



NATIVE VILLAGE OF EKLUTNA

Native American Lands Environmental Mitigation Program Strategic Project Implementation Plan



1964 Eklutna Army Site

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and



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Acronyms

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ASTM	American Society for Testing and Materials
ATV	All Terrain Vehicle
BIA	Bureau of Indian Affairs
CFR	Code of Federal Regulations
CA	Cooperative Agreement
CSM	Conceptual Site Model
DOD	Department of Defense
EG&G	EG&G Technical Services
EI	Eklutna Inc.
EPA	Environmental Protection Agency
ERWC	Eklutna River Watershed Council
GPS	Global Positioning Systems
GLT	Great Land Trust
HAZWOPER	Hazardous Waste Operations and Emergency Response
NALEMP	Native American Lands Environmental Mitigation Program
NVE	Native Village of Eklutna
PCB	Polychlorinated Biphenyls
PRP	Potentially Responsible Party
POWTEC	Prince of Wales Tribal Enterprise Consortium
Ppm	Parts Per Million, same as mg/L
RFP	Request for Proposals
SAR	Site Assessment Report or Site Activity Report
SPIP	Strategic Project Implementation Plan
TCLP	Toxicity Characteristic Leaching Procedure
TCE	Trichloroethylene
USACE	United States Army Corps of Engineers
VOC	Volatile Organic Compounds
yd ³	Cubic Yards

Abstract

The Native Village of Eklutna (NVE) prepared this Strategic Project Implementation Plan (SPIP) to present environmental mitigation activities with the Department of Defense (DOD) Native American Lands Environmental Mitigation Program (NALEMP). This report summarizes 10 years of mitigation activities at the Eklutna Army Site and presents plans to address other ongoing environmental concerns that affect our community.

Native Village of Eklutna

NVE is a distinct, independent political community that exercises Tribal sovereignty as passed down from our ancestors since time immemorial. NVE is a federally recognized Dena'ina Athabascan Tribe with more than 330 members. Eklutna is the last traditional Athabascan Dena'ina village in the Anchorage municipality. Our community is located along the Knik Arm of the Upper Cook Inlet, 25 miles northeast from the city of Anchorage and 10 miles south of Alaska's fastest growing population near Wasilla. Native Corporation, Eklutna Inc. (EI) is the largest landowner in this region of traditional Eklutna Dena'ina territory. All the NALEMP cleanup activity performed by NVE has been conducted on traditional Tribal lands now owned by EI.

While Eklutna is adjacent to urban population centers, our village is surrounded by natural areas including Palmer Hay Flats State Game Refuge, Chugach State Park, and Joint Base Elmendorf Richardson. These areas are connected by several EI owned wetland conservation easements. This unique web of land ownership and management provides contiguous habitat areas that maintain ecological integrity and support the traditional Dena'ina culture.

Our subsistence way of life depends on healthy fish and wildlife habitat and connects our people to each other and to our traditionally used lands. Through this connection we strongly support pursuits to preserve, steward and sustainably develop traditional lands.

Location

The Eklutna Army Site is adjacent to Eklutna Village in Chugiak, Alaska, which is about 25 miles northwest of Anchorage. Refer to Figure 1 for Eklutna location.

The site is located on the upper shores of the Cook Inlet at 48 feet of elevation located at Township 16N, Range 1W, Section 24 and 25. The GPS location is North 61° 28' 11" and West 149° 25' 14." The site can be accessed along the Alaska Railroad from a dirt road parallel to the tracks behind a locked gate. It is generally forested, but includes open grassy areas that are sometimes used for camping.



Figure 1: Location of Eklutna in South-central Alaska

Eklutna Army Site Description

The Eklutna Army Site, Formerly Used Defense Site (FUDS) Number: F10AK000097, directly adjoins the village and is between the community and our subsistence resources, which are situated along the Eklutna River and Upper Knik Arm of the Cook Inlet. The site was historically and is currently used for seasonal camps, subsistence hunting of black bear, moose, rabbit, and the gathering of firewood, berries other plants and medicines.

The Bureau of Indian Affairs (BIA) used the site as an Indian boarding school from 1927 to 1947. In 1931, Alaska Native education was transferred from the Office of Education to the BIA. This was due to the Office of Education's difficulty in obtaining federal funding for operating public schools on tax-exempt Native-occupied lands. The BIA continued operating the Eklutna Indian Reserve boarding school, which served all of Alaska until 1947 when the state operated school system replaced Native only boarding schools. The U.S. Department of Interior used the site for railroad transportation under the jurisdiction of the Alaska Railroad from 1923 to 1985. From 1985 to the present, the State of Alaska has jurisdiction for the Alaska Railroad. The Alaska Railroad Corporation holds grandfathered easement rights to the right of way through the site for continued railroad use.

From 1968 to 1971, the DOD used the site's BIA buildings for housing, supply and storage, though DOD had already begun using the adjacent property in 1961 for the same purposes. The Eklutna Army Site was used by the U.S. Department of the Army as a supply, housing and storage area. Although the village housing area was less than 1,000 feet away, Tribal members were not allowed to enter the fenced site, which was protected by armed guards.

DOD activities occupied 148 acres and surrounding properties. The Army was permitted the use of four buildings from the BIA boarding school by Supplemental Amendment No. 5, dated September 19, 1968. The Department of the Army constructed at least 20 Quonset huts, used underground bunkers for storage, stored equipment aboveground and housed personnel. Following occupation, DOD leveled much of the site, piling some building debris and other waste at the perimeter of the site and in a central dump.

The former Eklutna Army Site was conveyed by the Alaska Native Claims Settlement Act (ANCSA) to the Eklutna Inc. village corporation. Eklutna Inc. owns more than 124,772 acres total. Of the 146.78-acre site, impacts were observed and addressed by NVE on approximately 55 acres. Subsurface rights are owned by Cook Inlet Regional Inc.

Throughout much of the NALEMP remediation activities NVE used the area for subsistence hunting and gathering activities, youth camps, and to host the largest Pow Wow in the state drawing more than 3,000 people to the site bi-annually. Additionally, approximately 300 Chugiak school children use the site annually for camping and outdoor activities with NVE instruction on cultural activities. A portion of the Eklutna Army Site is now an active gravel pit managed by Alaska Interstate Construction and is under concurrent investigation by FUDS for petroleum contamination that has impeded the expansion of gravel mining. Figure 2 below shows the contemporary site with inset showing the Eklutna Army Site and a bull's-eye indicating the drum dump site where majority of cleanup activities were conducted by the NVE and NALEMP. Investigations of the site from closure in 1971 to NALEMP assessment in 2000, failed to document remaining impacts at the site. It was not until 2003, that impacts were described and 2005, when cleanup activities commenced under management by NVE, thanks to DOD policy that included Tribes in cleanup of their traditional lands.



