ATTACHMENT 4

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Seal Island Gunnery Range
Military Munitions Response Program (MMRP)
Site Inspection (SI)

Technical Project Planning (TPP) Meeting
February 9, 2006
Portland, ME

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Introductions

- Why are we here?
  Achieve ‘Site Closeout’ (as it relates to Munitions and Explosives of Concern (MEC) and Munitions Constituents (MC)), involve stakeholders, etc.
- Name, Organization, Role on the Project, and Expectations of TPP
- Sign in sheet
- Acronyms and other handouts in package

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Agenda

- Introductions
- Overview of the Military Munitions Response Program (MMRP) & Site Inspection (SI) Process
- Overview of the TPP – Systematic & Comprehensive Process
- Site History/Previous Investigations/Proposed Sampling Locations
- Site-Specific Work Plan (WP)
- Data Quality Objectives (DQO)/Screening Criteria
- Schedule
- TPP Worksheets
- TPP Memorandum
- Closing Remarks from the Team/TPP Evaluation Form

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MMRP SI Program

Under Defense Environmental Restoration Program (DERP), USACE is conducting a nationwide effort to identify, manage and prioritize future response actions at Formerly Used Defense Sites (FUDS) where historical documents indicate MEC were used, produced, tested, or stored by the military.

- In 2002, Defense Appropriations Act passed requiring USACE to complete an initial range inventory of MMRP FUDS

This effort included:

- Inventory Project Report (INPR) review
- Archive Search Report (ASR) review
- Locating ranges/range fans and other MMR areas associated with each FUDS
- Results used to populate additional required data fields in a centralized database

USACE to complete over 700 SIs nationwide by FY10

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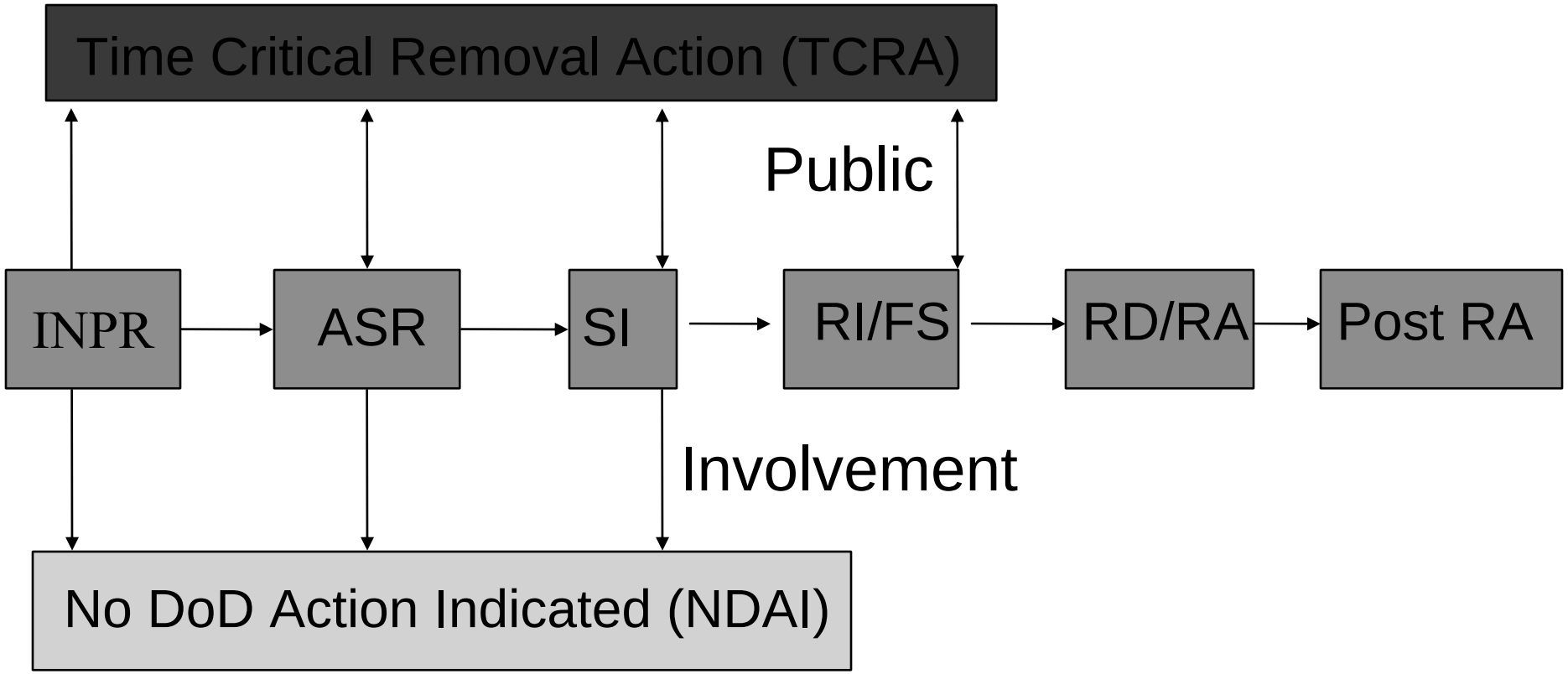
MMRP Response Process



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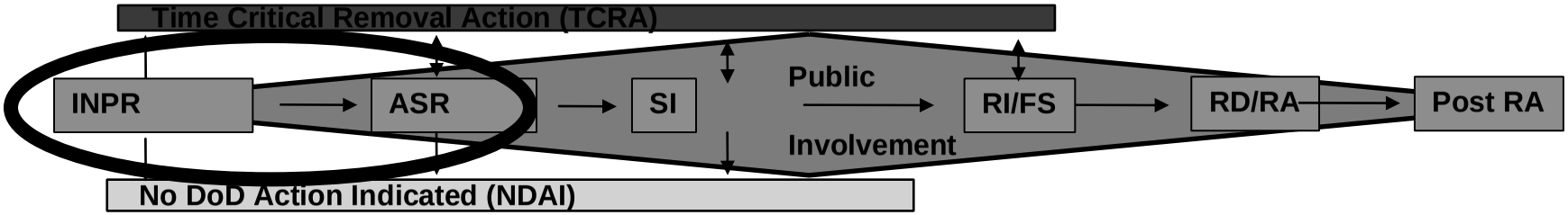
MMRP Response Process



- **Inventory Project Report (INPR) – Completed**
- **Archive Search Report (ASR) – Completed**

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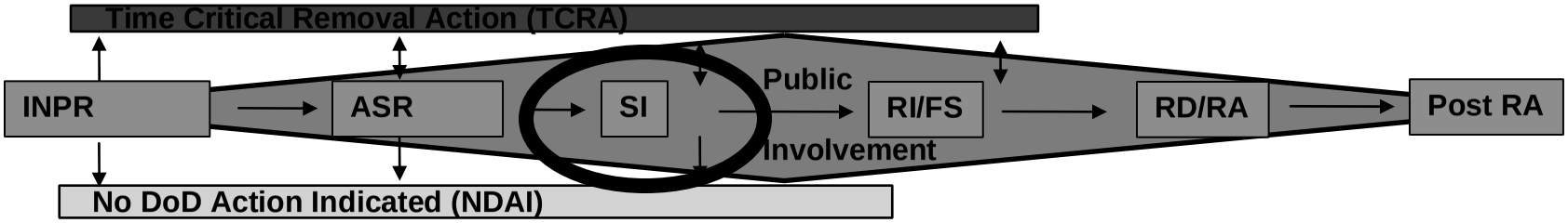
MMRP Response Process



The SI Phase will be completed in 18 months.

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Project Team Composition

**Local USACE District –
New England District**

Other Agencies

**MMRP Design CNTR -
Baltimore District**

Stakeholders

**Admin/Technical
Support**

**MMRP Contractor –
Alion Team**

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MMRP Design Center Responsibilities - Baltimore

- Successful completion of the projects
- Timely submission of all deliverables
- Ensure appropriate coordination between Alion and FUDS geographical district
- Conduct technical reviews of TPP meeting minutes, SI Site-Specific WP, and SI report
- Perform additional project QA/QC
- Conduct oversight of Alion work efforts
- Monthly status reports

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Geographical USACE District Responsibilities – New England District

- Obtain Right of Entry from property owners
- Coordinate and communicate project planning activities with regulators/stakeholders in accordance with the TPP process
- Review/comment on TPP meeting minutes, SI Site-Specific WP, and SI reports and coordinate with regulator/stakeholders for their reviews and comments on TPP meeting minutes, SI Site-Specific WP, and SI report
- Hold public meeting and public involvement activities (if necessary)
- Establish and maintain a permanent project record
- Work with Design Center to monitor planning and execution of SI field work.

