Introduction

This Proposed Plan provides information to the public on the US Army Corps of Engineers, New England District (the Corps) recommended remedial action for groundwater contamination at the site of the former Ground to Air Transmitter (GAT) Facility in Glenburn, Maine (the Site). This is intended to inform the community of the Corps' rationale for the selection of the preferred alternative and to encourage and facilitate community participation.

The Proposed Plan

This Proposed Plan has been prepared by the Corps to present the proposed remedial action for the former Glenburn GAT Site in Glenburn, Maine. This plan describes the rationale for recommending "Alternative 2 - Monitored Natural Attenuation" as the preferred remedy; which includes:

- Long term monitoring of groundwater
- Point of use water treatment for water supply wells
- Institutional controls.

No remedial action is recommended for surface water or soil vapor intrusion (to indoor air).

Further soil investigation under the municipal building is recommended when the building is demolished to confirm the current conclusion that there is no unacceptable residual soil contamination under the structure. Currently, there is no evidence significant soil contamination is present under the building, but an investigation is prudent if the building is removed in the future. No other remedial action for soil is recommended.

Federal and state environmental laws govern characterization and response activities at federal facilities. The Department of Defense (DOD) has the responsibility for identifying, investigating, and determining clean-up activities related to former (DOD) facilities under the Formerly Used Defense Site (FUDS) Program. The Corps is the lead agency responsible for managing remediation based on the Remedial Investigation (RI) and Feasibility Study (FS) of the former Glenburn GAT. The FUDS property (FUDS Property Number D01ME0566, Project Number 01) consists of the 9.09 acres originally used by the United States Air Force (USAF) to construct and operate the Former Ground to Air Transmitter Facility, and is now used by the Town of Glenburn for municipal services.

The federal statute, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), better known as Superfund, establishes procedures for site investigation, evaluation and remediation. Under the framework of CERCLA, the Corps has been working towards a clean-up plan for the Site. The Corps has worked closely with the Maine Department of Environmental Protection (DEP), the Town of Glenburn, and local community representatives.

As the lead agency for implementing the environmental response program for the Site, the Corps has prepared this Proposed Plan in accordance with CERCLA Section 117(a) and Section 300.430(f)(2) of the National Contingency Plan (NCP) to continue its community awareness efforts and to encourage public participation. This plan has been developed with support from the Maine DEP.

Purpose of Proposed Plan

The purpose of this Proposed Plan is to ensure that the community understands the information compiled for the Site and understands the proposed action that is being recommended. After the public has had the opportunity to review and comment on this Proposed Plan, the Corps will summarize and respond to all comments received during the comment period and the public meeting in a document called the Responsiveness Summary. Refer to the ***Public Comments are Requested*** highlight box for the meeting date and times.

Public Comments are Requested

PUBLIC COMMENT PERIOD
January 9, 2013 to February 8, 2013
Written comments on this Proposed Plan can be submitted to the Corps during this comment period. Comment letters must be postmarked no later than February 8, 2013 and can be sent to Ms. Marie Wojtas, Project Manager, US Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2751. Comments can also be e-mailed to: marie.a.wojtas@usace.army.mil

PUBLIC MEETINGS – **January 8, 2013**
The Corps will host an information session from 6:00pm to 7:00pm at the Glenburn Municipal Building, 144 Lakeview Avenue, Glenburn, ME to provide information and answer questions in an informal setting. This will be followed by a formal public hearing from 7:00pm to 8:00pm, which will consist of a brief introduction by the Corps and an opportunity for public comments to be submitted – either verbally or in writing.

The Corps and Maine DEP will carefully consider all comments received. The final preferred alternative decision for the site will be documented in a Decision Document, which will include the Responsiveness Summary.

This Proposed Plan highlights key information from previous reports regarding details from the Site characterization presented in the RI and FS Report. The RI, which includes Ecological Screening Level and Human Health Risk Assessments, presents the nature and extent of Site contamination. The FS supports the identification and evaluation of cleanup technologies, and presents the rationale for selection of the preferred alternative. These and other documents that support this Proposed Plan are available locally at the Glenburn Municipal Building.

Site Background

Where is the former Glenburn facility?

The Site is in Glenburn, Maine, approximately 8 miles northwest of Bangor (located at 144 Lakeview Avenue in Glenburn, Maine). The Site is located on the crest of a gentle hill, as depicted in the topographic map shown on Figure 1.

Glenburn is predominantly rural residential with a few commercial operations and farms. The Town population was 4,594 according to the 2010 census.

What was the former Glenburn facility used for?

The facility was used by the US Air Force as a ground to air transmitter (GAT) station between approximately 1958 and 1967. The GAT facility was built to support the BOMARC IM99A missile launch and command units intended to respond to Soviet bombers. The property was purchased by the Town of Glenburn in 1967 and is currently used as a municipal building (see Figure 2).