Figure 2: Eklutna Army Site Drum Dump with inset 1964 aerial photo

Eklutna Army Site Investigations 1987 – 2003

OceanTech performed an assessment of the Eklutna Army Site in 1987, under contract to United States Army Corps of Engineers (USACE). The firm contacted EI by letter and phone calls to determine if impacts existed. In 1988, based on lack of correspondence, no impacts were recorded. In 1997, Ecology and Environment Inc., under contract to Environmental Protection Agency (EPA), conducted an assessment of the Eklutna Army Site that noted, “Based on the lack of a documented release... and knowledge from site contacts indicating no on-site contamination, no further action... is recommended.” NALEMP was created by Congress to mitigate military environmental impacts on Indian lands in 1993. The program began work in Alaska in 1996.

In 2000, EG&G subcontracted Portage Environmental to prepare 4 Step One Site Assessment Reports (SAR) for sites near Eklutna. Similar to previous reports, the Step I Eklutna Army Site SAR produced in 2000, was prepared without a site visit and it maintained no eligible impacts were present. DOD impacts were well-known in the community and if the Tribe had been properly consulted known site impacts would have been forthcoming. Hundreds of such assessments were conducted nationwide and these were used to establish eligibility for Tribes to create NALEMP Cooperative Agreements (CA) with DOD.

In 2003, Environmental Engineer Elijah Donat, then with POWTEC Environmental Services, prepared a Step I Eklutna Army Site SAR for NALEMP to thoroughly document DOD impacts overlooked by the previous report. Donat lived in Eklutna in 2002, and had become familiar with impacts such as leaking drums of solvent and paint, remains of many buildings, barbed wire fencing and extensive debris. This report was submitted to the DOD and prime contractor EG&G compensated POWTEC for the effort. The DOD officially accepted the report and USACE documented in the NAMSEI database that the report superseded the previous report. This informed a series of meetings between USACE and the NVE, and facilitated creation of NVE NALEMP activities in 2005.

2004: Eklutna Army Site Visits with NALEMP

In 2004, NVE Second Chief Lee Stephan, NVE Land and Environment Director Marc Lamoreaux, and consultant Elijah Donat brought Alaska Department of Environmental Conservation (ADEC) staff and NALEMP Project Manager Patrick Roth to visit the Eklutna Army Site. Mr. Patrick Roth became a strong advocate for NVE to remediate the site with NALEMP, and worked with NVE to earn a 2-year, \$750,000 CA starting in 2005 to address the impacts. The following chronology details the cleanup of this site by NVE terminating in 2015.

2005: Debris Cleanup

In 2005, NVE hired eight Tribal members to remove surface debris under a debris cleanup plan prepared by POWTEC. They were divided into three crews and assigned separate tasks including removal of barbed wire at two locations, and removal of collapsed Quonset hut frames. These tasks proved extensive and activities continued into subsequent years. The barbed wire fences presented a significant impact to free movement of the moose population and had led to at least one entanglement death. Quonset huts positioned throughout the Eklutna Army Site were abandoned and had mostly collapsed frames preventing use of much of the otherwise ideal area for camping. The frames also posed a significant threat for tripping and injury in the highly used area because the sharp metal frames seasonally became disguised under leaves. These hazards were especially significant in light of the bi-annual Pow-Wow, when more than 3,000 people visited the site and many camped, as well as the approximately 300 school children that took fieldtrips to the site annually for environmental education. The site cleared by the army is the only clearing in the forested area and has been heavily used for community gatherings and camping.

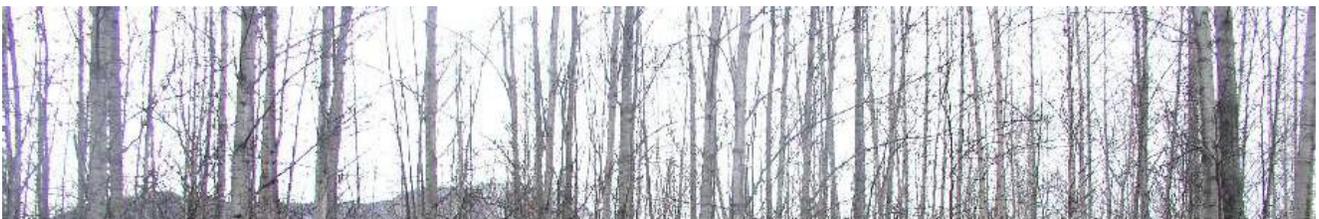


Photo 1: Debris cleanup including many Quonset hut frames

2006: Survey and Debris Cleanup

In 2006, NALEMP provided six Tribal members 40-hour HAZWOPER or refresher courses. They were the star performers from our 2005 work and NVE is proud to have further developed their capacity by providing job training and certifications. Project Manager Marc Lamoreaux and contractor Elijah Donat attended the annual NALEMP meeting in Sitka, Alaska. From May 22 to May 26, the Tribe performed a comprehensive survey of the Eklutna Army Site following a work and safety plan approved by USACE. Survey crews, including our contractor, formed a line and maintained a 15 to 30 feet separation between individuals and walked each transect searching for Army site impacts.

Two staff generally functioned as documenters for each survey crew of five each. When someone found an impact, the crew gathered together to document it. Impacts were given a site number, GPS location, and description, which were written on a placard with photos. For ease of relocation, orange flagging tape was prominently tied to nearby vegetation. Crews carried a metal detector to investigate disturbed ground for buried metal remains. NVE produced aerial photo maps of the project area to guide the field transect crews. The information gathered was also recorded on field notes. Minor debris that would be difficult to relocate was collected throughout this effort and other debris condensed for recollection. In addition to this intensive methodology intended to capture all impacts to the subject

property, three drum dumps and the army site garbage dump were investigated in greater detail, including assessment by out contractor, to better understand cleanup requirements. Two of the drum dumps were determined by our contractor to contain only empty drums, buckets and cans and these sites were approved for debris cleanup. The dump presented extensive surface debris but no recognized environmental conditions were observed. One of three drum dumps was discovered to include at least three drums noticeable from the surface that had rusted through and were exposed to air, thereby allowing view into the drums, which revealed visible paint and tar products. This site was 100-feet from the Alaska Railroad on Eklutna Inc. property. NVE invited ADEC Contaminated Sites Program Environmental Specialist Deb Caillouet to assess the drum sites and agreed that the empty drums at two locations could be disposed as non-hazardous waste and that the exposed leaking drum site required further assessment.

NVE purchased equipment with general funds and then rented it to the program to facilitate cleanup. Equipment included a three-quarters ton pick-up truck with crew cab and lift gate. NALEMP provided funding for project supplies such as a heavy-duty trailer, one all-terrain vehicle (ATV) and an ATV trailer. NALEMP also provided project supplies such as metal detectors, two chainsaws, a digital camera, a gas powered metal saw, vapor masks, face shields, a 12 volt winch, and debris gathering tools such as wheelbarrows, rakes, picks, hard hats, gloves and steel toed and shanked boots for crew, chains, and miscellaneous small supplies.

