# Preliminary Assessment Report Security Services Northwest Gardiner, Jefferson County, Washington TDD: 07-06-0009

TechLaw, Inc. Contract EP-S7-06-03

**Region 10** 



Superfund Technical Assessment and Response Team

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#### LIST OF ACRONYMS

Acronym	<b>Definition</b>
°F	degrees Fahrenheit
Assessor	Jefferson County Assessors Office
Cascadia	Cascadia Consulting Group
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DBVWC	The Discovery Bay Village Water Company, Inc.
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
ERTS	Environmental Report Tracking System
ESA	Endangered Species Act
IDMS	Integrated Data Management System
Jefferson County	Jefferson County Department of Community Development
L & I	Washington State Department of Labor and Industries
LLC	Limited Liability Company
MRC	Marine Resources Committee
NCSS	National Cooperative Soil Survey
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWI	National Wetlands Inventory
PA	Preliminary Assessment
PPE	probable point of entry
PUD	Public Utility District
SHA	site hazard assessment
SSNW	Security Services Northwest
START-3	Superfund Technical Assessment and Response Team-3
TDD	Technical Direction Document
TDL	target distance limit
TechLaw	TechLaw, Inc.
USDC	United States Department of Commerce
USFW	United States Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WISHA	Washington Industrial Safety and Health Act
WRIA	Water Resource Inventory Area

#### **1.0 INTRODUCTION**

The United States Environmental Protection Agency (EPA) tasked the TechLaw, Inc. (TechLaw) Superfund Technical Assessment and Response Team-3 (START-3) to conduct a preliminary assessment (PA) at the Security Services Northwest (SSNW) site in Gardiner, Jefferson County, Washington pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). TechLaw completed PA activities under Contract Number EP-S7-06-03 and Technical Direction Document (TDD) No. 07-06-0009.

The specific goals for the SSNW site PA, identified by the EPA are:

- Determine the potential threat to public health or the environment posed by the SSNW site;
- Determine the potential for a release of hazardous constituents into the environment; and
- Determine the potential for placement of the SSNW site on the National Priorities List.

Activities as part of this PA included reviewing existing site information, collecting receptor information within the range of SSNW site influence, determining regional characteristics, and conducting a site visit. This document includes a discussion of background site information (Section 2), a discussion of migration/exposure pathways and potential targets (Section 3), summary (Section 4), and a list of references (Section 5).

#### 2.0 SITE BACKGROUND

Site Name:	Security Services Northwest (SSNW)		
EPA ID No.	WAN001002697		
Location:	3501 Old Gardiner Road, Gardiner, Jefferson County, Washington		
Latitude:	48.045139 North		
Longitude:	-122.889444 West		
Legal Description:	On or about the line dividing Sections 35 and 36, Township 30 North, Range 2 West		
Congressional District:	6		
Shooting Ranges 1, 2, and 3 Parcel Numbers:	002363008 and 002363001		
Property Owner Contact:	Reed Gunstone 3501 Old Gardiner Road, Gardiner, Jefferson County, Washington, 98382-8781 (360) 797-7302		
Security Services Northwest Owner	Joe D'Amico 3501 Old Gardiner Road, Gardiner, Jefferson County, Washington, 98382-8781 (360) 821-9001		

#### 2.2 Site Description

The SSNW site is located in Gardiner, Jefferson County, Washington (Figure 2-1), just west of Contractors Point on Discovery Bay. Located east of the SSNW site is Discovery Bay. Discovery Bay is located on the Olympic Peninsula and enters the Strait of Juan de Fuca between the Miller and Quimper Peninsulas. Discovery Bay is 6 to 7 miles in length, and slightly over a mile wide at its mouth.

The SSNW site is comprised of eleven different parcels totaling approximately 3,700 acres (Figure 2-2). These parcels are zoned as open space, vacant, residential, and forest land; the zoning designations are shown on Figure 2-2 (Jefferson County Assessors Office (Assessor) 2007). Figure 2-3 provides an aerial view of the SSNW site. The parcel numbers associated with the SSNW site are the following: 002351002, 002354003, 002354006, 002363001, 002363007, 002363003, 002363006, 002363001, 002363002, 902011003, and 002363009 (Washington State Department of Ecology (Ecology) 2007a).

The owner of the property is Reed Gunstone; the owner/operator of SSNW is Joe D'Amico. SSNW provides security services and training opportunities to SSNW personnel and other

groups. The SSNW site contains three shooting ranges, a helicopter landing zone, a dock, and a variety of buildings.

The majority of the parcels immediately surrounding the SSNW site are also owned by the Gunstone family and are listed as Country Girl Enterprises, Ark Group Limited Liability Company (LLC), Discovery Bay Land Company, and Bay Mountain Timber (Assessor 2007).

There are at least three houses located at the SSNW site. The first is a house located on parcel number 2363002 and is a one story structure. A second house is located on parcel number 2363006 and is a two story structure which has an attached garage. The third structure is located on parcel number 2363007 and is a one story, metal building (Assessors 2007). There are also multiple buildings associated with SSNW.

Shooting range #1 is located on the southern portion of 002363008, just west of shooting range #2, and north of Old Gardiner Road. Shooting range #1 is approximately 40 yards by 20 yards and has eight, 2-foot-tall target stands located on the south side of the shooting range (D'Amico 2007). Located behind the target stands is a backstop berm that stands approximately 15 to 20 feet high. Shooting range #1 also has two unfinished sound barriers, a building, and a covered shelter on the northern portion of the shooting range. Photographs of shooting range #1 are located in Appendix A.

Shooting range #2 is located on the southern portion of 002363008, just east of shooting range #1, and north of Old Gardiner Road. Shooting range #2 is approximately 45 yards by 45 yards and has only one target stand located on the southern portion of the shooting range (D'Amico 2007). Located behind the target stand is a berm that is approximately 20 feet high. Shooting range #2 also has a covered shelter on the northern portion of the shooting range and a mobile storage unit on the northeastern portion of the shooting range #2 can also be found in Appendix A.

Shooting range #3 is located in the southwestern portion of parcel 002363001, south of Old Gardiner Road, and its exact dimensions are unknown. This range is reportedly only used every few years and is often trespassed on, used for illegal dumping, and as a spot for unauthorized target practice (D'Amico 2007). A 30-foot berm is located on the southwest end of this range. Also located at shooting range #3 is an old car, riddled with bullet holes. This and other illegally dumped objects will be removed by Jefferson County Public Health, according to Mr. D'Amico (D'Amico 2007). Photographs of shooting range #3 can be found in Appendix A

#### 2.3 Ownership History

The SSNW site is owned by Irene Gunstone, Reed Gunstone, and Kristen Gunstone-White. The property is leased to Joe D'Amico and SSNW (Ecology 2007a). According to the SSNW website, historically, the property was a tree farm. The Gunstone family utilizes the property for a shellfish farming and shipping business. Available file information does not provide specific information as to the dates of property ownership by the Gunstones, the dates of operation for the shellfish businesses, or the extent of the tree farm. It is also unknown if the SSNW site was historically utilized for any other purposes.

