ENVIRONMENTAL REQUIREMENTS FOR NEW AND EXPANDING INDUSTRY

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for:

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ENVIRONMENTAL LAWS, RULES AND REGULATIONS DIRECTLY EFFECTING FACILITY LOCATION

- Clean Air Act (CAA) and Amendments
- Clean Water Act (CWA)/Federal Water Pollution Control Act
- Resource Conservation Recovery Act (RCRA)
- Comprehensive Environmental Response, Compensation, Liability Act (CERCLA) amended by Superfund Amendments & Reauthorization Act (SARA)
CLEAN AIR ACT (CAA)

- Established National Ambient Air Quality Standards (NAAQS)
- Identified attainment/non-attainment areas throughout country
- Air pollutants
  - Carbon monoxide (vehicle exhaust)
  - Sulphur dioxide
  - Ozone (smog)
  - Particulate matter
  - Lead
  - Nitrogen oxides
- Mobile Sources
- Air Toxics
  - 189 identified toxics
- Enforcement
  - Company officer must certify application data
  - Civil or criminal enforcement
CLEAN WATER ACT (CWA)

- Controls discharges of pollutants into waters of U.S.
  - Non-point sources (golf courses, agriculture)
  - Specific point sources (direct & indirect discharges from production facilities)

- Types of Pollutants
  - Toxic (priority): best available treatment (BAT)
  - Conventional: best conventional treatment (BCT)
  - Non-conventional: best available treatment (BAT)

State water quality standards may require further specific technology controls.

- Direct Discharge into U.S. Waters
  - National permit discharge emission source (NPDES)

- Indirect sources
  - Discharge into publicly-owned treatment works
  - Pre-treatment standards limit type of pollutants
  - Enforced through states and local government
RESOURCE CONSERVATION & RECOVERY ACT (RCRA)

- **Subtitle C:** Hazardous Waste
- **Subtitle D:** Solid Waste
- **Subtitle I:** Underground Storage Tanks
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION & LIABILITY ACT (CERCLA)
Amended by the SUPERFUND AMENDMENT & RE-AUTHORIZATION ACT (SARA)

■ Created multi-billion dollar fund designed to respond to the release of hazardous substances caused by abandoned facilities and sites

■ Cleanup responsibility
- EPA from the fund
- Potentially responsible party (PRP)
  ✓ Current & past owners/operators
  ✓ Transporters
  ✓ Mortgagees/financiers
  ✓ Generators (persons arranging for transport) (RI/FS)

■ Phases of Cleaning
- Phase I: Remedial investigation/feasibility study
  ✓ Assessment of nature and risk based on site testing (RI)
  ✓ Engineering study of potential remedies
- Phase II: EPA reviews and decides on the final remedy
- Phase III & IV: Remedial design and remedial action
- Phase V: After cleanup operations and maintenance action

■ Action
- EPA can unilaterally enforce PRPs to perform cleanup
- PRPs should try to work cost allocation
STEPS IN THE FACILITY LOCATION PROCESS

1. Formulation of Objectives
2. Defining the Area of Search
3. Screening of Communities
4. Field Investigations
5. Recommendations
6. Implementation
1. FORMULATION OF OBJECTIVES

- **Strategy**

- **Definition of Facility**
  - Employment levels & skill requirements
  - Utility and fuel requirements
  - Site and building requirements
  - Supplier and service requirements
  - Raw material sources and markets
  - Environmental issues

- **Subjective Factors**
  - Proximity to major airport
  - Training capability of work force
  - Company culture
PROJECT SPECIFICATIONS (ABBREVIATED)

- **Labor**
  - Professional: 80
  - Skilled Trades: 114
  - Semi-Skilled: 575
  - Unskilled: 12
  - TOTAL: 781

- **Labor Requirements**
  - Plant near vocational/technical school
  - Work force must be multi-skilled, flexible and self-directed and thrive in a participative management environment

- **Utilities (per month)**
  - Electric Power
    - Demand: 10,000 KW
    - Energy: 5,000,000 KWH
  - Process Gas: 30,000 mcf
  - Water (millions of gallons): 5.0
  - Sewer (millions of gallons): 3.9

- **Environmental**
  - Require an air attainment area
  - Not willing to use a septic or private sanitary disposal system
  - At full production the characteristics of the waste water are likely to be:
    - BODS: 70-1750 mg/l  pH: 6.9-9.2
    - COD: 280-8200 mg/l  Lead: 0.05-0.5 mg/l
    - TSS: 24-350 mg/l  Zinc: up to 4.8 mg/l
    - O/G: 38-91 mg/l  TTO: 29-433 UG/1
  - Require an area with adequate land fill capacity. The plant will generate the following wastes: omitted
The new plant will generate the following air pollutants:

- **Particulate**: boiler, mixing, spraying, finishing, maintenance
- **Odor**: fabric treatment oven
- **VOC**: building, spraying, finishing, maintenance