In 2006, NVE removed 37,000 pounds of debris from the site and disposed of it at the Anchorage Highland Landfill and Alaska Metal Recycling. At least 20 latrines were identified and filled with soil to deter safety concerns.

Disposed debris included sheets of metal, Quonset hut frames, chicken wire associated with insulation, fencing, metal pipes, insulated electrical wire, old appliances, empty five-gallon and one gallon cans, gas and oil cans, ammunition boxes, a five-gallon can of paint thinner (taken to the hazardous materials facility at the landfill), canvas tent remains, power pole support wires, extensive small scrap metal, much of which had to be dug out or pulled out by heavy equipment due to partial burial in soils and entanglement in roots. Additionally, there was extensive shallow household garbage from the era of DOD occupation including cans, bottles, food packaging, shoes, etc. This garbage was distributed throughout the housing area and camouflaged by leaf debris. It was not until surrounding debris was dislodged that the extensive garbage was observed.

NVE hired South Fork Construction, following a formal bidding process, to provide heavy equipment to level and sort debris in a large berm measuring 1,000 feet by as much as 50-feet high containing the remains of the old BIA School building and army site. This was the first BIA Indian School in Alaska and was later used by DOD. Historic cleanup of the site included bulldozing the debris into a large berm. This berm demonstrated extensive protruding debris such as lead based pipes, asbestos pipes, barbed wire, concrete and other 1920s building materials. Another pre-proposal and CA were developed to address the extensive impacts remaining at the Eklutna Army Site after two years of Tribal cleanup work.



Photo 2: Debris removal



Photo 3: Debris removal

2007: Debris Cleanup and First Drum Dump Cleanup

The second CA began in 2007 when South Fork Construction dismantled the 10,000-yd³ berm containing remains of the former BIA school. They separated the building debris and disposed of 800,000 pounds of debris such as concrete building rubble offsite where it was needed as fill. NVE purchased a small tractor backhoe-loader and rented it to the project to complete further removal of Marsden Matting and debris throughout the Eklutna Army Site that were challenging to remove with manual labor.

In 2007, there were five drums visible at the surface at the Eklutna Army Site Drum Dump. Donat performed sampling for the purpose of shipping and disposal to prepare waste profiles and shipping manifests. This included analysis for reactivity, ignitability, flammability and PCB. Halogenated solvents were identified in free product requiring future analyses for migration to soil and water. Sampling reflected that the five drums visible at the surface at the time contained paint and that considerations for cleanup should include trained personnel only, non-sparking tools, no ignition sources, respirators, Photoionization Detector monitoring, eyewear and protective clothing.

South Fork Construction was selected to remove the drums and manage disposal. However, upon excavation of the five drums visible at the surface, another 35 mostly full drums were identified and removed, as the larger scale of the site became known. The project was halted when observance of extensive additional buried drums and contaminated soil necessitated preparation of another CA to secure sufficient cleanup resources. South Fork staged 40 drums at their facility in Eagle River and contained leaking drums in overpacks. Emerald Environmental then conducted further analysis of the free products contained in the drums such as paints, tar and solvents. This analysis informed waste profile requirements for shipping and disposal of the waste.

The 2008 NALEMP pre-proposal and CA were developed to further address the extensive buried drums at the Eklutna Army Site. NVE also developed a poster presentation for the EPA Alaska Tribal Conference on Environmental Management to present cleanup activities performed by the Tribe from 2005 to 2007.

NVE worked with POWTEC to develop a SPIP in 2007. NVE identified that the Eklutna Army Site was the only known source of DOD impacts to Eklutna Native lands so the plan strategized cleanup of known impacts at the site.



Photo 4: Debris Removal



Photo 5: Sorting through berm for debris removal



Photo 6: Sorting through berm for debris removal

2008: Debris Removal

In 2008, NVE was faced with challenges that resulted in the absence of Land and Environment Director Marc Lamoreaux, Project Engineer Elijah Donat, and Second Chief Lee Stephan. Despite this, NVE was able to continue project activity including some debris removal. The Tribe conducted a Request for Proposals (RFP) to contract cleanup of the Eklutna Army Site Drum Dump. Two proposals were received but no selection was made. NVE later chose to redo the bidding process in 2009. POWTEC, with new staff, was contracted in 2008, to prepare a drum dump cleanup plan. The plan was not accepted by the Tribe or ADEC. In hopes to reinvigorate the program Donat prepared a pre-proposal and CA for 2009, with the help of persisting Land and Environmental staff.

2009: Drum Dump Cleanup and Debris Removal

In 2009, NVE Land and Environment Director Marc Lamoreaux returned and re-hired four Tribal members from the original cleanup crew. He coordinated additional HAZWOPER training for them and removed an additional 10,960 pounds of debris that was much more difficult to access than previously removed debris. NVE also coordinated with NALEMP to host the annual conference in Anchorage, Alaska. The RFP process completed in 2008 was determined to be insufficient and the RFP was rewritten and reposted. Seven proposals were received and Chilkat Environmental was selected to perform the cleanup.

Right of entry approvals were prepared and approved by the Alaska Railroad and Eklutna Inc. to access the Eklutna Army Site Drum Dump. Two large piles of wire mesh-backed insulation were identified by cleanup crews and suspected to contain asbestos. Laboratory analysis determined the insulation was mineral wool and did not contain asbestos. The Tribal crew cleared a temporary vehicle access to the remote and over-grown site. Several tons of insulation were removed and disposed.

After the cleanup of 40 drums in 2007, there were still 16 drums visible at the surface and covered by tarps for the duration of 2008 and 2009. Chilkat Environmental assisted preparation of the NVE Drum Dump Interim Removal Action Work Plan July 20. ADEC responded with comments on July 24, which were addressed over the phone and later approved. Fieldwork was performed September 6-20 and included confirmation with metal detectors that all drums had been removed. A total of 62 additional drums with contents were removed. Drums were either excavated manually or pumped in-place to avoid release when disturbed. Refer to photos 7 and 8, which demonstrate the condition of the drums in the ground and challenge of removal. Drums were placed in overpacks and transported to a covered staging area. Once all the drums were staged they were divided into the six products encountered and samples collected to refine waste profiles and manifests. The six products included tar, white paint, green paint, gray paint, solvent and a tar/gasoline mixture. The paint was determined to contain lead and the solvent can be described as Stoddard Solvent that was likely used as paint thinner and to improve paint application in cold.

Drum contents were combined with like materials when feasible, placed in new drums or overpacks, properly labeled with shipping hazard information and transported to Waste

Management Inc. for proper disposal. The final shipment had 54 drums and overpacks [Refer to Photo 9]. Most of the drums were full and contained unused products. Waste was stored, treated and disposed of in compliance with the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act. The outcome of each excavated drum with contents was documented in compliance with 18 AAC 75.325(f)(1)(B). Hazardous waste was disposed under EPA Waste Generator ID AKR000203398 and certificates of destruction were filed with EPA.



