sediment	1,2,4-Trimethylbenzene	95-63-6	--	ug/kg	--	--	--
VOC	Sediment	1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	M	ug/kg	4E+04	9E+03	3E+04
VOC	Sediment	1,2-Dibromoethane (Ethylene dibromide or EDB)	106-93-4	--	ug/kg	2E+04	4E+05	--
VOC	Sediment	1,2-Dichlorobenzene (o-Dichlorobenzene)	95-50-1	--	ug/kg	--	4E+06	--
VOC	Sediment	1,2-Dichloroethane (EDC)	107-06-2	--	ug/kg	4E+05	3E+05	--
VOC	Sediment	1,2-Dichloropropane	78-87-5	--	ug/kg	9E+05	4E+06	--
VOC	Sediment	1,3,5-Trimethylbenzene	108-67-8	--	ug/kg	--	5E+05	--
VOC	Sediment	1,3-Dichlorobenzene (m-Dichlorobenzene)	541-73-1	--	ug/kg	--	--	--
VOC	Sediment	1,3-Dichloropropane	142-28-9	--	ug/kg	--	9E+05	--
VOC	Sediment	1,4-Dichlorobenzene (p-Dichlorobenzene)	106-46-7	--	ug/kg	6E+06	3E+06	--
VOC	Sediment	2,2-Dichloropropane	594-20-7	--	ug/kg	--	--	--
VOC	Sediment	2-Butanone (Methyl Ethyl Ketone)	78-93-3	--	ug/kg	--	3E+07	--
VOC	Sediment	2-Chlorotoluene (o-Chlorotoluene)	95-49-8	--	ug/kg	--	9E+05	--
VOC	Sediment	2-Hexanone	591-78-6	--	ug/kg	--	2E+05	--
VOC	Sediment	4-Chlorotoluene	106-43-4	--	ug/kg	--	9E+05	--
VOC	Sediment	4-Methyl-2-pentanone (MIBK)	108-10-1	--	ug/kg	--	4E+06	--
VOC	Sediment	Acetone	67-64-1	--	ug/kg	--	4E+07	--
VOC	Sediment	Acetonitrile	75-05-8	--	ug/kg	--	--	--
VOC	Sediment	Acrolein	107-02-8	--	ug/kg	--	2E+04	--
VOC	Sediment	Acrylonitrile	107-13-1	--	ug/kg	6E+04	2E+06	--
VOC	Sediment	Allyl Chloride	107-05-1	--	ug/kg	2E+06	--	--
VOC	Sediment	Benzene	71-43-2	--	ug/kg	6E+05	2E+05	--
VOC	Sediment	Bromobenzene	108-86-1	--	ug/kg	--	4E+05	--
VOC	Sediment	Bromochloromethane	74-97-5	--	ug/kg	--	--	--
VOC	Sediment	Bromodichloromethane	75-27-4	--	ug/kg	5E+05	9E+05	--
VOC	Sediment	Bromoform (Tribromomethane)	75-25-2	--	ug/kg	3E+06	7E+05	--
VOC	Sediment	Bromomethane (Methyl Bromide)	74-83-9	--	ug/kg	--	7E+04	--
VOC	Sediment	Carbon disulfide	75-15-0	--	ug/kg	--	5E+06	--
VOC	Sediment	Carbon Tetrachloride	56-23-5	--	ug/kg	5E+05	2E+05	--
VOC	Sediment	Chlorobenzene (Monochlorobenzene)	108-90-7	--	ug/kg	--	9E+05	--
VOC	Sediment	Chloroethane	75-00-3	--	ug/kg	--	--	--
VOC	Sediment	Chloroform	67-66-3	--	ug/kg	1E+06	5E+05	--
VOC	Sediment	Chloromethane (methyl chloride)	74-87-3	--	ug/kg	--	--	--
VOC	Sediment	cis-1,2-Dichloroethene	156-59-2	--	ug/kg	--	9E+04	--
VOC	Sediment	cis-1,3-Dichloropropene	10061-01-5	--	ug/kg	--	--	--
VOC	Sediment	Dibromochloromethane	124-48-1	--	ug/kg	3E+05	7E+05	--
VOC	Sediment	Dibromomethane	74-95-3	--	ug/kg	--	5E+05	--
VOC	Sediment	Dichlorodifluoromethane	75-71-8	--	ug/kg	--	9E+06	--
VOC	Sediment	Ethylbenzene	100-41-4	--	ug/kg	3E+06	5E+06	--
VOC	Sediment	Formaldehyde	50-00-0	--	ug/kg	--	7E+06	--
VOC	Sediment	Hexachlorobutadiene	87-68-3	--	ug/kg	3E+05	3E+04	--
VOC	Sediment	Iodomethane	74-88-4	--	ug/kg	--	--	--
VOC	Sediment	Isobutyl Alcohol (Isobutanol)	78-83-1	--	ug/kg	--	1E+07	--
VOC	Sediment	Isopropylbenzene (Cumene)	98-82-8	--	ug/kg	--	5E+06	--
VOC	Sediment	Methanol	67-56-1	--	ug/kg	--	2E+07	--
VOC	Sediment	Methylene Chloride (Dichloromethane)	75-09-2	M	ug/kg	2E+07	3E+05	1E+07
VOC	Sediment	Methyl-tert-butyl-ether (MTBE)	1634-04-4	--	ug/kg	2E+07	--	--
VOC	Sediment	Naphthalene	91-20-3	--	ug/kg	--	6E+05	--
VOC	Sediment	N-Butylbenzene	104-51-8	--	ug/kg	--	2E+06	--
VOC	Sediment	N-Propylbenzene	103-65-1	--	ug/kg	--	3E+06	--