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MMRP Contractor - Alion

- Responsible for all contractor MEC/MC related activities
- Responsible for the development of the SI
    - Historical review
    - CSM
    - DQOs
    - Work Plan
    - Fieldwork
    - Reports
- Consult the Army Corps of Engineers during SI activities

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Stakeholder Responsibilities

- Stakeholders provide input throughout the MMRP removal process.
- Voice community concerns
- Review and give input to Technical Project Planning (TPP)
- Review/comment on SI Site-Specific WP and SI report

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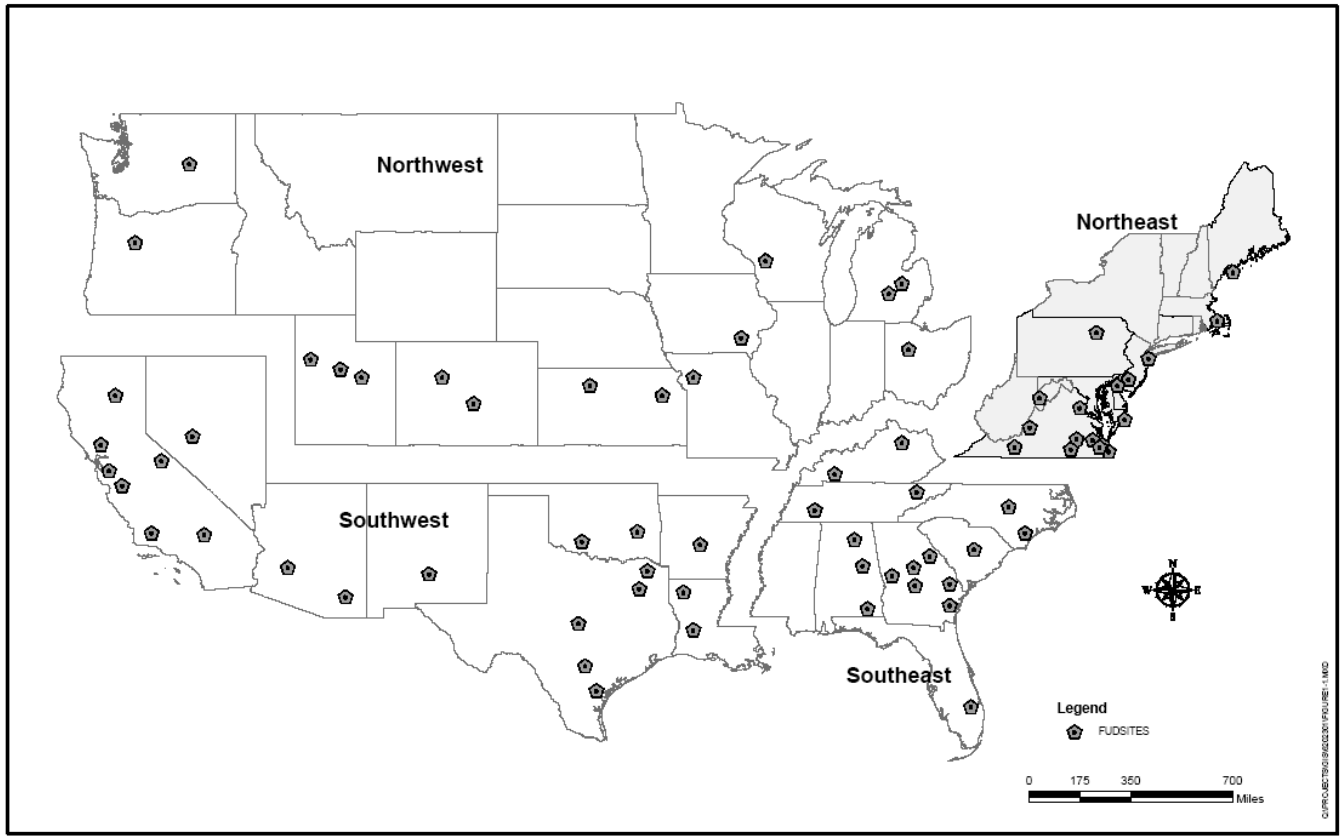
SAMPLE of SI Project Locations



Sample of Site Inspection Project Locations

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SI Objectives

- **NOT** a full-scale study
- Primary Objective:
  - Determine whether site warrants further response action under CERCLA or NDAI
- Secondary Objectives:
  - Confirm the presence of MEC or MC
  - Determine the need for an emergency response action or a TCRA by evaluating data (Historical Documentation, Site Visit, Geophysics)
  - Collect data to characterize site and determine risk
  - Collect data for Hazard Ranking System (HRS)
  - Collect data to complete the Munitions Response Site
  - Priority Protocol (MRSPP)

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General SI Approach for MEC & MC at FUDS

- **The SI will focus on those areas identified through historical documents as having been associated with MEC/MC operations, such as a range, firing point, OB-OD, or burial area (if present)**
- **Additional areas will be included that are identified by the regulators or stakeholders that have evidence of MEC/MC use from DoD activities**
- **Areas of the former installation that do not have historical evidence of MEC/MC activities are not included**

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SI Technical Approach for MEC at FUDS

The MEC portion of the SI will involve some or all of the activities shown below, listed in order of increasing level of effort. Activities will be limited to the most appropriate level of effort possible.

1. **Use of existing data, where available and sufficient, to document the presence or absence of MEC**
2. **If not previously identified, conduct reconnaissance inspection to determine approximate boundaries of project area (this will also confirm areas historically identified as MEC areas of concern)**
3. **Surface inspection only, MEC items are clearly visible on the ground surface**
4. **Magnetometer assisted site reconnaissance; to keep from disturbing unseen MEC items located on the surface or under vegetative cover**

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SI Technical Approach for MC at FUDS

The MC portion of the SI will involve some or all of the activities shown below, listed in order of increasing level of effort. Activities will be limited to the most appropriate level of effort possible.

1. **Use of *existing data*, where available and sufficient, to document the presence or absence of MC**
2. **Collect *composite surface soil samples* at firing points, impact areas, or where contamination is most expected**
3. **Collect *background samples*: for TAL metals in any matrix sampled, only if no previous studies exist for the installation**
4. **Collect *composite sediment samples* in accumulation or high runoff areas**
5. **Collect *surface water samples* in surface water bodies in close proximity to area where contamination is most expected**
6. **Collect *groundwater samples* - use *existing* (monitoring or water supply) *wells* to maximum extent practical**

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SI Technical Approach for MC at FUDS (cont.)

Other Sampling Methods that may be employed if primary methods of MC Data Collection are not appropriate for the site.

7. **Collect *discrete surface soil or sediment samples* in areas of very high concern**
8. **Collect *groundwater samples* - install *new wells***
9. **Collect *discrete subsurface soil samples* - only from new monitoring well borings or areas of very high concern**
10. **Collect surface water samples - only in impoundment areas where high levels of explosives could accumulate**

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Technical Project Planning (TPP) - Overview

- Purpose/Objective
  - Develop a plan to achieve site closeout for MMRP (plan will address Munitions and Explosives of Concern as well as Munitions Constituents)
  - Involve stakeholders in project decision making/work plan development
  - Systematically address complex issues
- Spirit
  - “Structured brainstorming”

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TPP Overview (cont.)

- **TPP Structure; TPP is a four phase process**

  - **Phase I - Identify the project.**
    (90% of TPP effort)

    Describe the situation

    Develop the CSM

  - **Phase 2 - Determine data needs.**

    What *do* we know?

    What *don't* we know?

  - **Phase 3 - Develop data collection options.**
  - **Phase 4 - Finalize data collection program.**

    How best to get the information we need?

(Phases 3 & 4 mostly pre-defined for MMRP projects.)

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TPP – Overview (cont.)

- Key TPP Products
  - **Understanding of Stakeholder Concerns**
    - Identifying stakeholders and their special interests, identifying competing interests (if any), and determining key issues (“hot buttons”)
  - **Develop the Project Goal/site closeout statement**
    - Overall SI Project Goal is to determine what additional action(s) are necessary to closeout the MMRP project (emergency response action, time critical removal action (TCRA), remedial investigation (RI), or NDAI)
  - **Develop Conceptual Site Model (CSM)**
    - Identify potential sources, pathways, and receptors

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TPP – Overview (cont.)

- **Key TPP Products (cont.)**
  - **Develop Data Quality Objectives (DQOs)**
    - Identify criteria that a data collection program should satisfy (including numbers of samples/measurements to collect; decision error rates, QA/QC requirements, and screening criteria
  - **Develop Project Objectives/Data needs to reach project goal**
    - Issues to be resolved prior to achieving project goal of site closeout (may include future land use, evaluating regulatory requirements [Endangered Species Act, wetlands, National Historic Preservation Act, Coastal Zone Management Act], ongoing investigations, right of entry, and site accessibility issues)
  - **Probable Remedies**
    - Defined in site closeout statement (emergency removal, TCRA, RI or NDAI)
  - **Actions needed for site closeout**
    - Conduct SI or present existing data (Desktop SI)

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TPP – Overview (cont.)

- Process culminates with a memorandum of meeting minutes (TPP Memorandum)

- Signing the final TPP meeting memorandum does not signify agreement with any or all items discussed, only that it is an accurate record of what was discussed at this meeting.