SSNW was founded in 1977. In 1988, the company began leasing the property and has since used the SSNW site as an operations base and training facility. Joe D'Amico has been the President and Chief Executive Officer since 1986 (SSNW 2007).

#### 2.4 Site Operations and Waste Characteristics

Current site operations include shellfish farming, shellfish shipping, and the SSNW operations. The shellfish farming includes the business operated by the Gunstone family, shellfish beds owned by the Gunstone family, and geoduck beds leased to Peter Downey by the Gunstone family. The Gunstones operate the shellfish business called J & G Gunstone Clams, Incorporated, located on the property (Gunstone 2007, Washington Licensed Shellfish Companies 2007, and Food and Drug Administration 2007). Reportedly, Reed Gunstone is the largest commercial harvester of littleneck clams in Washington State and the Gunstones own the majority of the community shellfish beds in Discovery Bay (Brooks 2001, Bailey 2007). The number of employees for either the Gunstones or the lessee of the geoduck beds, as well as the size of the farming operations for either shellfish business, is currently unknown.

Since 1988 SSNW has leased the site from the Gunstones for operations and training purposes (D'Amico 2007). SSNW provides security services and training; counter assault team services and training, armored car services, alarm installation and monitoring services, and K-9 services and training (SSNW 2007). In addition, SSNW provides security services to the Gunstones by patrolling the beaches during low tides. It is currently unknown how many people work for SSNW at the SSNW site or how many clients utilize the SSNW site shooting ranges.

The following sections describe facility operations and waste characteristics.

#### 2.4.1 Security Services Northwest, Incorporated

The SSNW site has three shooting ranges, a dock, a helicopter landing zone, and a variety of buildings, including an office and a classroom. According to their website, the shooting ranges are utilized by SSNW staff for rifle and handgun training. Reportedly, State and Federal law enforcement agencies have also used the facility for firearms training purposes (SSNW 2007). Website literature for the SSNW Company mentions an upper firing range, Fort Discovery Challenge Course, an explosives range, and pier-side training. However, according to company representatives, the upper firing range and Fort Discovery Challenge are not currently in place. According to an interview a representative from the Jefferson County Public Health Environmental Health Department held with Joe D'Amico, the Fort Discovery Challenge Course is a promotional tool and has never been implemented and there is no upper shooting range (Hicklin 2007). Mr. D'Amico also indicated explosives were not used at the range (D'Amico 2007). It is unknown whether or not an explosives range exists, when it was used, if at all, or its location.

#### 2.4.2 Solid Waste Handling

Specific solid waste handling procedures for handling waste lead from lead shot are not known for the SSNW site and the amount of lead shot and bullets utilized is not in the available file material. According to an inspection on April 30, 2007, performed under Washington Industrial

Safety and Health Act (WISHA) by Washington State Department of Labor and Industries (L & I), there are no explosives stored at the SSNW site (L & I 2007).

#### 2.4.3 Storm Water Control

According to Jefferson County Public works there are no stormwater outfalls located on the property that discharge to Discovery Bay (Pearson 2007). Contractors Creek flows into Discovery Bay at Contractors Point, southeast of the SSNW site dock (Shanz et al. 2005). It is unknown what measures are in place to control stormwater.

In late December 1996 and early January 1997 heavy rains fell on snow, causing extensive flooding and debris-flows from upstream of US 101. Sediment and debris were pushed through the US 101 culvert and clogged the culverts for Old Gardiner Road and the adjacent railroad. After unsuccessful attempts to clear the blockage, the Old Gardiner roadbed failed, releasing a massive volume of water and debris downstream into Discovery Bay (Shanz et al. 2005). The water and debris washed out into Discovery Bay just southeast of the SSNW site dock. The washout affected the Gunstone's orchard and garden but reportedly did not affect the shooting ranges (D'Amico 2007).

#### 2.5 Washington State Department of Ecology Actions

On August 1, 2005, Ecology received a complaint about 3501 Old Gardiner Road, regarding the SSNW site. The caller alleged concerns about elevated lead contamination in soils at the SSNW shooting ranges. On August 30, 2005, Ecology sent a certified letter to ARK Group LLC, in care of Reed Gunstone, requesting permission to gain access to the SSNW site to conduct an initial investigation. A tentative date was set for the end of November but Mr. Gunstone later contacted Ecology cancelling the initial investigation visit. Later attempts to schedule a site investigation visit were also futile (Ecology 2006b).

On January 18, 2006, an initial investigation field report was completed without a site visit. This initial investigation field report was completed in response to the 2005 complaints of potential lead contamination in the soil. Possible activities or practices responsible for the potential contamination were identified as improper handling and disposal of lead shot or other wastes. Ecology identified groundwater and soil as the suspected media affected by the contamination; however, no drinking water systems are known to be affected nor are there any groundwater or drinking water wells in the vicinity. The field report also identified sensitive environments that could potentially be affected. There are no discharges permitted at the SSNW site. Ecology recommended that because they were unable to perform an initial investigation the SSNW site should be listed on the suspected contaminated site database and that a site hazard assessment (SHA) be conducted (Ecology 2006a).

On February 3, 2006, via certified mail, Ecology sent a letter to Ark Group LLC, in care of Reed Gunstone, informing them that the SSNW site had been placed on the database of Confirmed or Suspected Contaminated Sites and assigned a Facility Site Identification number of 3705596. The SSNW site was added to the database of Confirmed or Suspected Contaminated Sites due to the lack of cooperation of the initial investigation attempted by Ecology. Ecology also informed the Ark Group LLC, in care of Reed Gunstone that Ecology may conduct a SHA of the SSNW site in the future (Cross 2006).

On May 4, 2007, Ecology completed a strategy recommendation. Ecology recommended that a Preliminary Assessment (PA) be conducted at the SSNW site and that the SSNW site be considered a high priority due to the high number of potential contaminant migration/exposure routes posing a threat to human health and environment (Ecology 2007a). Ecology subsequently referred the SSNW site to the EPA. EPA initiated the PA on June 14, 2007.

#### 2.6 START-3 Actions

START-3 conducted a PA site visit on October 10, 2007, accompanied by Joe D'Amico, and representatives from the EPA, Ecology, and the Jefferson County Public Health Environmental Department. Photographic documentation of the PA site visit is provided in Appendix A.

The PA site visit included a meeting with Mr. D'Amico and a tour of the site. During the meeting with Mr. D'Amico, he provided information regarding the testing of his drinking water well and the nearby stream. The analytical results did not indicate elevated levels of lead. During this meeting, Mr. D'Amico provided START-3 with the L & I report stating that the SSNW site did not have any safe work violations and that there were no explosives stored at the SSNW site. Also shown in the meeting with D'Amico, was an aerial photograph, depicting the locations of the shooting ranges, the on-site well, the helicopter landing zone, and areas affected by the Contractors Creek washout.

