



improved Record of Decision and Baseline Ecological Risk Assessment

Federal Remediation Technologies Roundtable

5 June 2008

Importance of Documentation



• Why do we care about documents?

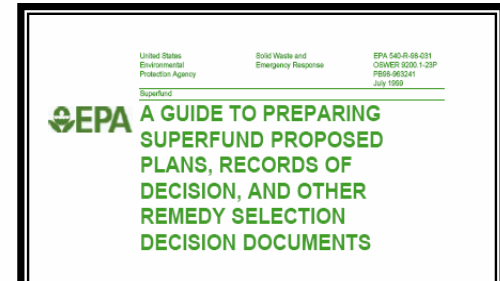
– Convey / solicit information

- Regulators, public, trustees, other stakeholders

– Memorialize actions taken

- Legal drivers, guidance, policy

– Justify actions



Why Improve?



- Consistent with:

- The President's Management Agenda, Fiscal Year 2002

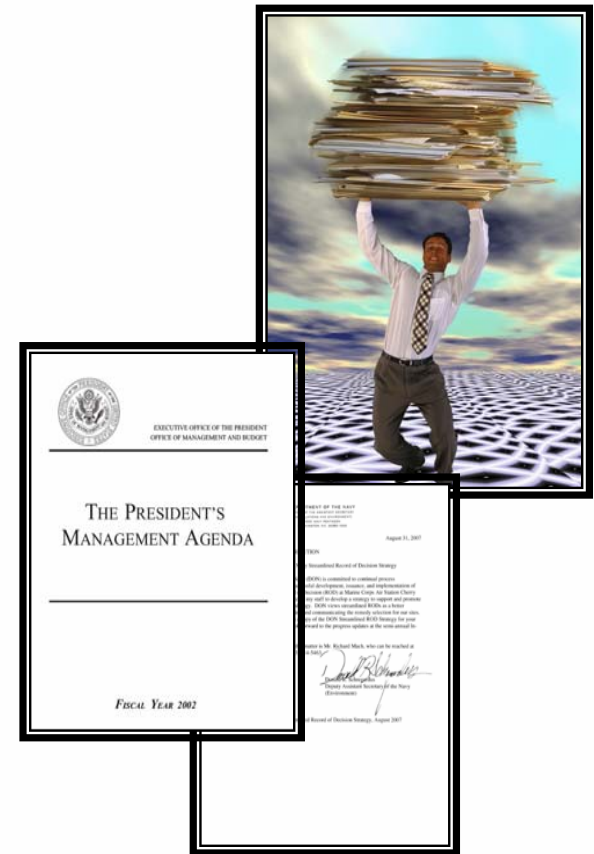
- Implement better business management practices to provide cost and time savings using electronic enhancements

- E-Government

- Expanding E-Government is the President's goal of utilizing technology to improve how the Federal Government serves citizens, businesses and agencies.