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TPP Team Members

- Identified Stakeholders
  - Government agencies/regulators
    (e.g., USACE, USEPA, MEDEP)
  - Property owner – U.S. Fish and Wildlife
- Other potential stakeholders
  - Public interest groups
  - User groups & community interests
  - Local, State & Federal elected officials
  - External technical resources (technical experts)

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Phase I – Identify the Project: Seal Island

- Currently part of the Maine Costal Islands National Wildlife Refuge
- 23 Miles east of Rockland, ME
- 1 Mile long and 100 to 300 yards wide
- Total FUDS (eligible area) = 65 acres
- Primarily rocky coastline with a grassy interior
- Only one small known source of fresh water

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Seal Island Installation Map

- Island (65 acres)
  - Bombing Range
  - Rocket Range
- Surrounding Waters
  - Not part of the SI process

Taken from the Supplemental Archive Search Report (ASR)

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Site History

- First used by US DoD in the 1940's under lease
  - Bombing target
  - Used practice bombs and rockets
- 1956 Plans to construct a target and helicopter landing pad developed
- 1957 DoD assumed ownership of site
  - Continued to use as bombing target until 1966
  - Conducted 3 day disposal operation (not fully cleared)
- FUDS property transferred ownership in 1972
  - U.S. Fish and Wildlife Services
  - Part of Maine's Coastal Islands Wildlife Refuge
- 1978 Fire burned underbrush and detonated buried MEC causing several explosions

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Previous Investigations

- Visual Ordnance Survey (1983)
  - Navy EOD team covered 55% of the island and discovered one intact 8-inch round
- Range Clearance (1984)
  - Navy EOD team performed limited range clearance on the eastern side (pathways from boat landing site to cabin, underwater survey 50 feet out from the shore from boat landing area)
  - Rocky areas determined safe, but grassy areas may still contain MEC hazards
- PA (1987)
  - Conducted for EPA by private contractor
  - Concluded primary hazards are potentially explosive conditions due to live military ordnance
  - Recommended further investigation under DERP FUDS

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Previous Investigations (cont.)

- INPR (1988)
  - FDE concluded the site consisted of 65 eligible acres
  - Identified MEC as a potential hazard
    - Project # D01ME003201
- Stakeholder Island Sweep (2001)
  - Sweep of island performed by USFW, MEDEP, ME Police to determine MEC present
  - Discovered several pieces of MEC (100 lb practice bomb debris, and 5-inch rocket debris)
- ASR (2003)
  - Historical evidence suggests the use of practice bombs and rockets during the WWII era and from 1958 to late 1960s
  - ASR cited Seal Island has a confirmed ordnance presence
    - 1978 when island caught fire several explosions occurred
    - Island has been swept several times for MEC (1967, 1983, 1984, 2001)
  - SI team was unable to visit site due to adverse weather conditions and utilized historical reports from previous investigations
- Supplemental ASR (2004)
  - Assigned Seal Island an overall RAC score of 3

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Development of the Conceptual Site Model (CSM)

- **Definition of CSM -** *A simple model of the relationships between contaminants at a site and the potential exposure pathways to human health or the environment.*
  - The CSM serves as the basis for developing a comprehensive approach for addressing response actions based on existing knowledge.

- **Examples of Exposure Pathways**
  - MEC becomes exposed by stream bank erosion; may be contacted by visitors
  - Buried MEC may be in new gas pipeline corridor; construction crews may contact
  - Visitors/site workers may encounter MEC at the surface
  - Lead contaminated soil (MC) at range backstops may become airborne

- **Evaluate available data to develop the CSM**

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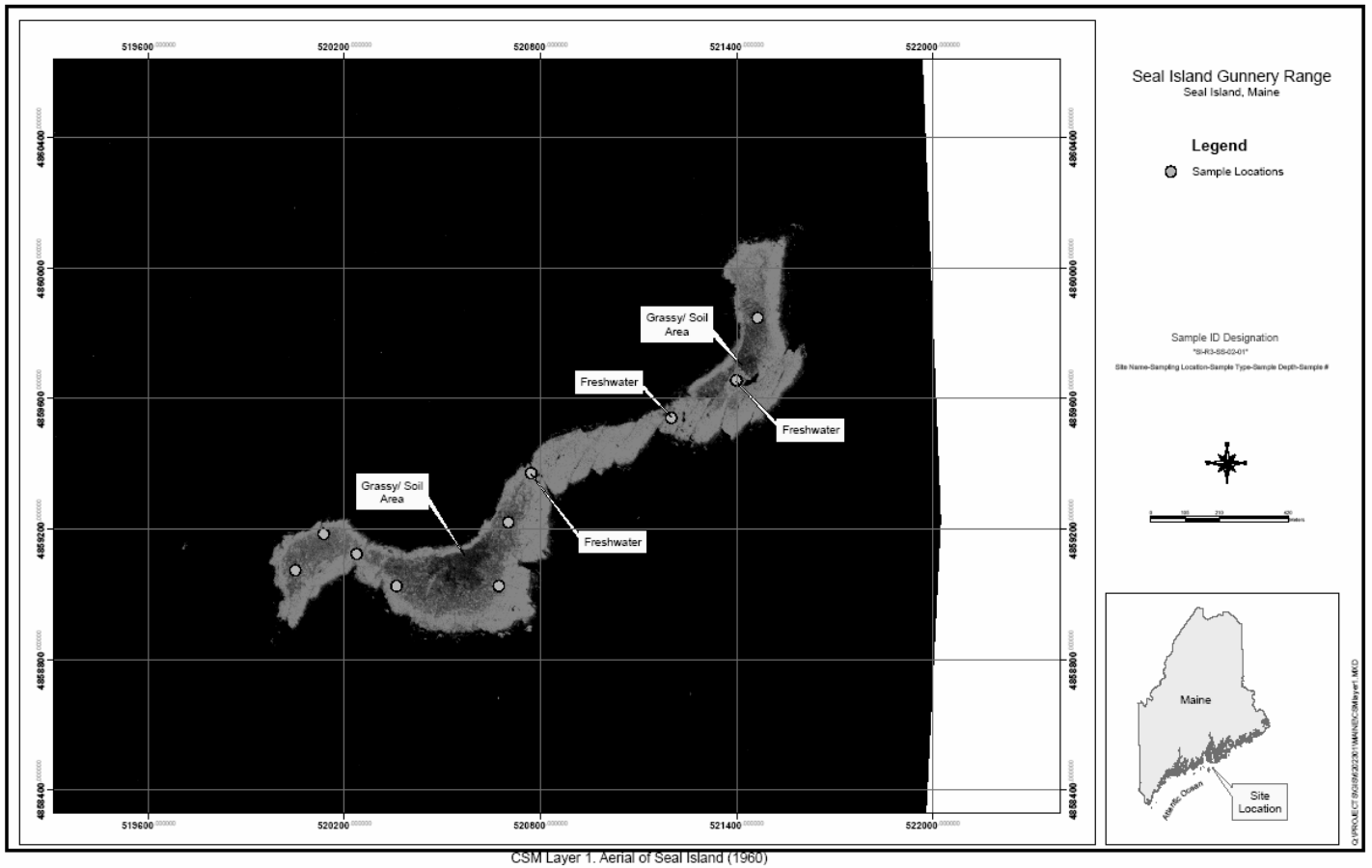
CSM Layer – Aerial (1960)



CSM Layer 1. Aerial of Seal Island (1960)
I-1

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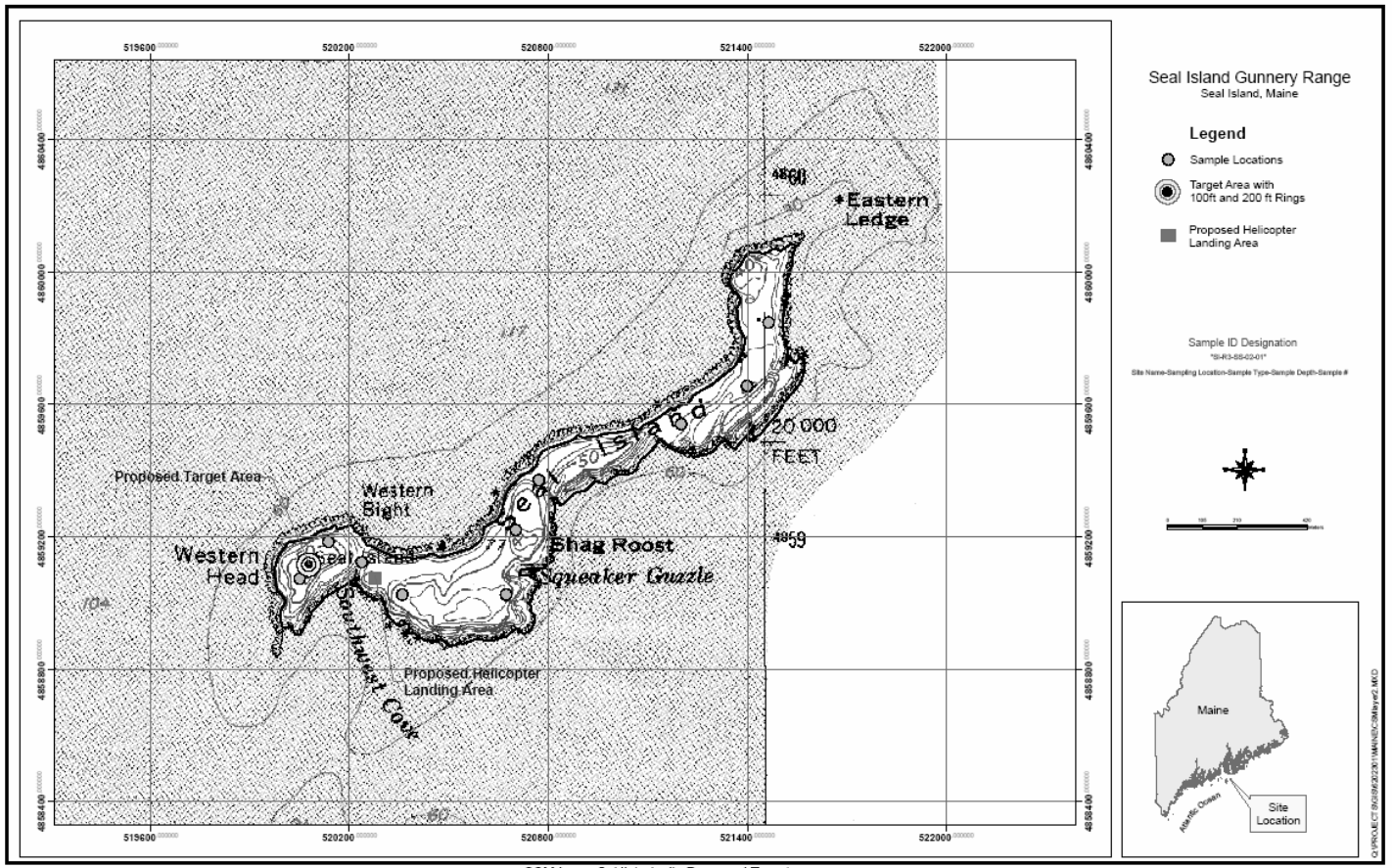
CSM Layer - Historically Proposed Target



