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PURPOSE

To establish a procedure for processing complaints against the Massachusetts Highway Department (MassHighway) for potential salt contamination of public, private, industrial and commercial water supplies.

PROCEDURE

<u>General</u>

1. Complaints of alleged salt contamination of water supplies should be submitted, in writing, together with any water quality data and other evidence, by the complainant, to the District Highway Director (DHD). The complaint submittal must include at least one recent water analysis from a laboratory that is certified by the Massachusetts Department of Environmental Protection (DEP) for drinking water for the following constituents: sodium, calcium, chloride and specific conductance. The complaint shall then be forwarded to Environmental Services through the Chief Engineer. Environmental Services personnel shall acknowledge the complaint and send appropriate forms to the complainant. A copy of the complaint acknowledgement, release agreement, or denial letter shall be sent to the State Maintenance Engineer, the District Highway Director and the Executive Office of Transportation (EOT) Chief Counsel. Any complaint that is sent to MassHighway by an attorney shall be forwarded by Environmental Services to the Chief Counsel. The acknowledgment, response and investigation of such complaints shall be conducted in cooperation between Environmental Services and Chief Counsel. A flow chart outlining the procedure to respond to salt complaints is included as Appendix 1. Copies of forms and examples of acknowledgment letters for private and public salt complaints are provided herein as Appendices.

2. After the forms are completed and returned, Environmental Services and District personnel shall make an initial site visit. The findings from that site visit shall provide the basis for a determination to either: (a) conduct a detailed investigation or (b) deny the complaint.

3. If a detailed investigation is warranted, water samples shall be collected monthly by MassHighway personnel or its designee from the water sources of concern. Typically, monthly water samples may be collected for at least one-year; however, sample collection may be reduced to six months if a clear preponderance of the evidence determines the significant source of the salt in the water supply. The specific details on an accelerated sampling program are further defined in the Well Sampling section of this SOP. The investigation and data collection shall be conducted in a legally and scientifically defensible manner and shall be properly documented. The monthly and annual fluctuations of the salt content of the water sources shall be compared with historical MassHighway and municipal salt application data in order to

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determine whether MassHighway winter maintenance operations are a significant source of the salt contamination of the complainant's water supply.

4. After a sufficient period of data collection, water sampling and analysis, Environmental Services personnel shall make a determination that: (a) the Department institute remedial action; (b) the complaint should be denied; or (c) that continued data collection is needed to further evaluate the drinking water supply or define sources of salt. In no instance shall a remedial action be decided unless six monthly samples have been collected that clearly demonstrates that MassHighway is the significant source of salt contamination. If remedial action is recommended, a specific, appropriate, cost-effective remedial action shall be designed and implemented by Environmental Services and District personnel. Before any remedial action is begun, the complainant must sign a release form that relieves MassHighway of all liability for salt contamination of the water supply of concern. The release shall be reviewed by the Chief Counsel prior to its submittal to the complainant. If the complaint is to be denied, Environmental Services personnel shall prepare the letter of denial, documenting the basis for denial, for the Chief Engineer's signature. Before submittal to the Chief Engineer, the denial letter shall be reviewed by the Chief Counsel. The signed letter shall then be forwarded to the complainant and copied to the District Highway Director.

Private Well Complaints

1. Salt contamination complaints for private wells shall be investigated if the chloride concentration in water from the well is 250 milligrams per liter (mg/l) or greater. Two hundred and fifty mg/l is the Environmental Protection Agency (EPA) and DEP defined "Secondary Maximum Contaminant Level" for chloride. Private well complaints shall also be investigated if any resident of the property is under a physician's care and is required to be on a specific, documented, sodium-restricted diet (see Appendices 4 & 5). The specific sodium-restricted diets and the corresponding sodium concentrations in drinking water are:

- a) A documented sodium restricted diet of less than 1000 milligrams per day (mg/d) and the sodium concentration in the water supply exceeds 20 milligrams per liter (mg/l).
- b) A documented sodium restricted diet of less than 2000 mg/d and the sodium concentration in the water supply exceeds 40 mg/l.

Public Water Supplies

1. Massachusetts Department of Environmental Protection "Drinking Water Regulations" 310 CMR 22, defines a "Public Water System" as follows:

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<u>"Public Water System"</u> means a system for the provision to the public of piped water for human consumption, if such a system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days of the year. Such term includes (1) any collection, treatment, storage, and distribution facilities under control of the operator of such a system and used primarily in connection with such system, and (2) any collection or pre-treatment storage facilities not under such control, which are used primarily in connection with such system. A public water system is either a community water system or a non-community water system as defined by DEP regulation 310 CMR 22.02.

2. All investigation and remediation of salt contamination complaints of public water supplies shall be conducted in cooperation with the DEP, since DEP regulates all public water supplies.

3. In no instance shall MassHighway designate the roads in an area of a public water supply as a reduced salt zone until such time that the owner/operator complies with requests for information further described herein and MassHighway has an opportunity to review the monthly sampling results. Furthermore, MassHighway reserves the right to discontinue maintaining a reduced salt zone in the event the owner/operator of the public water supply fails to provide the necessary monthly sampling results which will be used as a measure of the reduced salt zones effectiveness. In addition, MassHighway may elect to discontinue maintaining a reduced salt zone in the event that monthly data or other remedial efforts render it unnecessary.

