

# Uncontrolled Hazardous Substance Decision Document

Decision Document for: Portland Bangor Waste Oil Company,  
Ellsworth Site

Date prepared: January 6, 2009

Preparation Coordinated by: Wayne Paradis, Project Manager

Purpose: to document rationale and decisions made regarding remedial activities, cleanup standards, and other related relevant activities. This is not intended to be a comprehensive report on the subject site; for more detailed information refer to the project file.

## I. Site Name, Location and Description of Site

### SITE NAME

The Portland Bangor Waste Oil Company, Ellsworth (PBWO Ellsworth) or Robbins Property was once owned and operated by George West, Jr. (now deceased) of the Portland Bangor Waste Oil Company (PBWOC).

### PROPERTY LOCATION AND OWNERSHIP

The property is located at 318 Bangor Road in the Town of Ellsworth, Hancock County, Maine. A deed describing the property is recorded in the Hancock County Registry of Deeds in Book 3123 at Page 123, and Town Tax Maps depict it as Map 49, Lot 3. The property is currently owned by the Maine Department of Environmental Protection (MEDEP), who acquired the property from Mrs. Sundae Robbins in 2001.

### SITE DESCRIPTION

The subject property consists of a diamond-shaped parcel totaling 0.92 acres of residential zone land. The parcel is set approximately 450 feet off Bangor Road (U.S. Route 1A) and is served with a deeded right of way over land of others. A locus plan is presented as **Figure 1**.

A majority of the Site is earthen and gravel-filled open land surrounded by woodlands. Prior to remedial activities, a vacant residential building that contained approximately 850+ square feet of living space and a detached shed were present on the property. The Site residence was serviced by an on-site private water supply well and septic system (tank and leachfield). A general Site Plan is provided as **Figure 2**.

## **II. Brief Site History (include enforcement related activities)**

George West, Jr. (d.b.a. Portland Bangor Waste Oil Company) owned and operated a waste oil collection and storage facility at the Site from 1963 until 1980. The company received quantities of waste oil from military bases, auto dealerships, municipalities, local garages, industries, and utility companies. A review of historical drivers' logs and other information indicated that over 95,000 gallons of waste oil and other potentially hazardous liquids were delivered and stored at the Site.

The waste oil was stored in five or six 2,000-gallon storage tanks. The tanks were reported to be partially buried. Once the oil settled in the storage tanks it became stratified. PBWOC decanted the lighter oil and sold it for various uses, including to paper mills as a fuel supplement. PBWOC sold the heavier oils to towns and race tracks as a dust suppressant for dirt roads. During facility operations waste oils were spilled, leaked or otherwise deposited onto the ground.

## **III. Brief Summary of Site Actions to Date**

In March 1992, the MEDEP completed a Screening Site Inspection (SIP) Report for the Robbins Property. A final SIP was completed on December 2, 1994. The MEDEP also completed a Source Investigation Report in January 1997, a Source Area Remedial Alternatives Memo in February 1997, and a Preliminary Soil Pre-Remedial Goals Memo in July 1997. Remedial investigation activities took place in October 1997 and July 1998. On May 18, 2000, a Remedial Investigation Update was prepared.

Additional subsurface investigations that focused on the deep overburden aquifer and the bedrock aquifer at the Site were conducted in May, June, and July 2000.

Based on the results of the subsurface investigations conducted by the MEDEP, the Site's overburden soils were found to contain hazardous substances including Light Non-Aqueous Phase Liquids (LNAPL) and Dense Non-Aqueous Phase Liquids (DNAPL) comprised of chlorinated and non-chlorinated hydrocarbons. A thin layer of floating LNAPL was present on the perched water table within the source area, and DNAPL was found to be present in the soils at the contact between the sand and gravel and the underlying clayey silt unit.