Figure 2: Former Glenburn GAT Facility

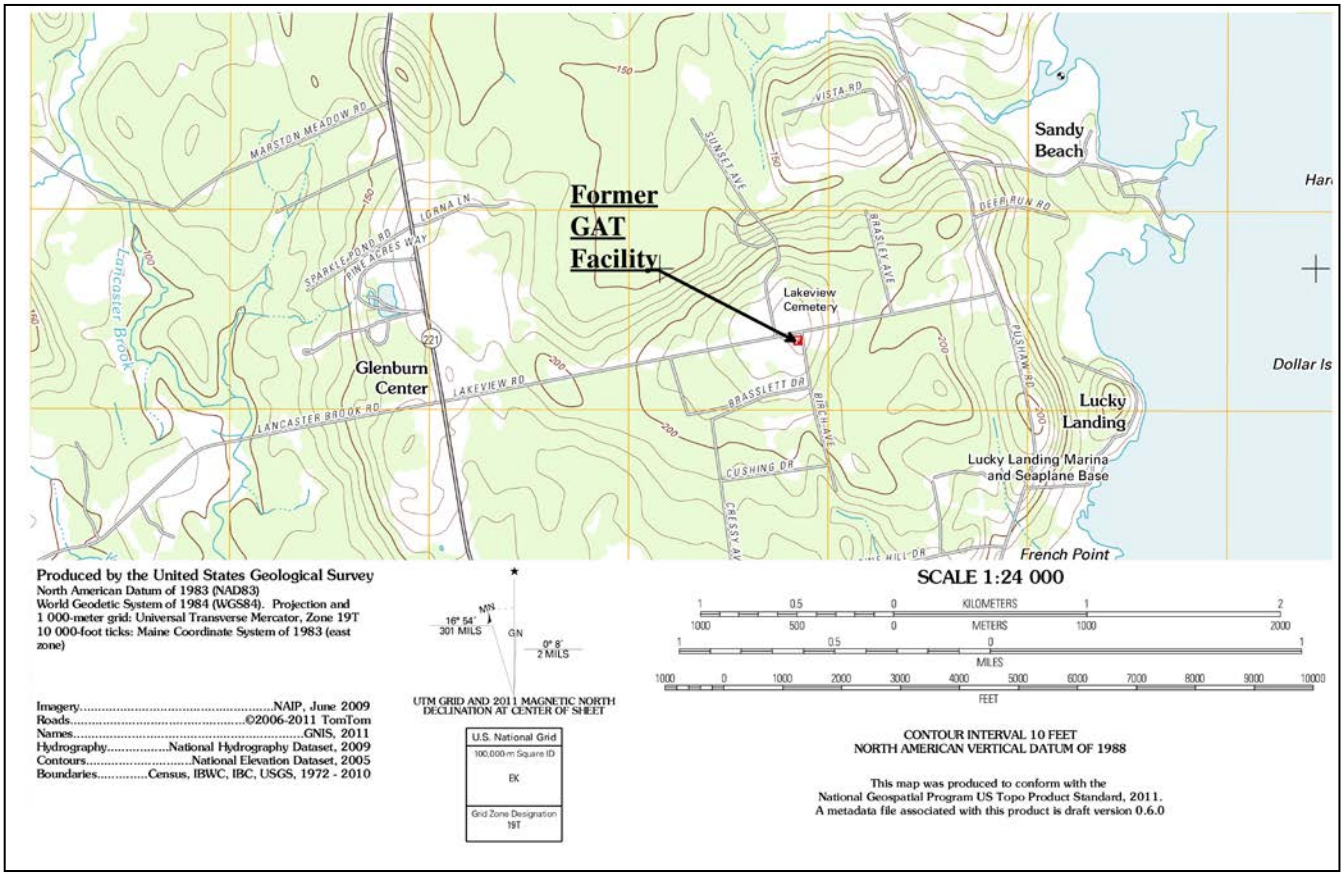

Figure 1: Topographic Map of the Former Glenburn GAT Area

What is the contamination problem and where did it come from?

Based on the history of facility activities, prior investigations, and the results of the RI, the primary chemical of concern (COC) remaining in the subsurface at the Site is trichloroethene (TCE). TCE is a volatile organic compound (VOC) that is generally soluble in groundwater at low concentrations. The US Environmental Protection Agency (USEPA) has classified TCE as a potential carcinogen, with a federal maximum contaminant level (MCL) of 5 micrograms per liter (µg/L) in drinking water. As such, its presence in groundwater has been the primary focus of past Site investigations. Refer to the ***Concentration Units*** highlight box for information on chemical concentrations.

Concentration Units

1 microgram per liter (µg/L) is referred to as a *part per billion* (ppb). It is a common unit of measure that represents the concentration of an organic contaminant such as TCE in groundwater.

For context, one part per billion is equal to one inch out of 16,000 miles. 1% of a chemical in groundwater is 10,000,000 µg/L (ppb); therefore, a chemical concentration of 5 µg/L is a very small fraction of a percent (0.0000005%).

Historical operations at the facility included the use of TCE as a cleaning solvent for electronic and other equipment. Routine usage of TCE may have resulted in its release to the environment. TCE would then have migrated downward through the soil (overburden) and into the underlying fractured bedrock where it would slowly dissolve into the groundwater over time. The exact nature and locations of historical releases are unknown.

TCE has been detected in monitoring wells in the immediate vicinity of operational areas of the former facility property at concentrations generally in the 1 to 5 µg/L range except in two on-Site monitoring wells where concentrations have been measured up to 60 µg/L and 25 µg/L (MW-01 and MW-02, respectively).

The concentrations detected in several but not all groundwater wells have declined over time likely due to natural attenuation. Natural attenuation is a term used to refer to the natural dispersion (spreading), degradation (microbial and abiotic chemical and physical transformations to breakdown products) and dilution of groundwater contaminants over time. The data from the other wells are inconclusive in terms of concentration trends over time, or indicate stable conditions. Further monitoring is deemed necessary to determine if natural attenuation is actually occurring. Reviews will be performed to evaluate whether monitored natural attenuation is applicable. However, given the length of time since the releases occurred, it is expected that all concentrations will eventually decrease due to the natural attenuation processes mentioned above.

Is our drinking water impacted?

Private and public drinking water wells are the main source of potable water in the area. Most of the water supply wells are bedrock wells drilled into the fractured bedrock aquifer that underlies the region. Public water supply wells provide drinking water to the Homestead Mobile Home Park located immediately south and west of the Site (off-site wells PW-02 and PW-03), and to the on-Site Municipal Building and Emergency Services Building (on-site well PW-01).

A groundwater monitoring (GWM) program was initiated by the Corps in 2002 and is currently ongoing. The program includes collecting water samples from a variety of residential/domestic wells (DW), public water supply wells (PW), groundwater seeps/springs, and environmental groundwater monitoring wells (MW). Laboratory analysis includes TCE and its degradation products.

Concentrations of TCE in recently collected off-Site bedrock groundwater samples throughout the impacted area were all below the remedial action objective (RAO) and MCL of 5 µg/L. TCE has been historically detected in six off-Site water supply wells (PW-02, PW-03, DW-19, DW-22, DW-54 and DW-55 (see Figure 3 for locations). A graph of TCE concentrations in these wells is provided in Figure 4. The Human Health Risk Assessment concluded there are no unacceptable risks to humans from ingestion or inhalation of, or dermal contact with, any VOCs, including TCE, in off-Site water supplies or groundwater. Currently, bedrock groundwater on the Site property is being used as a potable water supply (public water supply well PW-01). Historical monitoring has had no TCE detections in this well.

One off-Site domestic water supply well (DW-22) is equipped with a granular activated carbon (GAC) two stage treatment system. Installation of a treatment system at this location was done as an interim remedial action, although concentrations of untreated well water from DW-22 since 2007 have consistently been below the RAO and MCL. During the ten years of GAC treatment at this well, TCE has never been detected beyond the first of two carbon filters. GAC treatment of DW-22 well water will continue under the preferred remedial alternative.