Table 4. Sediment RBTLs
McClellan, Anniston, Alabama

Sediment RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	TSA cancer	TSA noncancer	TSA mutagenic[(1)]
VOC	Sediment	P-Isopropyltoluene (Cymene)	99-87-6	--	ug/kg	--	--	--
VOC	Sediment	sec-Butylbenzene	135-9-88	--	ug/kg	--	--	--
VOC	Sediment	Styrene	100-42-5	--	ug/kg	--	9E+06	--
VOC	Sediment	tert-Butylbenzene	98-06-6	--	ug/kg	--	--	--
VOC	Sediment	Tetrachloroethene (PCE)	127-18-4	--	ug/kg	2E+07	3E+05	--
VOC	Sediment	Toluene	108-88-3	--	ug/kg	--	4E+06	--
VOC	Sediment	trans-1,2-Dichloroethene	156-60-5	--	ug/kg	--	9E+05	--
VOC	Sediment	trans-1,3-Dichloropropene	10061-02-6	--	ug/kg	--	--	--
VOC	Sediment	Trans-1,4-Dichloro-2-Butene	110-57-6	--	ug/kg	--	--	--
VOC	Sediment	Trichloroethene (TCE)	79-01-6	M	ug/kg	7E+05	2E+04	8E+05
VOC	Sediment	Trichlorofluoromethane	75-69-4	--	ug/kg	--	1E+07	--
VOC	Sediment	Vinyl Acetate	108-05-4	--	ug/kg	--	5E+07	--
VOC	Sediment	Vinyl Chloride	75-01-4	M	ug/kg	5E+04	1E+05	5E+04
VOC	Sediment	m,p-Xylene	136777-61-2	--	ug/kg	--	--	--
VOC	Sediment	O-Xylene	95-47-6	--	ug/kg	--	9E+06	--
VOC	Sediment	Xylenes (Total)	1330-20-7	--	ug/kg	--	9E+06	--
RSK	Sediment	Carbon Dioxide	124-38-9	--	ug/kg	--	--	--
RSK	Sediment	Ethane	74-84-0	--	ug/kg	--	--	--
RSK	Sediment	Ethene	74-85-1	--	ug/kg	--	--	--
RSK	Sediment	Methane	74-82-8	--	ug/kg	--	--	--
SVOC	Sediment	1,2,4-Trichlorobenzene	120-82-1	--	ug/kg	1E+06	5E+05	--
SVOC	Sediment	1,2-Dichlorobenzene (o-Dichlorobenzene)	95-50-1	--	ug/kg	--	4E+06	--
SVOC	Sediment	1,3-Dichlorobenzene (m-Dichlorobenzene)	541-73-1	--	ug/kg	--	--	--
SVOC	Sediment	1,4-Dichlorobenzene (p-Dichlorobenzene)	106-46-7	--	ug/kg	6E+06	3E+06	--
SVOC	Sediment	2,3,4,6-Tetrachlorophenol	58-90-2	--	ug/kg	--	1E+06	--
SVOC	Sediment	2,4,5-Trichlorophenol	95-95-4	--	ug/kg	--	3E+06	--
SVOC	Sediment	2,4,6-Trichlorophenol	88-06-2	--	ug/kg	2E+06	3E+04	--
SVOC	Sediment	2,4-Dichlorophenol	120-83-2	--	ug/kg	--	1E+05	--
SVOC	Sediment	2,4-Dimethylphenol	105-67-9	--	ug/kg	--	7E+05	--
SVOC	Sediment	2,4-Dinitrophenol	51-28-5	--	ug/kg	--	7E+04	--
SVOC	Sediment	2,4-Dinitrotoluene	121-14-2	--	ug/kg	8E+04	7E+04	--
SVOC	Sediment	2,6-Dimethylphenol	576-26-1	--	ug/kg	--	2E+04	--
SVOC	Sediment	2,6-Dinitrotoluene	606-20-2	--	ug/kg	--	3E+04	--
SVOC	Sediment	2-Chloronaphthalene (beta-Chloronapthalene)	91-58-7	--	ug/kg	--	4E+06	--
SVOC	Sediment	2-Chlorophenol	95-57-8	--	ug/kg	--	2E+05	--
SVOC	Sediment	2-Methylnaphthalene	91-57-6	--	ug/kg	--	1E+05	--
SVOC	Sediment	2-Methylphenol (o-Cresol)	95-48-7	--	ug/kg	--	2E+06	--
SVOC	Sediment	2-Nitroaniline	88-74-4	--	ug/kg	--	3E+05	--
SVOC	Sediment	2-Nitrophenol	88-75-5	--	ug/kg	--	--	--
SVOC	Sediment	3,3-Dichlorobenzidine	91-94-1	--	ug/kg	5E+04	--	--
SVOC	Sediment	3,4-Dimethylphenol	95-65-8	--	ug/kg	--	3E+04	--
SVOC	Sediment	3-Chlorophenol (m-chlorophenol)	108-43-0	--	ug/kg	--	--	--
SVOC	Sediment	3-Methylphenol (m-Cresol)	108-39-4	--	ug/kg	--	2E+06	--
SVOC	Sediment	3-NITROANILINE	99-09-2	--	ug/kg	--	--	--
SVOC	Sediment	4,6-Dinitro-2-Methylphenol	534-52-1	--	ug/kg	--	3E+03	--
SVOC	Sediment	4-Bromophenyl Phenyl Ether	101-55-3	--	ug/kg	--	--	--
SVOC	Sediment	4-Chloro-3-methylphenol (p-Chloro-m-cresol)	59-50-7	--	ug/kg	--	3E+06	--
SVOC	Sediment	4-Chloroaniline	106-47-8	--	ug/kg	1E+05	1E+05	--
SVOC	Sediment	4-Chlorophenyl Phenyl Ether	7005-72-3	--	ug/kg	--	--	--
SVOC	Sediment	4-Methylphenol (p-Cresol)	106-44-5	--	ug/kg	--	3E+06	--
SVOC	Sediment	4-Nitroaniline	100-01-6	--	ug/kg	1E+06	1E+05	--
SVOC	Sediment	4-Nitrophenol (p-Nitrophenol)	100-02-7	--	ug/kg	--	--	--
SVOC	Sediment	Acenaphthene	83-32-9	--	ug/kg	--	2E+06	--
SVOC	Sediment	Acenaphthylene	208-96-8	--	ug/kg	--	--	--
SVOC	Sediment	Aniline	62-53-3	--	ug/kg	4E+06	2E+05	--
SVOC	Sediment	Anthracene	120-12-7	--	ug/kg	--	9E+06	--
SVOC	Sediment	Azobenzene	103-33-3	--	ug/kg	3E+05	--	--
SVOC	Sediment	Benzidine (1,2-Diphenylhydrazine)	92-87-5	M	ug/kg	1E+02	1E+05	7E+01
SVOC	Sediment	Benzo(a)anthracene	56-55-3	M	ug/kg	3E+04	--	2E+04
SVOC	Sediment	Benzo(a)pyrene	50-32-8	M	ug/kg	3E+03	--	2E+03
SVOC	Sediment	Benzo(b)fluoranthene	205-99-2	M	ug/kg	3E+04	--	2E+04

Table 4. Sediment RBTLs
McClellan, Anniston, Alabama

Sediment RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	TSA cancer	TSA noncancer	TSA mutagenic[(1)]
SVOC	Sediment	Benzo(g,h,i)perylene	191-24-2	--	ug/kg	--	--	--
SVOC	Sediment	Benzo(k)fluoranthene	207-08-9	M	ug/kg	3E+05	--	2E+05
SVOC	Sediment	Benzoic acid	65-85-0	--	ug/kg	--	1E+08	--
SVOC	Sediment	Benzyl Alcohol	100-51-6	--	ug/kg	--	3E+06	--
SVOC	Sediment	Bis(2-Chloroethoxy)Methane	111-91-1	--	ug/kg	--	1E+05	--
SVOC	Sediment	Bis(2-chloroethyl)ether	111-44-4	--	ug/kg	3E+04	--	--
SVOC	Sediment	Bis(2-chloroisopropyl)ether	108-60-1	--	ug/kg	5E+05	2E+06	--
SVOC	Sediment	Bis(2-ethylhexyl)phthalate	117-81-7	--	ug/kg	2E+06	7E+05	--
SVOC	Sediment	Butyl benzyl phthalate	85-68-7	--	ug/kg	1E+07	7E+06	--
SVOC	Sediment	Carbazole	86-74-8	--	ug/kg	--	--	--
SVOC	Sediment	Chlorobenzilate	510-15-6	--	ug/kg	2E+05	7E+05	--
SVOC	Sediment	Chrysene	218-01-9	M	ug/kg	3E+06	--	2E+06
SVOC	Sediment	Di (2-ethylhexyl) adipate	103-23-1	--	ug/kg	2E+07	2E+07	--
SVOC	Sediment	Dibenzo(a,h)anthracene	53-70-3	M	ug/kg	3E+03	--	2E+03
SVOC	Sediment	Dibenzofuran	132-64-9	--	ug/kg	--	5E+04	--
SVOC	Sediment	Dichloroacetic acid	76-43-6	--	ug/kg	--	--	--
SVOC	Sediment	Diethyl phthalate	84-66-2	--	ug/kg	--	3E+07	--
SVOC	Sediment	Dimethyl phthalate	131-11-3	--	ug/kg	--	--	--
SVOC	Sediment	Di-n-Butyl phthalate	84-74-2	--	ug/kg	--	3E+06	--
SVOC	Sediment	Di-n-Octyl phthalate	117-84-0	--	ug/kg	--	4E+05	--
SVOC	Sediment	Fluoranthene	206-44-0	--	ug/kg	--	1E+06	--
SVOC	Sediment	Fluorene	86-73-7	--	ug/kg	--	1E+06	--
SVOC	Sediment	Hexachlorobenzene	118-74-1	--	ug/kg	1E+04	3E+04	--
SVOC	Sediment	Hexachlorobutadiene	87-68-3	--	ug/kg	3E+05	3E+04	--
SVOC	Sediment	Hexachlorocyclopentadiene	77-47-4	--	ug/kg	--	2E+05	--
SVOC	Sediment	Hexachloroethane	67-72-1	--	ug/kg	6E+05	2E+04	--
SVOC	Sediment	Indeno(1,2,3-cd)pyrene	193-39-5	M	ug/kg	3E+04	--	2E+04
SVOC	Sediment	Isophorone	78-59-1	--	ug/kg	2E+07	7E+06	--
SVOC	Sediment	Monochloroacetic acid	79-11-8	--	ug/kg	--	7E+04	--
SVOC	Sediment	Naphthalene	91-20-3	--	ug/kg	--	6E+05	--
SVOC	Sediment	Nitrobenzene	98-95-3	--	ug/kg	--	9E+04	--
SVOC	Sediment	N-Nitrosodimethylamine	62-75-9	M	ug/kg	5E+02	3E+02	3E+02
SVOC	Sediment	N-Nitroso di-n-propylamine	621-64-7	--	ug/kg	3E+03	--	--
SVOC	Sediment	N-Nitrosodiphenylamine	86-30-6	--	ug/kg	5E+06	--	--
SVOC	Sediment	Pentachlorobenzene	608-93-5	--	ug/kg	--	3E+04	--
SVOC	Sediment	Pentachlorophenol	87-86-5	--	ug/kg	4E+04	1E+05	--
SVOC	Sediment	Phenanthrene	85-01-8	--	ug/kg	--	--	--
SVOC	Sediment	Phenol	108-95-2	--	ug/kg	--	1E+07	--
SVOC	Sediment	Propylene glycol	57-55-6	--	ug/kg	--	7E+08	--
SVOC	Sediment	Pyrene	129-00-0	--	ug/kg	--	9E+05	--
SVOC	Sediment	Tetrahydrofuran	109-99-9	--	ug/kg	--	3E+07	--
SVOC	Sediment	Trichloroacetic acid	76-03-9	--	ug/kg	3E+05	7E+05	--
EXPL	Sediment	1,3,5-Trinitrobenzene	99-35-4	--	ug/kg	--	1E+06	--
EXPL	Sediment	1,3-Dinitrobenzene	99-65-0	--	ug/kg	--	3E+03	--
EXPL	Sediment	2,4,6-Trinitrotoluene	118-96-7	--	ug/kg	1E+06	2E+04	--
EXPL	Sediment	2,4-Dinitrotoluene	121-14-2	--	ug/kg	8E+04	7E+04	--
EXPL	Sediment	2,6-Dinitrotoluene	606-20-2	--	ug/kg	--	3E+04	--
EXPL	Sediment	2-Amino-4,6-Dinitrotoluene	35572-78-2	--	ug/kg	--	9E+04	--
EXPL	Sediment	2-Nitrotoluene	88-72-2	--	ug/kg	1E+05	4E+04	--
EXPL	Sediment	3-Nitrotoluene	99-08-1	--	ug/kg	--	3E+03	--
EXPL	Sediment	4-Amino-2,6-Dinitrotoluene	19406-51-0	--	ug/kg	--	9E+04	--
EXPL	Sediment	4-Nitrotoluene	99-99-0	--	ug/kg	1E+06	1E+05	--
EXPL	Sediment	HMX (Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine)	2691-41-0	--	ug/kg	--	2E+06	--
EXPL	Sediment	Nitrobenzene	98-95-3	--	ug/kg	--	9E+04	--
EXPL	Sediment	RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	121-82-4	--	ug/kg	3E+05	1E+05	--
EXPL	Sediment	Tetryl (Trinitrophenylmethylnitramine)	479-45-8	--	ug/kg	--	1E+05	--
PEST	Sediment	4,4'-DDD	72-54-8	--	ug/kg	1E+05	--	--
PEST	Sediment	4,4'-DDE	72-55-9	--	ug/kg	7E+04	--	--
PEST	Sediment	4,4'-DDT	50-29-3	--	ug/kg	9E+04	2E+04	--
PEST	Sediment	Aldrin	309-00-2	--	ug/kg	1E+03	1E+03	--
PEST	Sediment	alpha-BHC	319-84-6	--	ug/kg	4E+03	3E+05	--