Photo 7: Eklutna Army Site Drum Dump



Photo 8: Eklutna Army Site Drum Dump



Photo 9: 54 drums and overpacks from the Eklutna Army Site Drum Dump

Following cleanup of the buried drums, three samples were collected of the soil for the purpose of completing waste profiles for shipping and disposal requirements. Samples were analyzed using Toxicity Characteristic Leaching Procedure (TCLP) to prepare samples for analyses of metals and Volatile Organic Compounds (VOC). The entire disturbed area had soil with chunks of dried lead based paint and soil at the former location of a leaking solvent drum featured strong odor. This sampling event was performed using methods approved to characterize waste for shipping and disposal and not to determine level of contamination at the site. The level of contamination in soil at the site was determined following a plan approved by ADEC.

NVE and Chilkat Environmental submitted a work plan for characterization of soil before the drum cleanup event on August 31. On September 18, an email was sent to ADEC to clarify methodology questions and ADEC approved the plan that day. The purpose of the ADEC soil characterization plan was to define the level of contamination remaining at the extent of excavation rather than to describe the level of contamination in the disposed soil.

Excavation of the contaminated soil from the drum dump was conducted October 4-5. The extent of excavation was determined in accordance with 18 AAC 75.360 using visual observation and heated Photoionization Detector headspace technique as approved in the work plan. Four 20-foot containers were loaded with contaminated soil, including two containers profiled as non-hazardous (for shipping) that contained dried chunks of lead based paint. The other two containers were profiled as hazardous for shipping because they contained high levels of Benzene and Lead. Certificates of disposal were provided to EPA. On the third day of the project, October 6, it was determined that the NALEMP budget was not sufficient to continue excavation. Sampling was then performed at the extent of excavation including half the site that was believed to be clean and the other half where solvent contamination required further excavation. The eight samples collected reinforced this finding and determined that more contaminated soil was present at the location of a formerly leaking solvent drum where contamination had migrated deeper.

2010-2011: Debris Clean-Up, Drum Dump and “Burn Pit” Site Characterization

In 2010, NVE worked with USACE to submit the 2010-2012 CA to complete debris cleanup activities and cleanup of the Eklutna Army Site Drum Dump. Debris cleanup activity was focused on the perimeter of the site, where significant debris remained, but was more challenging to access and remove, often requiring vegetation removal to gain access for removal.

Debris included significant amounts of barbed wire, old fence posts, and 10 drums. Nine of the drums were empty but one was about a quarter full and sealed. This drum was investigated by Chilkat Environmental, determined to contain water and was disposed. Six additional latrine pits were identified and filled.

The final soil excavation was conducted September 13-15, 2010. Soil screening at the extent of excavation was conducted using the heated Photo-Ionization Detector headspace technique and hot water sheen test. A total of 116 tons of soil were excavated into six 20-foot connex containers and soil sampling was conducted at the extent of excavation on September 15.

Six samples collected from the extent of excavation were each analyzed for Residual Range Organics, Diesel Range Organics, Gasoline Range Organics, Volatile Organic Compounds, Semi Volatile Organic Compounds, and Resource Conservation and Recovery Act metals. After samples were collected, the 13-foot deep excavation pit was filled and the site was reshaped to restore the natural landscape.

Laboratory results for all analyses except Trichloroethylene (TCE), were significantly below regulatory clean-up levels. Results indicated that low levels of contamination remained at portions of the extent of excavation. The migration to groundwater soil clean-up standard for TCE is 0.020 parts per million (ppm). Sample 22 encountered 0.031 ppm and Sample 23 was 0.059 ppm TCE. Trichloroethylene is a volatile organic chemical that was used primarily as an industrial solvent to clean grease from metal. TCE isn't usually found in surface soils because it is volatile and evaporates. However, as recently as 2009, solvent was leaking into the soil from failing drums, thereby contaminating subsurface soils as deep as 13 feet. In August 2011, Chilkat Environmental prepared a Site Activity Report for NVE and recommended characterization of groundwater at the drum dump. ADEC responded to the report with a request for groundwater characterization.

Resources in the NALEMP CA were insufficient for the groundwater characterization, so the remaining CA resources were focused on the "Burn Pit" issue raised in the 2007 SPIP, but not previously addressed. The groundwater assessment was delayed for a possible future CA.

In August 2011, NVE, with Chilkat Environmental, prepared a work plan to investigate if the Eklutna Army Site "Burn Pit" site was a risk to people. Previous investigations by the Tribe observed a large circular area with subsurface soils stained with carbon evidencing burning. The purpose of the work plan, developed by Chilkat Environmental, was to determine if shallow soils presented contamination at levels that would warrant further investigation.

The suspected burn pit was a 115-foot circular area, covered by grass and second growth trees. The site is within the clearing between the Pow Wow grounds and the "men's circle" used for ceremonial activities. Its boundary is barely apparent in the field as a shallow, five-foot wide berm concaved toward the center. The suspected burn pit was visible as a blackened circle in a 1964 air photo of the Eklutna Army site. See Photo 10 below.



Photo 10: 1964 Eklutna Army Site air photo

Preliminary investigation identified the site as a 128-foot diameter circle of birch, white spruce and poplar trees. The perimeter is elevated about six-inches above the surrounding surface. The circle of trees is primarily surrounded by grass and within the circle a cross was observed also dominated by trees. This cross feature was observed to approximately line up with magnetic north in 1964 of 26° east declination. These observations indicate the feature could be aviation related. Test pits were forwarded throughout the site and did not encounter charred debris. Subsurface investigation found characteristics identical to the surrounding landscape. The upper 2-4-inches contained silty soil and organics from grass and shrubs. Beyond four-inches below ground surface featured dense unconsolidated cobble, gravel, sand and silt originating from the former floodplain of the Eklutna River.

The NVE and NALEMP project managers discussed these observations in the field during the investigation and modified the work plan with USACE approval to collect three shallow composite samples from the three areas observed within the feature, including the outer perimeter, the cross, and the four grassy areas. A total of nine discrete samples were collected from four to 10-inches below ground surface for each of three composites.

Composites were homogenized in a stainless steel bowl and analyzed for Polychlorinated Biphenyls (PCB), Resource Conservation and Recovery Act metals and Dioxin.

Composite results from this laboratory report each represent nine discrete sources analyzed for PCB, metals and Dioxin. If contaminants were encountered as few as one of the discrete sources could have presented the contaminant. Therefore, even low levels would be significant. Fortunately, this investigation found no contamination of concern or the presence of recognized environmental conditions. The investigation indicated the site was not a burn pit as suspected; rather it was likely a feature related to aviation, such as a helicopter pad. Furthermore, sampling results did not find contaminants and compelled no further investigation. A report summarizing these activities was submitted the first week of January 2012.

2012: Potential Eligible Sites Investigation

NVE performed fieldwork October 8-12 including locating and removing one previously identified drum from Eklutna Army Site and the inspection of the landfill area to determine if environmental conditions persisted there. No concerns were identified by Chilkat Environmental. Fieldwork also included the inspection of four sites previously determined to not be eligible for NALEMP that are on Eklutna Inc. lands.