During the tour of the SSNW site, START-3 did not observe spent lead shots/bullets located on the ground or other obvious contamination in shooting ranges #1 or #2. A small 5-gallon container was located at shooting range #1 containing spent lead shots/bullets. A detailed description of shooting ranges #1 and #2 is provided in section 2.2 Site Description, see Appendix A for photographic documentation.

During the tour of shooting range #3, an abandoned vehicle was observed that appeared to have been used as a shooting target. The Jefferson County Public Health Environmental Department representative informed the inspection team that the vehicle would be removed. Also located at shooting range #3 were discarded objects that appeared to be used as targets and a variety of spent shots/bullets. D'Amico stated that shooting range #3 is used illegally for dumping and as a shooting range and concluded that the spent shot and bullets were from the unauthorized use of the shooting range. This shooting range is located just northwest of Contractors Creek. According to Mr. D'Amico; SSNW only uses shooting range #3 once every few years.

D'Amico then pointed out the location of the on-site drinking water well, the location of the onsite dock, and the areas affected by the Contractors Creek washout. There was evidence of the Gunstone's shellfish business near the dock.

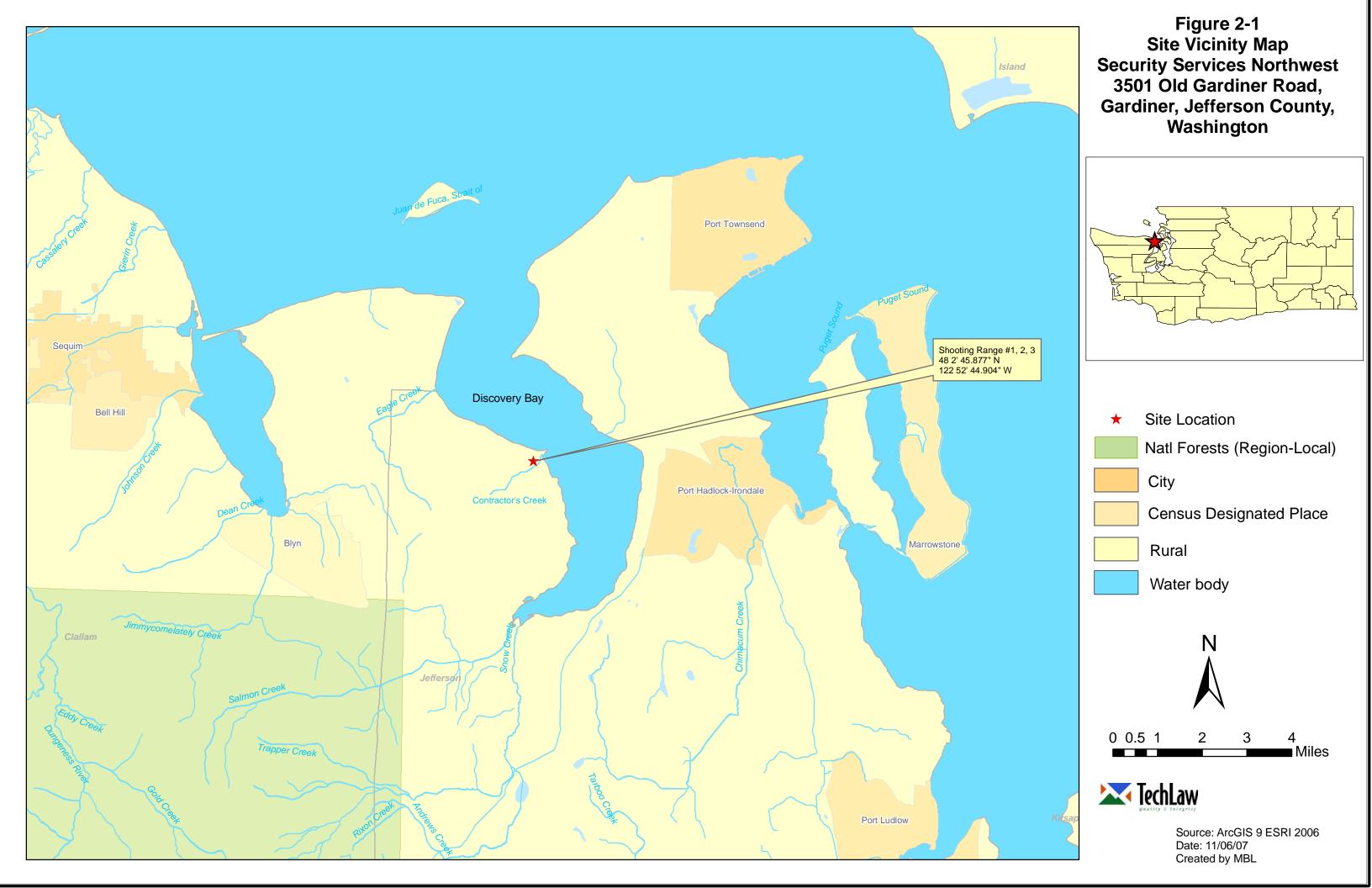
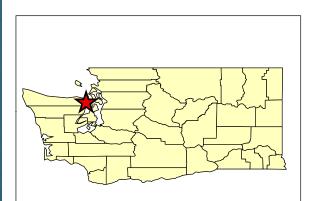




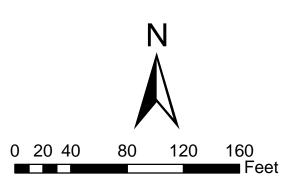
Figure 2-3 Aerial Photograph Security Services Northwest Gardiner, Jefferson, County, Washington





Parcels of Concern Outline

## Shooting Range Outlines





Source: Jefferson County Central Services GIS Date: 11/06/07 Created by MBL

#### **3.0 Migration/Exposure Pathways and Targets**

The following sections describe migration/exposure pathways and potential targets within the SSNW site's range of influence (Figures 3-1, 3-2, 3-3, and 3-4).

#### 3.1 Groundwater Migration Pathway

The target distance limit (TDL) for the groundwater migration pathway is a 4-mile radius that extends from the potential sources of contamination at the SSNW site. Figure 3-1 depicts the groundwater 4-mile TDL with the location of groundwater wells included.

The geology of the SSNW site consists of Vashon Recessional Outwash in deltas and alluvial fans, and the Holocene age Alluvial Deposits, Vashon Recessional Outwash, Vashon Lodgement Till, and the Vashon Advance Outwash at the site (Jefferson County Integrated Data Management System (IDMS) 1995a).

