



**Final Report**  
**12/19/05**

**The ECOS and DoD Sustainability Work Group**  
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## Overview

The ECOS-DoD Sustainability Work Group hosted the Forging Partnerships on Emerging Contaminants Forum November 2-3 in San Diego, California. The Forum was an opportunity for State and Federal stakeholders to discuss and define the issues and challenges posed by emerging contaminants. The objective of the Forum was to jointly develop and prioritize proposed actions. The Forum's output will now form the foundation for further development of a cooperative process by which emerging contaminants can be addressed by all stakeholders.

The 22 priority items identified at the Forging Partnerships on Emerging Contaminants Forum reflect a variety of actions and issues ranging in specificity from site/risk assessments to broad policy goals. These can be grouped into five general themes:

- Policy Goals
- Communication
- Process
- Assessment (Risk/Site/Toxicity)
- Resources

On the following pages the 22 priority items have been categorized into one or more of the above themes. The goal of these thematic categories is to capture priority items common among the breakout groups. Please note that these groupings are not intended to be an exhaustive compilation of the substantive output of the breakout groups. Rather, they are a summary of common priority items. For a comprehensive listing of what a particular priority item addressed, please refer to the list at the back of this document.

### Policy Goals

While many of the items identified suggest that specific goals, i.e. development of an independent advisory group, should be sought, three items identify broad policy concepts for the Work Group to address. **Item M** suggests that the Work Group should develop and champion a *broad pollution prevention policy* for emerging contaminants, while **Items O and S** support the development of a *proactive and preventative emerging contaminants (EC) strategy to address ECs before they become regulatory concerns*.

The above items share a common theme of early action/pollution prevention that could be incorporated into the process goals identified below. These items are captured in the following summary statement:

***The Work Group could develop and champion a proactive emerging contaminants policy that supports pollution prevention through life cycle analysis and the development of best management practices for ECs.***

### Communication

Several groups identified improved communication of all phases of the emerging contaminant process as a priority item. **Item G** suggests the Work Group develop a *comprehensive risk management/assessment communication strategy for ECs*, while **Item N** adds that such a strategy should be based on expert advice and emphasize *proactive risk communication*. **Item V** emphasizes that such a communication strategy should seek to achieve greater *consistency* in the EC process. Lastly, **Items G and V** support the idea of a *clearinghouse to disseminate information on ECs*. These items are captured in the following summary statement:

***The Work Group could develop a consistent, comprehensive communication strategy regarding the entire process by which ECs are addressed- from risk/hazard identification to implemented regulations. This process would be proactive, emphasize stakeholder education, clearly define terms and provide for such information to be made available in a central clearinghouse.***

## Process

Process was widely identified as an item to be addressed by the Work Group. Loosely defined, it represents the steps necessary to successfully manage ECs from initial identification through to implemented regulations. Specific Breakout Group suggestions include:

**Item D** recommends the development of an *independent advisory group* to *coordinate data collection and provide interim guidance for initial action and risk communication during the development of final toxicity values*. **Item H** supports the development of a *uniform protocol to identify and prioritize ECs*. **Item P** suggests that in light of the *uncertainty* surrounding ECs, the workgroup identify *what conditions should trigger an action to interrupt exposure*. **Items I and U** add to Item H by recommending that a *framework for action be developed to guide management of ECs after identification but prior to agreement on levels*. **Item J** supports a *collaborative process to address research needs and fill data gaps*. **Item K** recommends a *state survey* to identify where resources should be allocated including future toxicological studies. **Item Q** supports the *development of definitions for ECs that recognize different processes may be necessary for ECs based on whether they are newly discovered, reemerging or reassessed*. **Item R** recommends the Work Group develop a *broad strategy of early involvement, cooperation and transparency in an effort to achieve a more consistent approach to ECs*. Lastly, **Item T** recommends the development of a consensus document to foster a *collaborative process for addressing ECs*. These items are captured in the following summary statement:

***The Work Group could support a broad, collaborative framework to guide the identification and management of ECs. This framework would provide agreed upon definitions and address all aspects of the EC process including what conditions should trigger a response when an EC is identified in an exposure pathway. The framework would recognize that different processes may be necessary on an EC-by-EC basis and would aspire to achieve consistency in identifying and addressing ECs while reflecting the interests of all affected stakeholders.***

## Assessment

4 items identified “assessment” as a priority to be addressed by the Work Group. While this term was not given a universal definition at the Forum, it appears to have been loosely understood as the specific steps by which contaminants are identified and their risks to human health and the environment evaluated and quantified.

