Commonwealth of Massachusetts
Executive Office of Environmental Affairs ■ MEPA Office

ENF Environmental Notification Form

For Office Use Only *Executive Office of Environmental Affairs*
EOEA No.: 13275 MEPA Analyst: ANNE CANADAY Phone: 617-626- 1035

The information requested on this form must be completed to begin MEPA Review in accordance with the provisions of the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: Olin Wilmington Maple Meadow Brook		
Street: Chestnut Street and Main Street		
Municipality: Wilmington	Watershed: Aberjona River and Ipswich River Watersheds	
Universal Tranverse Mercator Coordinates:	Latitude: 42.52896 Longitude: -71.15920	
Estimated commencement date: 6/14/04	Estimated completion date: 6/14/05	
Approximate cost: $300,000	Status of project design: 90 %complete	
Proponent: Stephen Morrow		
Street: P. O. Box 248		
Municipality: Charlestown	State: TN	Zip Code: 37310
Name of Contact Person From Whom Copies of this ENF May Be Obtained: Eric Axelrod		
Firm/Agency: MACTEC, Inc.	Street: 107 Audubon Rd., Bldg 2, Suite 301	
Municipality: Wakefield	State: MA	Zip Code: 01880
Phone: (781) 245- 6606	Fax: (781) 246- 5060	E-mail: emaxelrod@mactec.com

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
☐Yes ☒No

Has this project been filed with MEPA before?
☐Yes (EOEA No._____) ☒No

Has any project on this site been filed with MEPA before?
☐Yes (EOEA No._____) ☒No

Is this an Expanded ENF (see 301 CMR 11.05(7)) requesting:

a Single EIR? (see 301 CMR 11.06(8))	☐Yes	☒No
a Special Review Procedure? (see 301CMR 11.09)	☐Yes	☒No
a Waiver of mandatory EIR? (see 301 CMR 11.11)	☐Yes	☒No
a Phase I Waiver? (see 301 CMR 11.11)	☐Yes	☒No

Identify any financial assistance or land transfer from an agency of the Commonwealth, including the agency name and the amount of funding or land area (in acres):

Are you requesting coordinated review with any other federal, state, regional, or local agency?
☒Yes(Specify Wilm. Con. Com., ACOE, MADEP) ☐No

List Local or Federal Permits and Approvals:

A NOI, WQC, and a Category 2 Permit from U.S. Army Corps of Engineers have been submitted.

Which ENF or EIR review threshold(s) does the project meet or exceed (see 301 CMR 11.03):

- ☐ Land
- ☐ Water
- ☐ Energy
- ☐ ACEC
- ☐ Rare Species
- ☐ Wastewater
- ☐ Air
- ☐ Regulations
- ☒ Wetlands, Waterways, & Tidelands
- ☐ Transportation
- ☐ Solid & Hazardous Waste
- ☐ Historical & Archaeological Resources

Summary of Project Size & Environmental Impacts	Existing	Change	Total	State Permits & Approvals
LAND				☐ Order of Conditions ☐ Superseding Order of Conditions ☐ Chapter 91 License ☐ 401 Water Quality Certification ☐ MHD or MDC Access Permit ☐ Water Management Act Permit ☐ New Source Approval ☐ DEP or MWRA Sewer Connection/ Extension Permit ☐ Other Permits (*including Legislative Approvals*) – Specify: Applied For: Order of Conditions 401 WQC
Total site acreage	252			
New acres of land altered		0.371		
Acres of impervious area				
Square feet of new bordering vegetated wetlands alteration		16,150		
Square feet of new other wetland alteration				
Acres of new non-water dependent use of tidelands or waterways				
STRUCTURES				
Gross square footage				
Number of housing units				
Maximum height (in feet)				
TRANSPORTATION				
Vehicle trips per day				
Parking spaces				
WATER/WASTEWATER				
Gallons/day (GPD) of water use				
GPD water withdrawal				
GPD wastewater generation/ treatment				
Length of water/sewer mains (in miles)				

CONSERVATION LAND: Will the project involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97?