The SSNW site is located in the Chimacum Creek Basin. The youngest deposits in the area are Holocene-age Alluvial Deposits, estimated between zero and fifty feet thick with an average thickness of 15 feet. The Holocene-age Alluvial Deposits include silt, sand, and peat deposits in flat valley bottoms and small lake basins, dune, and beach sands along the Puget Sound shoreline, and small landslide deposits. Although they may be saturated for much of the year, the alluvial deposits are not a good source of water. The soils are either too fine-grained to yield water or too rich in organic matter to be useful for household use. The peat deposits in the Chimacum Valley are essentially impermeable; therefore they act as a barrier to surface water and groundwater exchange. Groundwater recharge through these organic-rich alluvial materials is very limited (Simonds et al. 2004).

The next deposit in the area is the Vashon Recessional Outwash. Sediments that were deposited as the Pleistocene-age Vashon ice sheet retreated include a variety of materials collectively known as the Vashon Recessional Outwash. The Vashon Recessional Outwash consists of sorted and stratified sands and gravels with relatively good porosity and permeability. These materials were deposited by high energy streams that eroded and re-deposited till and other materials; they were not compacted by subsequent ice sheets. Some of the fine-grained sediments were deposited in a lake that formed as the retreating ice margin blocked drainage to the north. The resulting large lake filled much of Puget Sound including both forks of Chimacum Creek, until the ice dam was breached and the water drained (Simonds et al. 2004).

The Vashon Recessional Outwash is generally less than fifty feet thick. The coarse-grained layers generally are water-bearing and may form an unconfined water-table aquifer when not overlain by fine-grained impermeable layers. Because the main surface water drainages in eastern Jefferson County occupy valleys underlain by the Vashon Recessional Outwash, there is a strong tendency for surface water to interact with groundwater for this unit. Because the Vashon Recessional Outwash contains highly permeable materials, the unit can be recharged from multiple sources, including the direct infiltration of precipitation onto the surface of the unit, through lateral flow from underlying units, and from seepage of surface water along losing reaches of creeks that cross the unit. Discharge from this unit occurs along gaining reaches of

creeks that cross the unit and through the bottom of the unit into the underlying materials (Simonds et al. 2004).

The next deposit in the area is the Vashon Lodgement Till. The Vashon Lodgement Till is a poorly-sorted mixture of sand, gravel, and boulders representing eroded materials smeared at the base of the Pleistocene-age Vashon ice sheet. This material was compressed as nearly 4,000-feet of ice moved over it. In some places, the material is highly compacted and very resistant and commonly is referred to by drillers as "hard pan." In other places, the till has been reworked and is not compacted. Drillers' logs sometimes do not distinguish till from other materials. The Vashon Lodgement Till is not present in areas where ice was in direct contact with bedrock or in the main river valleys, where recessional outwash streams eroded the till away (Simonds et al. 2004).

The Vashon Lodgement Till is not a significant producer of water because the unit generally lies above the water table. In addition, its primary porosity and permeability have been reduced by the effects of compaction. The low hydraulic conductivity of the till acts to retard the infiltration of precipitation, causing lakes or wetlands to form in depressions on the Vashon Lodgement Till surface. The thickness of the Vashon Lodgement Till ranges from 40 feet or less to as much as 100 feet. Ranges in thickness are due in part to erosion, but also to inconsistent descriptions of the material in the drillers' logs. The Vashon Lodgement Till is recharged through the direct infiltration of precipitation onto the surface of the unit. Lateral groundwater flow probably is very slow, so that the primary groundwater discharge from the till is through the bottom of the unit into the underlying materials (Simonds et al. 2004).

The next deposit in the area is the Vashon Advance Outwash. The Vashon Advance Outwash is stratified sequence of silts, clays, and peat deposits that interfinger with well-sorted sands, gravels, and cobbles. The sequence was deposited by melt-water streams preceding the advancing Pleistocene-age Vashon ice sheet. The Vashon Advance Outwash is the most prolific water-bearing unit in the area because of its lateral continuity and favorable primary porosity and permeability. The thickness of the unit ranges from 0 to a little more than 200 feet. West of Chimacum Creek, large amounts of groundwater are produced from coarse-grained layers within the Vashon Advance Outwash is primarily through the overlying till or by direct infiltration of precipitation exposed areas. Because some layers of the Vashon Advance Outwash are highly transmissive, lateral groundwater velocities may be high. Groundwater discharge is evident in springs and seeps at the base of valley slopes where the unit is exposed. Water also may be discharged where Vashon Advance Outwash is in lateral contact with overlapping recessional outwash materials. Groundwater also is discharged through pumping for domestic use (Simonds et al. 2004).

The soils located at shooting ranges #1 and #2 consist of Clallam gravelly sandy loam at 0 to 15 percent slopes (United States Department of Agriculture (USDA) 1991). The Clallam series consists of moderately deep to densic materials, moderately well drained soils formed in glacial till over very compact glacial till (National Cooperative Soil Survey (NCSS) 2004). The soils located at shooting range #3 consist of Hoypus gravelly loamy sand at 0 to 15 percent slopes (USDA 1991). The Hoypus series consists of very deep, somewhat excessively drained soils that formed in glacial outwash (NCSS 2005).

Two municipal wells and approximately 101 domestic wells are present within a 4-mile radius of the SSNW site (Ecology 2007b and Jefferson County 2007). Nine of these wells are located within a 1-mile radius of the SSNW site (Ecology 2007b).

A total of 676 persons are served by the wells based on the average number of 2.21 persons per household in Jefferson County and the number of connections for the two municipal wells (United States Department of Commerce (USDC) 2000, Fager 2007, and Parker 2007). Table 3-1 provides estimates of the number of people using groundwater for drinking water within the 4-mile TDL.

- The population for the on-site well is assumed based on the number of known residences at the SSNW site
- The Discovery Bay Village Water Company, Inc. (DBVWC), owns a municipal well located within the 2- to 3-mile radius of the SSNW site. The DBVWC owns only one well which serves 88 connections. Those connections, multiplied by the average population per household in Jefferson County, results in a total population of 176 (Fager 2007; USDC 2000).
- Jefferson County Public Utility District (PUD) #1, owns only one municipal well, which is located within the 3- to 4-mile radial ring. This municipal well has 120 connections, multiplied by the county average of 2.21 persons per household results in a total well population of 265.2 (Parker 2007).
- The remaining 100 domestic wells are located within a 4-mile radius of the SSNW site. The population per well is based on the average number of 2.21 persons per household for Jefferson County (USDC 2000).

It is currently unknown how many clients use SSNW site per week or how many workers are based out of the SSNW site.

#### **3.2 Surface Water Migration Pathway**

The surface water migration pathway TDL begins at the probable point of entry (PPE) of surface water runoff from the SSNW site into Contractors Creek and extends northeast for approximately a quarter of a mile where it enters Discovery Bay. TDL #1 extends north in Discovery Bay for approximately six miles, where it enters the Strait of Juan de Fuca. In the Strait of Juan de Fuca the TDL is applied as an arc because, as coastal tidal water, the direction of flow is not considered (EPA 1990). As Discovery Bay is tidally influenced, and the extent of tidal carry extends to the end of the bay; therefore, TDL #2 extends south in Discovery Bay for 4.4 miles and ends. Figures 3-2 and 3-3 depict TDLs #1 and #2, respectively.