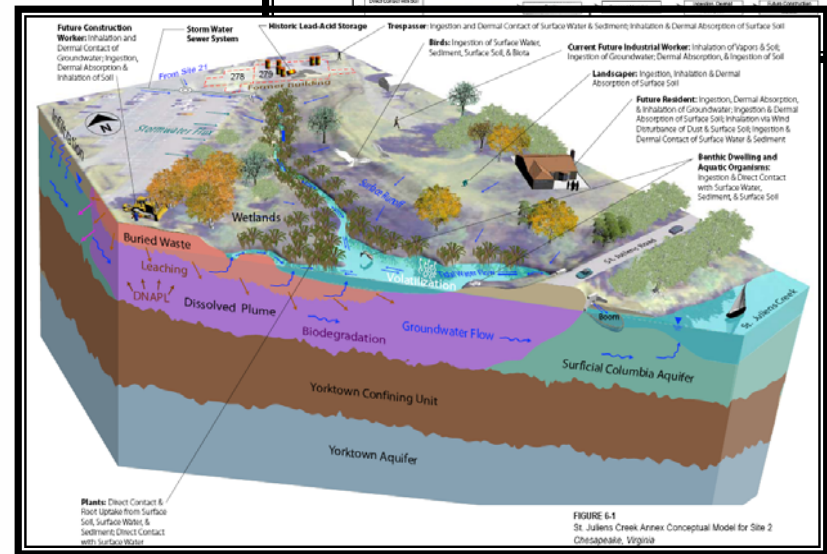
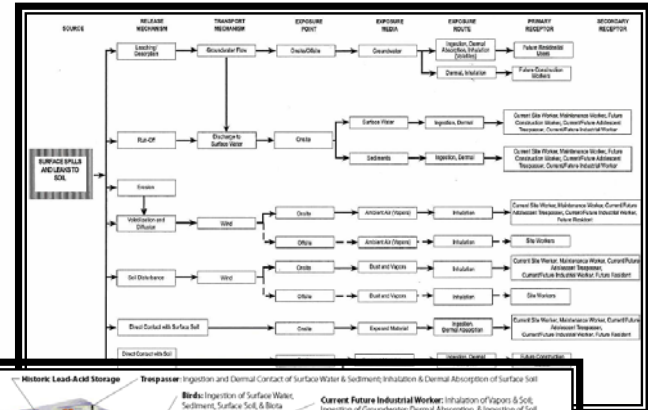
- Paperwork Elimination Act Section 3504(a)(1)(B)(vi) of Title 44, US Code

- Acquisition and use of information technology, including alternative information technologies that provide for electronic submission, maintenance, or disclosure of information as a substitute for paper"



Challenge...can we make documents...

- More concise...easier to read?
- Reference detailed/complex information?
 - Existing documentation
- Use modern information management technology
- More scalable / understandable to a wider audience?
- Expedite regulatory review and decision-making
- More cost effective?



Must comply with Statutes / Regulations

FIGURE 6-1
St. James Creek Annex Conceptual Model for Site 2
Chesapeake, Virginia

What is a Improved Document?

- Hardcopy document using streamlining tools
 - Concise text
 - Summary tables, figures
 - Graphical presentations
- Electronic enhancements (Optional)
 - Self-launching
 - Free-ware
 - Interactive
 - Graphically oriented
 - Easily navigable
- Hardcopy meets regulatory requirements, guidance and policy



Analyte Name	Range of Detected Concentrations	Screening Value	Frequency of Exceedance	Location of Maximum Exceedance
Iron	5,480 - 50,400	20,000	29 / 56	SJSBK-SD08-001
Lead	17.0 - 437	35.8	47 / 56	SJBC-SD18-03C
Manganese	26.5 - 413	260	12 / 56	SJBC-SD30-03C
Mercury	0.030 - 1.10	0.150	29 / 56	SJBC-SD04-03C
Nickel	3.70 - 41.4	20.9	16 / 56	SJS04-SD05-001
Selenium	0.710 - 2.30	1.00	12 / 56	SJSBK-SD08-001
Silver	0.190 - 0.790	1.00	0 / 56	SJS04-SD04-000
Vanadium	4.00 - 86.0	57.0	4 / 56	SJSBK-SD09-001



Benefits



- Significantly reduced document size

- Reference previously documented information already peer-reviewed
- Concise text, summary tables & figures with focus on graphic presentation