☐Yes (Specify_____) ☒No

Will it involve the release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction?

☐Yes (Specify_____) ☒No

RARE SPECIES: Does the project site include Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities?

☐Yes (Specify_____) ☒No

HISTORICAL /ARCHAEOLOGICAL RESOURCES: Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☐Yes (Specify_____) ☒No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?

☐Yes (Specify_____) ☒No

AREAS OF CRITICAL ENVIRONMENTAL CONCERN: Is the project in or adjacent to an Area of Critical Environmental Concern?

☐Yes (Specify_____) ☒No

PROJECT DESCRIPTION: The project description should include **(a)** a description of the project site, **(b)** a description of both on-site and off-site alternatives and the impacts associated with each alternative, and **(c)** potential on-site and off-site mitigation measures for each alternative (*You may attach one additional page, if necessary.*)

(a) & (c) This describes work to be performed by Olin as part of pre-remedial investigations for the updated Phase III Detailed Evaluation of Remedial Alternatives (Phase III) of the Maple Meadow Brook Study Area, located approximately one-half mile northwest of the Olin property at 51 Eames Street. The additional work includes the installation of a total of five wells in the Maple Meadow Brook Study Area. Two of the wells will be installed adjacent to each other in the area identified as the Western Bedrock Valley. One of these wells will be a multilevel piezometer and the other well will be a deep monitoring well. The remaining three wells will be installed adjacent to each other in the area identified as the Southern Bedrock Channel. These wells will function as monitoring wells and will be screened at different depths through the aquifer. Locations of these wells are within Areas Subject to Protection Under the Massachusetts Wetlands Protection Act, and therefore this ENF has been prepared.

Approximate locations of the piezometer and monitoring well, and the monitoring well triplet relative to wetland resource areas are shown in Figure 1. This work has been requested and approved by the MADEP Bureau of Waste Site Cleanup, as noted in a letter from Christopher Pyott (BWSC) dated December 12, 2003. A copy of this letter is attached. A Request for Determination of Applicability was submitted on December 22, 2003 for seismic investigations (MACTEC, 2003), which will be used to select final locations for well installation, and a Determination of Applicability was received on January 15, 2004. A NOI was also submitted February 18, 2004 for the proposed work.

This includes a description of well installation activities as well as a description of the potentially affected resource areas. It should be noted that the locations of the proposed wells are **preliminary**. Based on the information available at the time of the preparation of this ENF, the boring locations are, in general, correct and it is anticipated that actual locations will not be significantly different. Olin will keep the Town of Wilmington informed of any revisions to these locations upon approval from MADEP.

SCOPE OF WORK ACTIVITIES

The work activities that may affect areas subject to protection under the act include construction of a temporary access road to each well location, installation of the wells, and subsequent sampling events.

Construction of Temporary Access Roads

Upon DEP approval of the recommended well locations, Olin will arrange for the installation of temporary road ways to access each well location. The temporary roadways are to be constructed by placement of wooden, interlocking mats that are placed using a truck-mounted crane. The thickness of the road bed is determined by the depth of the water within the MMBA Study Area at the time of construction, and can be altered as necessary (i.e., multiple mats can be placed on top of the other to build up thickness of the roadway). It is assumed that the footprint of the access road will be approximately 20-feet wide. It is estimated that construction of the roadway will take approximately two to three days for each location, and that the roadways will remain in place for a period of approximately three months to allow for well installation, well development, and initial sampling. Once these activities are completed, the roadways will be removed and the wetlands will be restored as necessary to comply with the OOC.