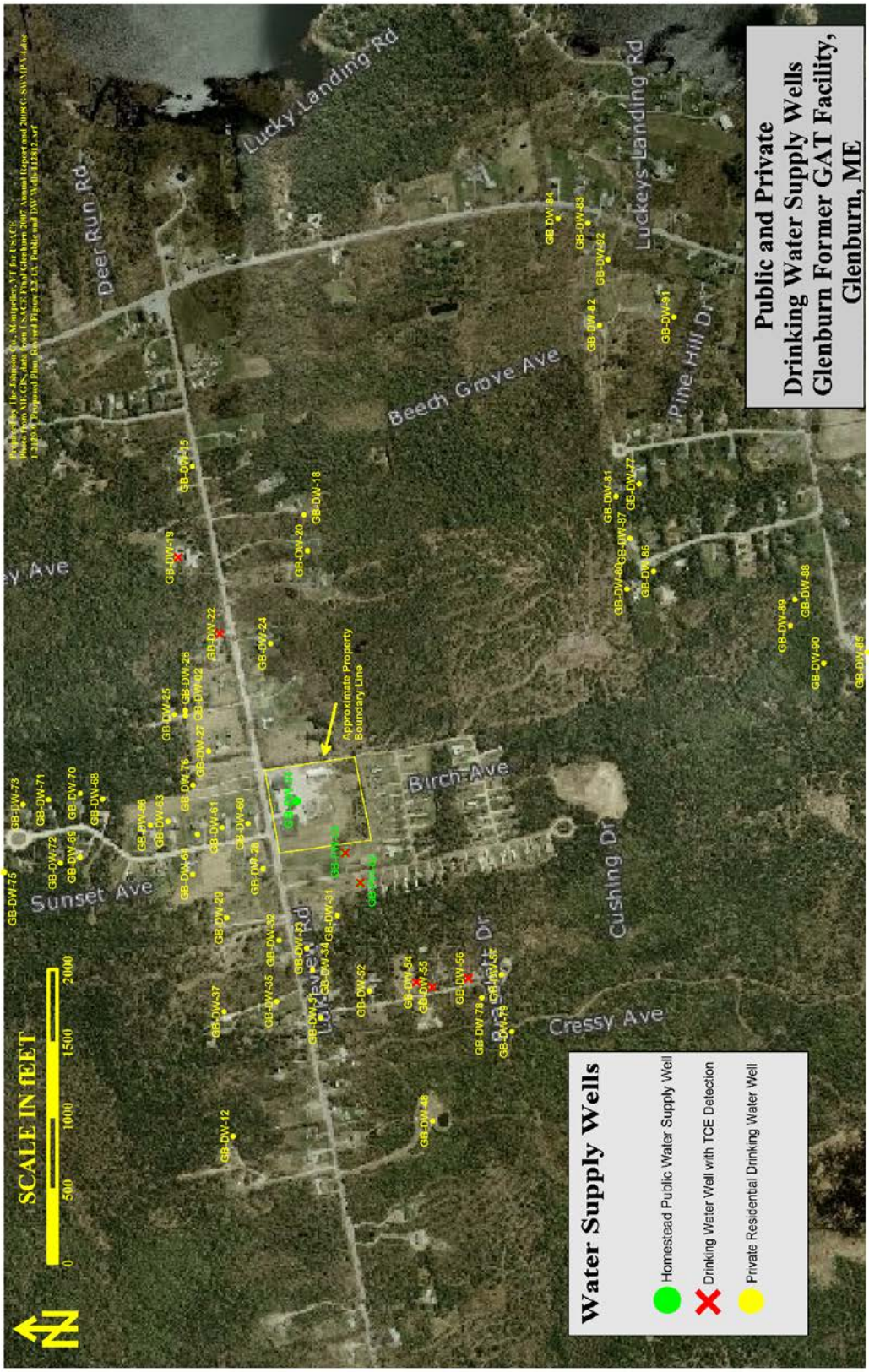

Figure 3: Public and Private Water Supply Well Locations

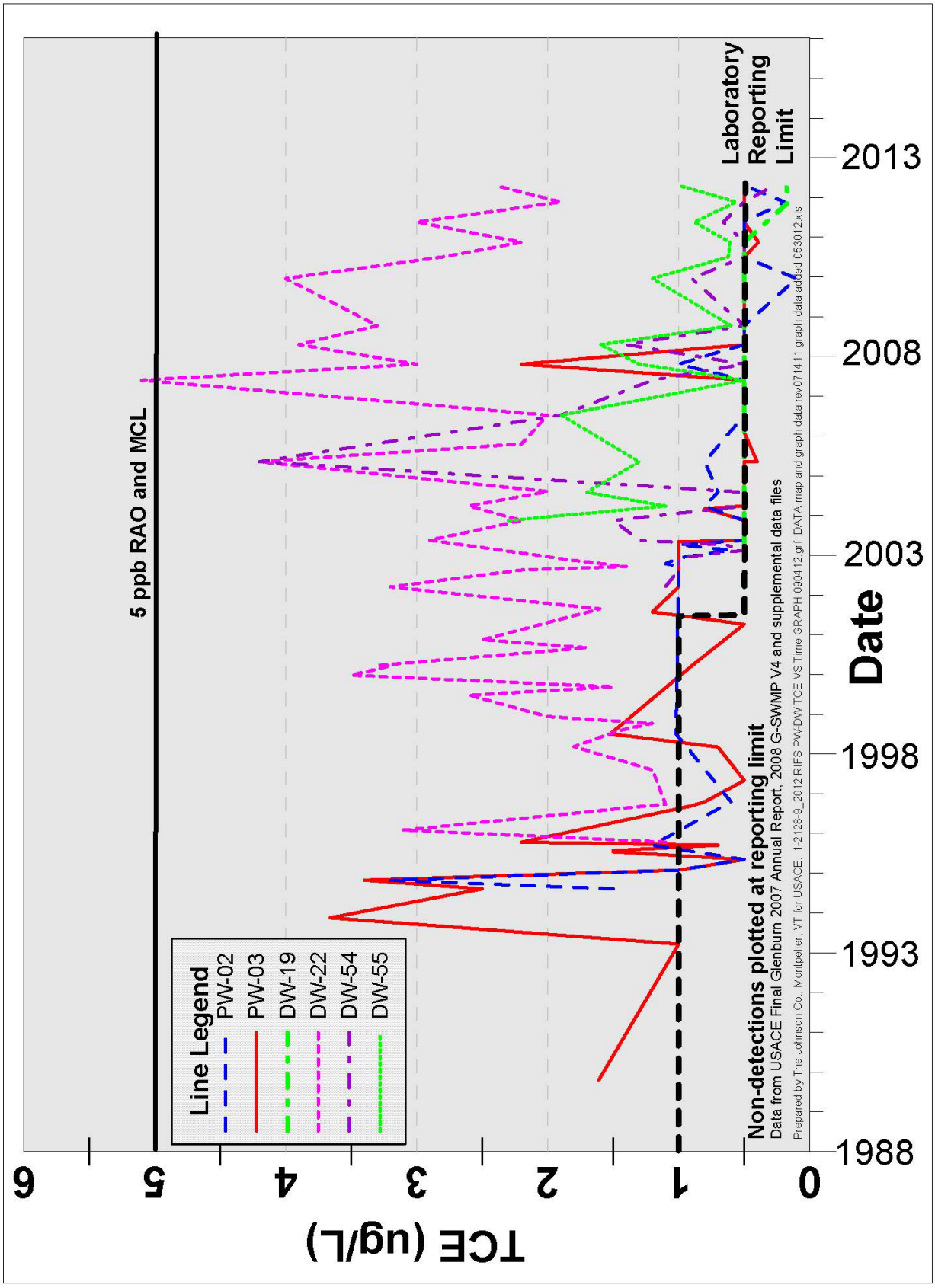

Figure 4: TCE Concentrations in Water supply Wells over Time

Is there on-going groundwater monitoring and will it continue in the future?

The current groundwater monitoring program includes sampling and VOC analyses (including TCE and its degradation products) twice per year from six overburden and six bedrock on-Site monitoring wells, three spring/pore water locations, and 28 area water supply wells. Water treatment for unacceptably impacted water supplies is also included. This monitoring plan will be optimized in the future in a long term monitoring plan, and will continue until sufficient data are collected to confidently demonstrate decreasing concentrations over time with no exposure risks on a consistent basis.

Is Soil impacted?

Multiple on-site soil investigations have only resulted in the detection of TCE in two out of a total of 188 samples (16 parts per billion (ppb) at 19 feet below the ground surface (fbgs) near the salt shed and 1.1 ppb at 3-5 fbgs beneath the slab of the former GAT building). The observed concentrations are an order of magnitude below the EPA residential screening level of 910 ppb, indicating no unacceptable risk to human health. Maine also has a remedial action guideline for TCE in soils of 19 ppb for residential use, and 60 ppb to protect groundwater. No action is recommended for soil except additional investigation under the existing building is recommended if the building is removed in the future (see description of the preferred alternative below)

Is Indoor Air impacted?

Indoor air quality was tested in the former GAT building by the Corps in March 2006 and again in November 2010 under probable worst-case conditions (i.e., during the heating season with frost in the ground), and no unacceptable risk to human health was found, even if residential use was conservatively assumed. TCE was reported in the second set of samples, but at concentrations below EPA residential screening levels.

Additionally, the Human Health Risk Assessment used an Environmental Protection Agency (EPA) computer model to demonstrate that TCE would not adversely impact indoor air quality. Therefore, no action is recommended for soil vapor intrusion.

Is Surface Water impacted?