CSM Layer 2. Historically Proposed Target
B.2-2

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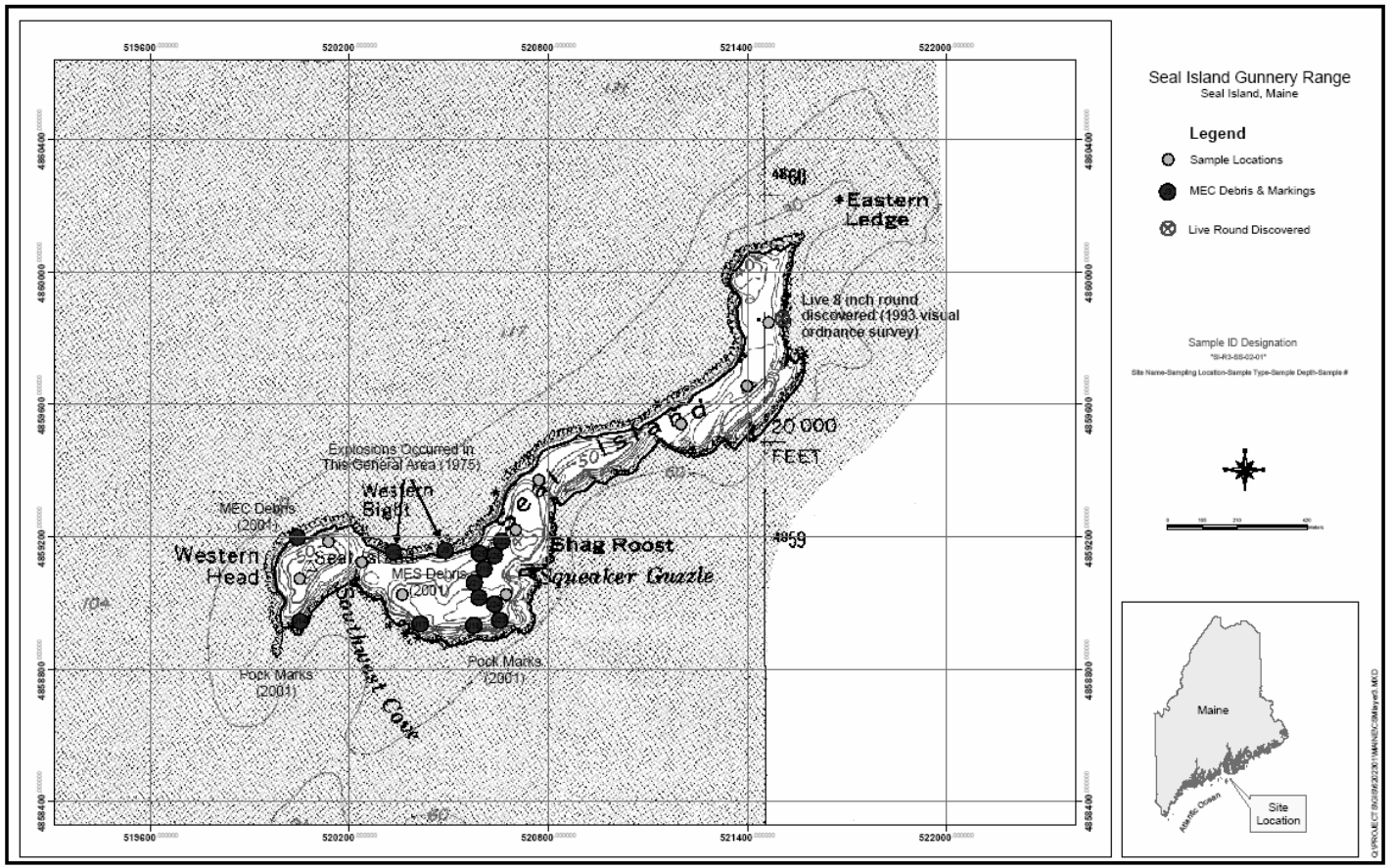
CSM Layer - MEC Remnants, Markings and Events



CSM Layer 3. MEC Remnants, Markings, and Events
B.2-3

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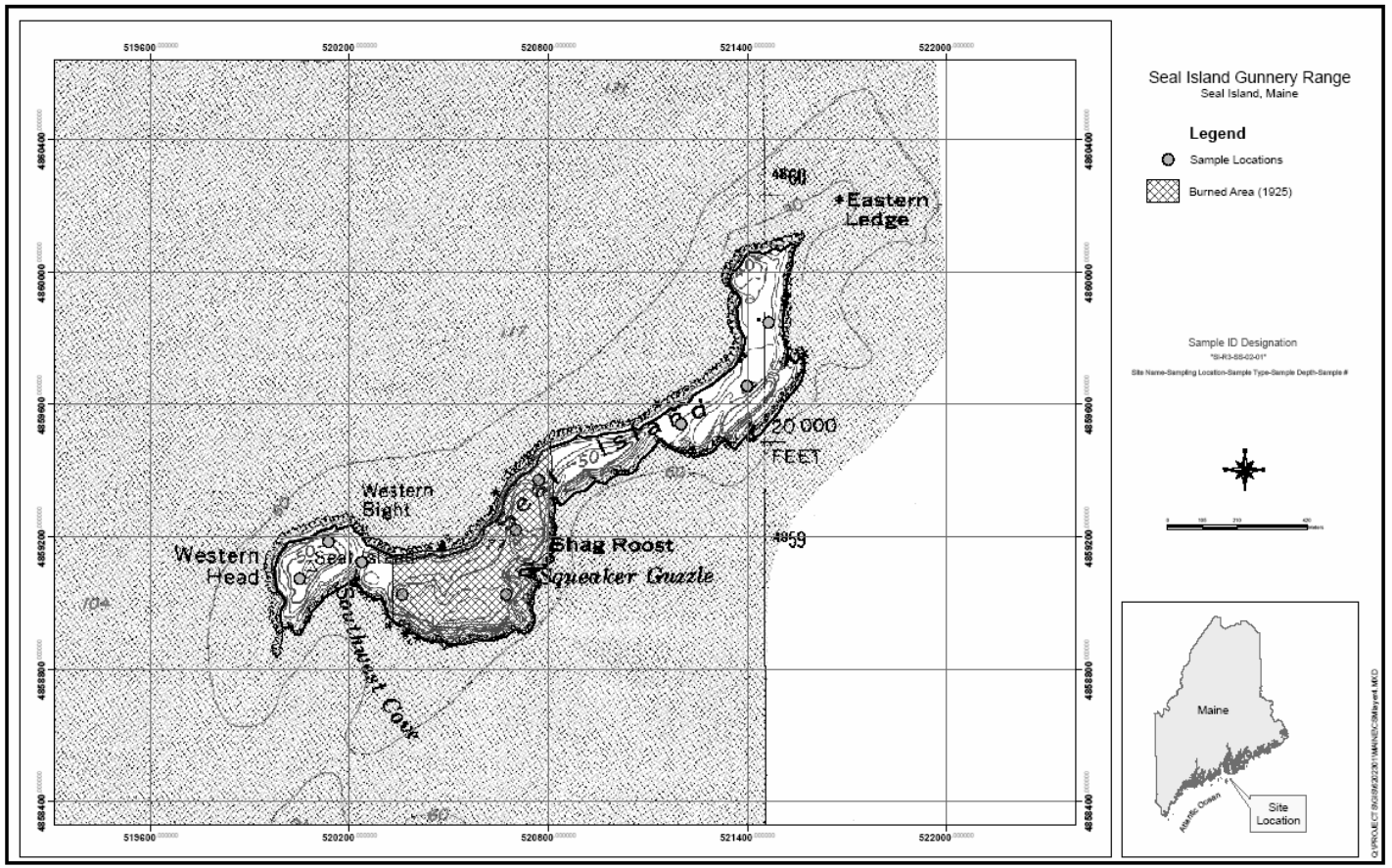
CSM Layer - Area Burned During 1978 Fire