The requirements and general procedures for further consideration/participation by MassHighway in the investigation of a public water supply complaint for public systems further described as a Community, Non-Community, or Industrial Water System is described below:

A. Community Water Systems

1. These include all municipal water supplies. DEP generally requires these systems to provide intensive, regular water analyses and to conduct detailed hydrogeologic studies. These requirements are described in 310 CMR 22 and other DEP documents. The effects of MassHighway salt application practices on these systems can be quantified by means of a salt balance study. Such a study superimposes salt application data on the available hydrogeologic and water quality data for these water supplies.

2. In order for MassHighway to conduct a salt balance study, Community Water Systems that file a salt contamination complaint are required to provide MassHighway with a copy of the hydrogeologic and analytical reports that they have previously submitted to DEP (see Appendices 6 & 7). Community Water Systems that are required to provide regular water analyses to DEP shall be required to provide MassHighway with monthly water analyses for sodium, calcium, chloride and specific conductance to document their salt complaint. This data

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shall help to define the effects of MassHighway salting on the public water supply and shall provide a basis for monitoring the effectiveness of any remedial action.

3. MassHighway shall conduct this monthly water sampling and analysis for systems using less than 4,000 gallons per day (gpd).

4. Community Water Systems are required, to the extent practicable, to provide MassHighway with data on the quantity of salt that they pump from their water sources. MassHighway can then compare these quantities of pumped salt with the quantities of salt that MassHighway applies seasonally to nearby highways and/or stockpiles at nearby salt storage facilities.

B. Non-Community Water Systems

1. These are usually small systems that provide water for a restaurant or business. These systems are required to comply with 310 CMR 22. MassHighway policy is that investigation and remediation of all public water supplies should be conducted in cooperation with the DEP. Accordingly, MassHighway shall deny any public water supply salt contamination complaint that is from a water supplier that does not document full compliance with 310 CMR 22 for at least one year, including the entire period of the MassHighway investigation. This compliance must be confirmed by the appropriate DEP regional office before MassHighway can institute remedial action.

2. This policy shall prevent a public water supplier from simply registering with the DEP but not complying with the DEP requirements. In addition, public water systems that comply with DEP regulations are routinely reviewed and inspected by DEP. MassHighway's Salt Remediation Unit shall work with DEP personnel in investigating and remediating salt contamination complaints of public water supplies.

3. Non-Community Water Systems that are required to provide regular water analyses to DEP may be required to provide MassHighway with monthly water analyses for sodium, calcium, chloride and specific conductance to document their salt complaint. This data shall help to define the effects of MassHighway salting on the public water supply and shall provide a basis for monitoring the effectiveness of remedial action.

4. For systems using less than 4,000 gpd, this monthly water sampling and analyses shall be conducted by MassHighway.

5. Non-Community Water Systems that contain more than 20 mg/l of sodium shall be requested to post a sign at every water tap that might be used for drinking water. The sign should show the maximum measured sodium concentration in that water supply. The sign should also contain an

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advisory that individuals who are on a 2,000 mg/day, or less, sodium restricted diet, should contact their physicians before consuming water from that source.

C. Industrial and Commercial Water Supplies

1. Salt contamination complaints of Industrial and Commercial Water Supplies are generally based upon the cost to an industry for the installation and operation of a water treatment system to make the water suitable for an industrial process. These complaints shall be investigated in cooperation with the personnel of the industrial or commercial facility. If MassHighway winter maintenance practices are found to be a significant source of salt contamination to the water used in the industrial process, MassHighway shall institute appropriate remedial action in the event salt contamination has a negative impact on the industrial process.

2. For systems using less than 4,000 gpd, this monthly water sampling and analyses shall be conducted by MassHighway.

Well Sampling

1. MassHighway shall collect the monthly samples for laboratory analysis on behalf of the private well owner, or for public water supply systems using less than 4,000 gpd. In addition to field parameters, the target constituents for the monthly laboratory analysis include sodium, calcium, chloride, and specific conductance. The first sampling event shall include analysis of additional constituents to serve as a baseline and shall include but not be limited to arsenic, barium, copper, iron, lead, manganese, and nitrates. The first three months of sampling shall include laboratory analysis for the presence of total coliform. Analysis of other constituents (i.e., petroleum, pesticides, and synthetic organics) shall be added if there is a documented source of contamination in the area.

2. Samples shall be analyzed by a Massachusetts DEP Certified laboratory for the target constituents.

3. MassHighway may elect to collect and analyze an additional baseline sample of the existing well prior to well replacement. MassHighway shall collect and analyze a baseline water sample from the replacement well. MassHighway shall only analyze for radon in the replacement well if it is a requirement of the local Board of Health. The property owner shall be responsible for sample collection and analysis of any additional constituents required by the municipality.

4. MassHighway shall collect three additional samples for salt constituents after the well is connected and put in use. Typically, these samples shall be collected every other month and shall be used to confirm the effectiveness of the remedial activity.