Surface water was evaluated through the collection and analysis of porewater samples. The mean TCE concentration is 1.94 µg/L (based on 15 samples collected between 2007 and 2012 from GB-SW-04; the surface water location with the highest and most consistent TCE detections). The maximum TCE porewater concentration reported was 3.6 µg/L which would be significantly diluted when it enters any surface water. Nevertheless, 3.6 µg/L is below applicable ecological screening levels and the human health risk assessment calculated no unacceptable human health risks. Therefore, no action is recommended for surface water.

Human Health Risk and Ecological Screening Summary

Soil –TCE was only detected in two of 188 soil samples, at concentrations an order of magnitude below the EPA residential screening level and below Maine Remedial Action Guidance levels, indicating no unacceptable risk to human health.

Surface Water – Surface water may be impacted in West Pond based upon pore-water samples containing TCE up to 3.6 µg/L. However, the human health risk assessment calculated no unacceptable risks, and the concentrations are below applicable ecological screening levels.

Indoor Air –Indoor air quality testing of the Glenburn Municipal Building demonstrates TCE concentrations are below EPA residential screening levels. The Risk Assessment calculated no unacceptable risk.

Drinking Water – TCE has been detected in six water supply wells in recent years. The EPA MCL of 5 µg/L is the RAO and was exceeded in only one residential water supply well once at 5.1 µg/L, in 2007. Using that maximum concentration, the risk assessment calculated an excess cumulative cancer risk of 6.11×10^{-7}, which is below the CERCLA acceptable range of 10^{-4} to 10^{-6} excess cancer risk. That is, the TCE may cause an excess cumulative cancer risk in 1 out of 61 million people exposed to 5.1 µg/L. TCE in several monitoring wells on the Property exceed the RAO.

Site Characterization

What kind of information was collected to characterize the Site?

The 2012 RI Report considered all environmental data collected at the Site. In addition to their in-house technical expertise, the Corps has enlisted the services of additional professionals since 2002

to expand their understanding of the environmental conditions at the Site. These included the US Army Topographic Engineering Center (TEC), Geophysical Applications, Inc. (GAI), Argonne National Laboratory (ANL), The Johnson Company (JCO), Hager-Richter Geoscience, Inc, and Radon Abatement Systems, Inc. (RAS). Refer to the ***Characterization Tools*** highlight box for the investigatory methods used.

Why are such sophisticated tools necessary to characterize the Site?