CSM Layer 4. Burned Area (1925)
B.2-4

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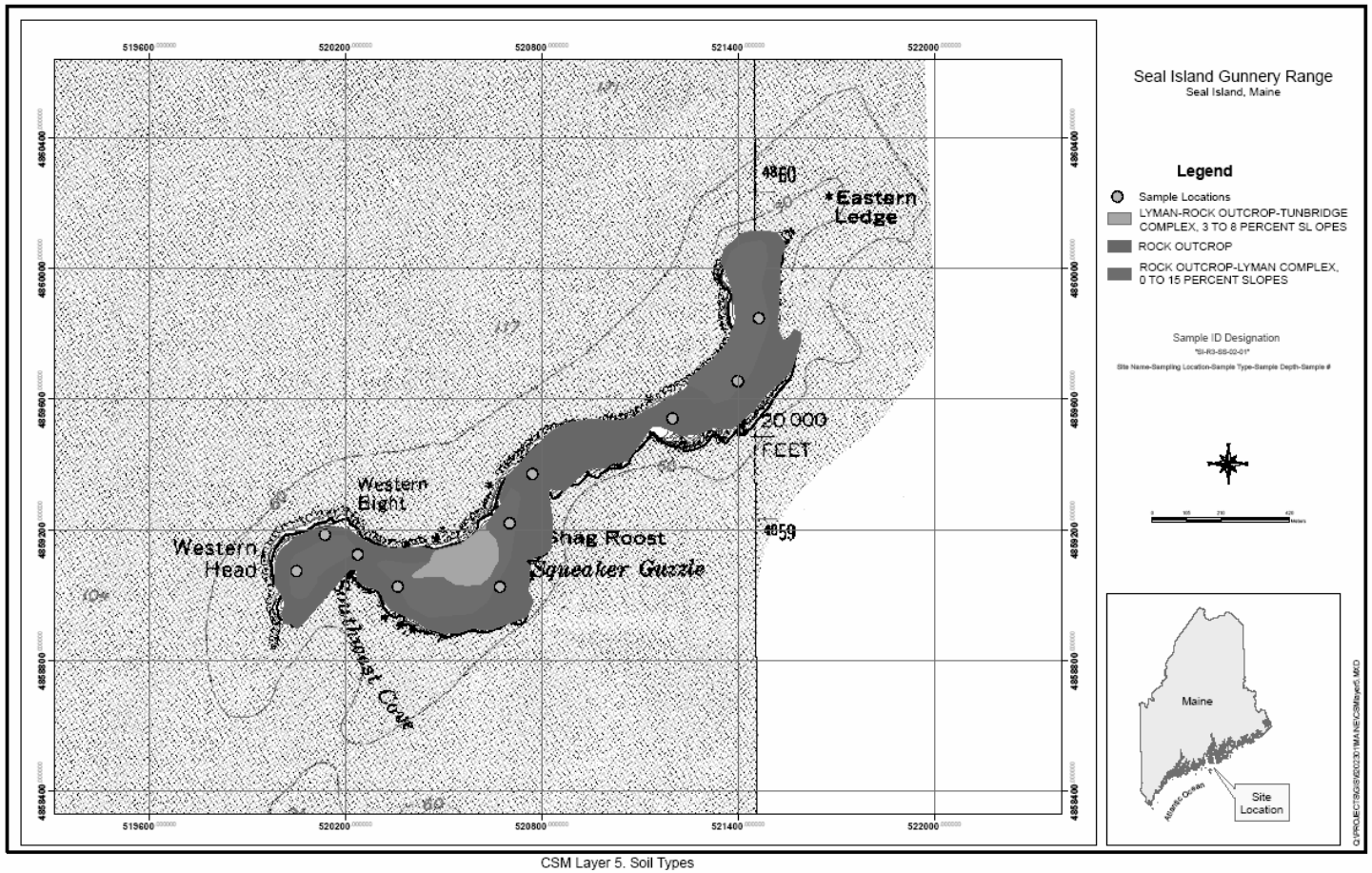
CSM Layer - Soil Types



CSM Layer 5. Soil Types
B.2-5

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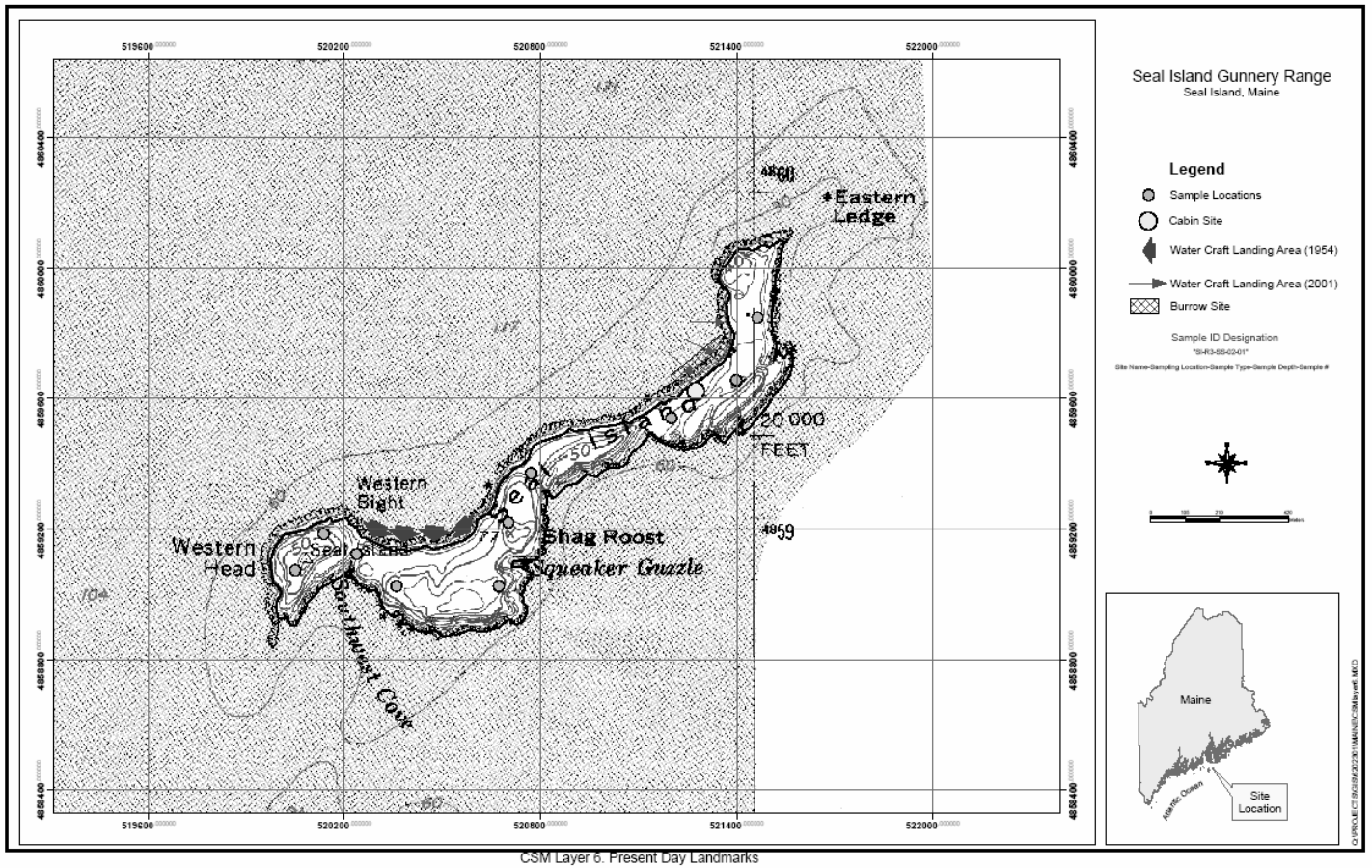
CSM Layer 6 - Present Day Landmarks



CSM Layer 6. Present Day Landmarks
B.2-6

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Summary of MEC, Type, and Composition

Site Name	Range Name	Acreage	RAC	Types of Munitions	Munitions ID
Seal Island Gunnery Range		12,424	3	Conventional	Practice Bombs; HE Large Caliber (37 MM and larger); Practice Aerial Rockets
	Bombing Range	649	3	Conventional	Practice Bombs; Practice Aerial Rockets
	Rocket Range	12,424	3	Conventional	Practice Bombs; HE Large Caliber (37 MM and larger); Practice Aerial Rockets

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Preliminary Summary of Risk from MEC

SITE NAME	RANGE NAME	SUBRANGE NAME	ACREAGE	RAC SCORE	TYPE OF MUNITIONS	MUNITIONS ID
Seal Island Gunnery Range	Range Complex No. 1		12,424	3	Conventional	Practice Bombs; Practice Aerial Rockets, HE Rockets
		Bombing Range	649	3	Conventional	Practice Bombs; Practice Aerial Rockets
		Rocket Range	12,424	3	Conventional	Practice Bombs; Practice Aerial Rockets, HE Rockets

[1]RAC scores are as reported in 2004 Supplemental ASR.