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5. Copies of laboratory analytical data shall be released only after receiving a written request from the property owner.

6. In no instance shall MassHighway issue a release agreement or settle a claim prior to the collection of six monthly samples.

7. The issuance of a release agreement shall only be expedited in the event that;

(a) A preponderance of the evidence indicates that MassHighway is the sole or significant source of salt contamination to the water supply. The data may include recent data results from a previous salt complainant in the vicinity (i.e., data collection within 2 years and within a $\frac{1}{2}$ mile radius);

- (b) A resident is on a documented sodium-restricted diet; and/or
- (c) The chloride level is routinely greater than 500 mg/l.

Bottled Water

1. MassHighway shall provide a bottled water supply to eligible homeowners as described below to satisfy the human consumption rate of 2 liters/day/person (i.e., 3.5 gallons/week/person). The bottled water supply shall be initiated after MassHighway has an opportunity to collect and review the laboratory results for the first sample, and the bottled water recipient(s) sign a bottled water agreement form. The bottled water supply shall cease at the conclusion of the investigation, the successful completion of the remedial action, or the complainant's refusal to sign a release agreement with MassHighway.

2. The complainant must also satisfy the following requirements:

(a) A resident is on a documented sodium restricted diet of less than 1,000 mg/d and the sodium concentration in the water supply exceeds 20 mg/l, or;
(b) A resident is on a documented sodium restricted diet of less than 2,000 mg/d and the sodium concentration in the water supply exceeds 40 mg/l, or;
(c) The chloride concentration in a domestic supply exceeds 500 mg/l. Bottled water provided to solely address chloride shall cease if the data demonstrate that the chloride concentration is <400 mg/l for two consecutive sampling events.
(d) In addition, the system cannot be injecting sodium into the plumbing system for water softening or neutralization.

3. For small public water supplies (i.e., <4,000 gpd), such as a restaurant, MassHighway may consider providing bottled water for drinking purposes only. Signs should be posted in bathrooms and at all available drinking water taps notifying users that the water contains >20

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mg/l of sodium and that individuals on sodium-restricted diets should consult their physician before consuming this tap water.

Complaint Denials

The intent of this policy is to remediate significant salt contamination of an otherwise potable and/or suitable water supply. It is not the intent of this policy to replace a poorly constructed well at the Commonwealth's expense.

1. Regardless of the sodium or chloride level, a salt contamination complaint of a drinking water supply shall be denied if the water is not otherwise potable due to the presence of non-highway related contamination in concentrations that exceed the "Massachusetts Drinking Water Standards" as specified in the current version of 310 CMR 22, "Drinking Water Regulations" or DEP Private Well guidelines.

2. A complaint shall be denied, regardless of the salt content of the water, if MassHighway determines that the well construction is so poor that surface contamination can readily enter the well. Examples of poor construction include but shall not be limited to dug wells with covers below grade or that readily allows surface water infiltration, or improperly or poorly set well casing as demonstrated by use of a down-hole camera or other suitable technique.

3. During the period of monthly sampling and analysis by MassHighway, water samples shall be collected and analyzed for total coliform for three successive months. Any detection of coliform shall result in a denial of the salt contamination complaint by MassHighway.

4. The complaint may also be denied if there are significant non-MassHighway sources of salt to the water supply as determined by MassHighway's investigation. Such sources may be from municipal salt storage, municipal salt application to local roads, salt application to private properties, such as driveways and parking lots, water treatment chemicals including use of a water softener or neutralizer, industrial contamination, or other sources of salt.

Reopening of Denied Complaints

1. After a complaint is denied, the property owner may request that MassHighway reopen and reinvestigate the complaint. This request must include documentation that the basis for the denial has been corrected. Examples of this documentation are: (1) a water analysis that shows no coliform or (2) a detailed description with receipted bills for repairs and improvements to a poorly constructed well or (3) documentation, supported by water analyses that an appropriate, cost-effective water treatment system has been installed and is operating satisfactorily.

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2. A water supply well that is denied due to the presence of coliform bacteria and where the septic system components are within the prohibited limits of 310 CMR 15.000 shall not be eligible for reopening of the salt complaint.

3. A water supply well that is denied due to the addition of a sodium based chemical via a treatment system shall require at least 6 months before re-opening. MassHighway shall request proof that the treatment system was taken off line by submission of additional laboratory analytical data of raw and tap water, or receipts for alternative treatment chemicals.

Reimbursement for Costs Resulting from Salt Contamination

1. Water Supply Replacement

(a) MassHighway's investigation must document MassHighway responsibility for salt contamination of the water supply.

(b) MassHighway must determine cost-effective remedial action by evaluating appropriate alternatives. The complainant is responsible for obtaining and forwarding copies of at least three cost estimates for MassHighway review prior to initiating the work.

(c)The salt complainant must agree to pay the contractor for the appropriate, costeffective remedial action and obtain receipted bills for submittal to MassHighway. MassHighway shall only reimburse for reasonable costs and shall not be responsible for any upgrades to the property such as landscaping (including shrubs and trees), walkways or driveways.

(d) The salt complainant must agree to keep the well pump for the salt contaminated well operational, with electrical service connected and an appropriate, connected sampling tap for MassHighway.