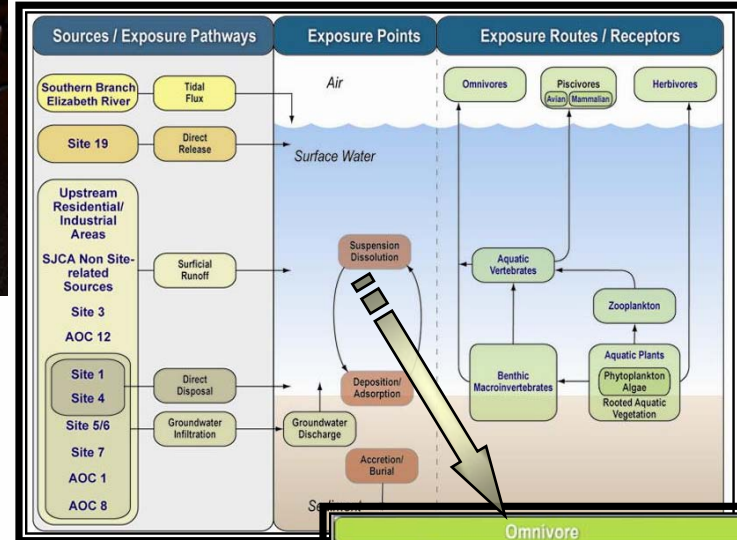


- Time/cost savings

- Reduction in review time

- Higher quality document

- Focus understanding by broader audience
- Intuitive and easily navigable format
- Consistent with guidance and regulatory requirements



Omnivore

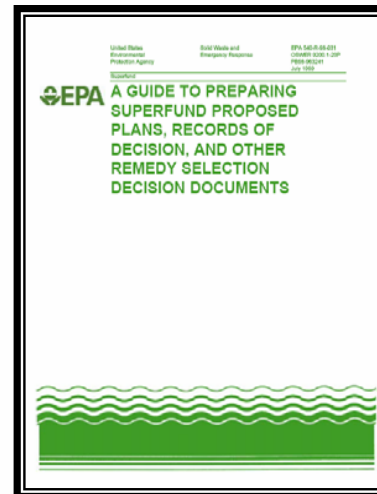
Evaluation Status: No further evaluation is warranted. Evaluation in CH2M HILL (2004) indicates minimal potential for inorganic chemicals and no potential for organic chemicals to adversely affect mammalian omnivores.

Selected Receptor Species: Raccoon (*Procyon lotor*)

Habitat Occurrence: Highly adaptable, living adjacent to all types of aquatic habitats, which provide food, water, and den space.

Dietary Composition: Opportunistic and adaptable, consuming almost any type of animal or plant material.

Potential Exposure Route: Ingestion of chemicals accumulated in animal and plant tissue and direct ingestion of chemicals in surface water.



Prototype 1: improved Record of Decision (ROD) MCAS Cherry Point, NC

- Legal document that certifies the remedy selection process
 - Hardcopy meets requirements of CERCLA and NCP
 - Addresses all elements of EPA Guidance
 - Relies on reference to Administrative Record
 - Uses streamlining tools
 - Reference CD allows easy access to referenced information

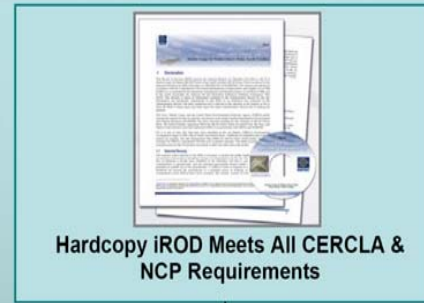
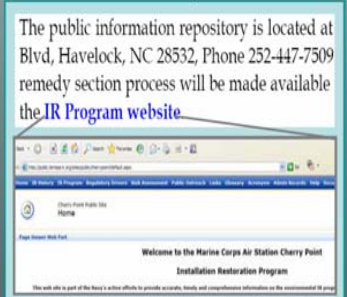


TABLE 1: PREVIOUS STUDIES AND INVESTIGATIONS

Previous Study / Investigation	Date	Investigation Activities
Remedial Investigation Report, OU 6, Site 12	1999 to 2005	16 surface soil (0 to 1 ft bgs), 32 subsurface soil (1 to 11 ft bgs), 7 groundwater (Surface Aquifer), 3 drainage surface water, and 3 drainage sediment (0 to 0.5 ft bgs) samples were collected for analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, pesticides, polychlorinated biphenyls (PCBs), petroleum-related compounds, and/or dioxin/furans.
Feasibility Study, Site 12	2006	
Proposed Plan, OU 6, Site 12	2006	

Hyperlinked Excerpt of Supporting Administrative Record Information



iROD Demonstration



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and
TBCs](#)

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[Printable
ROD
with
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Documents](#)

[Acronyms](#)

[Exit CD](#)



Final Record of Decision Operable Unit 6, Site 12 Marine Corps Air Station Cherry Point, North Carolina