Table 4. Sediment RBTLs
McClellan, Anniston, Alabama

Sediment RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	TSA cancer	TSA noncancer	TSA mutagenic[(1)]
PEST	Sediment	Alpha-Chlordane	5103-71-9	--	ug/kg	--	--	--
PEST	Sediment	beta-BHC	319-85-7	--	ug/kg	1E+04	--	--
PEST	Sediment	Chlordane	12789-03-6	--	ug/kg	8E+04	2E+04	--
PEST	Sediment	Chlorobenzilate	510-15-6	--	ug/kg	2E+05	7E+05	--
PEST	Sediment	DELTA-BHC	319-86-8	--	ug/kg	--	--	--
PEST	Sediment	Diallate	2303-16-4	--	ug/kg	4E+05	--	--
PEST	Sediment	Dieldrin	60-57-1	--	ug/kg	1E+03	2E+03	--
PEST	Sediment	Endosulfan I	959-98-8	--	ug/kg	--	--	--
PEST	Sediment	Endosulfan II	33213-65-9	--	ug/kg	--	--	--
PEST	Sediment	Endosulfan Sulfate	1031-07-8	--	ug/kg	--	--	--
PEST	Sediment	Endrin	72-20-8	--	ug/kg	--	1E+04	--
PEST	Sediment	Endrin Aldehyde	7421-93-4	--	ug/kg	--	--	--
PEST	Sediment	Endrin Ketone	53494-70-5	--	ug/kg	--	--	--
PEST	Sediment	gamma-BHC (Lindane)	58-89-9	--	ug/kg	3E+04	1E+04	--
PEST	Sediment	Gamma-Chlordane	5103-74-2	--	ug/kg	--	--	--
PEST	Sediment	Heptachlor	76-44-8	--	ug/kg	5E+03	2E+04	--
PEST	Sediment	Heptachlor epoxide	1024-57-3	--	ug/kg	3E+03	4E+02	--
PEST	Sediment	Kepone	143-50-0	--	ug/kg	2E+03	1E+04	--
PEST	Sediment	Methoxychlor	72-43-5	--	ug/kg	--	2E+05	--
PEST	Sediment	Toxaphene	8001-35-2	--	ug/kg	2E+04	--	--
OPP	Sediment	Atrazine	1912-24-9	--	ug/kg	1E+05	1E+06	--
OPP	Sediment	Chlorpyrifos	2921-88-2	--	ug/kg	--	3E+04	--
OPP	Sediment	Dimethoate	60-51-5	--	ug/kg	--	7E+03	--
OPP	Sediment	Disulfoton	298-04-4	--	ug/kg	--	1E+03	--
OPP	Sediment	Malathion	121-75-5	--	ug/kg	--	7E+05	--
OPP	Sediment	Methyl parathion	298-00-0	--	ug/kg	--	8E+03	--
OPP	Sediment	Parathion	56-38-2	--	ug/kg	--	2E+05	--
OPP	Sediment	Phorate	298-02-2	--	ug/kg	--	7E+03	--
OPP	Sediment	Simazine	122-34-9	--	ug/kg	2E+05	2E+05	--
OPP	Sediment	Sulfotepp (tetrathyldithiopyrophosphate)	3689-24-5	--	ug/kg	--	2E+04	--
PCB	Sediment	PCB - Aroclor 1016	12674-11-2	--	ug/kg	3E+05	2E+03	--
PCB	Sediment	PCB - Aroclor 1221	11104-28-2	--	ug/kg	1E+04	--	--
PCB	Sediment	PCB - Aroclor 1232	11141-16-5	--	ug/kg	1E+04	--	--
PCB	Sediment	PCB - Aroclor 1242	53469-21-9	--	ug/kg	1E+04	--	--
PCB	Sediment	PCB - Aroclor 1248	12672-29-6	--	ug/kg	1E+04	--	--
PCB	Sediment	PCB - Aroclor 1254	11097-69-1	--	ug/kg	1E+04	6E+02	--
PCB	Sediment	PCB - Aroclor 1260	11096-82-5	--	ug/kg	1E+04	--	--
PCB	Sediment	Total PCBs	1336-36-3	--	ug/kg	1E+04	--	--
HERB	Sediment	2,4,5 TP (silvex) (2-(2,4,5-Trichlorophenoxy) propionic acid)	93-72-1	--	ug/kg	--	3E+05	--
HERB	Sediment	2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7	--	ug/kg	--	4E+05	--
HERB	Sediment	2,4-Dinitro-6-sec-butylphenol (Dinoseb)	88-85-7	--	ug/kg	--	3E+04	--
HERB	Sediment	Alachlor	15972-60-8	--	ug/kg	4E+05	3E+05	--
HERB	Sediment	Dalapon (2,2-dichloropropionic acid)	75-99-0	--	ug/kg	--	1E+06	--
HERB	Sediment	Diquat	85-00-7	--	ug/kg	--	7E+04	--
HERB	Sediment	Endothall	145-73-3	--	ug/kg	--	7E+05	--
HERB	Sediment	Glyphosate	1071-83-6	--	ug/kg	--	3E+06	--
HERB	Sediment	Picloram	1918-02-1	--	ug/kg	--	2E+06	--
HERB	Sediment	Pronamide	23950-58-5	--	ug/kg	--	3E+06	--
CARB	Sediment	Aldicarb	116-06-3	--	ug/kg	--	3E+04	--
CARB	Sediment	Aldicarb Sulfone	1646-88-4	--	ug/kg	--	3E+04	--
CARB	Sediment	Aldicarb Sulfoxide	1646-87-3	--	ug/kg	--	--	--
CARB	Sediment	Carbofuran	1563-66-2	--	ug/kg	--	2E+05	--
CARB	Sediment	Oxamyl (Vydate)	23135-22-0	--	ug/kg	--	8E+05	--
DXN	Sediment	2,3,7,8 TCDD (Dioxin)	1746-01-6	--	ug/kg	2E-01	3E-02	--
MET	Sediment	Aluminum	7429-90-5	--	mg/kg	--	5E+04	--
MET	Sediment	Antimony	7440-36-0	--	mg/kg	--	2E+01	--
MET	Sediment	Arsenic	7440-38-2	--	mg/kg	2E+01	1E+01	--
MET	Sediment	Barium	7440-39-3	--	mg/kg	--	9E+03	--
MET	Sediment	Beryllium	7440-41-7	--	mg/kg	--	9E+01	--
MET	Sediment	Cadmium	7440-43-9d	--	mg/kg	--	4E+01	--
MET	Sediment	Calcium	7440-70-2	--	mg/kg	--	--	--