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Summary of Munitions

- **The following slides are intended to provide background information by giving examples of the general types of MEC associated with Seal Island. The MEC are grouped into the following categories:**
  - **100 lb Practice Bomb, Mk 15**
  - **2.25-inch Practice Rocket**

- **Potential contaminants associated with these type of MEC include metals and explosives.**

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Practice Bombs (i.e. 100 lb Mk15)

- Used in horizontal or dive-bombing practice
- Over-all length=41.2 inches
- Body Diameter=8.0 inches
- Fin Dimension=11.24 inches
- Weight=100 pounds
- Potential contaminants – Metals, Explosives

100-lb Practice Bomb Mk15

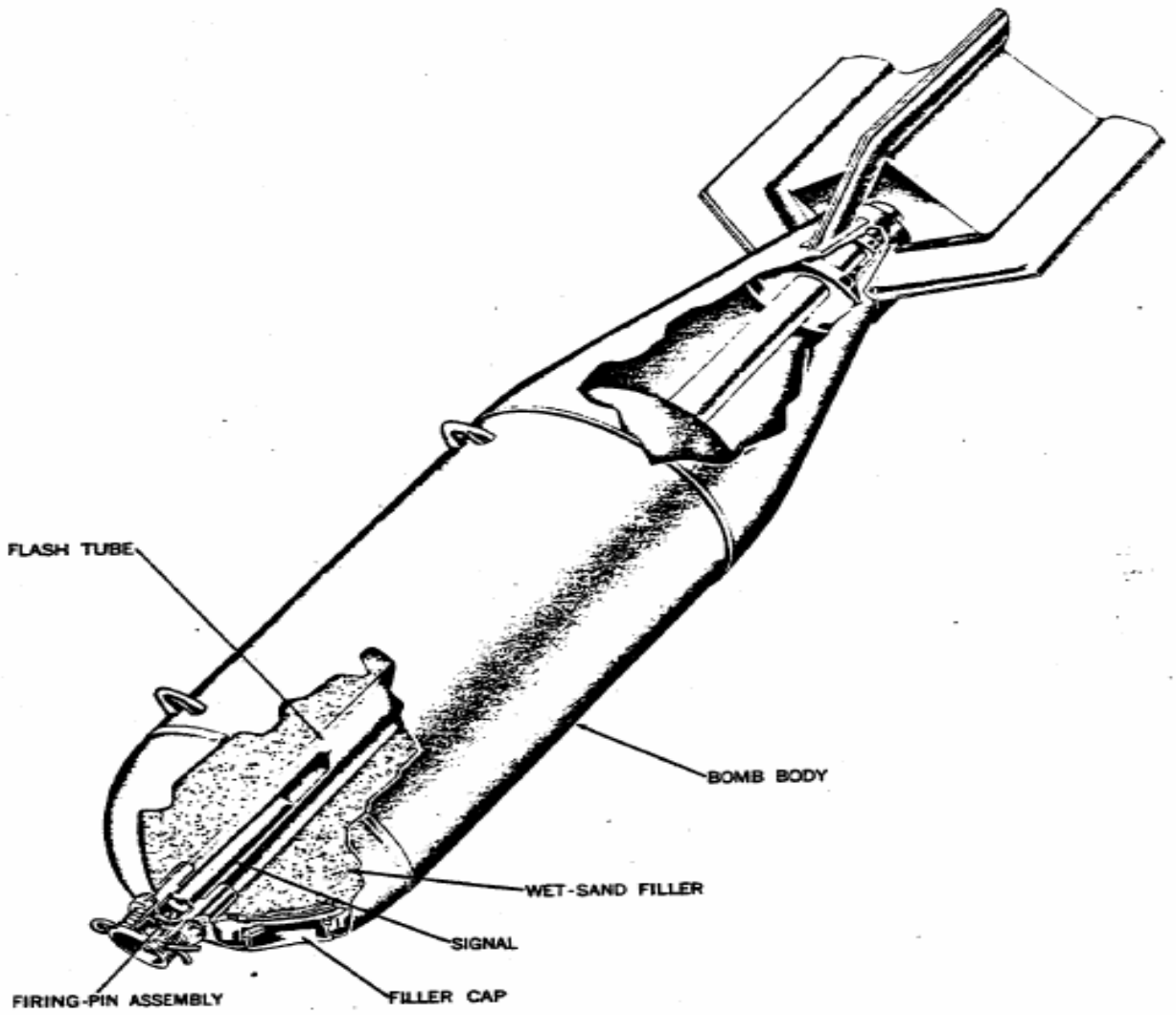

Figure 11–19.—100-lb Practice Bomb Mk 15 Mod 4, Cutaway View.

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Practice Aerial Rockets

- Used for practice firing against surface targets
- The heads are solid steel, zinc die cast, or cast iron and contain no fuses
- Weight = 12.47 pounds
- Diameter of Body = 2.25 inches
- Length = 29.07 inches
- Potential contaminants – Metals, Explosives

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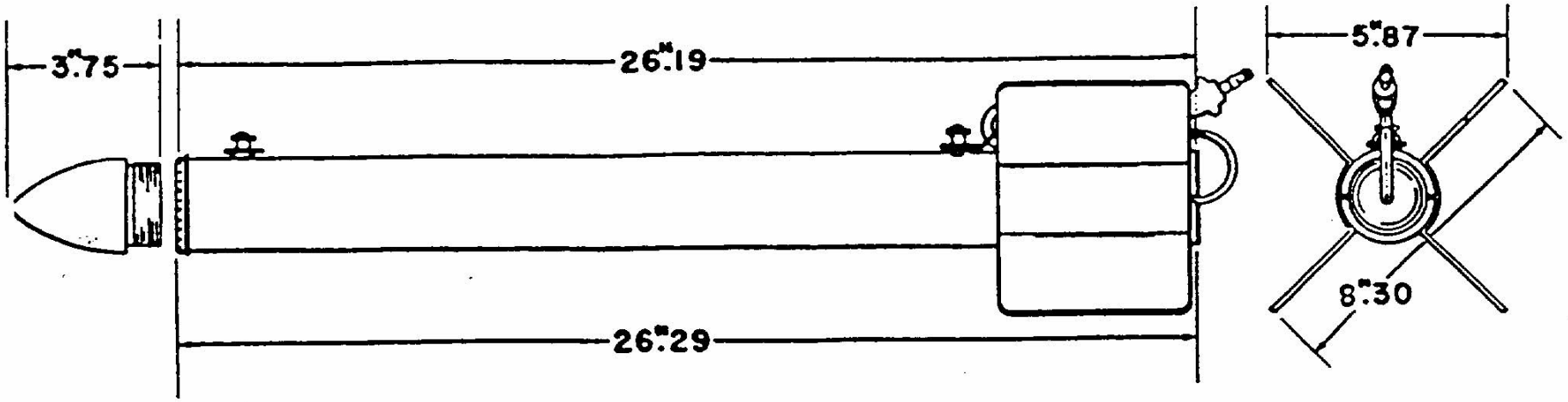
2.25-Inch Practice Rocket



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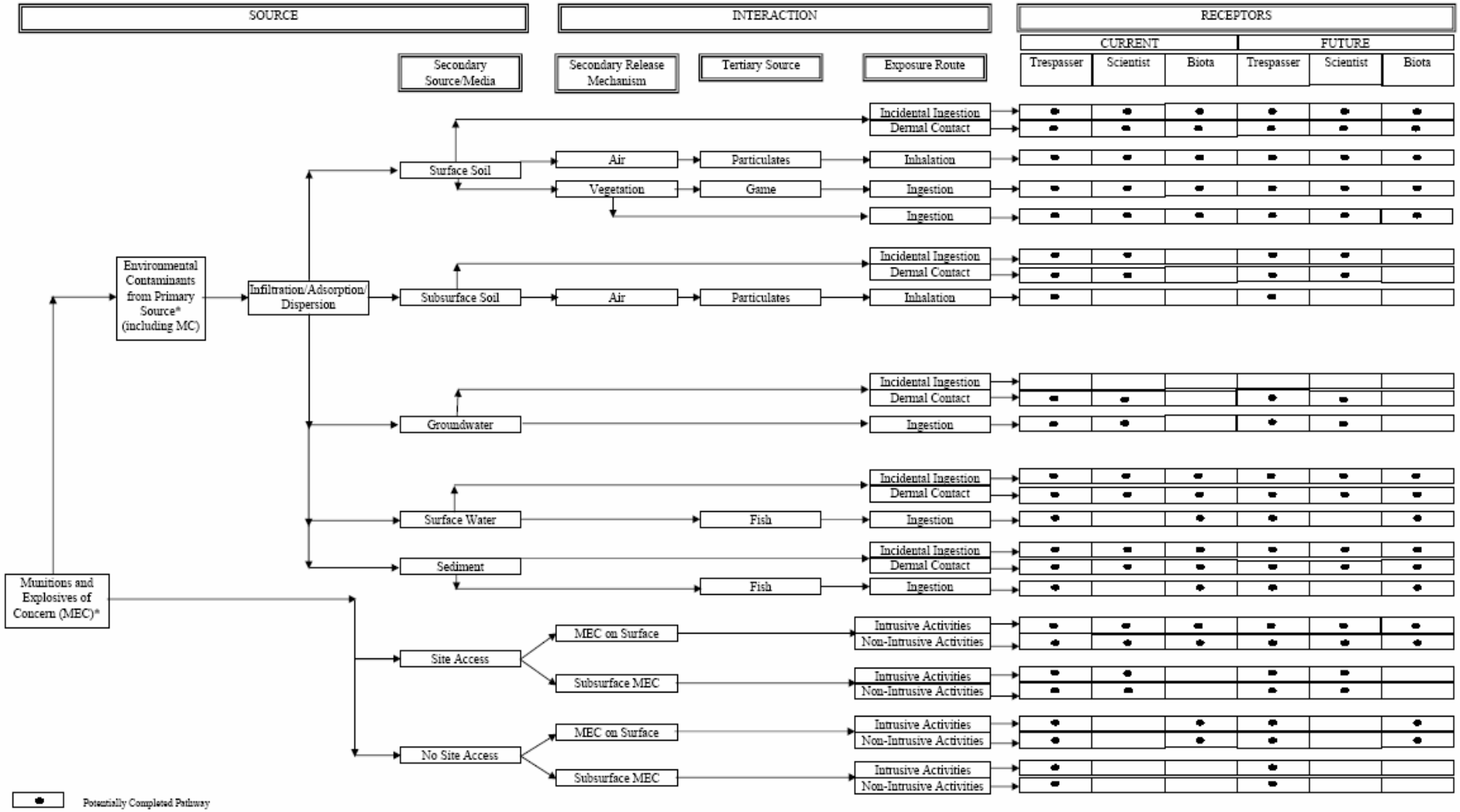
CSM Formulation