September 2006

1 Declaration

This Record of Decision (ROD) presents the Selected Remedy for Operable Unit (OU) 6, Marine Corps Air Station (MCAS) Cherry Point, North Carolina. MCAS Cherry Point was listed on the National Priorities List (NPL) December 16, 1994 (EPA ID: NC1170027261). The remedy was selected in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on information contained in the Administrative Record. Information not specifically summarized in this ROD or its references but contained in the Administrative Record¹ has been considered and is relevant to the selection of the remedy. Thus the ROD is based upon and relies upon the entire Administrative Record file in making the decision.

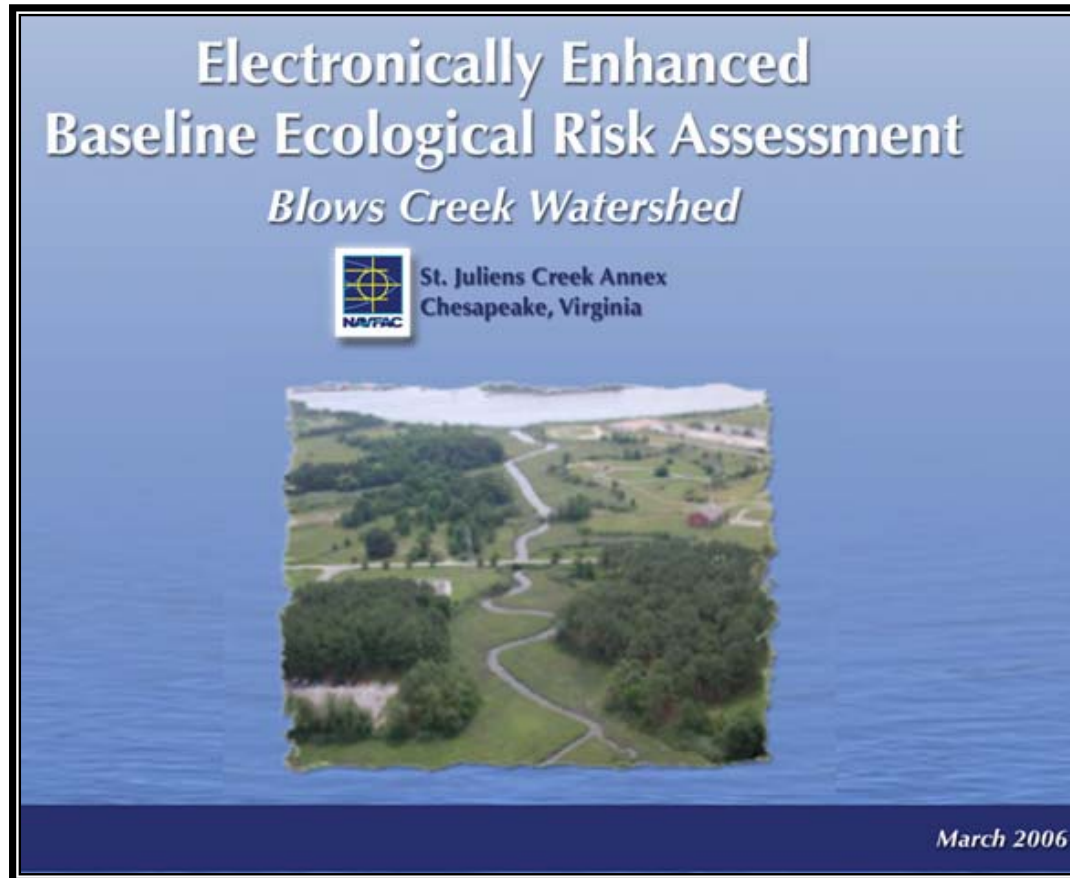
The Navy, Marine Corps, and the United States Environmental Protection Agency (USEPA) selected the remedy for Site 12, with the concurrence of the North Carolina Department of Environment and Natural Resources (NCDENR). The Navy provides funding for site cleanups at MCAS Cherry Point. The Federal Facility Agreement (FFA) for MCAS Cherry Point documents how the Navy and Marine Corps intend to meet and implement CERCLA in partnership with USEPA and NCDENR.