**Item B** recommends that the Work Group increase the role of *stakeholders in health risk assessment*. **Item C** supports *increased transparency in health and site risk assessments*. **Item I** suggests that *risk assessment serve as one consideration in determining what action to take after an EC is identified, but prior to agreement on levels*. **Item J** supports a collaborative process that *fills data gaps between the States and DoD and other agencies*. These items are captured in the following summary statement:

***The Work Group could support a transparent, collaborative health and site risk assessment process that involves all stakeholders and fills existing data gaps. The results of this risk assessment process would be one factor in guiding the management of ECs prior to agreement on levels.***

## Resources

Financial resources were identified as a priority item in five instances. Specifically, **Item A** recommends that the Work Group *leverage state and federal resources, coordinate activities to avoid duplication and focus available resources on areas of greatest potential risk*. **Item E** suggests that the Work Group convene a group of budget experts to *evaluate site-specific management priorities at the national level*. **Item F** promotes the *development of flexible budgetary tools to help achieve timely proactive investments addressing ECs*. **Item I** supports the development of mechanisms to *efficiently communicate the EC issue to the budget writing process in an effort to acquire necessary resources*. **Item L** encourages the Work Group to pursue *funding to allow for proactive responses to ECs that allow for the DoD to budget for such proactive actions*. These items are captured in the following summary statement:

***The Work Group could support flexible budgetary tools that allow stakeholders such as DoD to budget for proactive actions regarding ECs. To aid in obtaining these resources, the Work Group would endeavor to provide clear communication of the EC issue to the budget writing process. These tools would utilize available resources in an efficient manner that avoids duplication of effort and focuses resources on areas of greatest potential risk.***

## Priority Items

### Item A: (Group A)

ECOS/DoD Sustainability Workgroup should leverage resources across states and federal agencies, coordinate activities to eliminate duplication of efforts, such as risk assessments, and focus public resources on areas of potential highest risk.

### Item B: (Group A)

ECOS/DoD Sustainability Workgroup should work on ways to enhance stakeholder involvement in health risk assessment, and define the roles of stakeholders in the health risk assessment process.

### Item C: (Group A)

ECOS/DoD Sustainability Workgroup should develop recommendations on how to improve the transparency of health and site risk assessments (e.g. explain uncertainties, defaults and assumptions.)

### Item D: (Group A)

ECOS/DoD Sustainability Workgroup should explore establishment of an independent, inclusive, advisory group (e.g. ITRC, CRESP) that can coordinate data gathering, and provide interim guidance for initial action and risk communication, while encouraging continued development of final toxicity values.

### Item E: (Group A)

ECOS/DoD Sustainability Workgroup should establish a group with budgetary expertise that evaluates site specific risk management priorities at a national level, not just state by state. ECOS/DoD can facilitate state understanding/acceptance. (Could be modeled after FFERDC—Keystone Report, '96).

### Item F: (Group A)

ECOS/DoD Sustainability Workgroup should promote a more flexible budgetary process by developing tools to document and illustrate fiscal and mission benefits, allowing for timely proactive investments, e.g. pollution prevention and response actions for emerging contaminants.

### Item G: Communication (Group B)

Develop and implement a comprehensive communication strategy for ECs including risk management and assessment:

- Communication of ECs to all involved
- Communication in light of uncertainty
- Risk communication at the site level
- Development of an EC clearinghouse including those that don't make the list
- Risk communication on ECs and their uncertainties

- How can we benefit most from shared experiences and lessons learned
- How can risk communication messages be as consistent and least confusing to the public?
- Open dialogue with all stakeholders with regard to ECs
- Regulatory early communication on emerging EC issues
- Establish a clearinghouse on ongoing research for ECs to support regulatory standards or actions

Item H: Process (Group B)

Establish a uniform protocol to proactively identify and prioritize ECs relevant to DoD operations including:

- Identify responsibilities of regulators, producers and users of chemical substances
- A process to ensure transparency in addressing ECs in a collaborative manner
- Develop a process focusing on a few high probability ECs and designation of an EC lead
- Establish agreed upon criteria for identifying ECs not just process
  - o peer review/ ARARs / TBCs
- An EC process that links response, data quality, and the federal budget process
- Ensuring that standards are based on technically defensible science with a method to resolve scientific disputes publicly in an unbiased way.

Item I: Policy/ Budget (Group B)

Develop a framework with consideration of the risk assessment process and risk management perspectives for what to do with ECs after identification but prior to agreement on levels.