The Non-Aqueous Phase Liquids (NAPLs) are suspected of contributing to the dissolved phase contamination present in nearby bedrock water supplies, including the Boggy Brook Regional Vocational Center (BBRVC), now known as the Hancock County Technical Center. In addition, a soil sample from within the source area exhibited exceedances of the Resource

Conservation and Recovery Act (RCRA) Toxicity Characteristic Leaching Procedure (TCLP) maximum concentration for toxicity for perchloroethene (PCE) (i.e., leachable toxic concentrations of PCE were identified within the soil samples analyzed).

Groundwater samples taken from the site bedrock well in 1990 indicated the presence of a significant volatile organic compound (VOC) plume in the area. The MEDEP analyzed neighboring bedrock water supplies for the presence of VOCs. Three private water supplies and one public water supply (BBRVC) had positive detections of VOCs.

In 1991, the MEDEP placed granular activated carbon filters on the Robbins well, the three residences, and the BBRVC water supply. MEDEP implemented an operations, maintenance, and monitoring program for the filtration systems.

#### **IV. Selected Remedial Action(s) - Source Area**

In 2001, MEDEP conducted a Feasibility Study (FS) to identify, evaluate, and select a preferred remedial action to eliminate or mitigate the threats posed by the on-site contaminated soil, which provided a continuing source of groundwater contamination, ingestion risk, and dermal risk. The FS identified several alternatives which were eventually narrowed to:

- Alternative #1 - No Action
- Alternative #2 - Excavation and On-site Treatment
- Alternative #3 - Excavation and Off-Site Disposal

It is standard practice to include a No Action alternative as the baseline alternative. Alternatives #2 and #3 were similar in costs. MEDEP ultimately chose Alternative #3 as it provided the highest degree of permanence.

In 2002 MEDEP put the remedial action out to bid. Following a state approved bid review and selection process, DEP awarded the project to GZA, GeoEnvironmental Technologies, Inc. (GZA), of Portland, ME.

GZA was contracted by the MEDEP in October 2002 to conduct limited removal actions identified in the FS, primarily consisting of the removal and off-Site disposal of previously identified contaminated soils impacted by waste oil and waste oil constituents (i.e., PCE).

In cooperation with the MEDEP, GZA and its subcontractors conducted the limited removal action between October and December 2002.

## V. Source Clean-Up Standard(s) and How Determined

The objective of the remedial action program was to remediate waste oil-impacted soils from within previously identified source areas at the Site that exceeded a Site-specific, MEDEP-established, soil cleanup standard of 1.0 milligram per kilogram (mg/kg) (approximately equivalent parts per million [ppm]) for PCE. Factors considered in making this decision were:

1. MEDEP Remedial Action Guidelines (RAGs) for Soils identified 3.0 mg/kg of PCE as meeting the Residential Guideline protective of incidental ingestion, skin contact and vapor intrusion.
2. MEDEP RAGs identified 0.6 mg/kg as the default groundwater protection standard.
3. Clean up to 1.0 ppm PCE would be effective in reducing other VOC's of concern to acceptable levels, such that contaminated soils would no longer provide a significant source of continuing groundwater contamination, ingestion risk or contact risk.
4. The Practical Quantification Limit for PCE using available field laboratories was 1.0 Mg/kg. Use of a field laboratory enabled the MEDEP to delineate between soils that were hazardous waste, special waste, and clean, thus enabling the least-cost disposal option.
5. The limits of the source area could be well defined at the 1.0 Mg/kg level.

Remediation of the PCE-contaminated soils exceeding the cleanup standard was completed via excavation, transport, and off-Site disposal. Contaminated soils were initially identified *in situ* using a field laboratory. Excavated soils were temporarily stockpiled on site and segregated based upon the following criteria:

1. "Clean Soil" - surficial soils containing PCE at concentrations of less than 1.0 mg/kg;
2. "Special Waste Soil" - soils containing PCE at concentrations between 1.0 and 1,000 mg/kg and passing TCLP analysis (i.e., <0.7 milligrams per liter [mg/L] PCE); or
3. "Hazardous Waste Soil" - soils containing PCE at concentrations greater than 1,000 mg/kg and/or failing the TCLP analysis (i.e., > of 0.7 mg/L PCE), or failing other hazardous waste characterization criteria.