Table 4. Sediment RBTLs
McClellan, Anniston, Alabama

Sediment RBTLs

Type	Matrix	Analytes	CAS#	Mutagen	Units	TSA cancer	TSA noncancer	TSA mutagenic[1]
MET	Sediment	Chromium (III)	16065-83-1	--	mg/kg	--	7E+04	--
MET	Sediment	Chromium (Total)	7440-47-3	--	mg/kg	--	--	--
MET	Sediment	Chromium (VI)	18540-29-9	M	mg/kg	7E+01	1E+02	4E+01
MET	Sediment	Cobalt	7440-48-4	--	mg/kg	--	1E+01	--
MET	Sediment	Copper	7440-50-8	--	mg/kg	--	2E+03	--
MET	Sediment	Iron	7439-89-6	--	mg/kg	--	3E+04	--
MET	Sediment	Lead	7439-92-1	--	mg/kg	--	--	--
MET	Sediment	Magnesium	7439-95-4	--	mg/kg	--	--	--
MET	Sediment	Manganese	7439-96-5w	--	mg/kg	--	1E+03	--
MET	Sediment	Mercury	7487-94-7	--	mg/kg	--	1E+01	--
MET	Sediment	Mercury (methyl)	22967-92-6	--	mg/kg	--	5E+00	--
MET	Sediment	Nickel	7440-02-0	--	mg/kg	--	9E+02	--
MET	Sediment	Potassium	7440-09-7	--	mg/kg	--	--	--
MET	Sediment	Selenium	7782-49-2	--	mg/kg	--	2E+02	--
MET	Sediment	Silver	7440-22-4	--	mg/kg	--	2E+02	--
MET	Sediment	Sodium	7440-23-5	--	mg/kg	--	--	--
MET	Sediment	Strontium	7440-24-6	--	mg/kg	--	3E+04	--
MET	Sediment	Thallium	7440-28-0	--	mg/kg	--	5E-01	--
MET	Sediment	Tin	7440-31-5	--	mg/kg	--	3E+04	--
MET	Sediment	Vanadium	7440-62-2	--	mg/kg	--	--	--
MET	Sediment	Zinc	7440-66-6	--	mg/kg	--	1E+04	--
INO	Sediment	Ammonia	7664-41-7	--	mg/kg	--	--	--
INO	Sediment	Bromate	15541-45-4	--	mg/kg	5E+01	2E+02	--
INO	Sediment	Chloramine (Monochloramine)	10599-90-3	--	mg/kg	--	5E+03	--
INO	Sediment	Chloride	7647-14-5	--	mg/kg	--	--	--
INO	Sediment	Chlorine	7782-50-5	--	mg/kg	--	5E+03	--
INO	Sediment	Chlorine Dioxide	10049-04-4	--	mg/kg	--	1E+03	--
INO	Sediment	Chlorite	7758-19-2	--	mg/kg	--	1E+03	--
INO	Sediment	Cyanide (hydrogen)	74-90-8	--	mg/kg	--	3E+01	--
INO	Sediment	Cyanide (free)	57-12-5	--	mg/kg	--	3E+01	--
INO	Sediment	Cyanide (Total)	143-33-9	--	mg/kg	--	5E+01	--
INO	Sediment	Fluoride	7681-49-4	--	mg/kg	--	2E+03	--
INO	Sediment	Nitrate	14797-55-8	--	mg/kg	--	8E+04	--
INO	Sediment	Nitrite	14797-65-0	--	mg/kg	--	5E+03	--
INO	Sediment	Perchlorate	7601-90-3	--	mg/kg	--	--	--
INO	Sediment	Sulfate	7757-82-6	--	mg/kg	--	--	--

Notes:

1. Mutagenic cancer adjustments apply to all receptors up to the age of 16 with the exception of vinyl chloride, which only is adjusted for children up to age 6.
2. Italicized values exceed unity, and therefore no RBTL is applicable.
3. TCE trespasser soil and sediment RBTLs for soil calculated with the EPA RSL calculator. Vinyl chloride does not require a mutagenic adjustment for the trespasser age group.

Legend:

µg/kg = Micrograms per kilogram
mg/kg = Milligrams per kilogram
CARB = Carbamate (EPA Method 8321)
DXN = Dioxins
EXPL = Explosives
HERB = Herbicides
INO = Miscellaneous inorganic parameters
MET = Metals
OPP = Organophosphorus pesticides
PCB = Polychlorinated biphenyls (Aroclors)
PEST = Pesticides
RBTL = Risk-Based Target Level
RSK = Method RSK-175
TSA = Trespasser - Adolescent
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

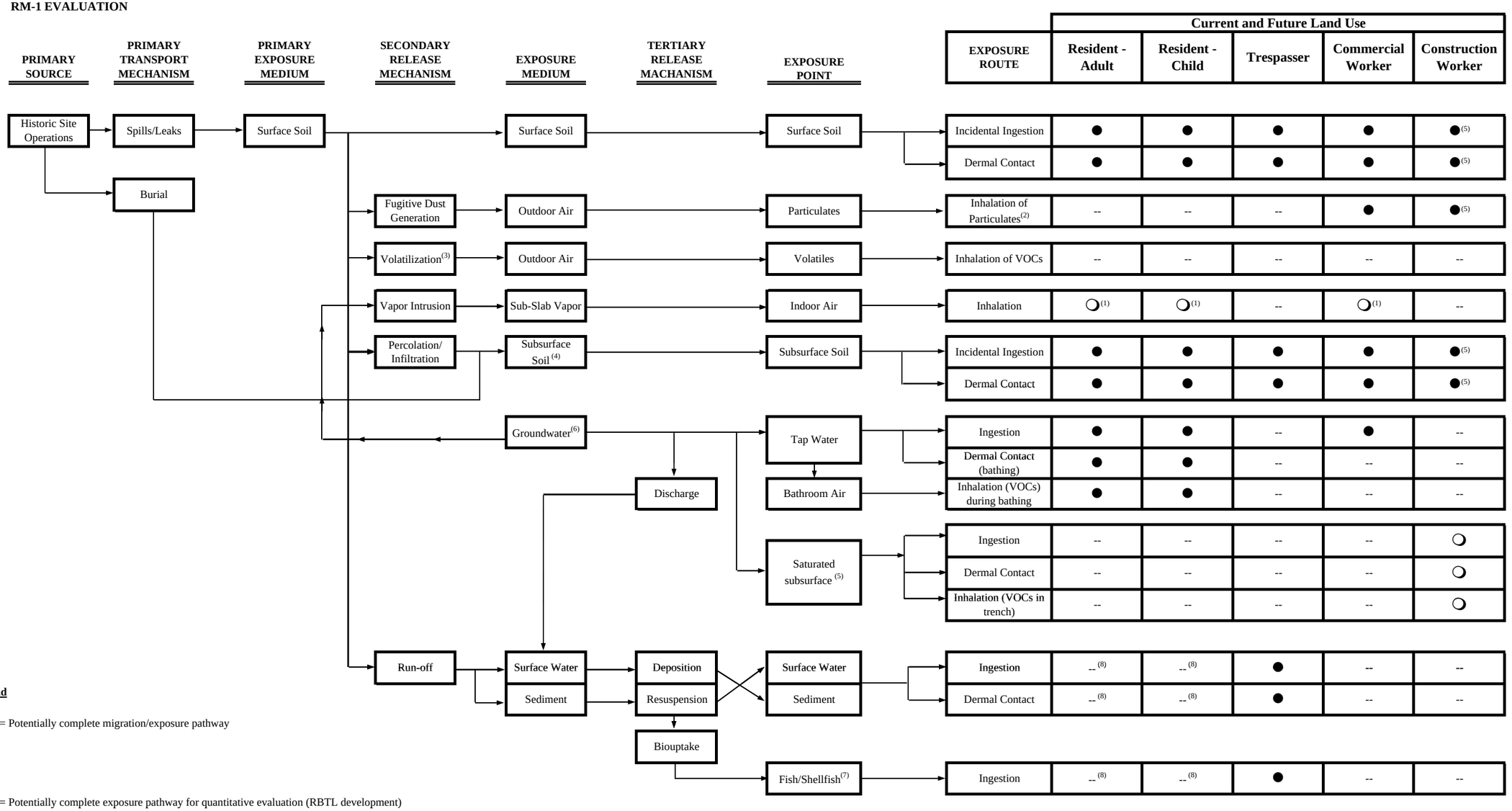
Attachment 3
Excel Files Used to Calculate RBTLs