Characterization Tools

- Geologic and fracture mapping
- Surface and borehole geophysical surveys
- Whole-well, discrete interval and packer sampling
- Monitoring well installation
- Spring identification and sampling
- Bedrock characterization
- Soil sampling
- Exploratory test pits and trenches excavated through geophysical anomalies
- Photolineament analysis
- Historic air photo analysis
- Hydrophysical logging
- Water level monitoring
- Monitoring well, water supply well and pore water sampling

Groundwater flow through the subsurface, particularly fractured bedrock, can be very complex. Rather than migrating through soil in a generally downhill direction, groundwater in bedrock at the Site meanders through a tortuous network of fractures. An array of tools was necessary to characterize the distribution of TCE in the subsurface (bedrock) and to evaluate the potential groundwater migration pathways due to the subsurface conditions described below.

Bedrock was evaluated using geophysical surveys and inspections of outcrops exposed in several locations throughout the study area. Overburden soil was sampled and includes one to eight feet of silty gravel overlying ten to 25 feet of very dense silty basal glacial till. The basal till lies directly over 15-35 feet of highly weathered bedrock saprolite that overlies fractured bedrock. The most common bedrock fractures and large-scale groundwater flow pathways are oriented towards the northeast and southwest. Hydrophysical logging, pump tests, and groundwater testing show that some individual wells and fractures at the Site that are proximate to one another actually are hydraulically and chemically isolated (not connected to each other).

The characterization tools selected and the sequence of the investigation and evaluation process were necessary to understand how groundwater behaves at the Site. This understanding allowed for an assessment of whether there are potential risks posed by the contamination and provided a basis for the development of remedial alternatives for the Site (see following section).

The horizontal extent of the TCE plume is shown in Figure 5. The vertical extent of the TCE plume below the Site is shown on the east-west cross section provided as Figure 6.

A Conceptual Site Model based upon all available data was developed during the RI which describes the contaminant source, hydrogeology, and the nature, extent, fate and transport of the contamination. In summary, it is likely that liquids containing TCE were released onto, into or buried in the ground more than 40 years ago below the GAT building and in the vicinity of GB-MW-01 and OB-4. The liquids likely migrated through the silty gravel, ponded in depressions in the till surface, and slowly infiltrated through fractures and bedding planes in the till and saprolite. TCE also likely diffused into the rock matrix. Residual TCE probably still exists in the till, saprolite or rock; however, no evidence of non-aqueous phase liquids (NAPL) was identified during any of the Site field investigation efforts.

Bedrock aquifer groundwater at the Site is contaminated due to contact with the residual TCE. There is little biodegradation of the contaminants in the groundwater. The contaminated groundwater flows preferentially along permeable bedding-related pathways towards the northeast and the southwest. Temporary changes in the direction of flow occur in response to the pumping of GB-PW-03, precipitation events, and/or seasonal groundwater surface elevation changes.

Dilution and dispersion of the TCE concentration to levels below the 5 µg/L RAO occurs rapidly, due in part to the general high permeability of the upper bedrock, and in part to the frequent changes in flow directions. The result is concentrations less than the RAO in off-site water supplies. Since 2007, concentrations in off-site water supplies have been stable or declining. However, TCE concentrations in two bedrock monitoring wells on the Site property (MW-01 and MW-02) will likely remain above the 5 µg/L RAO for decades to come.

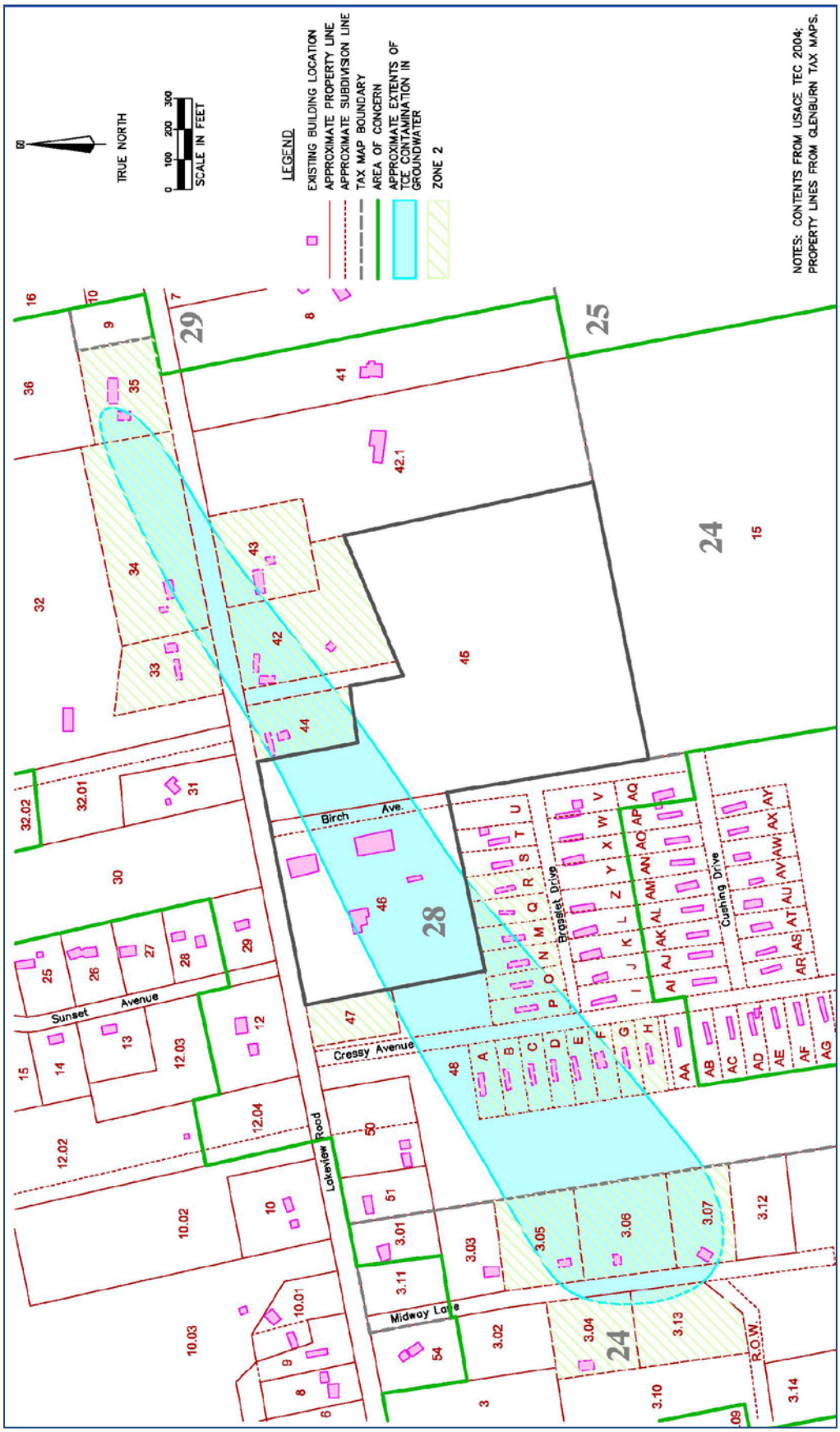

Figure 5: TCE Groundwater Plume and Property Map Showing Institutional Control Zones