(e) Reimbursement can only occur, if appropriate, after MassHighway has sampled monthly for at least one year and has copies of all receipts. Reduction to a six-month period may apply as long as the conditions stipulated in the Well Sampling section, item 7 have been met.

(f) MassHighway shall not be responsible for any costs associated with installation, operation, or maintenance of any equipment to address contamination not related to deicing chemicals.

(g) MassHighway shall not be responsible for costs associated with well replacement undertaken at the discretion of a complainant and that was not an effective remedial action, or repairs undertaken prior to the initial complaint.

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2. Water Treatment

(a) All water treatment installations should be cost effective and specifically designed for remediation of the highway deicing chemical(s) of concern. The system design and cost must be submitted to MassHighway for review prior to installation. Future maintenance costs for the water treatment to address deicing chemicals should be addressed as part of a settlement agreement. The sizing or addition of equipment, as well as future maintenance costs for systems not specifically related to deicing chemicals shall be the sole responsibility of the property owner.

Corrosion Complaints

Where chloride concentrations in the water supply are greater than 250 ppm MassHighway shall consider conducting a corrosion study for evaluation and possible reimbursement for salt-enhanced corrosion to plumbing and water-using appliances. The property owner shall request in writing that MassHighway complete a corrosion study on their behalf. MassHighway shall deny the request for a corrosion study if the chloride concentration in the well is <250 ppm. The chloride concentration of 250 ppm shall serve only as a threshold number where MassHighway shall perform the corrosion study.

The complainant must have paid receipts specifying the plumbing repairs and must save the removed, corroded parts for MassHighway's inspection. MassHighway shall conduct a corrosion study that includes inspection and photographing the plumbing system, metals analyses of the water (raw and after passing through the plumbing system), pH measurements, dissolved oxygen measurements and inspection of the plumbing system for dissimilar metals and electrical systems grounding.

At the completion of the corrosion study MassHighway shall make a determination on liability and report the findings in a letter report. Any reimbursement for corrosion shall be based on service life and depreciated value times a percentage of chloride effects on the component(s) taking into consideration other variables that are contributing to corrosion such as dissolved oxygen, electrical grounding, pH, and water hardness. MassHighway shall not be responsible for the full replacement value of the component(s).

Well Abandonment

When a replacement water supply is constructed by MassHighway for a salt-contaminated well, the existing well shall be properly plugged and abandoned. This shall prevent the salt contaminated well from serving as a conduit that may cause contamination of nearby wells. This

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policy is in conformance with the recommendations of section 4.6 of DEP Publication WSC-310-91. Before MassHighway institutes any remedial action or reimbursement, the complainant must agree to abandonment of the salt-contaminated well or must assume full responsibility for the salt contamination.

In instances where the complainant requests to maintain the existing well for irrigation or other purposes the release agreement shall include language that relieves MassHighway from any future responsibility related to this well. The property owner must also provide evidence that the release agreement containing such language has been properly filed with the appropriate registry of deeds or Land Court, if registered, prior to MassHighway performing any site work.

Remedial Actions

The following are examples of remedial actions that may be taken to alleviate salt contamination of drinking water supplies. A copy of a standard release form to allow implementation of the selected remedial action is included as Appendix 9.

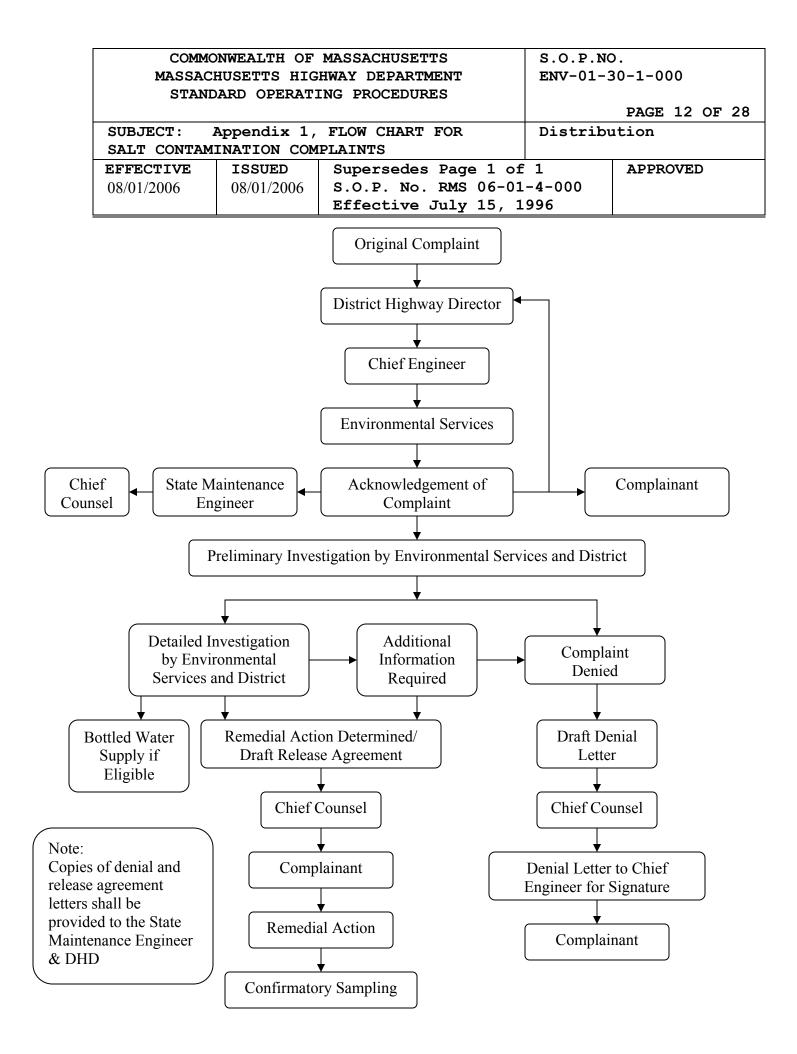
- (1) Connection to a public water supply.
- (2) Well replacement, with a relocated and properly constructed well.
- (3) Rehabilitating an existing well with a well sleeve.
- (4) Installation of water treatment.
- (5) Construction of a new highway drainage system or modification of an existing highway drainage system.
- (6) Reduction in salt usage on the nearby state highway, through the use of alternative deicing practices, procedures and materials.
- (7) Modification of deicing salt storage, handling and housekeeping practices at a maintenance facility.
- (8) Installation and operation of a scavenger well.