See Excel files on CD-ROM

The data is on a CD filed in the sleeve of the report which is located in the administrative record at Fort McClellan, Anniston, AL; and the information repositories located at the Anniston Calhoun County Public Library, Anniston, AL; and the Houston Cole Library, Jacksonville, AL.

Attachment 4
Conceptual Site Model and
Tables 1, 4-1 through 4-6 of RAGS

SITE-WIDE HUMAN HEALTH CONCEPTUAL SITE EXPOSURE MODEL
McCLELLAN, ANNISTON, ALABAMA
RM-1 EVALUATION



EXPOSURE ROUTE	Current and Future Land Use: Resident - Adult	Resident - Child	Trespasser	Commercial Worker	Construction Worker
Incidental Ingestion	●	●	●	●	●(5)
Dermal Contact	●	●	●	●	●(5)
Inhalation of Particulates(2)	--	--	--	●	●(5)
Inhalation of VOCs	--	--	--	--	--
Inhalation	❍(1)	❍(1)	--	❍(1)	--
Incidental Ingestion	●	●	●	●	●(5)
Dermal Contact	●	●	●	●	●(5)
Ingestion	●	●	--	●	--
Dermal Contact (bathing)	●	●	--	--	--
Inhalation (VOCs) during bathing	●	●	--	--	--
Ingestion	--	--	--	--	❍
Dermal Contact	--	--	--	--	❍
Inhalation (VOCs in trench)	--	--	--	--	❍
Ingestion	-- (8)	-- (8)	●	--	--
Dermal Contact	-- (8)	-- (8)	●	--	--
Ingestion	-- (8)	-- (8)	●	--	--

Legend

→ = Potentially complete migration/exposure pathway

● = Potentially complete exposure pathway for quantitative evaluation (RBTL development)
❍ = Potentially complete exposure pathway but not quantified (insufficient information or pathway expected to be controlled)
-- = Incomplete or de minimis exposure pathway

(1) Soil vapor intrusion may be a complete pathway in occupied structures if there are volatile organic compounds (VOCs) in the subsurface. However, the pathway cannot be evaluated without information about the nature of structures. Should there be a concern, this pathway will be managed with engineering/construction controls.
(2) Exposure via inhalation of particulates for residents and trespassers is negligible compared with other soil exposures due to the low particulate volatilization factor (VF_p).
(3) VOC presence in outdoor air is considered de minimis due to rapid dispersion.
(4) Subsurface soil is assumed to potentially become surface soil as a result of construction/regrading during Site redevelopment.
(5) It is assumed that these exposures will be controlled via proper health and safety and soil management plans.
(6) This scenario is conservative and represents the greatest possible exposure. Water is expected to be provided by the City of Anniston.
(7) RBTLs for the fish ingestion pathway will be calculated following investigation of surface waters supporting edible species, if needed.
(8) The resident is not expected to live in close proximity to surface water and sediment and therefore this pathway will be evaluated for recreational users. Per ARBCA Section 3.3, the recreational scenario can be evaluated using the trespasser defaults.

TABLE 1
SELECTION OF EXPOSURE PATHWAYS
SITE-WIDE HUMAN HEALTH CONCEPTUAL SITE EXPOSURE MODEL
McCLELLAN, ANNISTON, ALABAMA