The SSNW site is not located within a 100-year flood plain area (Jefferson County Department of Community Development (Jefferson County) 2007). The shooting ranges were not affected during the large road-washout in late December 1996 and early January 1997 (Shanz 2005). There are no outfalls located at the SSNW site (Pearson 2007). It is unknown how the SSNW site deals with stormwater and if there are any drains located on-site. There are no known water intakes along Discovery Bay (Pearson 2007).

Approximately 2.0 miles of wetlands are located along the surface water TDL (NWI 2007). The 2-year, 24-hour rainfall event is 1.58-inches (National Oceanic and Atmospheric Administration (NOAA) 1973). The average maximum temperature in Sequim, Washington is 57.7 degrees Fahrenheit (°F), the average minimum temperature in Sequim, Washington is 39.2°F, and the average total precipitation is 15.93 inches per year (Washington Regional Climate Center 2007).

Contractors Point, located just below the SSNW site, consists of swamp, marsh, and bog deposits (Jefferson County IDMS 1995a). Marsh deposits are organic-matter-rich sediments deposited in brackish or saltwater marsh (estuarine or lagoonal) environments (Schasse et al. 2005). The shoreline along Discovery Bay consists of beach sand and gravel (Jefferson County IDMS 1995a). Beach deposits consist of sand and cobbles, which may include silt, pebbles, and clay; pebble sized and larger clasts typically well rounded; well sorted; loose; and may be residual or transported. Large boulders are also often found up to 10 feet in diameter resting on beach deposits indicating a lag deposit derived from erosion and previous sliding (Schasse et al. 2005). These outwash deposits typically consist of loose sands and gravels deposited by glacial melt water. The water released by the failure of Old Gardiner Road scoured out this loose material when it realigned the creek valley, leaving behind scarps of sands and gravels on the valley margins. The washout also exposed a layer of poorly consolidated sandstone in the streambed just below Old Gardiner Road (Shanz et al. 2005).

Contractors Creek is located in Water Resource Inventory Area (WRIA) 17's Miller Sub Basin. It is one of the two primary freshwater features of the basin (Cascadia Consulting Group (Cascadia) 2003). Contractors Creek is approximately 2.85 miles long and discharges into Discovery Bay. Flow data is not available for Contractors Creek. Contractors Creek flows over bedrock and till until it nears its mouth and cuts through outwash sediments (Cascadia 2003). Contractors Creek is not on Ecology's list of impaired waters, and no water quality data is listed in Ecology's Environmental Information Management database for the creek. Water quality problems are likely to be associated with fine sediment and poor riparian condition at the US 101 culvert outlet, but have not been verified by sampling (Shanz 2005). Contractors Creek has been known to contain Coho salmon and Cutthroat trout, although this has not been confirmed after 1996/1997 washout (Nightingale 2000).

Discovery Bay is located on the Olympic Peninsula. Discovery Bay enters the Strait of Juan de Fuca between the Miller and Quimper Peninsulas. According to Jefferson County, a critical fish and wildlife habitat area is located in Discovery Bay at the location of Contractors Point. (Jefferson County IDMS 1995b).

The mouth of Discovery Bay is just south of Protection Island, a small Federally-protected nature preserve and sea bird sanctuary area. Approximately 70 percent of the nesting seabird population of Puget Sound and the Strait of Juan de Fuca nest on the island, which includes one of the largest nesting colonies of rhinoceros auklets in the world and the largest nesting colonies of glaucous-winged gulls in Washington. The island contains one of the last two nesting colonies of tufted puffins in the Puget Sound area. Approximately 1,000 harbor seals depend upon the island for a pupping and rest area (United States Fish and Wildlife Service (USFW) date unknown)

There are 11 total species within the surface water TDL, listed under the endangered species act (ESA). There are two endangered salmon species within the surface water TDL, the Puget

Sound Chinook and the Hood Canal Summer-Run Chum (Washington Department of Fish and Wildlife (WDFW) 2004). There are seven Puget Sound populations listed under the ESA found within the surface water TDL which include the Pacific herring, Pacific cod, Pacific hake, walleye pollock and Brown, Copper and Quillback rockfish. The Marbled Murrelet and the northern/ Steller sea lion are also found within the surface water TDL and are listed under the ESA (Nightingale 2000).

Herring spawning grounds are located along the shorelines of the southern half of Discovery Bay including Contractors Point (WDFW 1997). The pre-spawner holding grounds extend from just south of Protection Island in the Strait of Juan de Fuca to the middle of Discovery Bay (Nightingale 2000).

In 2005, the following species of salmon were caught within the surface water TDL, 331 Chinook salmon with an average weight of 12.5 pounds; 896 coho salmon with an average weight of 11 pounds; 1,616 pink salmon with an average weight of 4 pounds; 4 sockeye salmon with an average weight of 7 pounds; and 3 chum salmon with an average weight of 10 pounds (Barker 2007). The total weight of recreational caught salmon with in the surface water TDL is 20,515 pounds. There was no commercially caught salmon within the surface water TDL (Turcotte 2007).

In 2006, the following species of shellfish were collected from Sequim Bay for recreational purposes: 62 Manila clams with an average weight of 15.20 grams; 6,726 littleneck clams with an average weight of 16.9 grams; 419 butter clams with an average weight of 12.41 grams; 674 cockles with an average weight of 18.54 grams; 35 eastern soft shell clams with an average weight of 33.44 grams; 1,304 horse clams with an average weight of 3.5 pounds; and 14,924 oysters with an unknown average weight (Strom 2007, Bradbury et al. 2005, and Underwater Harvester Association unknown date). The total weight of all clam species collected in Sequim Bay is 4,858.27 pounds.

In 2006 the following species of shellfish, including crab, were collected from non-Tribal landings within the TDL for commercial purposes: 2,894 pounds of Dungeness crab; 21,574 pounds of butter clams; 1,136 pounds of cockles; 3,229 pounds of horse clams; 7,464 pounds of geoduck clams; 37,888 native littleneck clams; 50,126 Manila clams; 30,568 Pacific oyster; and 1,331 European oyster. A total of 156,210 pounds of shellfish, including crab, were caught in non-Tribal landings within the TDL. All clams and oysters in these areas are collected from aquatic farms (WDFW 2007a).

In 2006, 4,186 pounds of Dungeness crab was documented in Treaty Tribal Landings within the TDL. In 2005, 3,163 pounds of spot shrimp and 14,089 pounds of Dungeness crab were documented in Treaty Tribal Landings within the TDL for a total of 17,252 pounds (WDFW 2007b).

The total amount of spot shrimp caught in the TDL for 2007 was 1,538 pounds (Cain 2007). The total mean pounds of recreational shellfish caught in the TDL from 2001 to 2006 totaled 87,844 (Lowry 2007). The total weight of commercially caught shellfish within the surface water TDL in 2006 is 160,396 pounds.