Prototype 2: Electronically Enhanced Baseline Ecological Risk Assessment (eBERA)



Blows Creek, St. Juliens Creek Annex, Chesapeake, Virginia



•Blows Creek BERA

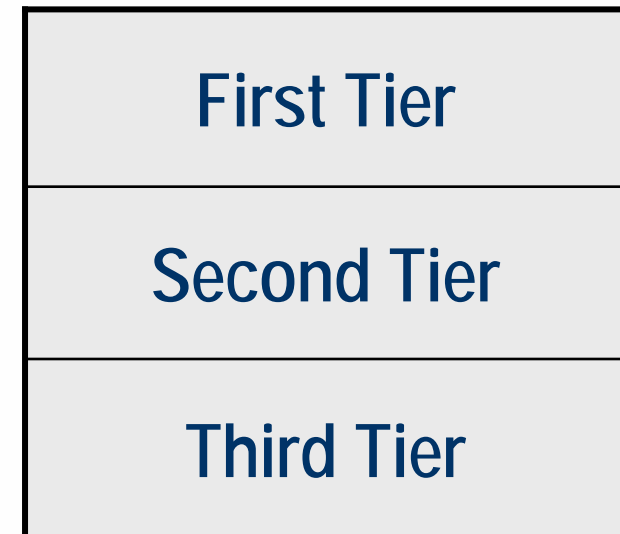
- Estuary to Southern Branch of the Elizabeth River
- Watershed approach
 - Potentially impacted watershed multiple contaminant sources
 - Southern Branch of the Elizabeth River
 - 9 CERCLA sites
 - Upstream residential/industrial areas



BERA Document Design and Layout



- Enhanced concepts developed from ROD
 - Increased level of interactivity
 - Improved layout of data presentation
- Information presented in tiered format to facilitate navigation
 - Detail increases with each subsequent tier
 - Tiers logically hyperlinked to subsequent level



BERA Document Design and Layout (con't)



First Tier

- Streamlined text
- Text-based hyperlinks to figures/tables and supporting documentation

Second Tier

Third Tier

3.2 Chemical Concentrations in Sediment and Fish

Data ([Analytical Data Tables](#)) were summarized into the following groupings for evaluation in the BERA:

- All sediment samples collected for chemical analysis from Blows Creek ([Blows Creek Sediment Summary Statistics Table](#));
- Sediment samples collected for mercury analysis from linear transects in the Southern Branch of the Elizabeth River, immediately adjacent to the mouth of Blows Creek ([Mouth of Blows Creek Sediment Summary Statistics Figure and Table](#));
- Whole body tissue residue samples collected for mercury analysis from three composite sample locations in Blows Creek ([Fish Tissue Summary Statistics Figure and Table](#)).

Summary Statistics - Sediment - Blows Creek St. Juliens Creek Annex, Chesapeake, Virginia						
Analyte Name	Range of Non-Detect Values	Frequency of Detection	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean ¹	Standard Deviation of Mean
Inorganics (MG/KG)	-- --	56 / 56	27,400	SJSBK-SD09-002	12,999	6,503
Aluminum	0.61 - 39.1	7 / 55	2.10	SJS01-SD02-001	6.10	5.16
Antimony	-- --	56 / 56	61.1	SJBC-SD18-03C	12.2	8.57
Arsenic	10.1 - 87.1	33 / 56	927	SJBC-SD18-03C	76.7	171
Barium	0.28 - 1.20	51 / 56	3.10	SJBC-SD04-03C	1.24	0.75
Beryllium	0.28 - 2.10	32 / 56	2.30	SJSBK-SD08-001	0.80	0.56
Cadmium	-- --	56 / 56	29,100	SJBC-SD09-03C	2,595	3,908
Calcium	-- --	56 / 56	49.2	SJSBK-SD09-002	23.5	10.4
Chromium	1.90 - 13.0	32 / 56	32.7	SJS04-SD05-001	8.14	6.36
Cobalt	11.3 - 96.9	41 / 56	137	SJBC-SD18-03C	43.5	29.2
Copper						