Installation of Multilevel Piezometer and Monitoring Well

Olin will install one multilevel piezometer and one monitoring well to a depth of approximately 200 feet below ground surface (bgs). The borings will be installed using rotosonic drilling technology. This method allows for rapid installation of 5.5 inch OD casing and the collection of continuous soil cores which can be assessed in the field for lithology and used to assess stratigraphy changes through the soil profile. The piezometer will be equipped with a Solinst Model 401 Waterloo Multilevel Groundwater System equipped with 12 stainless steel ports and twelve dedicated vibrating wire transducers, to allow for collection of groundwater samples and measurement of groundwater heads from 12 distinct horizons within the water column. Ports are isolated within the determined aquifer zone using a bentonite/sand mixture placed within the borehole annular space as the 5.5 inch OD casing is removed from the ground. The bentonite/sand mixture is placed using a tremie tube. Following installation of the multilevel piezometer, each port is developed using a peristaltic pump.

The monitoring well will be installed within the borehole using 4-inch ID PVC. A ten-foot screen will be placed at the bottom of the borehole, and sufficient riser pipe will be used to bring the well to the surface. The annular space around the well screen will be filled with clean sand to a depth of approximately one foot above the screen/riser interface. An approximate 2-foot thick bentonite seal will be placed above the sand pack, and the remainder of the annular space will be filled with a bentonite/Portland cement grout. A thirty-foot length of eight inch diameter steel casing will be placed around the PVC well to protect the well, and a 5-foot length of 10-inch diameter schedule 80 PVC pipe will be placed around the steel casing to protect the casing against ice. Development water will be drummed for off-site disposal. For purposes of this ENF, it is assumed that the footprint of each of the multilevel piezometer and monitoring well will be 5-feet by 5-feet, or 25 square feet.

Installation of Monitoring Well Triplet

Olin will install a cluster of three monitoring wells (referred to as a monitoring well triplet) in the Southern Bedrock Channel to help assess conditions in this portion of the aquifer. The triplet will include a shallow well, a mid-level well, and a deep well installed to rock. The depth to bedrock in this area, based on limited seismic data, is estimated to be approximately 80 feet. Borings for the monitoring wells will also be installed using the rotosonic drilling technology. The shallow and midrange monitoring wells will be installed within the boreholes using 2-inch ID PVC, the deep monitoring well will be installed using 4-inch ID PVC. A ten-foot screen will be placed at the bottom of each borehole, and sufficient riser pipe will be used to bring the well to the surface. The annular space around the well

screen will be filled with clean sand to a depth of approximately one foot above the screen/riser interface. An approximate 2-foot thick bentonite seal will be placed above the sand pack, and the remainder of the annular space will be filled with a bentonite/Portland cement grout. A thirty-foot length of eight inch diameter steel casing will be placed around the PVC well to protect the well, and a 5-foot length of 10-inch diameter schedule 80 PVC pipe will be placed around the steel casing to protect the casing against ice. Following installation, the wells will be developed using high volume pumps. Development water will be drummed for off-site disposal. For purposes of this ENF, it is assumed that the footprint of the well triplet will be 10-feet by 10-feet, or 100 square feet.

DESCRIPTION OF POTENTIALLY AFFECTED RESOURCE AREAS

Figure 2 shows a topographic map of the area depicting various wetland types in the vicinity of the MMB Study Area. This map was obtained from the Massachusetts' Office of Geographic and Environmental Information (MassGIS). The estimated boundary of the Olin site is depicted on this map. The focus of the work addressed in this ENF is on the western portion of the site, which consists primarily of palustrine scrub-shrub wetland. Figure 1 depicts the specific wetland resource areas and locations of proposed access roads and wells.

The MMB Study Area was characterized by MACTEC ecologists in November 2000 and February 2004. The detailed description of wetland resources is included at the end of this attachment. Maple Meadow Brook originates at Mill Pond Reservoir in Burlington, and drains to the north. Sawmill Brook originates in Burlington one-quarter mile to the west of Maple Meadow Brook, and drains to the northeast before joining Maple Meadow Brook approximately one-half mile northwest of the Site. The upper reaches of these brooks have well-defined stream channels with steep, over-hanging banks. However, both brooks drain into a large, topographically flat area approximately one-quarter mile upstream of their confluence. This area, best characterized as a scrub-shrub swamp approximately 15 acres in size, is bounded by Butters Row to the north and northwest, Chestnut Street to the southwest, a gravel pit/landfill to the south, and Route 38 to the east. Three Town of Wilmington pumping stations are located within 500 feet north and west of the confluence of these brooks.