#### 3.3 Soil Exposure Pathway

The soil exposure pathway is evaluated based on the threat to resident and nearby populations from soil contamination within two feet of the ground's surface (EPA 1990). The shooting ranges consist of exposed soil with sparse vegetation. SSNW provides beach security for the shellfish businesses operating on the property, but the extent of security provided for the remaining property is unknown. The available file information does not provide the number of employees on the property nor the normal business hours. The number of residences located on the property was not available; however, based upon the three homes observed during the site visit, multiplied by the county average persons per house, START-3 has estimated that there are at least nine residents on the property.

Security measures are in place to deter the public from gaining unauthorized access to the SSNW site but the extent of these measures is unknown.

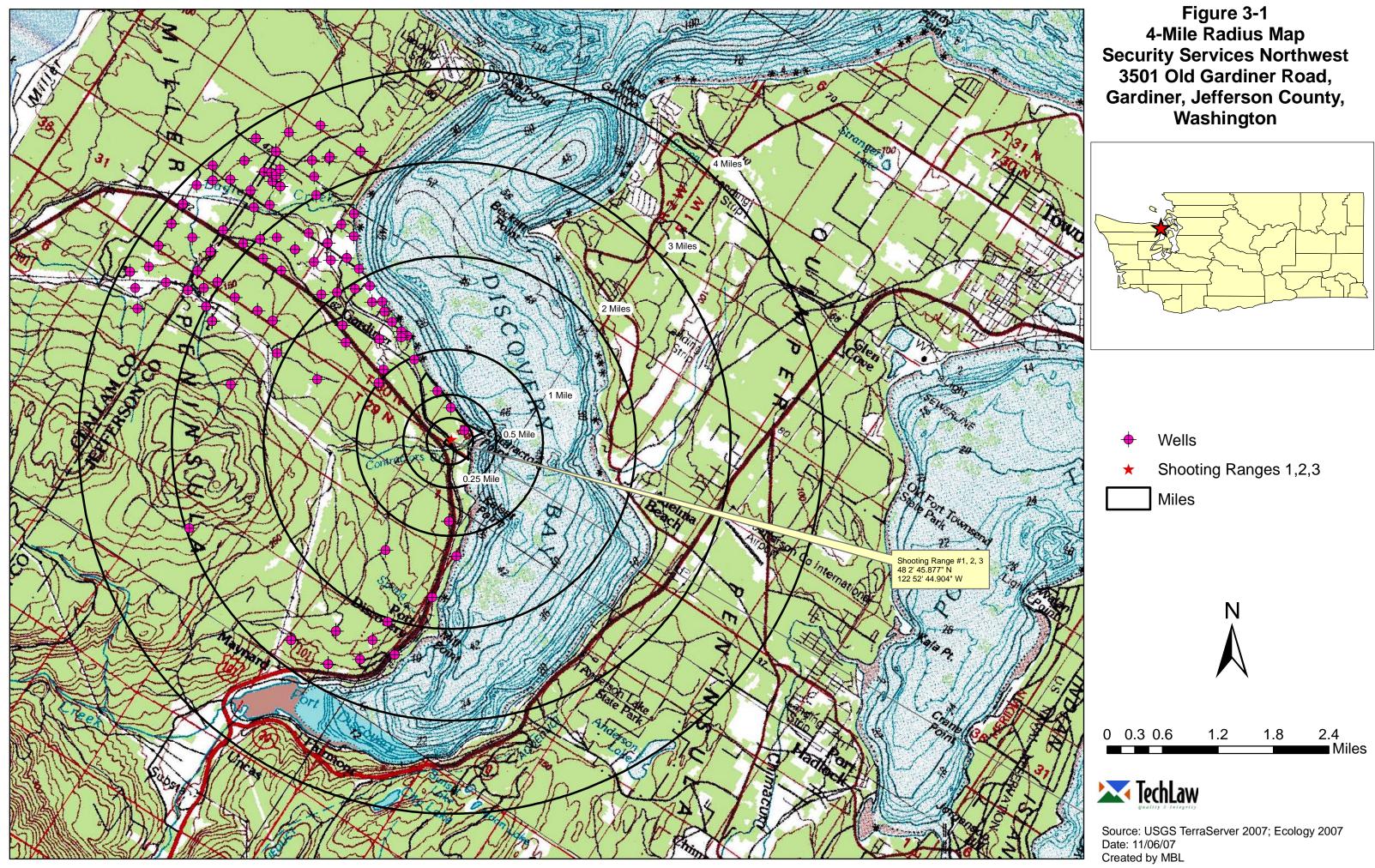
Approximately 778 people reside within a 1-mile radius of the SSNW site. There are no schools or daycares located within a 1-mile radius of the SSNW site. Table 3-2 provides an estimate of the number of people residing, working, or attending school within a 4-mile TDL, which includes those populations within a 1-mile radius of the SSNW site.