BERA Document Design and Layout (con't)

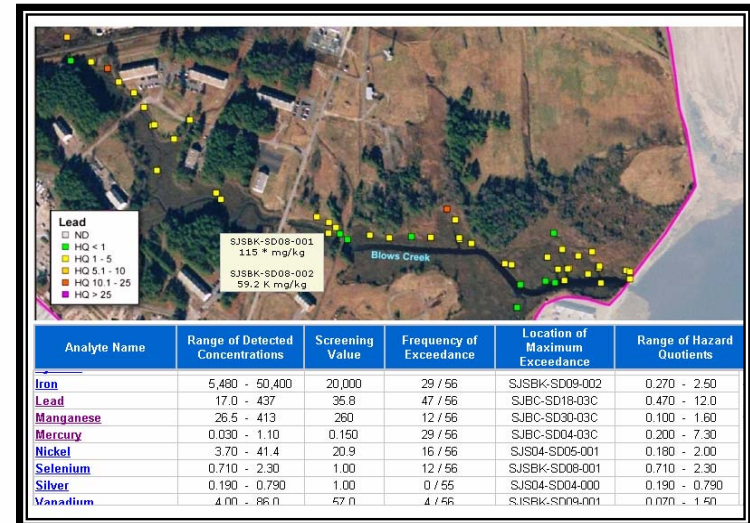


First Tier

Second Tier

Third Tier

- Visually oriented
- Focuses on interactive summary tables and figures with clickable information boxes
- Hyperlinks to third tier and supporting documentation



BERA Document Design and Layout (con't)