Scenario Time Frame	RBTL Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Included in CSEM	Rationale for Selection or Exclusion of Exposure Pathway
Current and Future[1]	Soil	Surface Soil[2]	Surface soil	Resident	Adult or Child	Ingestion	X	Residents may incidentally ingest surface soil.
						Dermal Contact	X	Residents may have exposed skin come into contact with surface soil.
		Subsurface Soil[2]	Subsurface Soil			Ingestion	X	Soil that is currently below grade may be exposed during construction/redevelopment and become surficial.
						Dermal Contact	X	
		Outdoor Air	Particulates			Inhalation		Residential areas are assumed to consist of housing, pavement and landscaping, which will prevent surficial emissions. Exposure via inhalation of particulates is negligible compared with other soil exposures due to low particulate volatilization factor (V_p).
			Volatiles			Inhalation		Per ARBCA (Section 3.4.1): "In most cases, the outdoor inhalation of vapors pathway is not evaluated due to the extreme dilution of outside air and the fact that the sunlight degrades most solvents."
		Surface Soil	Surface Soil	Trespasser	Adolescent	Ingestion	X	Trespassers may incidentally ingest surface soil.
						Dermal Contact	X	Trespassers may have exposed skin come into contact with surface soil.
		Subsurface Soil	Subsurface Soil			Ingestion	X	Soil that is currently below grade may be exposed during construction/redevelopment and become surficial and be incidentally ingested.
						Dermal Contact	X	Soil that is currently below grade may be exposed during construction/redevelopment and become surficial and be contacted dermally.
		Outdoor Air	Particulates			Inhalation		Exposure via inhalation of particulates is negligible compared with other soil exposures due to low particulate volatilization factor (V_p).
			Volatiles			Inhalation		Per ARBCA (Section 3.4.1): "In most cases, the outdoor inhalation of vapors pathway is not evaluated due to the extreme dilution of outside air and the fact that the sunlight degrades most solvents."
		Surface Soil	Surface Soil	Commercial Worker	Adult	Ingestion	X	Workers may incidentally ingest surface soil.
						Dermal Contact	X	Workers may have exposed skin come into contact with surface soil.
		Subsurface Soil	Subsurface Soil			Ingestion	X	Soil that is currently below grade may be exposed during construction/redevelopment and become surficial and be incidentally ingested.
						Dermal Contact	X	Soil that is currently below grade may be exposed during construction/redevelopment and become surficial and be contacted dermally.
		Outdoor Air	Particulates			Inhalation	X	Workers may engage in activities that could expose soils and release dust (particulates).
			Volatiles			Inhalation		Per ARBCA (Section 3.4.1): "In most cases, the outdoor inhalation of vapors pathway is not evaluated due to the extreme dilution of outside air and the fact that the sunlight degrades most solvents."
		Surface Soil	Surface Soil	Construction Worker	Adult	Ingestion	X	Workers may incidentally ingest surface soil.
						Dermal Contact	X	Workers may have exposed skin come into contact with surface soil during construction activities.
		Subsurface Soil	Subsurface Soil			Ingestion	X	Workers may incidentally ingest subsurface soil during construction activities.
						Dermal Contact	X	Workers may have exposed skin come into contact with subsurface soil during construction activities.
		Outdoor Air	Particulates			Inhalation	X	Workers may engage in activities that could expose soils and release dust (particulates).
			Volatiles			Inhalation		Per ARBCA (Section 3.4.1): "In most cases, the outdoor inhalation of vapors pathway is not evaluated due to the extreme dilution of outside air and the fact that the sunlight degrades most solvents."
	Soil (protection of indoor air)	Sub-Slab Vapors	Indoor Air	Resident	Adult or Child	Inhalation		Future residents may inhale vapors that partition from subsurface soil to soil vapor and migrate into indoor air. However, soil gas vapor data to evaluate this pathway are not available. Modeling cannot be performed without information concerning the nature and location of the subject building.
		Sub-Slab Vapors	Indoor Air	Commercial Worker	Adult	Inhalation		Future workers may inhale vapors that partition from subsurface soil to soil vapor and migrate into indoor air. However, soil gas vapor data to evaluate this pathway are not available. Modeling cannot be performed without information concerning the nature and location of the subject building.
	Soil (protection of groundwater)[3]	Groundwater (via leaching)	Tap Water	Potable Water Users	Adult or Child	Ingestion, dermal contact, inhalation		Soil RBTLs for protection of groundwater (leaching) are not required because groundwater data are available.
	Groundwater (potable use)[3]	Groundwater	Tap Water	Residential	Adult or Child	Ingestion	X	Groundwater may hypothetically be used as a future water supply and would be ingested as tap water.
						Dermal Contact	X	Hypothetical future groundwater uses may have exposed skin come into contact with groundwater used as potable water while bathing.
			Bathroom Air			Inhalation	X	Hypothetical future groundwater users may inhale volatile organic compounds (VOCs) as vapors while bathing.
		Groundwater	Tap Water	Commercial Worker	Adult	Ingestion	X	Groundwater may hypothetically be used as a future water supply and would be ingested during the work day.
		Groundwater	Tap Water	Construction Worker	Adult	Ingestion		Groundwater ingestion by construction workers is not applicable per ADEM policy.
	Groundwater (protection of indoor air)	Sub-Slab Vapors	Indoor Air (soil vapor intrusion)	Resident	Adult or Child	Inhalation		Future residents may inhale vapors that partition from groundwater to soil vapor and migrate into indoor air. However, soil gas vapor data to evaluate this pathway are not available. Modeling cannot be performed without information concerning the nature and location of the subject building.
		Sub-Slab Vapors	Indoor Air (soil vapor intrusion)	Commercial Worker	Adult	Inhalation		Future workers may inhale vapors that partition from groundwater to soil vapor and migrate into indoor air. However, soil gas vapor data to evaluate this pathway are not available. Modeling cannot be performed without information concerning the nature and location of the subject building.
	Surface Water	Surface Water (via run-off, leaching or partitioning from sediment)	Surface Water	Trespasser (Recreator)	Adolescent	Ingestion	X	Trespassers accessing creeks may incidentally ingest surface water.
						Dermal	X	Trespassers may have exposed skin come into contact with surface water.
		Bioaccumulation into fish tissue	Fish issue			Ingestion (dietary)		There is a possibility that recreational anglers could ingest fish caught from Site water bodies. The extent to which water bodies support game fish and are being accessed for fishing is not known. Should this pathway be determined to be complete after additional investigation it will be quantified.
	Sediment	Sediment (via run-off, leaching or partitioning from surface water)	Sediment	Trespasser (Recreator)	Adolescent	Ingestion	X	Trespassers accessing creeks may incidentally ingest sediment.
						Dermal	X	Trespassers may have exposed skin come into contact with sediment.
		Bioaccumulation into fish tissue	Fish issue			Ingestion (dietary)		There is a possibility that recreational anglers could ingest fish caught from Site water bodies. The extent to which water bodies support game fish and are being accessed for fishing is not known. Should this pathway be determined to be complete after additional investigation it will be quantified.

Notes:

X Indicates RBTLs have been developed for pathway/receptor combination. Per ARBCA Section 3.4, "Potentially impacted media include surficial and subsurface soil, air, surface water and groundwater. ROEs include ingestion of groundwater and soil particulates, indoor (and possibly outdoor, see Section 3.4.1) inhalation of vapors in the air, indoor (and possibly outdoor, see Section 3.4.1), inhalation of vapors from soil and groundwater, inhalation of soil particulates, dermal contact with soil, and, leaching to groundwater from surficial and subsurface soils."

(1) The RBTLs are a screening tool to assist in remediation to support Site redevelopment. The appropriate RBTLs will be selected in accordance with the anticipated land use. Receptors addressed in the RBTL development may or may not currently exist. All pathways are therefore treated as both current and future.

(2) Per ARBCA, surface soils are defined as 0-1 foot below ground surface (bgs) and subsurface soils are 1-10 feet bgs.

(3) The groundwater use scenario is conservative and represents the greatest possible exposure. Water is expected to be provided by the City of Anniston.

TABLE 4- 1
VALUES USED FOR DAILY INTAKE/EXPOSURE CALCULATIONS
McCLELLAN, ANNISTON, ALABAMA
RESIDENT - SOIL

Timeframe: Current and Future
Medium: Soil
Exposure Medium: Surface or Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Comment
Ingestion	Resident	Adult	Soil	IRS	Soil Ingestion Rate	100	mg/day	ADEM, 2008	Per U.S. EPA, 1989
				FI	Fractional Intake from Site	1	unitless		not specified; assumed 100%
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration	30	years	ADEM, 2008	Per U.S. EPA, 1989
				CFs	Conversion Factor	1.0E-06	kg/mg		
				BW	Body Weight	70	kg	ADEM, 2008	Per U.S. EPA, 1989
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	10,950	days	ADEM, 2008	Equals Exposure Duration
Ingestion	Resident	Child	Soil	IRS	Soil Ingestion Rate	200	mg/day	ADEM, 2008	Per U.S. EPA, 1989
				FI	Fractional Intake from Site	1	unitless		not specified; assumed 100%
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration	6	years	ADEM, 2008	Per U.S. EPA, 1989
				CFs	Conversion Factor	1.0E-06	kg/mg		
				BW	Body Weight	15	kg	ADEM, 2008	Per U.S. EPA, 1991[(1)]
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	2,190	days	ADEM, 2008	Equals Exposure Duration
Dermal	Resident	Adult	Soil	SA	Skin Surface Area	5,700	cm^2-day	ADEM, 2008	Per U.S. EPA, 2004
				M	Soil-to-Skin Adherence Factor	0.07	mg/cm^2	ADEM, 2008	Per U.S. EPA, 2004
				ABS	Dermal Absorption Factor	chemical-specific	unitless	EPA, 2013	Updated by EPA since the 2000 document referenced in ADEM, 2008
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration	30	years	ADEM, 2008	Per U.S. EPA, 1989
				CFs	Conversion Factor	1.0E-06	kg/mg		
				BW	Body Weight	70	kg	ADEM, 2008	Per U.S. EPA, 1989
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	10,950	days	ADEM, 2008	Equals Exposure Duration
Dermal	Resident	Child	Soil	SA	Skin Surface Area	2,800	cm^2-day	ADEM, 2008	Per U.S. EPA, 2004
				M	Soil-to-Skin Adherence Factor	0.2	mg/cm^2	ADEM, 2008	Per U.S. EPA, 2004
				ABS	Dermal Absorption Factor	chemical-specific	unitless	EPA, 2013	Updated by EPA since the 2000 document referenced in ADEM, 2008
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration	6	years	ADEM, 2008	Per U.S. EPA, 1989
				CFs	Conversion Factor	1.0E-06	kg/mg		
				BW	Body Weight	15	kg	ADEM, 2008	Per U.S. EPA, 1991
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	2,190	days	ADEM, 2008	Equals Exposure Duration

References

ADEM, 2008. ALABAMA RISK-BASED CORRECTIVEACTION GUIDANCE MANUAL, Version 2.
U.S. EPA, 1989, Risk Assessment Guidance for Superfund, Volume I. Human Health Evaluation Manual (Part A) Interim Final, EPA/540/1-89/002, Office of Emergency and Remedial Response, Washington, D.C.
U.S. EPA, 1991. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Interim Final. Office of Emergency and Remedial Response. OSWER Directive 9285.6 - 03.
U.S. EPA, 2004, Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005.
U.S. EPA, 2013. Regional Screening Level (RSL) Summary Table. Accessed May 2013.