The areas subject to protection under the act as defined in 310 CMR 10.00 include Bordering Vegetated Wetland and Riverfront Area.

The BVW boundary is being delineated in the area of the access roads. Approximate boundary lines based on topography are identified on Figure 1. The Riverfront Resource Area includes both streams plus a 200 foot wide area on either side. There is no buffer zone associated with the Riverfront Resource Area. There is a 100-foot buffer associated with the BVW.

Table 1 summarizes types of potential temporary and long-term impacts for each activity described below.

Access Road Location for Multilevel Peizometer and Monitoring Well

The access road for the multilevel piezometer and monitoring well will be located based on the results of the seismic survey. If located as shown on Figure 1, the access road will be able to largely follow previous access used to install groundwater wells. Efforts will be made to adjust the location of the road to minimize the removal of any trees in both upland and wetland areas. For purposes of this ENF, it is assumed that the access road will cross 400 feet of Riverfront Area and BVW. With a width of 20 feet, total temporary impact associated with the access road is approximately 8,000 square feet. For purposes of this ENF, it is assumed that there will be a long-term footprint of both the multilevel piezometer and monitoring well of 5 feet by 5 feet (25 square feet), for a total of 50 square feet.

Access Road Location for Monitoring Well Triplet

For the monitoring well triplet, the access road will begin at the Chestnut Street Pumping Station. The area east of the pumping station is heavily forested and contains steeply mounded topography associated with historic activities. An access road through this area would not be possible without removal of a large number of trees and earthworks. Therefore, the road will proceed northeast into the BVW (scrub/shrub and emergent wetland), and then east-southeast to the proposed well triplet location. A small earthen berm will be temporarily breached in the vicinity of the pumping station. This berm will be replaced upon completion of the removal of the access road. For purposes of this ENF, it is assumed that the access road will cross 200 feet of Riverfront Area, and 400 feet of BVW. With a width of 20 feet, total temporary impact associated with the access road is 4,000 square feet of Riverfront Area and 8,000 square feet of BVW. For purposes of this ENF, it is assumed that there will be a long-term footprint of the well triplet of 10-feet by 10-feet, or 100 square feet.

PROPERTY OWNER ADDRESSES

Table 2 contains a summary of addresses and map/lot numbers for properties that Olin may need access to for installation of these wells.

DETAILED DESCRIPTION OF WETLANDS IN THE MAPLE MEADOW BROOK STUDY AREA

During a visit on November 9, 2000, the entire 15 acre scrub-shrub swamp appeared inundated, the channels of Maple Meadow Brook and Sawmill Brook were not defined, and water flow in the scrub-shrub swamp was not apparent. Water depths ranged from a few inches to over 3 feet in the swamp. The edge of water was generally defined by the perimeter of the scrub-shrub swamp, where there was a slight change in topography between the swamp and the bordering forested wetlands. In some areas, however, water extended into the forest fringe (i.e., forested swamps). MACTEC ecologists intended to survey the aquatic habitats and receptors associated with the groundwater discharge area in the two stream channels. However due to the large area of inundation, depth and stillness of the water, and thickness of vegetation in the scrub-shrub swamp, it was not feasible to locate the channels, even at locations where the channels are nearby or adjacent to known monitoring well locations.