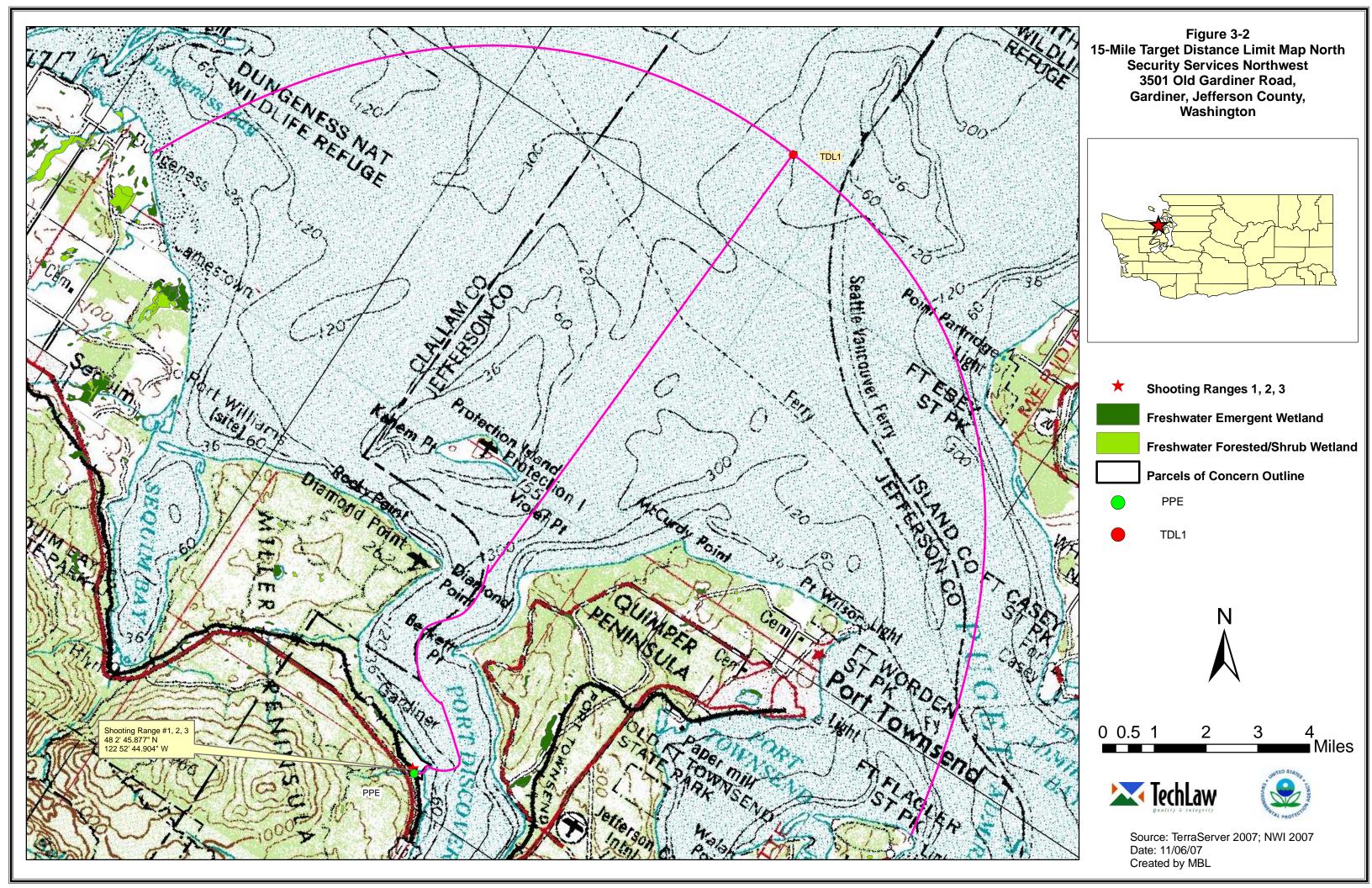
#### **3.4 Air Migration Pathway**

The air migration pathway TDL is a 4-mile radius that extends from the sources at the SSNW site (Figure 3-1). The number of employees working at Security Services Northwest, J & G Gunstone Clams Incorporated, or the geoduck business is not available.

Approximately 3,128 people reside within four miles of the SSNW site (USDC 2000). Table 3-2 provides an estimate of the number of people residing or working within the 4-mile TDL. The population values presented in Table 3-2 underestimate the actual populations since they do not include the workers at SSNW, J & G Gunstone Clams Incorporated, or other nearby businesses.

The 4-mile TDL includes habitat known to be used by several Federally- and state-listed species. The following Federally- and state-listed species are located within a 4-mile radius of the SSNW site: the Puget Sound Chinook and the Hood Canal summer-run chum (WDFW 2004). Other sensitive environments within the 4-mile TDL include approximately 198.63 acres of wetlands. Table 3-3 provides wetland acres by distance ring.





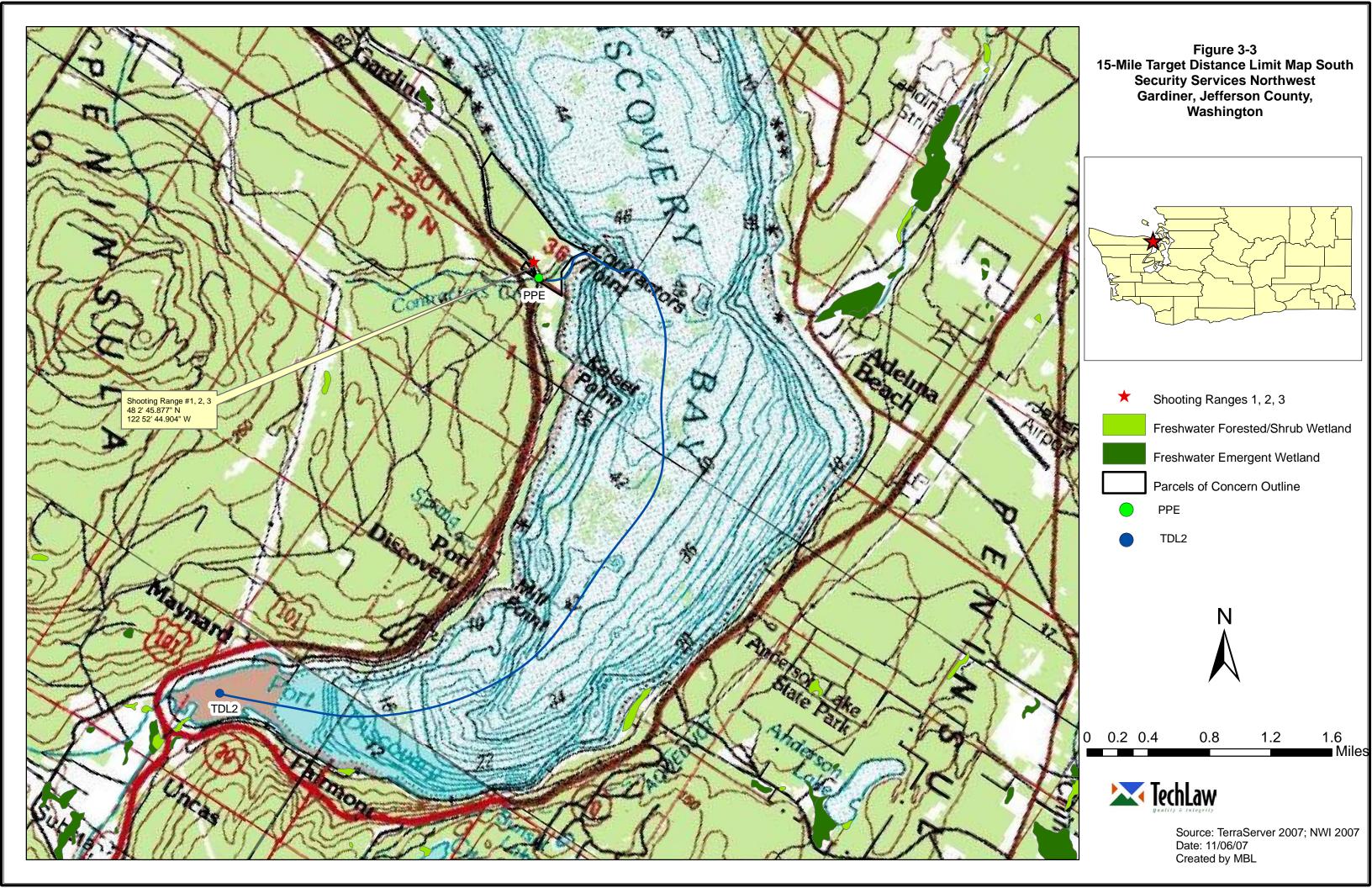


Table 3-1Groundwater Drinking Water Population Within a 4-Mile RadiusSecurity Services NorthwestPreliminary AssessmentGardiner, Washington				
Distance (Miles)WellsWell UsagePopulation (a)Population per Distance Ring				
0 to 0.25	1	Domestic	9 <sup>(b)</sup>	9
0.25 to 0.5	1	Domestic	2.21	3
0.5 to 1.0	7	Domestic	15.47	16
1.0 to 2.0	23	Domestic	50.83	51
2.0 to 3.0	30	Domestic	66.3	243
	1	Municipal	176	245
3.0 to 4.0	39	Domestic	88.19	354
	1	Municipal	265.2	534
Total 103 676				

(Ecology 2007b, USDC 2000, Fager 2007, and Parker 2007)

<sup>a</sup> Well population is based on the average of 2.21 persons per household for Jefferson County according to the U.S. Census Bureau (USDC 2000).