(1) ADEM references some of the EPA values to 1989 (original RAGS) but they were actually published in EPA, 1991 (Supplemental Guidance to RAGS).

TABLE 4- 2
VALUES USED FOR DAILY INTAKE/EXPOSURE CALCULATIONS
McCLELLAN, ANNISTON, ALABAMA
COMMERCIAL WORKER - SOIL

Timeframe: Current and Future
Medium: Surface and Subsurface Soil
Exposure Medium: Soil, Outdoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Comment
Ingestion	Commercial Worker	Adult	Soil	IRS	Soil Ingestion Rate	75	mg/day	ADEM, 2008	Per ADEM, 2007
				FI	Fractional Intake from Site	1	unitless		not specified; assumed 100%
				EF	Exposure Frequency	250	days/year	ADEM, 2008	Per U.S. EPA, 1991
				ED	Exposure Duration	25	years	ADEM, 2008	Per U.S. EPA, 1991
				CFs	Conversion Factor	1.0E-06	kg/mg		
				BW	Body Weight	70	kg	ADEM, 2008	Per U.S. EPA, 1989
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	9,125	days	ADEM, 2008	Equals Exposure Duration
Dermal	Commercial Worker	Adult	Soil	SA	Skin Surface Area - Soil Contact	5700	cm^2-day	ADEM, 2008	Per U.S. EPA, 2004
				M	Soil-to-Skin Adherence Factor	0.2	mg/cm^2	ADEM, 2008	Per U.S. EPA, 2004
				ABS	Dermal Absorption Factor	chemical-specific	unitless	EPA, 2013	Updated by EPA since the 2000 document referenced in ADEM, 2008
				EF	Exposure Frequency	250	days/year	ADEM, 2008	Per U.S. EPA, 1991
				ED	Exposure Duration	25	years	ADEM, 2008	Per U.S. EPA, 1991
				CFs	Conversion Factor	1.0E-06	kg/mg		
				BW	Body Weight	70	kg	ADEM, 2008	Per U.S. EPA, 1989
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	9,125	days	ADEM, 2008	Equals Exposure Duration
Inhalation	Commercial Worker	Adult	Particulates in Outdoor Air	VF_p	Volatilization Factor	9.76E-12	kg/m^3	Calculated per ADEM, 2008[(1)]	Equation from ASTM, 1995
				EF	Exposure Frequency	250	days/year	ADEM, 2008	Per U.S. EPA, 1991
				ED	Exposure Duration	25	years		
				ET	Exposure Time	10	hrs/day	ADEM, 2008	Per ADEM, 2001
				CFt	Conversion Factor - time	0.041666667	day/hrs		
				CFb	Conversion Factor - parts per billion (ppb)	1000	µg/mg		
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	9,125	days	ADEM, 2008	Equals Exposure Duration

References

ADEM, 2008. ALABAMA RISK-BASED CORRECTIVE ACTION GUIDANCE MANUAL, Version 2.
ADEM, 2007. ARBCA Guidance Decision Meetings.
ADEM, 2001. ARBCA Guidance Decision Meetings.
ASTM, 1995, Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites, Designation: E 1739-95, from The Annual Book of ASTM Standards, ASTM, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428.
U.S. EPA, 1989, Risk Assessment Guidance for Superfund, Volume I. Human Health Evaluation Manual (Part A) Interim Final, EPA/540/1-89/002, Office of Emergency and Remedial Response, Washington, D.C.
U.S. EPA, 2004, Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R/99/005.
U.S. EPA, 2013. Regional Screening Level (RSL) Summary Table. Accessed May 2013.

Notes

(1)

$$VF_p = \frac{P_e \times W_a}{U_a \times \delta_a} \times 10^3$$

ADEM defaults:

P_e	g-soil/cm^2-sec	6.90E-14	ADEM default for commercial worker
W_a	cm	6362	ADEM default for large soil source
U_a	cm/sec	225	ADEM default wind speed within breathing zone
δ_a	cm	200	ADEM default breathing zone height
VF_p	kg/m^3	9.76E-12	

TABLE 4- 3
VALUES USED FOR DAILY INTAKE/EXPOSURE CALCULATIONS
McCLELLAN, ANNISTON, ALABAMA
CONSTRUCTION WORKER - SOIL

Timeframe: Current and Future
Medium: Surface and Subsurface Soil
Exposure Medium: Soil, Outdoor Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Comment
Ingestion	Construction Worker	Adult	Soil	IRS	Soil Ingestion Rate	177	mg/day	ADEM, 2008	Per ADEM, 2007
				FI	Fractional Intake from Site	1	unitless		not specified; assumed 100%
				EF	Exposure Frequency	250	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration	1	years	ADEM, 2008	Per U.S. EPA, 1989
				CFs	Conversion Factor	1.0E-06	kg/mg		
				BW	Body Weight	70	kg	ADEM, 2008	Per U.S. EPA, 1989
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	9,125	days	ADEM, 2008	Equals Exposure Duration
Dermal	Construction Worker	Adult	Soil	SA	Skin Surface Area - Soil Contact	5700	cm^2-day	ADEM, 2008	Per U.S. EPA, 2004
				M	Soil-to-Skin Adherence Factor	0.2	mg/cm^2	ADEM, 2008	Per U.S. EPA, 2004
				ABS	Dermal Absorption Factor	chemical-specific	unitless	EPA, 2013	Updated by EPA since the 2000 document referenced in ADEM, 2008
				EF	Exposure Frequency	250	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration	1	years	ADEM, 2008	Per U.S. EPA, 1989
				CFs	Conversion Factor	1.0E-06	kg/mg		
				BW	Body Weight	70	kg	ADEM, 2008	Per U.S. EPA, 1989
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	365	days	ADEM, 2008	Equals Exposure Duration
Inhalation	Construction Worker	Adult	Particulates in Outdoor Air	VF_p	Volatilization Factor	9.76E-07	kg/m^3	Calculated per ADEM, 2008[(1)]	Equation from ASTM, 1995
				EF	Exposure Frequency	250	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration	1	years		
				ET	Exposure Time	10	hrs/day	ADEM, 2008	Per ADEM, 2001
				CFt	Conversion Factor - time	0.041666667	day/hrs		
				CFb	Conversion Factor - parts per billion (ppb)	1000	µg/mg		
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	365	days	ADEM, 2008	Equals Exposure Duration

References

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Notes

(1)

$$VF_p = \frac{P_e \times W_a}{U_a \times \delta_a} \times 10^3$$

ADEM defaults:

P_e	g-soil/cm^2-sec	6.90E-09	ADEM default for construction worker
W_a	cm	6362	ADEM default for large soil source
U_a	cm/sec	225	ADEM default wind speed within breathing zone
δ_a	cm	200	ADEM default breathing zone height
VF_p	kg/m^3	9.76E-07	

TABLE 4- 4
VALUES USED FOR DAILY INTAKE/EXPOSURE CALCULATIONS
McCLELLAN, ANNISTON, ALABAMA
TRESPASSER - SOIL OR SEDIMENT

Timeframe: Current and Future
Medium: Soil or Sediment
Exposure Medium: Soil or Sediment

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Comment
Ingestion	Trespasser	Adolescent	Soil or Sediment	IRS	Soil Ingestion Rate	100	mg/day	ADEM, 2008	Per ADEM, 2007
				FI	Fractional Intake from Site	1	unitless		not specified; assumed 100%
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per ADEM, 2007
				ED	Exposure Duration	10	years	ADEM, 2008	Per ADEM, 2007
				CFs	Conversion Factor	1.0E-06	kg/mg		
				BW	Body Weight	45	kg	ADEM, 2008	Per U.S. EPA, 2000
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	3,650	days	ADEM, 2008	Equals Exposure Duration
Dermal	Trespasser	Adolescent	Soil or Sediment	SA	Skin Surface Area - Soil Contact	5,700	cm^2-day	ADEM, 2008	Per U.S. EPA, 2004
				M	Soil-to-Skin Adherence Factor	0.07	mg/cm^2	Same as adult AF	Per EPA, 0.2 is used for children and is the "95th percentile weighted AF for children playing at a day care center (central tendency soil contact activity) or the 50th percentile for children playing in wet soil (high-end soil contact activity)." The adult resident value of 0.07 mg/cm^2 is "determined to represent a reasonable, high-end activity." This value is more applicable to a trespasser than a mud-in soil scenario developed for young children.
				ABS	Dermal Absorption Factor	chemical-specific	unitless	EPA, 2013	
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per ADEM, 2007
				ED	Exposure Duration	10	years	ADEM, 2008	Per ADEM, 2007
				CFs	Conversion Factor	1.0E-06	kg/mg		
				BW	Body Weight	45	kg	ADEM, 2008	Per U.S. EPA, 2000
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	3,650	days	ADEM, 2008	Equals Exposure Duration