The Eklutna Army Site was determined not to be eligible at the same time as these four sites, but was later proven to present significant impacts. The Tribe still doubted the meaningfulness of the other previous NALEMP assessments because they had not performed field investigations. Investigation sites included Birchwood Airforce Auxiliary Field, Eagle River Missile Annex, as well as the Eklutna Dispersal Site and Ammunition Storage Pad. Fieldwork included finding these sites and conducting detailed site investigations on foot. The level of investigation was comparable to an American Society for Testing and Materials (ASTM) 1526 -13 Phase 1 Environmental Site Assessment and no recognized environmental conditions were identified. Figure 3 presents roads observed at the Eklutna Dispersal Site and Ammunition Storage Pad.

Chilkat Environmental, with NVE prepared a work plan for groundwater investigation at the drum dump in 2012, but USACE called for additional soil sampling and other changes. NVE modified the work plan and it was later approved by ADEC on April 5, 2013. Activities in 2012, included securing updated right of entry permissions from the Alaska Railroad and Eklutna Inc.

In 2012, the NALEMP annual conference was again held in Anchorage. Eklutna Tribal President Lee Stephan provided a welcoming address and NVE prepared two poster presentations on the NVE Eklutna Army Site NALEMP accomplishments.

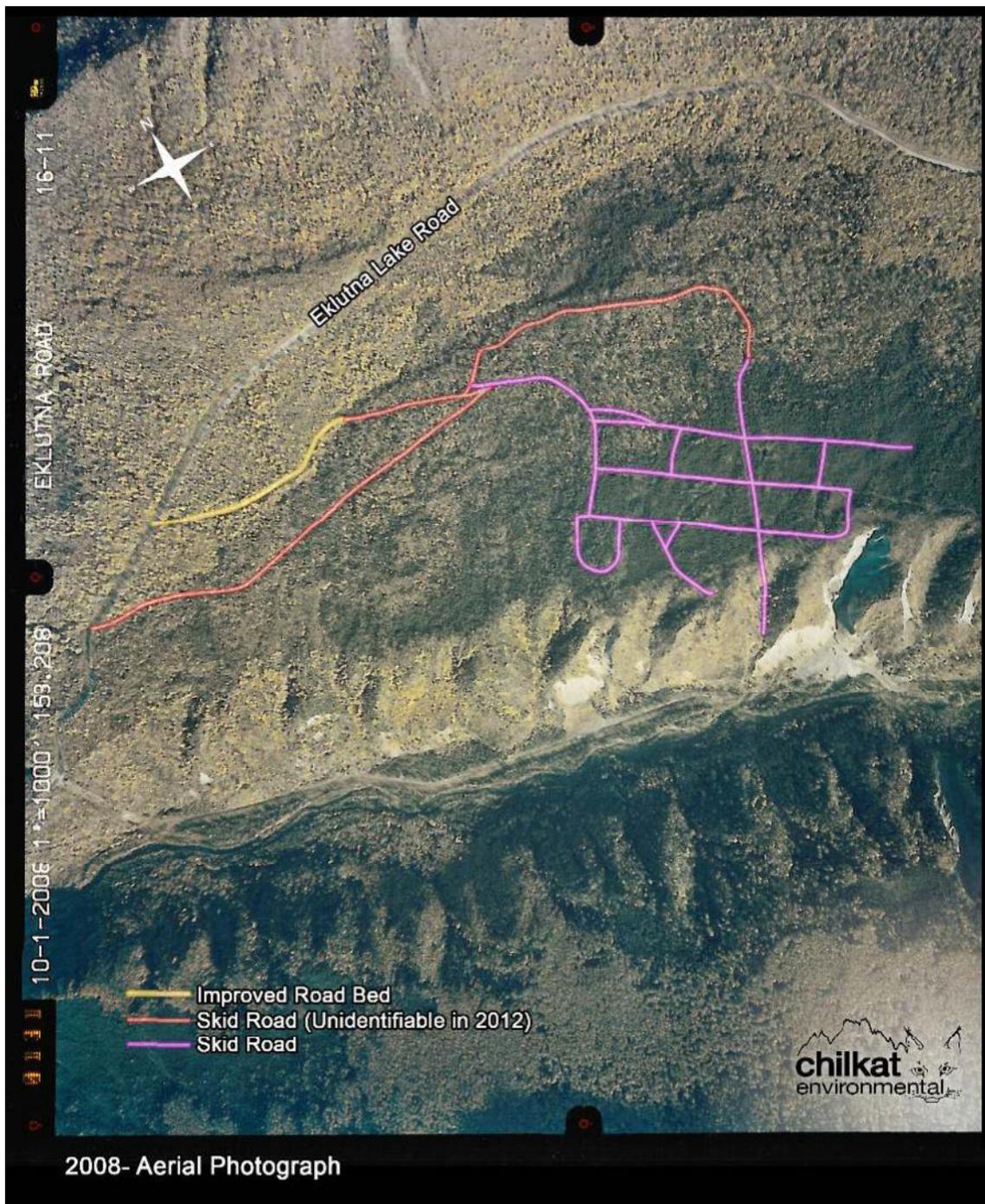


Figure 3: Eklutna Dispersal and Ammunition Storage Pad Site road improvements

2013: Groundwater and Soil Sampling at Drum Dump

The 2012 CA was extended through 2013. In August 2013, soil investigation was performed to characterize the vertical and horizontal extent of contaminated soil remaining at the former excavation and to determine if other contaminants of concern were present. Sampling after the last cleanup in 2010, identified TCE just above detection at levels that exceeded migration to groundwater cleanup. This contamination was observed at the area of deepest excavation where a solvent drum had leaked prior to removal in 2009.

To further characterize this contamination, the work plan called for three test pits sampled for soil at two-foot intervals. One soil sample was also collected from just above the saturated soil horizon at 18.5 feet during well installation. Groundwater investigation encountered no exceedance of cleanup standards and all results were below detection from the water table at 22-feet below ground surface. Sampling included a duplicate that produced identical results.

Results from two of three test pits and the groundwater interface soil sample at 18.5-feet were below cleanup levels. One of the test pits failed to pass cleanup levels. Contamination was observed at two-feet but not at the surface or at 4 feet. While the result was above the cleanup level, it was marginally above the detection limit. Two samples collected at the same depth at the same time produced one clean and one contaminated sample suggesting contamination was at the minimal extent and that the soil lens was not homogenous.

While Photoionization Detector screening was not able to detect the contaminated soil at such low levels, the 22 laboratory samples in the area of historic contamination produced one significant exceedance at two-feet. This pocket of contaminated soil is assumed to have been disturbed by site excavations and test pits. Earlier investigations discovered TCE contamination in this same area six to 10-feet deep while this investigation yielded levels just above detection at 10-feet with the highest levels at two-feet.