List of Appendices

- (1) Flow chart for salt contamination complaints.
- (2) Private well salt complaint acknowledgment letter.
- (3) Private well data form.
- (4) Resident's certification form for bottled water request.

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- (5) Physician's documentation form for bottled water request.
- (6) Public Water supply salt complaint acknowledgment letter.
- (7) Public Water supply data form.
- (8) Right of Entry Form.
- (9) Typical Release Agreement Form.



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Mr. & Mrs. John Doe 123 Massachusetts Road Anytown, MA 01111

Dear Mr. & Mrs. Doe:

As discussed with Mr. Doe in a telephone conversation on January 26, 2003, with Mr. Richard Smith, Environmental Services, attached are copies of the following forms:

- (1) Private Well Data Form.
- (2) Resident's Certification Form for Bottled Water Request.
- (3) Physician's Documentation Form for Bottled Water Request.
- (4) Right of Entry Form.

If you meet the criteria that are listed on the "Bottled Water" form, please complete the forms, have your signature notarized and return the forms to this office. Please have your doctor complete the Physician's form and return it to this office.

Please provide the information requested on the forms together with any supporting data. This shall be the basis for initiating an investigation of your complaint of salt contamination of your well.

Our policy in this regard is that MassHighway shall investigate a private well salt contamination complaint provided:

- (a) A resident is on a documented sodium restricted diet of less than 1000 milligrams per day (mg/d) and the sodium concentration in the water supply exceeds 20 milligrams per liter (mg/l), or;
- (b) A resident is on a documented sodium restricted diet of less than 2000 mg/d and the sodium concentration in the water supply exceeds 40 mg/l, or;
- (c) The chloride connection in a domestic supply well exceeds 250 mg/l.

Please fill out the forms as completely as possible.

After this office reviews the completed forms, we shall make an appointment for a site visit. During the investigation, water samples shall be collected monthly for up to one year. The investigation shall determine whether MassHighway is responsible for salt contamination of your water supply.

If we determine that MassHighway is responsible for a significant impact on the water supply, then MassHighway shall remediate the well. If we are not a significant source of contamination to the water supply, the complaint will be denied. Any complaint denial will include the reasons for the denial.

MassHighway appreciates the opportunity to assist you in this matter.

Very truly yours,

Environmental Services

Cc: District Highway Director State Maintenance Engineer Chief Counsel

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Environmental Services

Private Well Data Form

Please fill out this form as completely and as accurately as possible. Please attach all supporting data and send to:

Massachusetts Highway Department Environmental Services Ten Park Plaza, Room 4260 Boston, MA 02116 Attn: Supervisor, Salt Remediation Program

If you have any questions please call Mr. Richard Smith, Salt Remediation Coordinator at 508-555-1111.

(1) **Owner**

Name:

Street Address:
City or Town:
Zip Code:
Telephone No. (Residence):
(Work):
(2) Date property purchased:
(3) Occupant(s)
Name:
Street Address
at Well Location:
City or Town:
Zip Code:
Telephone No. (Residence):
(Work):

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(4) Wa	ter Use			
	(a) Nu	mber of people using the well location:		this
(b)) Other uses of we			
	Agricultural: Commercial:			
	Industrial: (specify):	Other Estimated da gallons.	ily water usage	for all
(5) Typ	Driven Point:	Dug: Other		
(6) We	ll Data			
(a)) Depth of well:]	Estimate/Actua	1
(b) Diameter of well:		l: 1	Estimate/Actua	1
(c) Depth of casing:			Estimate/Actua	1
(d) Casing material:			
(e)) Casing seal:			-
(f)	Depth to bedroc	k:	Estimate/Actua	ıl

(g) Screened interval:_____ Estimate/Actual (h) Yield of well: ______gallons per minute Estimate/Actual

(i) Date well constructed: _____ Estimate/Actual

(j) Type of Pump: Submersible:______ Jet:_____ Shallow:_____ Other (specify):_____ (k) Depth of pump intake:_____ (l) Driller's name: Street Address: City of Town: Zip Code:_____

COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD OPERATING PROCEDURES			S.O.P.NC ENV-01-3	
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SUBJECT: Appendix 3, PRIVATE WELL DATA FORM			Distribu	ition
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		Effective July 15, 1996		

Telephone No.:_____

Please attach a copy of the well driller's bill, if available.