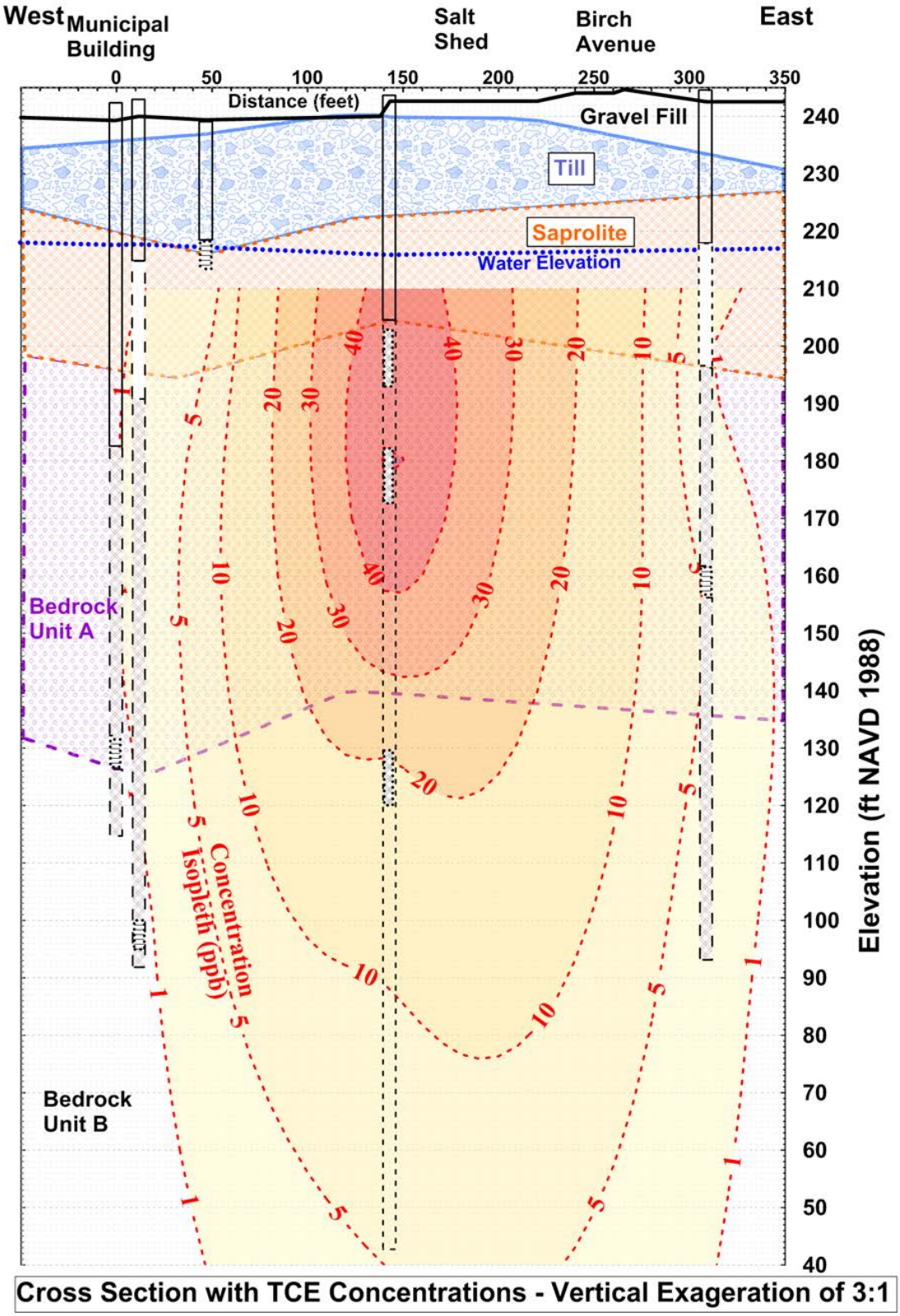

Figure 6: Northeast-southwest Cross Section of TCE Plume

Remedial Alternatives Evaluation

What is a Feasibility Study (FS)?

A FS consists of identifying Remedial Action Objectives (RAOs), evaluating physical, hydrogeologic, and geochemical conditions, and identifying and evaluating potential options to achieve the RAOs for a specific site. The potential options incorporate *remedial technologies*, which are subsequently used to develop comprehensive *remedial alternatives* for the site. A FS was completed for the Site in 2012.

What are the Corps' objectives for the Site?

The FS identified the following RAO for the Site:

- Prevent ingestion of groundwater containing TCE concentrations that exceed Federal maximum contaminant levels (MCLs) or unacceptable risk thresholds, until it can be demonstrated that groundwater has been restored to safe levels.

It is possible that TCE vapors could migrate from contaminated groundwater upwards into residential basements (similar to radon or other subsurface vapors). This is referred to as vapor intrusion. However, the maximum detected concentrations in the building most likely to be impacted (the Glenburn Municipal Building), and results from soil vapor modeling and the human health risk assessment, indicate no unacceptable risk to human health from exposure to volatized TCE in indoor air. Therefore, no RAOs were established for this media or exposure scenario.

What alternatives were considered in the FS?

The FS evaluated the applicability and viability of numerous potential technologies for the Site. Some technologies included removing groundwater, treating it above-ground to remove TCE, and discharging the treated groundwater back into the ground. Other approaches consisted of adding a treatment agent directly into the groundwater to treat the TCE *in situ* (in-place underground).

The FS also considered different types of institutional controls including deed restrictions, notice letters, zoning restrictions, local ordinances, and state controlled well installation restrictions to control future exposure to contaminants.

Refer to the ***Remedial Alternatives*** highlight box for the alternatives that were identified in the FS as being potentially viable solutions to achieve the Site RAOs.