1,1,2,2-Tetrachloroethane detected in sample 13EAS02A2SL was just above detection. The cleanup level for this compound is below the laboratory-reporting limit. This creates challenges for low-level detections because the approved method for analyses is not capable of detecting the compound until it is already over double the cleanup level. A duplicate was prepared for sample 13EAS02A2SL that did not detect the analytes above 0.05ppm.

The ADEC Method 2 migration to groundwater soil cleanup levels per 18AAC75 is intended to protect groundwater that people could ingest. The NVE groundwater investigation performed by Chilkat Environmental explored this human exposure pathway and determined that the pathway is not contaminated. Therefore, under Method 2, the other regulated exposure pathways associated with soil met requirements for closure.



Figure 4: Groundwater well and soil sampling



Photo 11: Soil sampling

2014-2015: Preparation of SPIP

In July of 2014, NVE received cleanup complete determination for the Eklutna Army Site Drum Dump from ADEC. The CA originally slated to end in 2012 and previously extended through 2013 was extended to end March 2015. In fall of 2014, NVE assembled relevant information to prepare this SPIP. The CA was extended to permit Draft SPIP completion on January 30, 2015, and Final SPIP completion by March 31. USACE and NVE determined the SPIP is an important opportunity to document the history of the NVE NALEMP and to identify other environmental issues in the community to coordinate response effort.

SYNOPSIS OF EKLUTNA NALEMP

NVE is thankful to DOD for supporting 10 years of clean-up activity at the Eklutna Army Site. We would also like to recognize USACE, EI, Alaska Railroad and ADEC for facilitating these activities. NVE and USACE are on standby for EI to address further DOD impacts on their lands if identified. Experience with NALEMP over the last 10 years, alongside our other environmental programs, has built the capacity of NVE Land and Environment Department to address environmental issues in the future.

NVE commends the individuals who have made this project successful. Lee Stephan has provided Tribal leadership throughout most of the project with the practical goal of accomplishing maximum cleanup with available resources. Marc Lamoreaux has managed this project for the Tribe and maintained the continuity and persistence required to reach completion. NALEMP Project Manager Patrick Roth was the proponent who got our program started and was a steadfast advocate for the Tribe. NALEMP Project Managers Valarie Palmer, Bob Glascott, and Andrea Elconin have each been very supportive, available, and focused on facilitating this project. Eklutna Inc. Lands Manager, Jim Arneson has been involved and supportive throughout this effort. Tribal laborers committed significant effort to this cleanup. This opportunity to restore our own lands has built community pride and established a pattern of competent and successful project management. NVE Tribal members that worked on this project include Norman Chilligan, Leon Stephan, Victor McNeil, Robert Munson Sr., Smitty Chilligan, Jon Davis, Kevin Pedro, Guy Stephan, Jacob Stephan, Robert Munson Jr., Laura Chilligan, Jolene Waskey, Angeleen Waskey and Angie Waskey. Elijah Donat prepared the assessment in 2003 that sponsored NALEMP program and also managed the decade of environmental restoration tasks. Other Chilkat Environmental staff that supported this project include Environmental Scientists Jacklynn Ruggirello, William Prisciandaro, Darsie Culbeck and Eric Forster. NVE continues to work with Chilkat to address ongoing environmental issues that are not associated with DOD.

Plans for NVE Land and Environment Department

NVE has long promoted habitat conservation in the upper Cook Inlet in addition to the DOD environmental restoration activities presented in this report. These combined efforts improve our sense of community responsibility and protect subsistence resources for future generations. NVE has produced more than 20 resolutions supporting local conservation efforts. The Tribe accepts stewardship responsibility for this land including mitigation of impacts to important habitat. This is important to us because of our subsistence lifestyle and understanding that ecosystems are very complex and require stewardship that benefits all species. The NVE Land and Environment Department has demonstrated competent project management through performance of many grants and contracts, including those from Alaska Conservation Fund, BIA, Cook Inlet Regional Inc., EPA, USACE, DOD, Knik Arm Bridge and Toll Authority, United States Maritime Administration, United States Geological Survey, United States Army Garrison - Alaska, University of Alaska and United States Fish and Wildlife Service.

Habitat Restoration and Conservation

In 2001, NVE created the Eklutna River Watershed Council (ERWC) to respond to the great need for improved communication to promote conservation and restoration. ERWC involves broad agency, Tribal and landowner participation. This collaborative approach has resulted in an effective dialogue for these pursuits of habitat restoration. The ERWC has focused mainly on restoration of the Eklutna River, which is diverted at Eklutna Lake about 11 miles above Eklutna Village, through a tunnel, flowing into the Knik River for power generation and piped for municipal water supply. Consequently no water is released into the Eklutna River from its primary source at Eklutna Lake. Watershed Council membership includes decision makers and valuable contributors such as Eklutna Inc., Alaska Department of Natural Resources, Chugach State Park, Water Resources, Alaska Railroad Corporation, Municipality of Anchorage, Anchorage Municipal Light & Power, Anchorage Water & Wastewater Utility, Chugach Electric, Cook Inlet Aquaculture Association, Eklutna Power Plant, Eklutna Valley Community Council, Matanuska Electric Association, NVE, Thunderbird Heights Homeowners Association, Bureau of Land Management, ADEC, Alaska Department of Fish and Game, Anchorage Soil & Water Conservation District, Anchorage Waterways Council, Great Land Trust, and University of Alaska Fairbanks Cooperative Extension Service.

NVE Land and Environment Department has managed the NALEMP program for most of the last 10 years under the following mission statement goals:

“To understand, protect, restore, secure and enhance traditional lands, environment and uses while maintaining cultural integrity.”

“Protect and manage traditional lands and environment for the benefit of Eklutna people and our way of life; under Council guidance.”

The Upper Cook Inlet is a very special place for Athabascan Dena'ina. For time immemorial we have shared this place and recognize our responsibility to protect its ecological diversity and healthy wildlife populations. NVE's environmental restoration and conservation activities are intended to support the diverse species of the Upper Cook Inlets summarized in Table 1 below.