(7) Water Quality

- (a) Describe any water problems:
- (b) When did you first notice any water problems?_____
- (c) Dates water samples were collected:

Please attach copies of all water analyses:

(8) Please include a water analysis from a laboratory that is certified by the Massachusetts Department of Environmental protection, if not already provided.

The water sample should be analyzed by the certified laboratory for the following constituents:

Specific Conductance Sodium Calcium Chloride

(9) Water Treatment

- (a) Do you have any water treatment and/or water filtration equipment?
- (b) If yes, please describe the equipment and include copies of bills from the installer and from the company that services the equipment and their name(s), address(es) and telephone number(s).

Softener:	Neutralizer:
Other (specify):	
II	······································

How much salt do you use each year in your water softener?

_____ pounds

What chemical is used in your neutralizer?_____

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Other:

(10) Please attach a sketch showing:

- (a) the state highway
- (b) the well
- (c) the house
- (d) the septic system including the leaching field
- (e) the property lines
- (f) adjacent property owners wells and septic systems (See attached example)

(11) Certification

I hereby certify that all of the statements and information on and supplied with this form are true and complete to the best of my knowledge and belief and that no information necessary to the resolution of this complaint is withheld.

Owner's signature:

Date: _____

Signature of person preparing this form:

Date:_____

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SUBJECT: Appendix 4, RESIDENT'S CERTIFICATION FOR BOTTLED WATER			Distribut	cion
EFFECTIVE ISSUED Supersedes Pages 1 & 08/01/2006 08/01/2006 S.O.P. No. RMS 06-01 Effective July 15, 1		-3-950	APPROVED	



Environmental Services

Resident's Certification Form for Bottled Water Request

Dear Sir:

The Massachusetts Highway Department (MassHighway) is investigating your complaint of salt contamination of your water supply. During our investigation, we may provide bottled water to residents whose sodium intake is restricted to less than 2000 milligrams (two grams) per day because of documented health problems.

In order to qualify for this bottled water, you must:

- 1. Be under a doctor's care for a blood pressure or heart condition.
- 2. You must be on a 2000 milligrams per day, or less, sodium restricted diet.

3. You must already be purchasing diuretics and low sodium foods and can provide and maintain receipts to document these purchases.

4. You must provide a statement from your physician documenting your restricted sodium intake (see attached "Physicians Documentation Form").

5. You must notify this office of any change in your condition that removes your need for this bottled water.

6. You must certify your request for MassHighway supplied bottled water and have your Signature notarized by the Notary Public as follows:

I hereby certify that all the statements and information on and supplied by this request for bottled water are true and complete to the best of my knowledge and belief, and that no information necessary to the resolution of this complaint is withheld.

Resident's	
signature	Date:

COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD OPERATING PROCEDURES			S.O.P.NO. ENV-01-30-1-000
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SUBJECT: Appendix 4, RESIDENT'S CERTIFICATION FOR BOTTLED WATER			Distribution
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COMMONWEALTH OF MASSACHUSETTS

COUNTY:_____DATE:_____

Then personally appeared the above named______ and acknowledge the above to be his/her free act and deed, before me.

_____, Notary Public

My Commission Expires

If you believe that you qualify for this program, please put your request in writing, with reference to Item 1-6 above, and submit to:

Massachusetts Highway Department Ten Park Plaza, Room 4260 Boston, MA 02116 Attn: Supervisor, Salt Remediation Program

If you have any questions, you may contact Richard Smith, Salt Remediation Coordinator, at 508-555-1111.

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STANDARD OPERATING PROCEDURES				PAGE 21 OF 28
SUBJECT: Appendix 5, PHYSICIAN'S DOCUMENTATION FORM FOR BOTTLED WATER REQUEST			Distribu	tion
EFFECTIVE 08/01/2006	ISSUED 08/01/2006	Supersedes Pages 1 & S.O.P. No. RMS 06-01 Effective July 15, 1	-3-951	APPROVED



To the Physician:

Because of sodium levels of about _____mg/l

(milligrams per liter) in the well of:

Name:_____

Address:_____

The Massachusetts Highway Department (MassHighway) may provide bottled water containing less than 20 mg/l of sodium to:

(Name)_____, if he/she is required to consume less than 2000 mg of sodium daily, because of documented health problems.

Patient:

Name:_____

Address:_____

Telephone Number (__)____

Physician:

Name:_____

Address:_____

Telephone Number (__)_____

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	DOCUMENTATION FORM FOR BOTTLED WATER			tion	
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Has this patient been treated for congestive heart failure?