- **Estimated Air Emissions**
  - VOC: 194.5 tons/year
  - Particulate: 81.4
  - Carbon Monoxide: 29.6
  - Sulfur Dioxide: 227.4
  - Nitrogen Oxides: 117.0

### Transportation

- To be further analyzed when narrowed to six or eight finalist communities
  - Inbound Shipments: ~ 16 to 20 trucks per day
  - Outbound Shipments: ~ 20 to 25 trucks per day
- **Other**:
  - **Highway**: Desire to be within 20 to 30 miles of an interstate highway
  - **Air Service**: Ready access to a good airport. Desire access to general aviation facility
  - **Rail**: Three to five cars per day (polymers, carbon block)

### Building/Site Description

- **Site**: 160 - 300 acres
  - Prefer square or rectangular shape
  - Load bearing capacity of 3500 psf
  - Must have rail access
  - Attractive image
  - No previous onerous environmental uses
  - Prefer stand alone

### Investment Summary

- $100 million plus
2. DEFINING THE AREA OF SEARCH

- **Strategic Thrust**

- **Geographic Analysis of the Market**
  - Distribution network
  - Competitive positioning
  - Determine outbound freight costs from representative locations

- **Geographic Analysis of Suppliers**
  - Present
  - Potential
  - Determine inbound freight costs

- **Preliminary Estimates of Labor Costs Developed on Subregional Basis**

- **Environmental Constraints**
  - State laws versus company objectives
  - Ease of permitting
  - Existing business evaluation
  - Stream flows
  - Water temperatures
  - Deep wells

- **Key Subjective Factors**
  - Quality of state training programs
  - Business climate
  - Right-to-work
3. SCREENING COMMUNITIES

- Operating Cost Factors
  - Labor
  - Transportation
  - Occupancy
  - Utilities
  - Taxes

- Operating Condition Factors
  - Environmental, Air
    ✓ Attainment
    ✓ Non-attainment: available offsets
  - Environmental, Water
    ✓ Municipal treatment
    ✓ Pretreatment
    ✓ Direct discharge
  - Labor Characteristics
  - Transportation Facilities

- Living Condition Factors
  - Cost of living
  - Recreational and cultural facilities
  - Health Care
  - Housing

- Site/Building Availability
ATTAINMENT VERSUS NON-ATTAINMENT

- Six categories of pollutants
  - Ozone
  - Carbon monoxide
  - Sulphur dioxide
  - Nitrogen oxide
  - Lead
  - Particulate matter

- Metropolitan Area Categorization
  - Nearly all non-attainment
    ✓ Most for ozone
    ✓ 40% for carbon monoxide
    ✓ 70% for particulate matter

- 1990 Amendments Have Significantly Tightened Requirements

- VOC
  - Under old law--40 tons per year
  - Now--10 to 25 tons

- OZONE
  - Under old law--100 tons per year
  - Now--25 to 50 tons

- Must search for offsets--1 to 1 or greater

- Must comb country for latest technology

- Oil toxics (arsenic, ethylene, etc.)
  - 90% reduction through MACT (Maximum Achievable Control Technology)
4. FIELD INVESTIGATION

- **Site/Building Inspection**
  - Phase I ESA
  - Indemnification/Innocent Purchaser Defense Fund
  - Cost

- **Community Leadership Interviews**
  - Mayor
  - Bankers

- **Local Employers**
  - Plant manager
  - Personnel manager

- **Service Representative Interviews**
  - State and local pollution authorities
  - Educators
  - Employment Service
  - Assessor
  - Water and sewer director
Transaction Screen Standard Practice (Greenfield Sites)

- Can be performed by non-environmental professional but questionnaire is technical.

- Elements
  - Interviews with site owners and occupants
  - Observations during site visit
  - Reviews of government records

PHASE I – Standard Practice

- Elements
  - Records review
  - Site reconnaissance
  - Interviews with key personnel (e.g., owners, occupants, and government officials)
  - Narrative report including professional opinion about the recognized environmental conditions of the property
ESA SCOPE OF WORK

Phase I Checklist

- Site Descriptive Features
- Surrounding Land Use
- Visual Site Inspection
- Fill or Dumping On-Site
- Septic Systems/Ponds/Sumps
- Site Discharges
- Chemical Inventory
- Storage Tanks
- PCB Containing Device
- Asbestos
- Radiation
- Records/Photographs
5. RECOMMENDATIONS

Identify Two or Three Final Candidate Locations

- Negotiate incentives
  ✓ Facility financing
  ✓ Tax abatement
    - Local tax abatement of pollution control equipment
  ✓ Land acquisition
  ✓ Training
  ✓ Infrastructure assistance
    - Extension of water and sewer lines
    - Expansion/modification of municipal treatment plant
  ✓ Employee relocation

- Balance operating costs and operating conditions with quality of life

- Finalize cost numbers after factoring grants, incentives and inducements

- Determine appropriate relocation costs

- Show paybacks for each finalist location