Mammals
Moose, Dall Sheep, Snowshoe Hare, Beaver, Muskrat, Brown Bear, Black Bear, Porcupine, Lynx, Coyote, Wolf, Red Fox, River Otter, Weasel, Least Weasel, Hoary Marmot, Red Squirrel, Beluga Whale, Harbor Seal, Little Brown Bat, Masked Shrew, Dusky Shrew, Northern Water Shrew, Pygmy Shrew, Northern Bog Lemming, Brown Lemming, Red-backed Vole, Meadow Vole, Tundra Vole, Singing Vole, Meadow Jumping Mouse, Arctic Ground Squirrel, Wolverine, Pine Marten, and Mink
Fish
King Salmon, Silver Salmon, Chum Salmon, Pink Salmon, Sockeye Salmon, Dolly Varden Char, Rainbow Trout, Burbot, Stickleback, Hooligan
Birds
Bald Eagle, Northern Goshawk, Sharp-shinned Hawk, Merlin, Kestrel, Osprey, Melanistic Red-Tailed Hawk, Great Horned Owl, Northern Harrier, Northern Hawk Owl, Raven, Steller's Jay, Gray Jay, Spruce Grouse, Ruffed Grouse, Willow Ptarmigan, Greater Yellowlegs, Sandhill Crane, Great Blue Heron, Canada Goose, White Fronted Goose, Tundra Swan, Trumpeter Swan, Mallard, American Widgeon, Northern Shoveller, Canvasback, Northern Pintail, Harlequin Duck, Black-billed Magpie, Black-capped Chickadee, Boreal Chickadee, Ruby-crowned Kinglet, Golden-crowned Kinglet, Swainson's Thrush, Hermit Thrush, American Robin, Orange Crowned Warbler, Savannah Sparrow, Fox Sparrow, White Crowned Sparrow, Gold Crowned Sparrow, Dark-eyed Junco, Pine Grosbeak, Bohemian Waxwing, Common Redpoll, Downy

Table 1. List of species in Eklutna.

This list was developed from traditional knowledge communications, literature review on similar, nearby properties, (1986PalmerHayFlatsStateGameRefugeManagementPlan,1981USFWSKinkArmsWetland Study, FortRichardsonspecieslists,DEISforthe proposedStrykerBrigadetransformation,information providedbyUAA EnvironmentandNaturalResourcesInstitute, etc.) and (primarily) NVE Land and Environment Department research and unpublished observations. More detail on our wildlife observations is available in the quarterly narrative reports made by NVE to USFWS for Coastal Program and Conservation Easement Development grants. (contact John DeLapp, USFWS Anchorage Field Office.) The smaller bird species following the waterfowl in the list were identified during a bird walk/song-bird survey lead by Malcolm Ford on June 8, 2000, and attended by NVE youth and staff.

Wetlands Conservation

In 2011, EI, in partnership with Great Land Trust (GLT), permanently conserved 4,800 acres at the mouth of the Knik and Matanuska Rivers with a conservation easement. Again in 2012, the partnership completed the Fire Creek and Eklutna River conservation easements covering eight miles of coastline totaling 1,355 acres containing Fire Creek, Mink Creek, Edmonds Creek, Mirror Creek, and Eklutna River estuaries. The land remains under Eklutna Inc. ownership and traditional uses such as hunting and fishing by shareholders continue under GLT conservation easements management.

NVE played a supporting role in the initiation of these conservation easements initially proposed by the Tribe in 2002. In partnership with GLT, NVE helped develop the proposal that funded the purchase of the first and largest easement, the Knik Islands, as mitigation for Port of Anchorage expansion impacts. These easements contain spawning, rearing, and migration habitat for all five species of Pacific salmon. The Eklutna River easement includes Eklutna's fish net site and provides excellent moose habitat, while also supporting diverse birds and wildlife such as the endangered Cook Inlet Beluga Whales. The addition these conservation easements result in a wildlife corridor of nearly 35 miles of continuous protected lands that border upper Knik Arm, from Palmer Hay Flats State Game Refuge, past Eklutna, and on to Fire Creek near Beach Lake. This tidal wetland wildlife travel corridor extends another 30 miles or more through Joint Base Elmendorf and around Anchorage proper, and links with Chugach State Park and up the Eagle, Knik and Matanuska Rivers.

Contaminated Sites

The NVE Council has directed its Land and Environment Department to advocate for the cleanup of lands near our community. The following is a list of contaminated sites that NVE will track and advocate for responsible parties to perform timely and reasonable cleanup efforts. Italicized text is extracted from the ADEC Contaminated Sites Database and normal text summarizes NVE plans for each site.

Eklutna Army Site

2108.38.004 (Open)

Eklutna Village Road, Chugiak, AK. 99567

(Description and status from ADEC database 1.6.15)

Contaminated soil was discovered during excavation of the area for aggregate. Spill reported to PERP. Revised Inventory Project Report for Property No. F10AK0097 received January 2011. Sampling associated with spill report found DRO at 1680 mg/kg.

*4.15.14 - Most recent database entry that details status from ADEC
Final remedial investigation work plan addendum approved*

NVE requested NALEMP resources in 2010 to conduct groundwater monitoring and soil sampling to document contaminated soil associated with the Eklutna Army Site that is currently impacting gravel extraction activities on Eklutna Inc. lands. This request was denied and instead the Formerly Used Defense Sites Program carried out the effort. Investigations are currently underway and NVE will stay apprised of project status to determine if the Tribe can manage tasks associated with these impacts in the future with NALEMP.

Birchwood Trespass Shooting Area

2106.38.010 (Open)

Birchwood Street; NW of Birchwood Airport, Chugiak, AK. 99567

(Description and status from ADEC database 1.6.15)

Lead contamination in soil detected up to 17,000 mg/kg at the Birchwood trespass shooting area site, which is being proposed for development into an authorized shooting range for Southcentral Alaska law enforcement. Delineation of lead impacts and cleanup prior to development are anticipated.

8.15.12 - Most recent database entry that details status from ADEC

Reviewed Work Plan for Soil Sampling at Birchwood Law Enforcement Range Development. Based on site visits, aerial photos, and analytical data, four shooting areas have been identified as well as the likely shot fall zone at the skeet shooting area. These areas will be cleared of vegetation in preparation for sampling. Field screening will be conducted in the shot fall zone by walking transects with a metal detector and collecting analytical soil samples from a minimum of 5 locations. Up to 5 soil samples will also be collected from each shooting area. A bench scale test on lead shot recoverability will be conducted to evaluate the likely effectiveness of potential lead recovery/recycling efforts.

This contaminated site is on Eklutna Inc. land and it appears from most recent Alaska Department of Environmental Conservation database entry in 2012 that the work plan has not been carried out. NVE will contact Eklutna Inc. to discuss the site and assist in maintaining compliance with ADEC requirements. Chilkat Environmental has extensive shooting range characterization experience in Alaska with the BLM and provides technical assistance to EI for this site.

ADOT Knik River Rest Stop (aka: Reflections Lake, Rambo Rest Stop)

2245.38.007 (Closed with IC's)

Mile 30.2 Glenn Highway Palmer, Alaska. 99645

(Description and status from ADEC database 1.6.15)

The chemicals of concern at the site include lead and associated metals (antimony and copper) related to a shooting range. Lead is considered the decision driver based on toxicity. Soil and sediments have been impacted. The "Knik River Rest Stop" contaminated site (AKA "Rambo Rest Stop" and ADOT&PF Knik River Rest Stop) was originally owned by the BLM. The BLM issued a land use permit/lease to the ADOT&PF in 1963 for use as a mineral material site for construction of the Glenn Highway. The access from the highway has resulted in its use by the general public as a shooting range and/or illegal dump for the past 30 years. The site access was eventually restricted through fencing and signage by ADOT&PF, and is within the Palmer Hay Flats Game Refuge. The land remains vacant, open land and was identified for transfer to the State of Alaska.