The substrate of the scrub-shrub swamp is highly organic in nature with variable firmness. Along the eastern perimeter of the swamp (in the vicinity of the Maple Meadow Brook channel), some areas of very soft muck and silt were encountered, as well as areas with a firm, fibric (i.e., comprised of roots) substrate. Hydrogen sulfide odors were observed in many areas. Along the western perimeter, between GW-64D and GW-86S, M, and D near the Butters Row Pumping Station Well No. 1 and the Sawmill Brook channel, there was approximately 4 inches of coarse particulate organic material (CPOM) suspended over a firm substrate. In the southwestern portion of the swamp near the Chestnut Street pumping station (along the Sawmill Brook channel), fine particulate organic matter (FPOM) was observed suspended over a firm, fibric substrate. All areas of the swamp contained considerable leaf and twig litter.

At the northern end of the swamp, approximately 500 feet downstream of the confluence where fill from an historic right-of-way spans the Maple Meadow Brook wetland corridor, water flow is funneled through what used to be the Middlesex Canal. In this area only, a mineral substrate of coarse sand, gravel, cobble, and boulder was observed, likely associated with the increased water flow (approximately 1 ft. /sec.) through this narrow area. Less than 30 feet upstream of the abutment, flow was negligible (i.e., less than 0.5 ft. /sec.). MACTEC ecologists observed an automatic surface water sampler set up on the downstream side of the abutment, collecting water samples from the stream channel. The fill and canal may be older than 50 years judging by the height of the trees growing on top of the fill, which is part of the Middlesex Canal.

Vegetation in the scrub-shrub swamp contained a mixture of small saplings, shrubs, and herbaceous vegetation. Due to the dormant, winter-like vegetative conditions, many species were not identified. Red maple (*Acer rubrum*) was common in the sapling layer. Shrubs common in the swamp included buttonbush (*Cephalanthus occidentalis*), speckled or smooth alder (*Alnus incana* or *A. serrulata*), red-osier or silky dogwood (*Cornus sericea* or *C. amomum*), winterberry (*Ilex verticillata*), sweet pepperbush (*Clethra alnifolia*), and rose (*Rosa* sp.). Herbaceous vegetation observed in the swamp included sensitive fern (*Onoclea sensibilis*) and other ferns, purple loosestrife (*Lythrum salicaria*), tussock sedge (*Carex stricta*) and other sedges (*Carex* sp., possibly *C. lurida*), iris (*Iris* sp.), and mosses.

Floating and rooted aquatic vegetation included duckweed (*Lemna minor*), water smartweed (*Polygonum* sp.), pickerelweed (*Pontedaria cordata*), grasses, and naiad (*Najas* sp.) or waterweed (*Elodea* sp.). In the vicinity of the Chestnut Street pumping station (in the southwest corner of the swamp, along the Sawmill Brook), several small (less than one-half acre) cattail marshes (*Typha* sp.) were observed along the edge of the swamp.

The forested wetlands and swamps bordering the 15 acre scrub-shrub swamp contained a mixture of trees, shrubs, vines, and herbaceous vegetation. In many areas, the tree layer was dominated with deciduous species, including grey birch (*Betula populifolia*), black willow (*Salix nigra*), cherry (*Prunus* sp.), and red maple. Oaks (*Quercus* sp.) were common further upland. White pine (*Pinus strobus*) was also commonly observed in both the forested wetlands and uplands. Large briar patches (*Smilax* sp.) were encountered in the understory. Shrubs observed in the forested wetlands included winterberry, cedar (*Juniperus* sp.), sweet fern (*Comptonia peregrina*), northern arrow-wood (*Viburnum recognitum*), and dogwood (*Cornus* sp.).

Downstream of the confluence with Sawmill Brook, Maple Meadow Brook flows north northeast, passing under the Boston and Maine Railroad and to the east of the center of Wilmington before joining with Lubbets Brook to form the Ipswich River. The Ipswich River (including the brooks) is designated as a Class B water body according to the Massachusetts Surface Water Quality Standards (314 CMR 4.00). Class B inland waters are "designated as habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation." With appropriate treatment, Class B surface waters may be used as a source of public water supply. They may also be used for irrigation and other agricultural uses, and for compatible industrial cooling and process uses.