- **Identify Sources**
  - **Determine presence/absence of MEC and MC**
- **Identify Likely Pathways/Route of Interaction**
  - **MEC: direct contact**
  - **MC: dermal contact, ingestion, inhalation**
- **Identify Receptors**
  - **Typical receptors include recreational users, trespassers, construction workers, site workers, and biota**
- **Determine relationships between potential contaminants at a site and potential exposure pathways to human health or the environment (completed pathway versus incomplete pathway).**

Draft CSM



Impact to sediment may also occur from surface soil via runoff of particulates.
A separate risk for surface soil and subsurface soil may be combined to represent risk from total soil for some receptors.
Impact to surface water may also occur from infiltration of groundwater.
*Primary sources will vary by site but are expected to include open burn/open detonation areas, disposal/burial areas, impact areas, and firing areas, etc.

DRAFT INTEGRATED CONCEPTUAL SITE MODEL FOR THE SEAL ISLAND MMRP FUDS SITE

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Summary of Draft Integrated CSM for Seal Island

- **Source(s)**
  - **MEC:** Potential exists for exposure to MEC since MEC debris has been previously found on the surface
  - **MC:** Potential presence of MC due to past use of the site; therefore, potential exists for receptors to be exposed to MC
- **Pathway/Interaction**
  - Surface soil, sediment, and surface water are potential exposure media
- **Receptor(s)**
  - Researchers/Scientists, biota, and trespassers are potential receptors

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Phase 2 – Determine Data Needs

- Inventory existing data
  - Determine if the data is useable
- Determine if there are additional data needs
  - Are contaminant levels known?
  - Are additional samples necessary?
  - Is there existing background sample data available?
  - Is digital geophysics necessary?
  - Has additional MEC been found at the site since the ASR?

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Existing Data/Data Needs

- **Existing Data**
  - **MEC related discoveries**
- **Data Gaps**
  - **No existing chemical data (MC data) has been found to date by the SI Team**
  - **Site-specific background data for MC not identified**
  - **No additional MEC discoveries known since ASR**
- **Additional samples/data gathering is necessary**

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Areas for Further Investigation

- Determined by historical events and Archive Search Research (ASR)

- Target Area
- Regions where MEC debris was discovered
- Regions where land is deformed
- Low lying areas that accumulate run-off
- Pools of water

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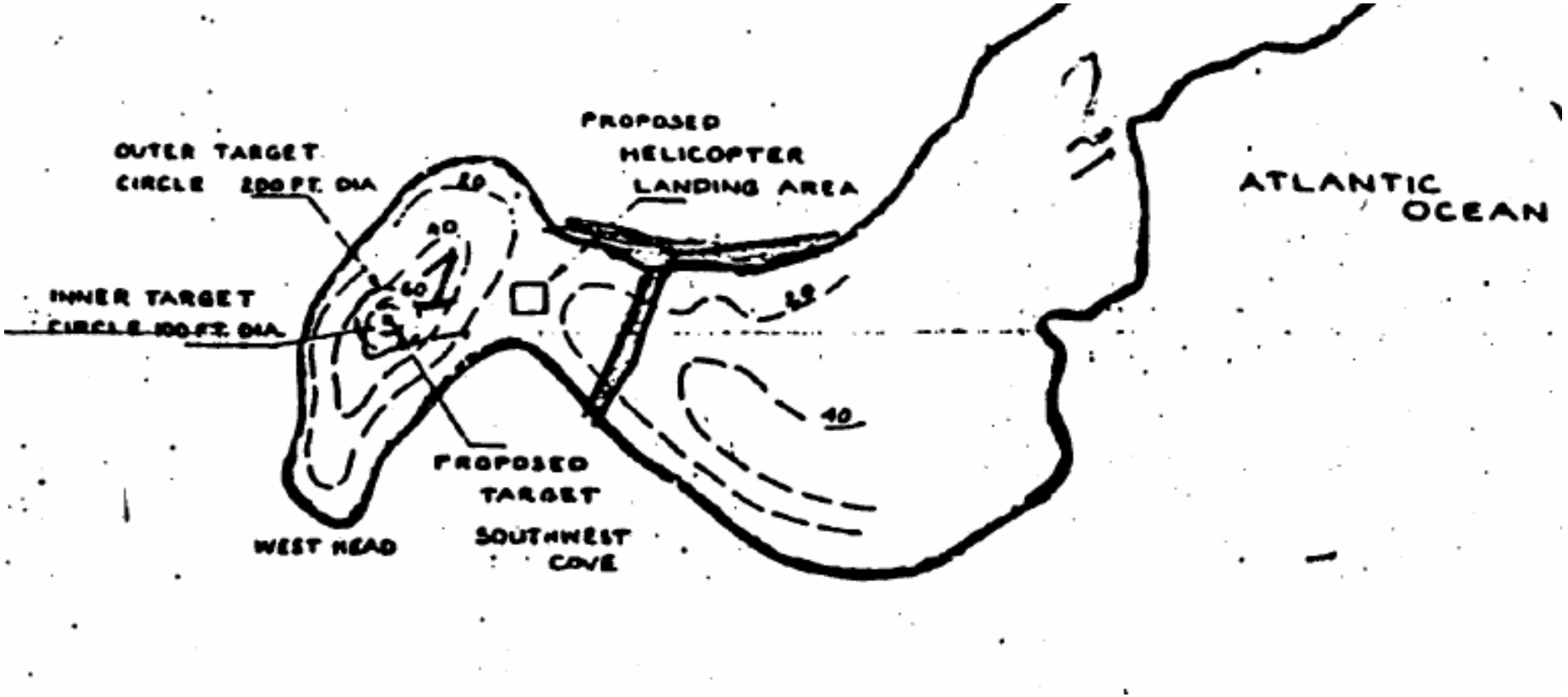
Areas for Further Investigation
(Proposed Historical Target)



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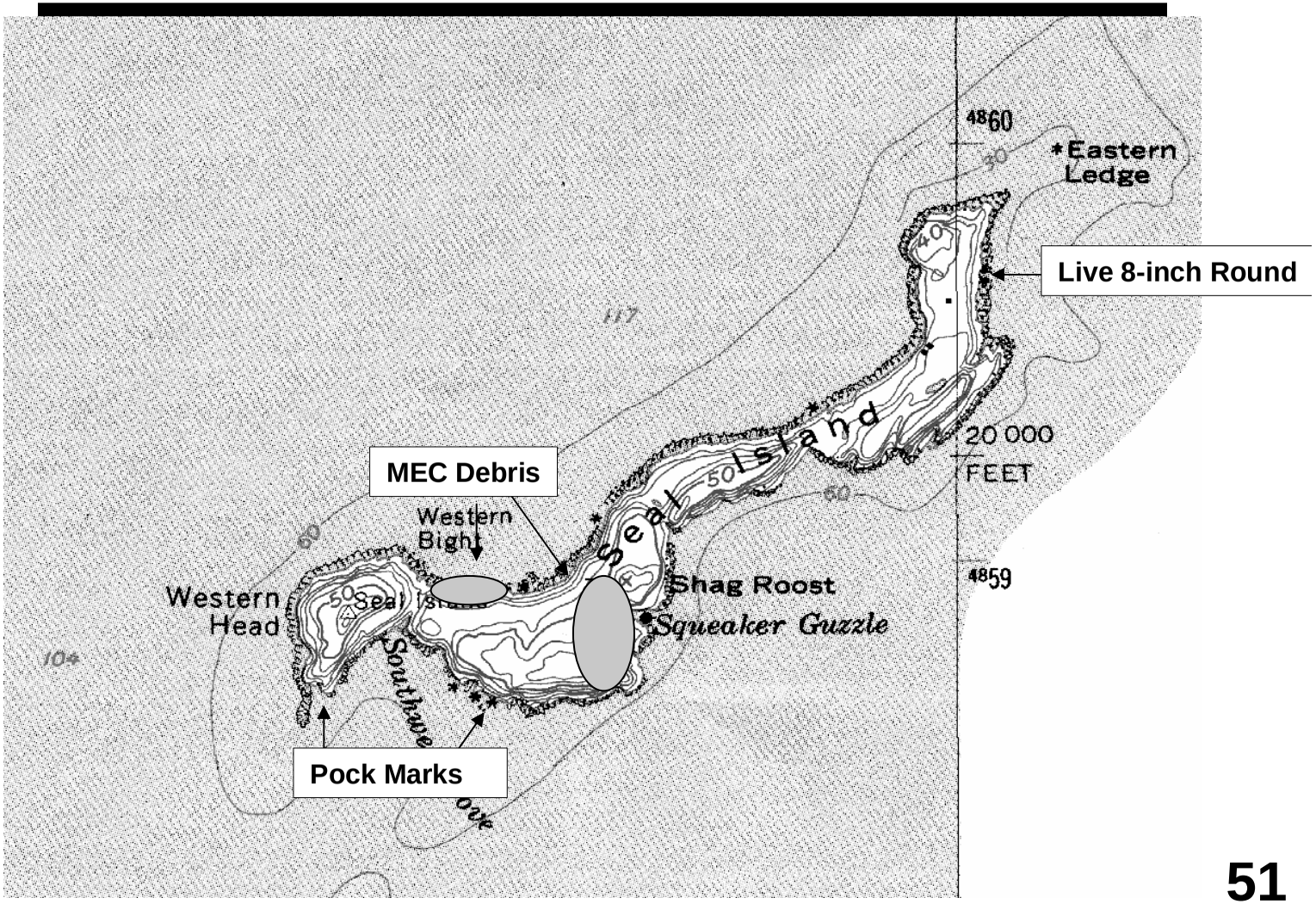
Areas for Further Investigation
(MEC Debris/Markings)