Composite samples of the stockpiles were then obtained and analyzed at an off-site laboratory to confirm the initial segregation. Soils determined to be "Special Waste" were transported and disposed at the Pine Tree Landfill Facility located in Hampden, Maine. Soils exhibiting "Hazardous Waste" constituents were transported and managed at the GSI Environment Facility located in Sherbrooke, Quebec, Canada. "Clean" soils were reused as backfill materials on Site.

## **VI. Remaining Areas of Concern (AOCs) and Additional Remedial Measures**

### AOC-1: Remaining Source material

A natural fine-grained deposit layer (silts and clay known as the Presumpscot Formation) is present beneath the source area excavation. Analyses of samples of groundwater collected from beneath this layer document the presence of hazardous substances and petroleum compounds in groundwater. If additional (so far undiscovered) source soils are at the site, additional investigation could release additional contaminants into the groundwater. Therefore, any further subsurface investigation must include a contingency plan to remove any newly discovered source material.

### AOC-2: On-Site Groundwater

On-site groundwater is contaminated. The nature and amount of source material remaining beneath the clay layer capable of leaching to groundwater is unknown. There is little understanding of the Site's hydrogeology. Natural attenuation may improve groundwater quality over time; however, without active remedial measures groundwater will most likely remain contaminated for the foreseeable future.

### AOC-3: Off-Site Groundwater

Contamination has migrated off-site and is found in the area's complex bedrock aquifer system. Further hydrogeological investigations could help determine the extent and magnitude of the remaining groundwater contamination, but could prove costly. As with on-site groundwater, natural attenuation may improve groundwater quality over time, however, without active remediation groundwater will most likely remain contaminated for the foreseeable future.

### Groundwater Risks

The total extent of groundwater contamination at or near the site is not fully known, but contamination has migrated off-site and is found in the area's complex bedrock aquifer system. On-site PCE concentrations in the deep overburden and

fractured bedrock exceed 1000 µg/L, indicating a significant potential for continued off-site groundwater contamination. Further hydrogeological investigations could help determine the extent and magnitude of the remaining groundwater contamination, but could prove costly. Further, neither EPA nor MEDEP have ever been able to successfully remediate a bedrock aquifer. Finally, there is currently inadequate funding available to delineate the contamination at this site.

Off-Site groundwater drinking water wells remain impacted above risk-based action levels. Currently, point of entry treatment systems (POETS) are used to remove Site related contaminants from two (2) residential wells and another at BBRVC. These POETS must be monitored and maintained. The area surrounding the site is on Route 1A, which could undergo rapid development. Further groundwater extraction in support of the development could draw contamination from the site into clean portions of the aquifer, such that existing clean areas would exceed drinking water standards.

#### Additional Mitigation Measures For Groundwater

The DEP concludes that the best permanent solution to mitigate future ground water impacts is to extend the public waterline from the existing waterline terminus on Route 1 to the impacted area, enabling the water district to supply affected groundwater users and any new users.

### **VIII. Other Activities and Other Relevant Determinations**

#### Institutional Controls

Residual soil contamination remains at the Site. On-site and off-site groundwater is contaminated. Land use restrictions are necessary to limit activities which may cause a threat to human health or the environment, including a prohibition on-site excavation and extraction of groundwater.

#### Natural Resource Damage Assessment

Contamination of an identified natural resource, groundwater, has been documented. A Natural Resource Damage Assessment would be necessary to assess the injury and determine damages. Such an assessment is likely necessary to resolve site liability and cost recovery issues between the MEDEP and the Potential Responsible Parties for the site.