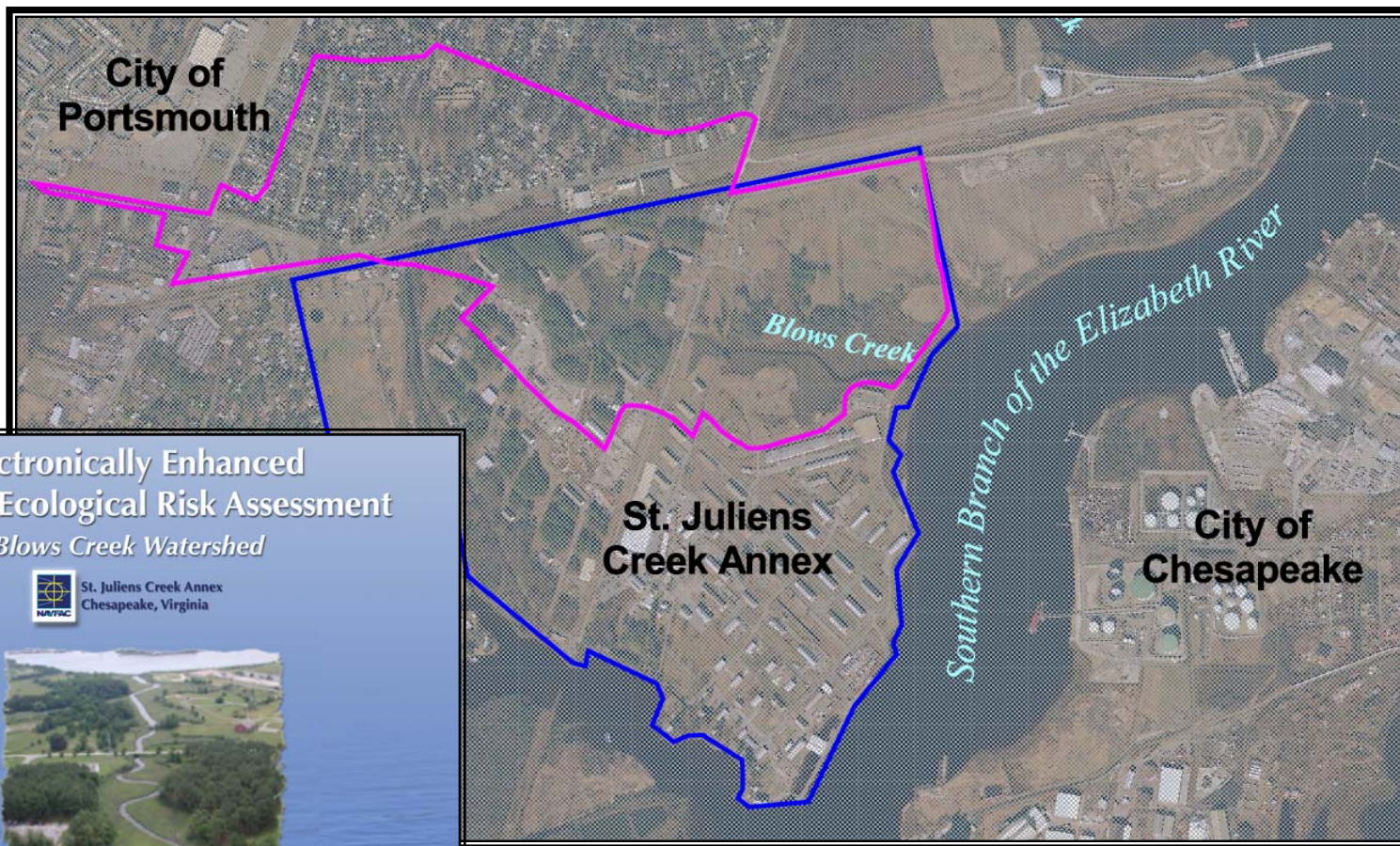
First Tier

Second Tier


Third Tier

- Summary tables and raw data
- Limited interactivity
- Few hyperlinks


BERA Demonstration



**Electronically Enhanced
Baseline Ecological Risk Assessment**
Blows Creek Watershed



St. Juliens Creek Annex
Chesapeake, Virginia



March 2006

The inset image shows the cover of the assessment report. It features a landscape with a body of water, green trees, and a path. The NAVFAC logo is in the top left, and the title and location information are centered. The date "March 2006" is at the bottom right.

Challenges and Solutions



- Non-traditional format and electronic enhancements
 - Engage project teams and regulators early to discuss document format and identify resources to assist with streamlining tools
 - Use freeware and include instructions for use and trouble-shooting
 - Provide easy access to hard copy document
- Hardcopy is stand-alone document that meets regulatory requirements and guidance
 - Electronic enhancements provide easy access to referenced information
 - Interactive document is effective streamlining tool
- iROD - work closely with regulators to identify key information to present in ROD and reference from Administrative Record



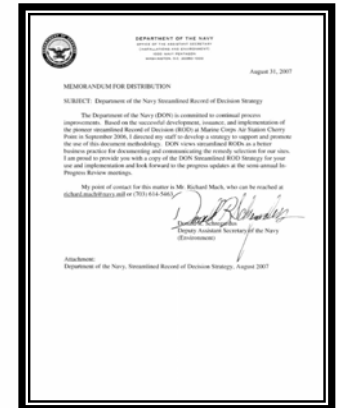
You are viewing an interactive CD of the Record of Decision (ROD) for Operable Unit 6, Site 12, MCAS Cherry Point, North Carolina. **Bold blue text** in the ROD identifies hyperlinks to referenced information from the Administrative Record. The Administrative Record excerpts referenced by the hyperlinks are part of the ROD.

If you do not have Adobe Reader, you can download a free copy by clicking the link in the upper left hand corner of the main page.

Status and Future Applications



- New and improved versions of RODs and BERA have been developed and signed in various formats by regulatory community
- Streamlining tools and electronic enhancements can be applied to a broad range of documents
- Approach can be easily adapted to differing objectives and scopes
- ASN issued ROD Strategy - 31 Aug 07
 - Goals -Standard Format to Document Remedy Selection
 - 50% in FY-09
 - 100% in FY-10 and beyond
 - Applicability
 - All Active and BRAC Environmental Restoration Sites developing RODs
- Desire to migrate and continually improve concept



Questions and Comments

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