Wildlife and Aquatic Receptor Observations

Few wildlife receptors were observed during the ecological characterization in November 2000. However, the scrub-shrub swamp and bordering uplands of Maple Meadow Brook and Sawmill Brook provide ideal forage and refuge habitat for a variety of receptors, including aquatic and terrestrial invertebrates, reptiles and amphibians, large and small mammals, songbirds, waterfowl, and predatory birds. Although the thick woody growth throughout most of the swamp may not provide ideal forage habitat for most wading or aerial piscivorous birds (e.g., rails, bitterns, herons, and kingfishers), wading birds may forage and nest in the small emergent marshes in the southwestern portion of the swamp along Sawmill Brook.

While completing the characterization, a white tailed deer (*Odocoilus virginiana*) was observed approaching the Maple Meadow Brook at the bridge abutment. In addition, beaver (*Castor canadensis*) gnaw marks were observed at the base of a tree. Birds heard or observed during the characterization include cardinal (*Cardinalis cardinalis*), white breasted nuthatch (*Sitta canadensis*), crow (*Corvus brachyrhyncos*), and red-tailed hawk (*Buteo jamaicensis*).

Although mid-November is past the season for observing many aquatic invertebrates, MACTEC ecologists qualitatively characterized the aquatic invertebrate assemblage in the scrub-shrub swamp during the ecological characterization. A D-frame dip net was used to jab in submerged aquatic vegetation and around the base of shrubs. There were no large snags or undercut banks under which to search for aquatic invertebrates. Invertebrates caught included amphipods (Amphipoda), midge larvae (Diptera, family Chironomidae), snails (Gastropoda), small (i.e., ¼ to ½ inch wide) freshwater clams (Pelycipoda), predacious diving beetles (Coleoptera, family Dytiscidae), backswimmers (Hemiptera, family Notonectidae), freshwater earthworms (Oligochaeta), damselfly larvae (Zygoptera), and dragonfly larvae (Anisoptera). In general, amphipods, chironomids, freshwater clams, and snails were common (i.e., 3 to 10 organisms observed) to dominant (i.e., >50 organisms observed) in most or all areas. Diving beetles, backswimmers, damselfly larvae, dragonfly larvae, and oligochaetes were generally rare (i.e., 1 to 3 organisms observed). Fewer organisms were observed in Maple Meadow Brook approximately 200 or 300 feet upstream of the confluence than in the vicinity of the bridge abutment.

While not observed during the ecological characterization, it is possible that the Maple Meadow Brook, Sawmill Brook, and the scrub-shrub swamp may support small fish and crayfish.

Based on the most recent edition of the Massachusetts Natural Heritage Atlas (Massachusetts Natural Heritage and Endangered Species Program [MNHESP], 2003 ed.), there are no priority habitats of rare species, or estimated habitats of rare wildlife and certified vernal pools along Maple Meadow Brook or Sawmill Brook within the project area.

List of Titles/Dates for Plans/Materials:

Figure 1 – Wetland Resources and Proposed Locations for Additional Monitoring Wells and Seismic Lines in WBV and SBC

Figure 2 - Wetland Types in the Vicinity of Maple Meadow Brook

Table 1 - Types of Potential Impacts to Resource Areas from Proposed Activities

Table 2 - Addresses for Gaining Access to Proposed Well Locations

(b) There are no alternative well locations. The only other option would be to re-route the well triplet access road onto adjacent upland. This would require significant earthworks and tree removal.

LAND SECTION – all proponents must fill out this section

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1)
___ Yes _X_ No; if yes, specify each threshold:

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	Existing	Change	Total
Footprint of buildings	_____	_____	_____
Roadways, parking, and other paved areas	_____	_____	_____
Other altered areas (describe)	_____	_____	_____
Undeveloped areas	_____	_____	_____

B. Has any part of the project site been in active agricultural use in the last three years?
___ Yes _X_ No; if yes, how many acres of land in agricultural use (with agricultural soils) will be converted to nonagricultural use?