- Discuss consistencies and address inconsistencies between state and federal government on policies, positions and standards
- Explore budgetary and other impediments to acting on ECs
- Once ECs are identified, what are the responsibilities of regulators and the regulated
- How can the EC issue be communicated efficiently to the Budget writing process- identify key players in the process that can be communicated in order to acquire necessary resources
- Depoliticizing the standard setting process
- How to consider TBCs in developing site-specific responses for ECs
- Explore alternative funding sources for testing and remediating wells
- Protocols/procedures for taking interim steps for addressing ECs when found in absence of final standards
- Balancing public health and budget issues
- How competing risks can be ranked when margins of safety are applied in the face of scientific uncertainty

- Develop a framework for a tiered evidence based risk management approach for ECs
- Consider net environmental benefit analysis when considering risk management
- Encourage mechanisms to expeditiously manage risks and human exposure
- Maintain the distinction between risk management and risk assessment
- Ensure development of site specific risk management measures for each EC
- In addition to development of MCLs need to develop acute levels for expedited response
- When does scientific judgment enter into the policy formation arena?
- Identify P2 and BMPs for chemicals which are being put into use with health impacts to prevent release into the environment
- Consideration of eco-risk in addition to human health risk
- Regulatory and remedial activities should be consistent for all PRPs
- Can we manage ECs in groups as opposed to individual compounds

Item J: Data/Research (Group B)

Develop a collaborative process between states and DoD to address research needs and data gaps with respect to ECs.

- Identify other outside agencies/entities for further collaboration
- Responsibility for anticipating what ECs will be- what is likely to get into the environment, taking early action- a more proactive attitude among producers and users of chemical substances
- Identify DoD's role, if any, in conducting toxicological and epidemiological research regarding ECs
- How can DoD fund and conduct research to best ensure the results will be viewed as valid?
- Consider the value of human information in characterizing emerging contaminants (bio-monitoring, observational studies, epidemiology, human subject research)

Item K: Survey (Group C)

The ECOS and DoD Sustainability Workgroup should survey states. The results would assist agencies in being proactive to identify and project where resources will need to be expended in the future and for developing toxicology studies. The survey would include but not be limited to:

- What emerging contaminants are the states dealing with and in what media?
- In what division or program are emerging contaminants being addressed?
- What is the relative priority of emerging contaminants?
- What is going on in bordering states that impacts state regulatory agencies?
- What contaminants are we potentially overlooking?

- What is the prevalence/occurrence?
- How do emerging contaminants impact programs?
- Have they sampled for emerging contaminants? What emerging contaminants are they sampling for?
- What are state regulations and guidance for each emerging contaminants?
- How do states deal with emerging contaminants response?
- What is the sense of urgency for each contaminant?

Item L: Funding and Implementation Strategies (Group C)

The ECOS and DoD Sustainability Workgroup should encourage funding and implementation of strategies for proactively responding to emerging contaminants such that DoD (and possibly other federal and state agencies) can budget for proactive actions including pollution prevention and impact analyses prior to regulations

- Identifying (scanning the horizon)
- Assessment of impact on mission
- Taking risk management actions such as pollution prevention
- Initiating further study including occurrence/prevalence
- Initiating further toxicological studies
- Estimating life cycle costs

Item M: Pollution Prevention Policy (Group C)

The ECOS and DoD Sustainability Workgroup should develop a resolution and champion a broad policy of pollution prevention regarding emerging contaminants by:

- supporting the investigation of life cycle analysis for compounds
- identifying methodologies for life cycle analysis
- identifying, evaluating, and recommending best management practices

Item N: Risk Communication Strategy (Group A/C)

The ECOS and DoD Sustainability Workgroup should consult with EPA, DoD, CDC and other experts to develop and embrace a comprehensive proactive risk communication strategy for emerging contaminants, including:

- Identification and engagement of stakeholders
- Dissemination of educational materials
- Explaining uncertainties, including the reliability of underlying toxicity studies
- Explaining the underlying basis among various state and federal risk levels
- Clearly defining terms used

Item O: Response Framework (Group C)

The ECOS and DOD Sustainability Workgroup should work with EPA and DoD to develop recommendations on a framework to enable DoD and others to anticipate and proactively respond to emerging contaminants before they

become regulatory concerns. The recommendations should consider such factors as:

- Exposure (current or future)
- Toxicity/health effects and uncertainty
- Occurrence
- Timing/Urgency
- Permanency of options
- Long-term stewardship
- Budget
- Co-contaminants
- Taste/odor and other qualitative factors
- Political considerations
- Recognition of government need to protect first
- Stakeholder identification for those who need to be involved and how

Item P: Discussion of response in face of uncertainty (Group C)

The ECOS and DoD Sustainability Workgroup should discuss under what conditions we should act/not act in the face of uncertainty to interrupt exposure.