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Phase 3 - Data Collection Options

- **Sampling and analysis approach**
  - **Fill in data needs identified in Phase 2**
  - **Fulfill project objectives**
  - **Consider site conditions**
  - **Balances precision and accuracy vs. goal of SI program of collecting the appropriate amount of data**

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Proposed Sampling

Range	Soil Sample*	Sediment Sample*	Surface Water Sample*
Seal Island	6	3	3

***Analyzed for metals and explosives**

3 Background Samples will be collected and analyzed for metals

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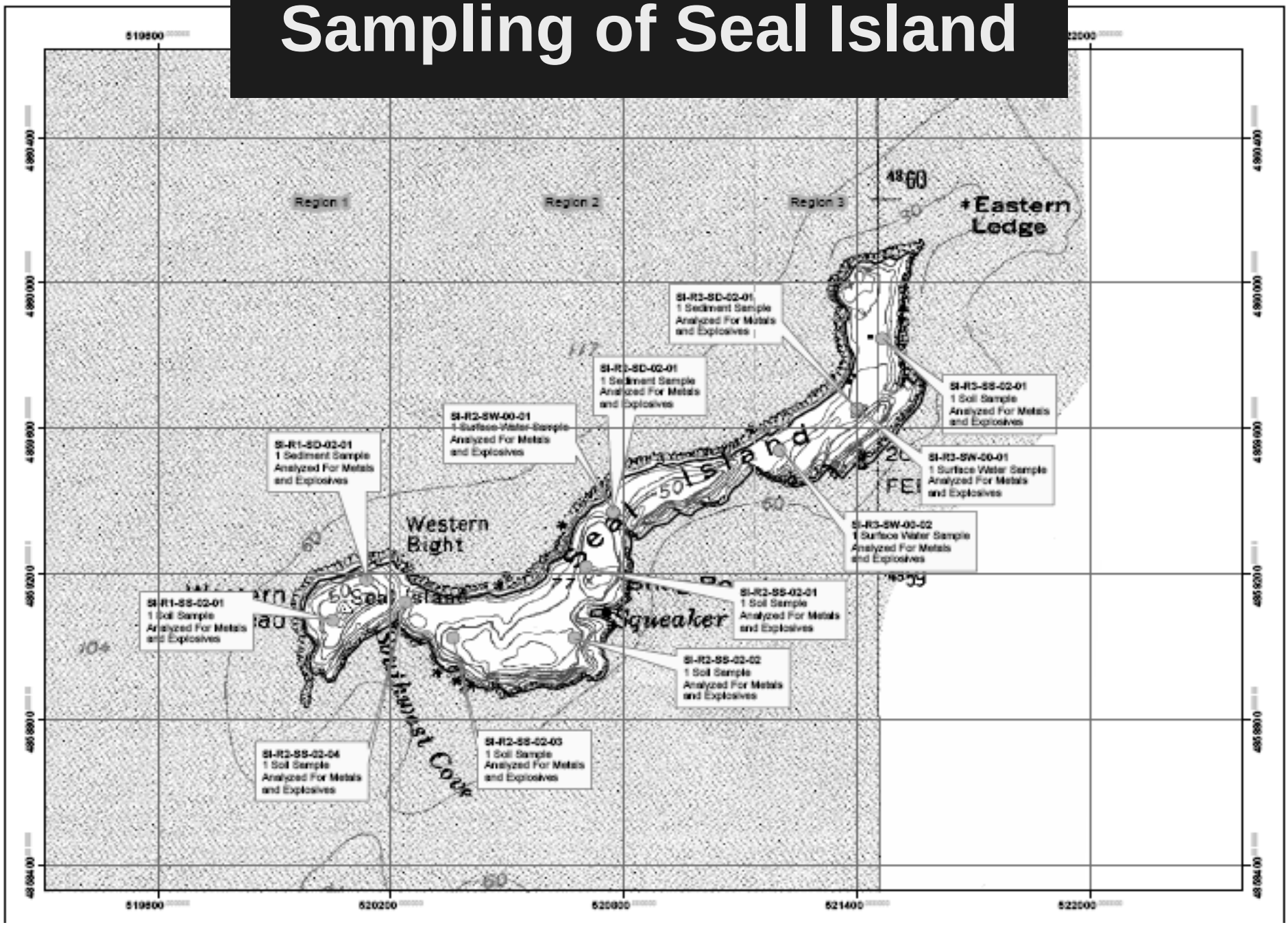
Selection of Sample Locations

- ALL of Seal Island was used as a target. Samples were spaced to capture a COMPLETE picture of the island, focusing on suspect areas.

- Region 1
  - Soil Sample (1) Near Proposed Historical Target
  - Sediment Sample (1) Near Proposed Historical Target, in low region
- Region 2
  - Soil Samples (4) Near MEC Debris and Pock Marks
  - Sediment Sample (1) in low region
  - Sample All Major Surface Water (1)
- Region 3
  - Soil Sample (1) Near Location of Live 8-inch Round, low and level region
  - Sediment Sample (1) in low region
  - Sample All Major Surface Water (2)

Sampling of Seal Island



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Phase 4 - Finalize Data Collection Program

- **Phase 4 ties back into Phase I**
  - **Data Quality Objectives (DQOs) – in package**
  - **Relates data needs to sampling program and project objectives**
  - **Provides assurance that decisions are well supported with the right data obtained in the correct manner**

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Data Quality Objectives (DQOs)

- MEC- Collect the number of valid data points necessary to adequately assess the presence or absence of MEC using data collected by others if available.
- MC- Collect the number of samples necessary to adequately assess the presence or absence of MC.
- Employ approved laboratory procedures and methods along with data validation procedures to ensure sampling data can be used for its intended purpose.
- Evaluate results of the data collection activities to address whether the site warrants further response action or NDAI.

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DQOs (cont.)

- EPA Region IX and MEDEP PRGs have been identified for screening against sampling data (included as handout)

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The Path Forward

- Schedule
- Complete TPP Worksheets as a group
- Prepare TPP Memorandum
  - Capture what was discussed in TPP
  - Update project schedule (as per TPP)
  - Identify action items
  - TPP memorandum reviewed by Team Members and comments provided for Alion response
  - TPP memorandum finalized and signed by select stakeholders/Team Members (concurrence on what was discussed; does not signify agreement)

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The Path Forward (cont.)

- Draft Site-Specific WP needs to be reviewed by Stakeholders, revised, and submitted to Stakeholders for response concurrence.
- Site-Specific Work Plan needs to be finalized before sampling.
- Status of Access Agreements (concurrent with TPP Memorandum and Site-Specific WP review).
- Closing Remarks.
- TPP Evaluation Form completed by all participants.

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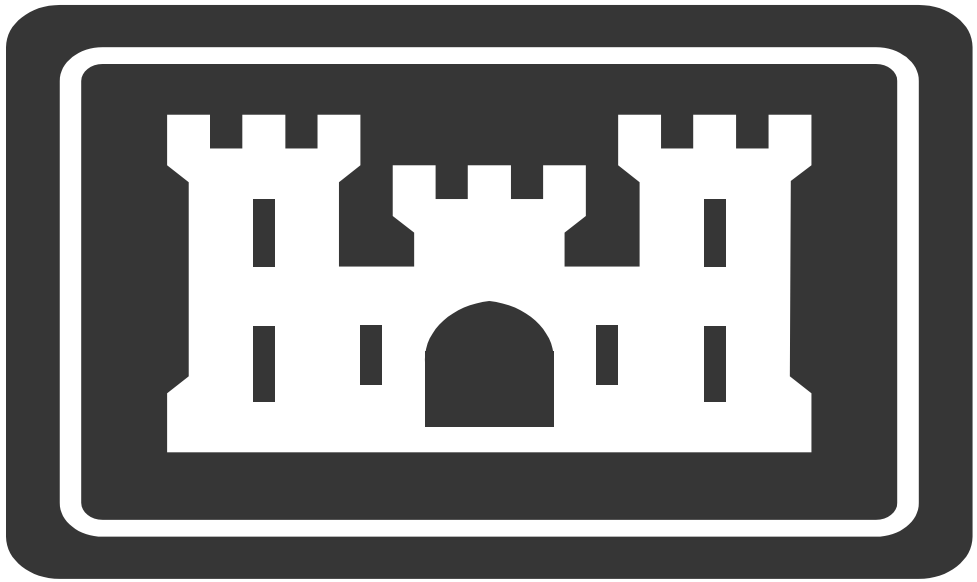
TPP Worksheet Completion



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