Methyl iodide water evaluation

- Surface water contamination unlikely
- Ground water contamination by methyl iodide unlikely
- Ground water contamination by iodide anion breakdown product uncertain

Surface water contamination unlikely

- Volatilization is primary dissipation route
- Labels require tarpaulins
- Few fumigations during winter storm runoff periods
- Low runoff potential in types of soils usually fumigated

Ground water contamination by methyl iodide unlikely

- Volatilization is primary dissipation route
- DPR conducted empirical modeling using extreme irrigation conditions
- Modeling scenario overestimated concentrations of known ground water contaminants (e.g., DBCP)
- Modeling scenario predicts essentially zero ground water concentration of methyl iodide

Ground water contamination by iodide uncertain

- Initial breakdown products are methanol and iodide anion
- Methanol degrades rapidly
- Shortcomings with field dissipation study for iodide
  - Iodide anion not measured for first 7 days
  - Test location not vulnerable to ground water contamination
  - Insufficient irrigation to cause downward movement

Worst-case ground water estimate

- Assume max methyl iodide application rate (175 lbs/ac)
- ~50% volatilization of methyl iodide, based on field data
- Assume remaining 50% converted to iodide anion (8.8 g I^-/m^2)
- Assume no soil sorption, no other transformation
- Fresno mean ground water recharge (0.5 m/yr)
- Iodide ground water concentration = 18 g/m^3 = 18 mg/L

Ground water uncertainties

- Methyl iodide soil breakdown products and rate uncertain
  - Transformation of iodide anion uncertain
- Soil mobility uncertain
- Amount of methyl iodide applied in vulnerable areas uncertain
- Amount and timing of water applied after fumigation uncertain
- Additional field dissipation data needed