Remedial Alternatives

- Alternative 1 – No Action
  - This alternative does not include any remedial actions including treatment, source removal, monitoring or institutional controls. It is included as a baseline against which other alternatives can be compared
- Alternative 2 – Monitored Natural Attenuation including:
  - Continued point of use water treatment of drinking water well DW-22 with GAC (and others as needed)
  - Long term monitoring of groundwater and drinking water wells
  - Institutional controls
  - Further investigation under the municipal building when the building is demolished to confirm the current conclusion that there is not unacceptable residual soil contamination under the structure. There is no reason to believe this exists, based on findings and data obtained, but it will be further investigated if the building is removed.
- Alternative 3 – same as Alternative 2 but with localized groundwater extraction and treatment

Rationale for Recommended Alternative

What is the rationale for the recommended alternative?

The RI/FS report demonstrates that contaminants in groundwater are not creating unacceptable risks to human health or unacceptably impacting other media such as surface water or indoor air.

A large variety of remedial options were considered, including early actions such as source removal, plume containment, groundwater treatment, and provision of alternate water supplies. The FS concluded that most of these technologies are not necessary; there is limited residual source material in the till, saprolite, and bedrock, and plume containment or alternative water supplies are not required to protect public health. Therefore, these types of aggressive remedies were not considered effective and were not retained in the FS for

detailed evaluation. The primary reason for rejection of *in-situ* treatment as a remedial approach is the risk of treatment chemicals and/or chemically altered groundwater reaching existing water supply wells, particularly PW-03, the water supply well for the Homestead Mobile Home Park.

Alternative 1, No Action, would provide the least protection of human health and the environment, because no remedial actions would be taken to restrict the future use of untreated groundwater.

Alternatives 2 and 3 would be protective of human health due to their point-of-use GAC treatment of impacted water supplies, monitoring to confirm where impacts are occurring, and notification and deed restrictions designed to prevent use of contaminated groundwater for potable use.

Alternative institutional controls, such as zoning restrictions, local ordinances, State controlled well installation restrictions, and private property deed restrictions or notices were considered in the FS, and discussed with MEDEP and the Town. However, these alternatives had significant limitations which made them impractical and/or ineffective.

Remedial Alternative 3 also includes the extraction and treatment of on-site groundwater which would marginally reduce the amount of contamination, but is not expected to meaningfully reduce the time frame to achieve the RAO. The estimated net present value cost for Alternative 2 and Alternative 3 is $0.9 million and $1.4 million, respectively. Alternative 1 has no costs, as no actions are included. Given that Alternative 2 is significantly less costly, and Alternative 3 is not expected to significantly reduce the time frame for achieving the RAOs, Alternative 2 was selected as the recommended alternative.
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Preferred Alternative

What is the preferred alternative for the Site?

Alternative 2 - Monitored Natural Attenuation (MNA) is the preferred remedy alternative, including long term monitoring, point of use water treatment as needed and Institutional Controls (also known as land use controls). No action is recommended for surface water or soil vapor. Further soil investigation under the municipal building is recommended when the building is demolished to confirm the current conclusion that there is no unacceptable residual soil contamination under the structure. There is no reason to believe that significant soil contamination is present under the building based on prior findings and data, but an investigation would be prudent if the building is removed in the future. No other remedial action for soil is recommended.

The intent of the selected remedy is to attain groundwater RAOs through natural attenuation processes (dilution). It is expected that decades will be required before the RAO of 5 µg/L TCE in groundwater is reached on-site. USACE will have continued presence and will continue oversight and groundwater monitoring for the duration of this timeframe.

The preferred remedy alternative includes the continuation of point of use water treatment of drinking water well DW-22 with GAC, and other wells as needed in the future. This treatment of DW-22 is currently in place and has been effective for 10 years. Treatment will continue until concentrations reach acceptable levels (as agreed to by the well owners, MEDEP and USACE.

It also includes long term monitoring. Monitoring will include water supply wells, surface water and monitoring wells.

The recommended alternative also adds an increased measure of protectiveness through deed restrictions for two Town of Glenburn public properties (Zone 1 – see below), and annual notice letters to owners of private property where TCE could potentially be present in groundwater (Zones 2 and 3 – see below). The estimated extent of contamination and affected properties that would be covered by these institutional controls are shown on Figure 5. Groundwater use restrictions were selected over zoning in part because it is anticipated that the former could be implemented more easily and more effectively than the latter.

Institutional Controls Zone 1 is the area outlined in heavy black line (see Figure 5) and includes land owned by the Town of Glenburn beneath the central and southern portions of the Site (Lot 46) and the northern portion of the adjacent property east of Birch Avenue (Lot 45). This area includes locations where TCE concentrations currently may exceed the 5 µg/L RAO. Zone 1 also includes areas where residual TCE may be present in soils, specifically below the former GAT building.

Institutional Controls Zone 2 encompasses areas where historical and current groundwater monitoring data indicate the presence of TCE in groundwater but at concentrations below 5 µg/L (shown by the blue area – Figure 5). Details of the long term monitoring will be

similar to the existing program discussed on Page 3. Since the precise location of the edge of TCE contamination is unknown due to the spatial distribution of the data (i.e., the locations of the wells), Zone 2 includes entire properties, whether they are impacted in part or in total. Properties included in Zone 2 are: Lots 3.04 through 3.07, Lot 3.13, Lots 48 A through 48 H, Lots 48 M through 48 R , Lot 33, Lot 34, Lot 35, Lot 42, Lot 43, Lot 44 and Lot 47.

Institutional Controls Zone 3 includes properties which are abutting or adjacent to properties included in Zone 2. The delineation of Zone 3 is indicated by the green lines shown on Figure 5. Zone 3 is conservatively included due to the indeterminate nature of the precise edge of the contamination, and the possibility that new wells could be installed and used in the future that may impact the current extent of contamination.

How will the Institutional Controls work?

The Zone 1 institutional controls will include public property deed restrictions to control potential exposure by limiting locations for new on-Site water supply wells, requiring indoor air mitigation systems for new buildings (to be conservative), and requiring MEDEP-approved work plans for any proposed excavations within the Municipal Building footprint. The Zone 1 deed restrictions will be implemented by the Town on the Town-owned Zone 1 properties. Inspections for compliance with the restrictions will be made by the Corps.