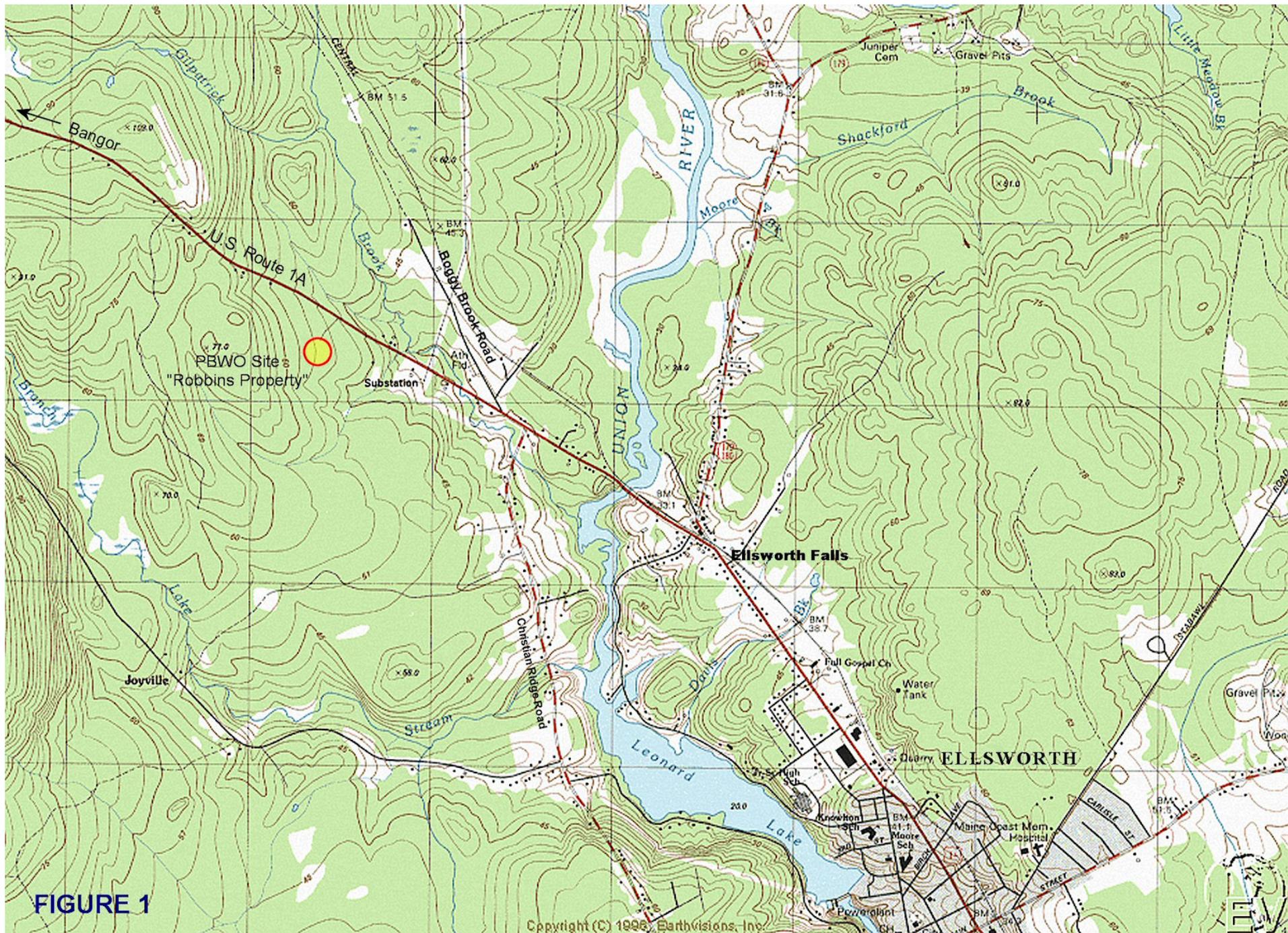
#### Response Costs

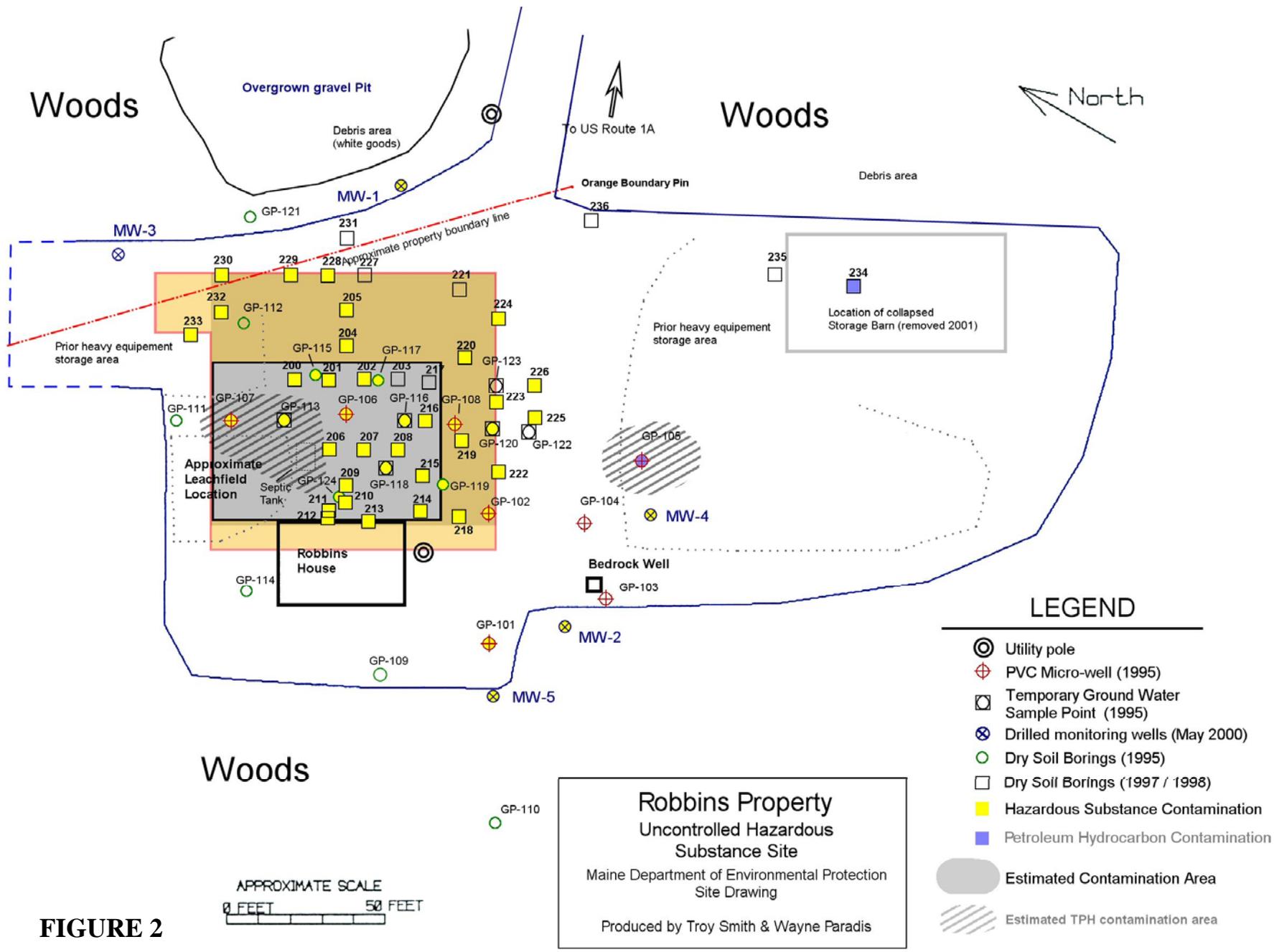
At the time of the writing of this decision document, MEDEP has incurred expenses in excess of \$908,000 in Site-related investigation and remediation. These costs have not been recovered. Additional costs will be incurred to:

1. Conduct additional on-site and/or off-site hydrogeological studies, if any are necessary,
2. Extend the existing municipal waterline to the contaminated area,
3. Develop and implement institutional controls,
4. Conduct an NRDA,
5. Provide for on-going POETS Operations and Maintenance, and
6. Undertake Cost Recovery actions.

Seen and reviewed by:

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Unit Supervisor                      date                      Division Director                      date





**FIGURE 2**