References

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TABLE 4- 5
VALUES USED FOR DAILY INTAKE/EXPOSURE CALCULATIONS
McCLELLAN, ANNISTON, ALABAMA
TRESPASSER - SURFACE WATER

Timeframe: Current and Future
Medium: Water
Exposure Medium: Surface Water

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Comment
Ingestion	Trespasser	Adolescent	Surface water	CR	Contact Rate	0.05	L/hour	ADEM, 2008	Per U.S. EPA, 2004
				FI	Fractional Intake from Site	1	unitless		not specified; assumed 100%
				ET	Exposure Time	1	hour//event		Conservative assumption for year-round activity; scenario assumes daily exposure
				EV	Event frequency	1	events/day		Assumes one exposure episode per day
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per ADEM, 2007
				ED	Exposure Duration	10	years	ADEM, 2008	Per ADEM, 2007; assumes trespasser contacts water during every trespassing event
				CF1w	Conversion Factor	1.0E+03	µg/mg		For final RBTLS in µg/L
				BW	Body Weight	45	kg	ADEM, 2008	Per U.S. EPA, 2000
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	3,650	days	ADEM, 2008	Equals Exposure Duration
Dermal	Trespasser	Adolescent	Surface water	K_p	Permeability constant	chemical-specific	cm/hour	EPA, 2013	
				ET	Exposure Time	1	hour//event		Conservative assumption for year-round activity; scenario assumes daily exposure
				EV	Event frequency	1	events'/day		Assumes one exposure episode per day
				SA	Skin Surface Area - Soil Contact	5,700	cm^2	ADEM, 2008	Per U.S. EPA, 2004; assumes same extent of skin exposed as for soil/sediment exposure
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per ADEM, 2007
				ED	Exposure Duration	10	years	ADEM, 2008	Per ADEM, 2007
				CF1w	Conversion Factor	1.0E+03	µg/mg		For final RBTLS in µg/L
				CF2w	Conversion Factor	1.0E-03	L/cm^3		
				BW	Body Weight	45	kg	ADEM, 2008	Per U.S. EPA, 2000
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	3,650	days	ADEM, 2008	Equals Exposure Duration

References

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TABLE 4-6
VALUES USED FOR DAILY INTAKE/EXPOSURE CALCULATIONS
McCLELLAN, ANNISTON, ALABAMA
HYPOTHETICAL GROUNDWATER USER

Timeframe: Future
Medium: Groundwater
Exposure Medium: Potable Groundwater / Shower Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Comment
Ingestion	Resident	Adult	Tap Water	IR_w	Water Ingestion Rate	2	L/day	ADEM, 2008	Per U.S. EPA, 1989
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration - Adult	30	years	ADEM, 2008	Per U.S. EPA, 1989
				BW	Body Weight - Adult	70	kg	ADEM, 2008	Per U.S. EPA, 1989
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	10,950	days	ADEM, 2008	Equals Exposure Duration
	Resident	Child	Tap Water	IR_w	Water Ingestion Rate	1	L/day	ADEM, 2008	Per U.S. EPA, 1989
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration - Adult	6	years	ADEM, 2008	Per U.S. EPA, 1989
				BW	Body Weight - Child	15	kg	ADEM, 2008	Per U.S. EPA, 1991a
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	2,190	days	ADEM, 2008	Equals Exposure Duration
	Commercial Worker	Adult	Tap Water	IR_w	Water Ingestion Rate	1	L/day	U.S. EPA, 1991	ADEM provides a default of 2 L/day, which is an upper-bound residential value. The EPA-recommended value of 1L/day assumes that half of daily water ingestion occurs at work.
				EF	Exposure Frequency	250	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration - Adult	25	years	ADEM, 2008	Per U.S. EPA, 1989
				BW	Body Weight - Adult	70	kg	ADEM, 2008	Per U.S. EPA, 1989
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	9,125	days	ADEM, 2008	Equals Exposure Duration
Dermal Contact	Resident	Adult	Tap Water (dermal contact while bathing)	DA_{event}	Absorbed Dose per Event	chemical-specific	mg/cm^2-event		
				Kp	Dermal Permeability Constant	chemical-specific	cm/hr		
				ET	Exposure Time Bathing/Showering	0.58	hr/event		
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration	30	years	ADEM, 2008	Per U.S. EPA, 1989
				EV	Event frequency	1	events/day		
				t*	Time to Reach Steady State	chemical-specific	unitless		
				FA	Fraction Absorbed	chemical-specific	unitless		
				τ_{event}	Lag Time per Event	chemical-specific	hr/event		
				B	Ratio of Kp through the Corneum relative to Kp Across the Viable Epidermis	chemical-specific	unitless (ratio)		
				SA	Skin Surface Area	18,000	cm^2-day	ADEM, 2008	Per U.S. EPA, 2004
				BW	Body Weight	70	kg	ADEM, 2008	Per U.S. EPA, 1989
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	10,950	days	ADEM, 2008	Equals Exposure Duration
				$CF1_w$	Conversion Factor	1.0E-03	L/cm^3		
				$CF1_w$	Conversion Factor	1.0E-03	mg/µg		
		Child	Tap Water (dermal contact while bathing)	DA_{event}	Absorbed Dose per Event	chemical-specific	mg/cm^2-event		
				Kp	Dermal Permeability Constant	chemical-specific	cm/hr		
				ET	Exposure Time Bathing/Showering	1	hr/event		
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration	6	years	ADEM, 2008	Per U.S. EPA, 1989
				EV	Event frequency	1	events/day		
				t*	Time to Reach Steady State	chemical-specific	unitless		
				FA	Fraction Absorbed	chemical-specific	unitless		
				τ_{event}	Lag Time per Event	chemical-specific	hr/event		
				B	Ratio of Kp through the Corneum relative to Kp Across the Viable Epidermis	chemical-specific	unitless (ratio)		
				SA	Skin Surface Area	6,600	cm^2-day	ADEM, 2008	Per U.S. EPA, 2004
				BW	Body Weight	15	kg	ADEM, 2008	Per U.S. EPA, 1991a
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	2,190	days	ADEM, 2008	Equals Exposure Duration
				$CF1_w$	Conversion Factor	1.0E-03	L/cm^3		
				$CF1_w$	Conversion Factor	1.0E-03	mg/µg		
Inhalation	Resident	Adult	Shower air (inhalation of VOCs)	K	Volatilization Factor (Water to Bathroom Air)	0.5	m^3/L	U.S. EPA, 1991b	
				ET	Exposure Time Bathing/Showering	0.58	hr/event		
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration	30	years	ADEM, 2008	Per U.S. EPA, 1989
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	10,950	days	ADEM, 2008	Equals Exposure Duration
				CF3w	Conversion Factor (Noncarcinogens)	1.0E+03	µg/mg		
		Child	Shower air (inhalation of VOCs)	K	Volatilization Factor (Water to Bathroom Air)	0.5	m^3/L	U.S. EPA, 1991b	
				ET	Exposure Time Bathing/Showering	1	hr/event		
				EF	Exposure Frequency	350	days/year	ADEM, 2008	Per U.S. EPA, 1989
				ED	Exposure Duration	6	years	ADEM, 2008	Per U.S. EPA, 1989
				AT_C	Averaging Time - Cancer	25,550	days	ADEM, 2008	70 years; Per U.S. EPA, 1989
				AT_{NC}	Averaging Time - Non-Cancer	2,190	days	ADEM, 2008	Equals Exposure Duration
				CF3w	Conversion Factor (Noncarcinogens)	1.0E+03	µg/mg		

Notes:

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