Institutional controls for Zones 2 and 3 will include annual notice letters to private property owners to ensure that they are aware of the potential for contaminated groundwater under their property; and to indicate that the Corps is willing to test any new drinking water well for TCE, and to install and maintain GAC filters on a drinking water well, if necessary. The Zone 2 and 3 notice letters will be sent by the Corps to property owners. The Town Grand List will be checked each year by the Corps to insure that the current owners of each property receive the notice letters.

Next Steps

What happens next?

Once the community has commented on this Proposed Plan, the Corps and Maine DEP will consider all comments received. The Corps will provide written responses to all formal comments, and will combine those responses into a *Responsiveness Summary*, which will be included in the *Decision Document* for the site. The Recommended Alternative presented in this document is based on current information and it could change in response to public comment or new information. The Public is encouraged to comment on all alternatives described in this document.

The Decision Document will describe the selected remedy, and summarize community participation in the process. The Corps and Maine DEP anticipate that the Decision Document will be finalized and signed before June 2013, at which time the document will be made available to the public at the Information Repositories located at the Glenburn Municipal Building, in Glenburn, ME and the U.S. Army Corps of Engineers, New England District in Concord, MA.

Will the Corps continue to communicate with the community?

The Corps is committed to keeping the community informed of the environmental program at the Site. The Corps Project Manager will continue to communicate through contact with the Town Manager, public meetings, and other forums.

Results from on-going well and GAC system testing will be provided to each water supply well owner as they become available.

The Corps will also continue to maintain the project mailing list for distributing key information to the community. If you are not on the mailing list and would like to be added, please contact the Corps Project Manager, Ms. Marie Wojtas, at the address or phone number provided on the last page of this Proposed Plan.

Glossary of Terms

Bedrock: The native rock underlying the Earth's surface. At Glenburn, the rock is primarily metamorphic, made up of sand, silt and clay that have been compacted into rock by heat and pressure (phyllite, quartzite, slate and meta-siltstone). Groundwater primarily moves through anastomosing (braided) zones of highly porous rock, following geologic bedding and preferential flow pathways in a northeast/southwest direction.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law passed in 1980 and amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA). These laws created a special tax that went into a Trust Fund, commonly known as Superfund, for investigating and cleaning up abandoned and/or uncontrolled hazardous waste sites. The Corps' characterization and remediation at sites is conducted under the framework of CERCLA/SARA, while funded by the Department of Defense under the Defense Environmental Restoration Program (DERP).

Corps of Engineers: The U.S. Army Corps of Engineers provides comprehensive environmental restoration services for the Army, Department of Defense, Environmental Protection Agency, Department of Energy, and other federal agencies. The US Department of Defense (DOD) has designated the Corps to oversee the environmental program at the Former GAT, under the Formerly Used Defense Site Program (FUDS).

Decision Document: A legal, technical, and public document that explains the rationale and Remedy decision for a given site. It also summarizes the public's involvement in the decision.

Ephemeral: Not present at all times. For example, an ephemeral spring may not be present during dry periods.

Feasibility Study (FS): An engineering study of the potential remedies for a site.

Geologic Bedding: Layers of different kinds of rock

Granular Activated Carbon (GAC): Specially formulated carbon used to filter organic contaminants out of drinking water. One pound of carbon contains a surface area of approximately 500,000 square meters. The *activation* process adds a positive charge to the carbon, which enables the carbon to more effectively attract (and filter out) negatively charged water contaminants, such as TCE.

Groundwater: Groundwater is the water found beneath the earth's surface that fills pores between such materials as sand, soil, gravel or rock. In the case of the Site, groundwater is predominantly found within bedrock fractures beneath the ground surface.

Groundwater Water Monitoring (GWM) Program: The Corps has been testing groundwater at the Site since 2002. Currently, the program includes six overburden and six bedrock on-Site monitoring wells, three spring/pore water locations, and 28 water supply wells (including one with a GAC system).

Information Repository: A public file containing site/project information and documents of onsite investigation and remedial activities in either hard copy or electronic form.

In-situ: In-place. *In-situ* generally refers to soils or groundwater treatment underground, without digging or pumping the contaminated materials. Generally, chemical or biological remediation is performed *in situ* by adding chemical nutrient and/or bacteria into the sub-surface.

Institutional Controls Zone (ICZ): Areas in which institutional controls (ICs) are implemented. Examples of ICs are deed restrictions and notifications to advise property owners that their property may be impacted by site contaminants.

Maximum Contaminant Level (MCL): Enforceable drinking water standard developed by the US EPA, based on laboratory research and toxicity data for specific chemicals. The MCL for TCE is 5 µg/L.

Monitored Natural Attenuation (MNA): MNA is the reliance on natural attenuation processes (within the context of a carefully controlled and monitored clean-up approach) to achieve site-specific remedial objectives within a time frame that is reasonable compared to other methods. These attenuation processes can include microbial degradation, abiotic chemical and physical transformations, dispersion and dilution. Monitoring often includes the collection of data that helps assess the rate of contaminant reduction through these natural processes.

Non-aqueous Phase Liquids (NAPL): A liquid that does not readily dissolve in water, and therefore remains as a separate phase in the subsurface. Light NAPL (LNAPL), such as gasoline is less dense than water and will tend to float on the water table. Dense NAPL (DNAPL), including TCE and chlorinated solvents, are more dense than water and will tend to sink once they reach the water table.

Remedial Action Objectives (RAOs): RAOs are chemical and media specific, risk and regulation based objectives.

Remedial Investigation (RI): The collection of data and information necessary to characterize the nature and extent of contamination at a site. The RI also includes information as to if the contamination poses a significant risk to human health or the environment.

Saprolite: Saprolite is a chemically weathered rock. Saprolites represent deep weathering of the bedrock surface. The original bedding of sedimentary and metamorphic rocks is often preserved. Iron compounds often color saprolites orange.

Strike: The compass direction, in relation to true north, of a plane of geologic bedding or fracture.

Till: Till or glacial till is unsorted glacial sediment. Glacial till was deposited directly by the glacier. Its content includes clay, silt, sand, gravel and boulders. This material is mostly derived from the sub-glacial erosion and entrainment by the moving ice of the glaciers.

Trichloroethene (also known as Trichloroethylene or TCE): TCE is a solvent used for degreasing. It was reported used for cleaning electronic components at the Glenburn Site, and is also commonly used in parts washers and vehicle maintenance.

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