<sup>b</sup> Population is assumed based on number of known residences at the SSNW site.

Table 3-2Population Within a 4-Mile RadiusSecurity Services Northwest3501 Old Gardiner RoadPreliminary AssessmentGardiner, Washington			
Distance Ring (Miles)	Resident Population <sup>a</sup>	Total Per Distance Ring	
On site	10.42 <sup>b</sup>	unknown	
0 to 0.25	255.63	255.63	
0.25 to 0.5	255.63	255.63	
0.5 to 1	266.63	268.63	
1 to 2	466.86	506.86	
2 to 3	766.86	766.86	
3 to 4	1116.86	1117.86	
Total 3,128.47			

(USDC 2000, ArcMap 9 ESRI Data and Maps 2007)

<sup>a</sup> The population is based on the average of 2.21 persons per household for Jefferson County according to the U.S. Census Bureau (USDC 2000).

<sup>b</sup> This number is based on the number of known residences located at one of the three houses at the SSNW site, plus two houses multiplied by 2.21, the average number of people per household (D'Amico 2007 and USDC 2000)

Table 3-3Wetlands Within a 4-Mile RadiusSecurity Services Northwest3501 Old Gardiner RoadPreliminary AssessmentGardiner, WA			
Distance Ring (Miles)	Wetlands (Acreage)		
On site	0		
0 to 0.25	0		
0.25 to 0.5	0		
0.5 to 1	4.87		
1 to 2	6.78		
2 to 3	103.09		
3 to 4	83.89		
Total 198.63			

(National Wetlands Inventory (NWI) 2007)

#### 4.0 Summary

Activities at the SSNW site include the operation of SSNW, which provides security services and training, counter assault team services and training, armored car services, alarm installation and monitoring services, and K-9 services and training. Site operations for the SSNW Company on the property include three rifle and pistol shooting ranges. The SSNW site is located on the shore of Discovery Bay at Contractors Point. The SSNW site is also the location for a shellfish farming business.

The potential contaminant at the SSNW site is lead from spent lead shot/bullets. It is not currently known how much lead shot/bullets are acquired per week or how often the spent lead shot/bullets are removed from the SSNW site, if at all. There are no explosives stored at the SSNW site (L &I 2007).

There are no known stormwater outfalls located at the SSNW site that discharge to Discovery Bay. It is not currently known what measures are in place to control stormwater coming from the site. In late December 1996 and early January 1997, there was a large road-washout that occurred on Contractors Creek at US 101 and Old Gardiner Road. The washout did not affect the shooting ranges but did affect the Gunstone's orchard and garden.

There are 9 wells located within 1 mile of the SSNW site and 103 wells located within the 4-mile radius (Ecology 2007b). The Vashon Recessional Outwash and Vashon Advance Outwash aquifers underlie the SSNW site. The Vashon Recessional Outwash generally is water-bearing and may form an unconfined water-table aquifer when not overlain by fine-grained impermeable layers. Because the Vashon Recessional Outwash contains highly permeable materials, the unit can be recharged from multiple sources, including the direct infiltration of precipitation onto the surface of the unit, through lateral flow from underlying units, and from seepage of surface water along losing reaches of creeks that cross the unit. The Vashon Advance Outwash is the most prolific water-bearing unit in the area. Recharge to the Vashon Advance Outwash is primarily through the overlying till or by direct infiltration of precipitation exposed areas (Simonds et al. 2004).

Extensive recreational boating, recreational fishing, and recreational and commercial shellfish harvesting occurs within the surface water TDL. Edible organisms caught for recreational purposes include salmon, shrimp, and other shellfish. Littleneck clams are commercially harvested from the SSNW site, down gradient from the shooting ranges but the total quantity is unknown

A number of endangered species located within the SSNW site surface water TDL. These species include: the Puget Sound Chinook, the Hood Canal summer-run chum, Pacific herring, Pacific cod, Pacific hake, walleye pollock, Brown rockfish, Copper rockfish, Quillback rockfish, the Marbled Murrelet, and the northern/Steller sea lion.

The SSNW site shooting ranges contain no engineering controls and are covered with exposed soil with sparse vegetation. There is security in place to deter the public from accessing the SSNW site but the extent of the security is unknown.

The population located within the 4-mile radius of the SSNW site totals 3,128 persons Several sensitive environments are present within the 4-mile radius, including Federally- and state-listed endangered species, Protection Island Wildlife Refuge and 198.63 acres of wetlands.

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#### APPENDIX A PHOTOGRAPHIC DOCUMENTATION

Security Services Northwest Preliminary Assessment Final February 2008



#### PHOTOGRAPH #1

Description: Photograph of Shooting Range #1 with two targets in the foreground and the backstop berm in the background.

Taken by: Lesa Nelson, TechLaw

Witness: Joanne LaBaw, EPA

Direction: Date: South October 10, 2007



PHOTOGRAPH #2

Description: Photograph of Shooting Range #1 with one target in the foreground and the backstop berm in the background.

Taken by:	Lesa Nelson, TechLaw	Direction:	South
Witness:	Joanne LaBaw, EPA	Date:	October 10, 2007

Security Services Northwest Preliminary Assessment Final February 2008



PHOTOGRAPH #3

Description: Photograph of the ground located in front of the sheltered shooting stand at Shooting Range #1.

Taken by:	Lesa Nelson, TechLaw	Direction:	North
Witness:	Joanne LaBaw, EPA	Date:	October 10, 2007



### PHOTOGRAPH #4

Description: Photograph of Shooting Range #2 with one target in the foreground and the backstop berm in the background.

Taken by:	Lesa Nelson, TechLaw	Direction:	South
Witness:	Joanne LaBaw, EPA	Date:	October 10, 2007



PHOTOGRAPH #5

Description: Photograph of the ground located in front of the sheltered shooting stand at Shooting Range #2.

Taken by:	Lesa Nelson, TechLaw
Witness:	Joanne LaBaw, EPA

Direction:	North
Date:	October 10, 2007



#### PHOTOGRAPH #6

Description: Photograph of Shooting Range #3 backstop berm.

Taken by:	Lesa Nelson, TechLaw	Direction:	Southeast
Witness:	Joanne LaBaw, EPA	Date:	October 10, 2007