- Yes
 No

 1. Have you restricted this patient's daily sodium intake to 1000 milligrams (1 gram) or less?
 Yes

 Yes
 No

 2. Have you restricted this patient's daily sodium intake to 2000 milligrams (2 grams) or less?
 Yes

 Yes
 No

 3. Is this patient required to use diuretics?
 Yes

 Yes
 No

 4. Is this patient required to consume only foods that are low in sodium?

 Yes
 No

 5. Should this patient be provided with bottled water containing less than 20 mg/l of sodium?

 Yes
 No

 6. Please notify this office of any change in this patient's condition, which obviates the need
- 6. Please notify this office of any change in this patient's condition, which obviates the need for bottled water.

4. Certification

I hereby certify that all of the statements and information on and supplied with this form are true and complete to the best of my knowledge and belief, and that no information necessary to the resolution of this complaint is withheld.

Physician's signature_____

Date:_____

<u>Please mail completed form to:</u> Massachusetts Highway Department Environmental Services Ten Park Plaza, Room 4260 Boston, MA 02116 Attn: Supervisor, Salt Remediation Program

If you have any questions, you may contact Mr. Richard Smith, Salt Remediation Coordinator, at 508-555-1111. Thank you for your cooperation.

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SUBJECT: Appendix 6, PUBLIC WATER SUPPLY COMPLAINT ACKNOWLEDGMENT LETTER			Distribution		
EFFECTIVE 08/01/2006	ISSUED 08/01/2006	Supersedes Page 9 S.O.P. No. RMS 06-01 Effective July 15, 1			

Ms. Mary Jane Chairman Anytown Board of Selectmen P.O. Box 123 Anytown, MA 01234

Dear Ms. Jane:

With reference to your telephone conversation with Mr. Richard Smith on May 16, 2005 regarding your concern about salt contamination of the Anytown public water supply, attached is a copy of our "Public Water Supply Data Form". Please have the water department superintendent complete the form and submit all of the requested data to this office.

The supporting data should clearly define the extent of state highways that lie within the Zone II of the municipal wells and the drainage basin of the reservoirs.

After we review the data submitted with the form, an appointment for a site visit shall be made with the water department superintendent. If it appears that MassHighway may be a significant source of sodium to the water supply, the water department shall be required to provide us with monthly water analyses for sodium, calcium, chloride and specific conductance for at least one year. A comparison shall be made between the sodium and chloride fluctuations and trends in the water supply with the historical annual salt applications to the state highway.

If the results of our investigation indicate that MassHighway winter maintenance operations are the source of a significant portion of the sodium concentration in the municipal water supply, MassHighway shall evaluate appropriate remedial actions. Any investigation and/or remediation for public water supplies shall be conducted in cooperation with the Water Supply Section of the Massachusetts Department of Environmental Protection.

If you have any questions, please contact Mr. Richard Smith at 508-555-1111. MassHighway appreciates the opportunity to assist Anytown in this matter.

Very truly yours,

MassHighway, Environmental Services Supervisor, Remediation Programs

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SUBJECT: Appendix 7, PUBLIC WATER			Distribution		
SUPPLY DATA FORM					
EFFECTIVE	ISSUED	Supersedes Page 1 &	2 APPROVED		
08/01/2006	08/01/2006	S.O.P. No. RMS 06-01-3-609			
		Effective July 15, 1	996		



Environmental Services

Please fill out this form, attach all supporting data and send to:

Massachusetts Highway Department Environmental Services Room 4260 Ten Park Plaza Boston, MA 02116 Attn: Supervisor, Salt Remediation Program

If you have any questions please call Environmental Services, Supervisor Salt Remediation Program at 617-555-1111.

(1) Water Department

Name of water department:

Name of superintendent:_____

Street Address:_____

City or Town:_____

Zip Code:_____

Telephone No:_____

(2) Location of municipal well(s) and/or reservoir(s) containing more than 20 milligrams per liter of sodium. <u>Please attach a map showing:</u>

- (a) the well and/or reservoir location(s)
- (b) the state highways
- (c) the "Zone II" area of the aquifer and drainage basin boundaries

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(3) Location of other municipal well(s) and/or reservoir(s) operated by your water Department.

Please attach a map of the city or town showing:

- (a) the well(s) and/or reservoir(s) locations
- (b) state highways
- (c) town roads
- (d) municipal and private salt storage areas

(4) Analytical Data

Please attach copies of <u>all</u> water analyses for the well(s) and/or reservoir(s) with 20 mg/l or more of sodium for at least the past ten years. Please include analyses for all constituents tested as well as sodium.

Please attach similar data for the water analyses of samples collected at the "free-flowing tap."

(5) Water Treatment

Please list, on a separate page, all water treatment equipment and chemicals used. Include annual quantities of chemicals used and the concentration of sodium in mg/l that is added to the water through the use of these chemicals.

(6) Geohydrologic data

Please attach a copy of all boring logs, engineering studies, pumping tests, well completion reports, hydrologic studies, etc. for the well(s) and/or reservoir(s) containing more than 20 mg/l of sodium.

(7) **Pumpage data**

Please list, by month, the annual pumpage for at least the past ten years for all municipal Well(s) and/or reservoir(s) operated by your water department.