Item Q: (Group D)

The ECOS/DoD Sustainability Workgroup should define emerging contaminants recognizing that the process/strategy differs for:

- Newly discovered
- Reemerging (New exposure pathway)
- Reassessed (Change in toxicity)

Item R: (Group D)

In order to achieve a more consistent approach, the ECOS/DoD Sustainability Workgroup should develop strategies to:

- Identify and Prioritize Emerging Contaminants
- Encourage Early Stakeholder Involvement
- Work Together (stakeholders, etc.)
- Identify Data Gaps (additional research, etc.)
- Identify Applicable Studies
- Investigate Occurrence
- Evaluate Technological Methods and Application
- Strive for transparency and consistency in the setting and updating of regulatory standards

Item S: (Group D)

The ECOS/DoD Sustainability Workgroup should develop a proactive and preventative strategy that includes:

- Inventories past and present
- Environmental Fate and Toxicological Testing
- Monitoring
- Management

- Communication/Notification
- Cross-media clearing house

Item T: (Group D)

The ECOS/DoD Sustainability Workgroup should adopt a consensus document to foster a collaborative process for addressing emerging contaminants

Item U: (Group D)

The ECOS/DoD Sustainability Workgroup should develop interim procedures for addressing emerging contaminants in the absence of “appropriate” standards which may include:

- Risk Management
- Containment and exposure prevention
- Technological limitations
- Indicator development
- Budget Issues (triggers, constraints, etc.)

Item V: (Group D)

The ECOS/DoD Sustainability Workgroup should adopt risk communication strategies in order to achieve a more consistent approach, to possibly include:

- Information clearinghouse/repository
- Site specific crisis communication strategy
- Strategic communication plan
- Glossary of terms
- Education and training – internal and external

### Prioritization Results

<b><u>ITEM</u></b>	<b>STATE</b>	<b>EPA</b>	<b>DOD</b>	<b>OTHER FED AGENCIES</b>	<b>OTHER</b>
A	8	2	13	2	1
B	0	0	1	2	0
C	3	2	4	0	0
D	12	3	17	2	1
E	1	3	2	0	0
F	11	6	5	0	1
G	12	13	13	<b>3</b>	1
H	7	4	19	<b>3</b>	0
I	16	10	<b>23</b>	<b>3</b>	1
J	8	4	17	2	0
K	<b>29</b>	9	12	1	2
L	12	7	19	0	0
M	16	<b>44</b>	7	1	0
N	10	2	12	1	2
O	26	8	14	2	2
P	10	0	7	1	0
Q	3	1	8	1	1
R	4	3	15	2	1
S	7	11	0	0	0
T	4	1	10	1	0
U	10	3	15	1	1
V	13	0	11	<b>2</b>	<b>4</b>
<b><u>TOTAL</u></b>	<b>222</b>	<b>136</b>	<b>244</b>	<b>30</b>	<b>18</b>
<b>Ballots received</b>	39	23	41	5	3
<b>Total Possible "X's"</b>	234	138	246	30	18

### Top Items by Organization

(Numbers in parentheses reflect number of x's cast per issue)

<b><u>ITEM PRIORITY</u></b>	<b>STATE</b>	<b>EPA</b>	<b>DOD</b>	<b>OTHER FED AGENCIES</b>	<b>OTHER</b>
1	Item K (29)	Item M (44)	Item I (23)	Items G, H, and I (3) (tie)	Item V (4)
2	Item O (26)	Item G (13)	Items H and L (19) (tie)	Items A, B, D, J, O and R (2) (tie)	Items K ,N and O (2) (tie)
3	Items M and I (16) (tie)	Item S (11)	Items D and J (17) (tie)	Items K, M, N, P, Q, T and U (1) (tie)	Items A, D, F, G, I, Q, R, and U (1) (tie)
4	Item V (13)	Item I (10)	Items R and U (15) (tie)	N/A	N/A
5	Items D,G, and L(12) (tie)	Item K (9)	Item O (14)	N/A	N/A
6	Items N,P and U (10) (tie)	Item O (8)	Item G (13)	N/A	N/A

### Overall Top Priorities

Item Priority	Item Letter	Number of Votes
1	M	68
2 (tie)	I&K	53
3	O	52
4	G	42
5	L	38