Under authorization to DOT, DNR worked with the BLM to clean up the site which has been historically used as an informal shooting range and dump site. In 2003, MACTEC

performed corrective action measures which included excavation of backstop areas B1, B2, and B3 and capping of areas A1 and A2. Approximately 34 cubic yards of soil was removed from excavation area B1 (depth of 0.5 foot), 6 cubic yards from excavation area B2 (depth of 0.5 foot), and 66 cubic yards from excavation area B3 (depth of 0.5 to 1.0 foot) for a total of 106 cubic yards. Confirmation samples were collected from the final limits of each of the excavations and verified the in-situ soil did not exceed the residential cleanup level for lead of 400 milligrams per kilogram (mg/kg). The excavated soil was placed in "super sacks" and shipped via railcar to Chemical Waste Management's disposal facility in Arlington, Oregon. The near shore sediments in areas A1 and A2 were capped with clean fill to cover to a thickness of one foot and extending about fifteen feet from the shoreline into the lake.

The remedial efforts employed at the backstop areas during 2003 removed the "hot spot" lead contamination resulting from site use as an illegal shooting range. Soil confirmation sample results from each excavation indicate that 18 AAC 75.341 Method Two cleanup levels have been achieved. Exposure to near shore sediments along the two trap shooting lanes has been mitigated through applying cover material. Because of the long use history of the site as a shooting range and understanding that while five main firing lanes were identified and corrective actions employed, random shooting did occur off those firing lines and over the open water.

During 30 plus years of shooting, there may be other areas that have not been addressed, requiring action in the future. Lake sediments along the trap shooting lanes may be impacted from shooting activities, and may require further assessment based on the future use of the site. As a result of the cleanup effort by the BLM, the site received a Cleanup Complete-ICs closure determination from ADEC in February 2004. However in the Record of Decision, ADEC recommended that additional ICs be established after transfer of the parcel to state ownership because more specifics about land use development would be known after the SOA assumed control.

After the closure determination was issued, DNR received title for the benefit of ADF&G and is now seeking to define the Institutional Controls (IC's) for this parcel before they transfer management responsibility to ADF&G. ADF&G has proposed a development plan for this site which includes construction of trails, a canoe launch, picnic area and plans to stock the lake (former gravel pit) for recreational fishing. An ACMP review of the ADF&G proposed development plan has been completed successfully, and the applicant, ADF&G, noted in the Environmental Risk Questionnaire attached to their application that the site was contaminated with lead shot from target shooting. It appears that as a result of the CU effort, the majority of lead contamination has been removed, however, there are possible data gaps throughout the site. Lead contamination in the lake sediment exceeds ecological screening levels, and one surface area sampled exceeds TCLP for lead.

The CSP project manager is also working with EH to obtain results from fish samples that were reportedly collected from the lake/pond. DNR, as the receiving landowner, has now received unrestricted title from the BLM and now wants to define from a state perspective what IC's this parcel will be subject to. DNR has agreed to memorialize that in the chain of title and interagency agreement. DNR is holding transfer of management responsibility to ADF&G until ADEC establishes ICs for the future land use being proposed for this site by

ADF&G. ADEC is in the process of evaluating the cleanup reports/data, and will need results from this sampling effort to fill data gaps and identify appropriate ICs.

6.23. 14 - Most recent database entry that details status from ADEC

Fish stocking in 2012 was unsuccessful, so Reflections Lake was stocked again in June 2013. It is anticipated that fish tissue samples will be collected in Fall 2013.

This former unauthorized shooting area has been closed by ADEC with Institutional Controls to limit release of Lead, Antimony and Copper. The success of capping and restocking, on this formerly BLM owned lake, is being monitored by ADF&G for fish tissue testing. The initial fish restocking effort in 2012 was unsuccessful. NVE will monitor the database updates and encourage BLM and ADEC to follow through with Institutional Controls and to modify them if required to best protect ecological health.

Old Matanuska Townsite

2245.38.001 (Open)

East D Street, South 2nd Street, Palmer, Alaska. 99645

(Description and status from ADEC database 1.6.15)

Petroleum spill in a wetland and surrounding areas. Corroding containers with markings such as dry cleaning solvent, paint, and PCBs. Hazardous substances being stored on the lots without proper spill protection. Surface stains are observed at the site. Sheen is observed on the water surface in the wetland.

12.10.09 - Most recent database entry that details status from ADEC

On 12/10/09, PERP closed its case with the site. 34 drums and one 5 gallons container of hazardous substances remain on site for EPA to dispose of as well as contaminated soil caused by releases that occurred at the site. In addition to removal of containers of hazardous substances, the Mat-Su Borough who also was involved in this case removed about 80-100 vehicles from the property to date. A more thorough description of the removal action is within the PERP's database for this site and has a separate file regarding their actions associated with the removal work.

Chilkat Environmental performed a comprehensive Phase 1 Environmental Site assessment for Eklutna Inc. in 2009, identifying extensive environmental impacts imposed by a squatter who had collected military surplus petroleum products and junk. Assessment led to emergency containment action by the ADEC Prevention and Emergency Response Program. A total of 80 to 100 vehicles, 29 drums and nine containers were removed consisting of 1,071 gallons of oil, 275 gallons of glycol, and 45 gallons of a water/oil/glycol mixture. Fifteen leaking drums were over-packed and 34 drums and one five-gallon container of hazardous substances were left on the site for EPA to dispose. Contaminated soil was also stockpiled for later removal. The last update to the Contaminated Sites Database is 2009, and it is unclear from the database if contaminated soil and drums remain at the site. NVE will monitor the site and encourage BLM and ADEC to follow through with Institutional Controls and to modify them if required to best protect ecological health.

Noise Pollution

Eklutna is positioned between the Glenn Highway and the Alaska Railroad. These massive and loud transportation infrastructures were built right through our community and have grown in scale over time. Quality of life is diminished by this noise. The Tribe will continue to advocate for state or federal resources to install noise barriers in Eklutna. Noise barriers often feature roadside walls to deflect sound and railroads commonly rely on intentionally planted rows of trees and other natural barriers to reduce noise pollution.

Air Quality

Eklutna air quality is impacted by the Glenn Highway and Alaska Railroad. These massive transportation infrastructures were built right through our community and have grown in scale over time. One result of this elaborate transportation infrastructure is that during inversion events air quality in the community can degrade significantly and the neighborhood where our Tribal members live has a strong odor of exhaust. Additionally, the recently constructed and soon to start, Matanuska Electric Authority powerplant has potential to impact air quality in the village, particularly if natural gas supplies run low when the engines generating electricity would be run on diesel. Noise barriers have been shown to reduce air pollution by enhancing vertical dispersion. A barrier of spruce trees along the highway would decrease both noise and exhaust from the highway reaching the village. Other solutions may be forthcoming to address these concerns.