(8) Certification

I hereby certify that all of the statements and information on and supplied with this form are true and complete to the best of my knowledge and belief and that no information necessary to the resolution of this complaint is withheld.

Signature of water superintendent or water commissioner:

Name:	Date:	
Title:		

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SUBJECT: Appendix 8, RIGHT OF ENTRY FORM		Distribution			
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Environmental Services

Right of Entry

_____, the sole owner(s) of property located at I/We, _____, Massachusetts ("Property"), do hereby grant permission to the Massachusetts Highway Department ("MassHighway") and its duly authorized agents and contractors to enter upon the Property for the purpose of collecting water samples and pertinent data related to the water supply well and plumbing system to evaluate the impact of highway deicing salt use on the water supply. These samples shall be collected on a monthly basis for a sufficient length of time to make a determination based on the results of the water analyses. All costs connected with the above described work shall be borne by MassHighway.

*0.

*Signed this	day of	, 2005
Signatures of Property Owner	(s)	
	(Print name)	(Print name)
COMMONWEALTH	OF MASSACHUSETTS	
COUNTY:	DATE:	
Then personally appea		ove to be their free act and deed,
before me.	_ 0	,
		Notary Public

My Commission Expires

*You may wish to discuss the matter with legal counsel before signing this document.

MASSAC	ONWEALTH OF MASSACHUSETTS HUSETTS HIGHWAY DEPARTMENT DARD OPERATING PROCEDURES	S.O.P.NO. ENV-01-30-1-000		
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SUBJECT: A AGREEMENT FO	ppendix 9, TYPICAL RELEASE RM	Distribution		
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RIGHT OF ENTRY AND RELEASE

- We, (Property Owner), the sole owner(s) of property located at Main Street, Anytown, Massachusetts ("Property"), do hereby grant permission to the Massachusetts Highway Department ("MassHighway") and its duly authorized agents and contractors to enter upon the Property to: (a) Drill test wells until one has been selected and approved by MassHighway as a replacement water supply ("replacement well"); (b) Install, if needed, a water treatment unit to reduce common dissolved minerals; (c) Install and connect a pump system; (d) Excavate an area sufficient to connect the replacement well to the existing water supply system plumbing; (e) Properly abandon the existing water supply well with neat cement grout and; (f) Take other reasonable measures to provide a replacement water supply to the Property, including the removal and replacement to the original condition, to the extent practicable, of landscaping, driveways, light posts, fences, or walls.
- 2. We, (Owner), understand that the purpose of this work is solely to correct sodium and chloride contamination of the water supply for the Property. With the exception of sodium and chloride, if water analyses document that any constituent(s) found in water samples collected from the original water supply well exceed Massachusetts Drinking Water Standards or Guidelines, MassHighway shall not be responsible for remediating those constituents. The yield of the replacement well shall meet or exceed the present demand on the existing water supply well. All costs connected with the above-described work shall be borne by MassHighway.
- 3. We, (Owner), understand that we shall be provided with the manufacturer's warranty, where applicable. The manufacturer and/or installer shall be responsible for correcting, repairing or replacing any defective equipment or workmanship, as specified in the warranty, during the warranty period. All future operation and maintenance costs, including, but not limited to, electrical service maintenance or improvement, pump maintenance, electricity usage, the cost of filters, filter maintenance or other supplies, shall be solely our responsibility and not the responsibility of MassHighway.

MASSACH	COMMONWEALTH OF MASSACHUSETTSS.O.P.NO.MASSACHUSETTS HIGHWAY DEPARTMENTENV-01-30-1-00STANDARD OPERATING PROCEDURESENV-01-30-1-00			
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EFFECTIVE	ISSUED			APPROVED
08/01/2006	08/01/2006			

MASSTHIGHWAY **RIGHT OF ENTRY AND RELEASE, (cont.)**

4. In consideration of MassHighway's completion of the work as described in paragraph 1 above, we, (Owner), on behalf of ourselves, our predecessors, successors, heirs, assigns and agents, and any and all other persons or entities acting on our behalf. hereby forever release and discharge the Commonwealth, and all of its political subdivisions, departments, offices, agencies, agents, employees and assigns of and from any and all past, present and future actions, causes of action, claims for damages, injunctive relief, orders, suits, debts, demands, judgments, accounts, covenants, contracts, agreements, liabilities, attorneys' fees, damages, costs, sums of money, and any other rights, demands, claims, suits or liabilities of any kind, including those related to vegetation damage and plumbing corrosion, whether under statutory or common law, whether or not heretofore known, suspected or asserted, and by whomever suffered, incurred or asserted, arising out of or relating in any way to the elevated sodium or chloride levels present in the original water supply for the Property or arising out of or relating to work done by MassHighway or its agents or contractors to correct this problem.

Signed this	day of		,
	Signature: _ Signature: _		er Signature)
COMMONWEALTH OF MASSACHUSETTS COUNTY:		DATE :	
Then personally appeared the above named above to be their free act and deed before me.			_ and acknowledged the
Notary Public My Commission Expires			

You may wish to discuss this matter with legal counsel before signing this document.