



DETAILED ACTION PLAN

CHEVAK COMPANY CORPORATION TANK FARM

WASTE EROSION ASSESSMENT & REVIEW (WEAR)

MAY 2015

The **Chevak Company Corporation Tank Farm** is located at latitude 61.528517 and longitude -165.584802. It is centrally located within the community, between the old school and the Ninglikfak River. It was inspected for the Waste Erosion Assessment and Review (WEAR) project on July 8, 2014.

The Chevak Company Corporation Tank Farm is owned by the Chevak Company, which is the village corporation. However, the landowner is unknown.



Imagery Dated 2007, WEAR Map at <http://dec.alaska.gov/eh/sw/wear.html>

Community* – CHEVAK – The community is located on the north bank of the Ninglikfak River, 17 miles east of Hooper Bay in the Yukon-Kuskokwim Delta. Chevak is a Yup'ik Eskimo village. Commercial fishing and subsistence activities are an important part of the local culture.



CONTAMINANT RISK

The Chevak Company Corporation Tank Farm was in operation from the 1970s to 2010. This site is located centrally within the community and is 160 feet from the Ninglikfak River. The tank farm is considered a small site measuring approximately 0.13 acres. It is also a known Contaminated Site (File ID 2409.38.001) due to heating oil and gasoline spills. Site characterization work was completed in 2003, but no further remediation work has been done. The nearest residences are 200 feet from the tank farm. There was no stressed vegetation observed. It is approximately 160 feet from a subsistence area and 4,000 feet from a critical habitat area for Spectacled and Steller’s Eiders.

Contaminants associated with fuels include benzene, polycyclic aromatic hydrocarbons (PAHs), and possibly lead from leaded gasoline. These contaminants are known to cause cancer and other chronic diseases. The tank farm is within the drinking water protection zone for the Chevak Water System Main Well, which draws from groundwater. According to the Alaska Department of Environmental Conservation’s (ADEC), Drinking Water Watch database, the system is monitored every 3 years for a group of volatile organic compounds (VOCs) related to fuel products. Over the years, VOCs including benzene have not been detected; however, lead has been detected.



EROSION RISK

The US Army Corps of Engineers 2009 study, *Alaska Baseline Erosion Assessment (BEA)*, lists an estimated erosion rate of 5 to 10 feet per year for Chevak. This area of the riverbank is reported by community residents to be eroding at 5 feet per year and is said to be caused by river currents, ice jams, and melting permafrost. The community has constructed a sandbag retaining wall in one section and utilized chain link mesh in another section. However, these attempts have limited effect. The soil at this site is sand and silt which is more easily eroded from river current and storms than other soil types.

The Chevak Corporation Tank Farm was 135 feet from the Ningliak River according to 2007 aerial imagery. Using the 5 feet per year erosion rate calculated by the BEA and reported by community residents, it is estimated that the site will be impacted by erosion in 2034.



MITIGATION

There are currently some local erosion mitigation efforts for this site. A sand bag wall and chain link mesh were the primary techniques employed. Erosion is still occurring as these measures have not been effective.

Mitigation Options

- A. **No Action** – If no action is taken to control erosion, the riverbank will continue to erode closer to the tank farm. The tank farm will eventually erode, releasing the contaminants in the soil beneath the tank farm into the river. Those contaminants could possibly impact nearby subsistence areas.
- B. **Remove Site** – Removing the tank farm will mitigate the contaminant risk for the site. This will involve removing the fuel tanks. The remaining soil should be tested for fuel contamination and a cleanup plan created as needed. This action will require some planning and likely a significant amount of money.
- C. **Erosion Mitigation** – Strong river currents, ice jams and spring breakup are the primary causes of erosion on this riverbank. Further study should be conducted to evaluate what erosion mitigation is best for the Ninglikfak River. The Department of Commerce, Community, and Economic Development’s Division of Community and Regional Affairs handbook, *Understanding and Evaluating Erosion Problems*, suggests the best methods for protecting against erosion from these causes are beach fill or relocation. The full list of suggested methods is provided in Table 2 of the document which is available online at <http://commerce.state.ak.us/dnn/dcra/PlanningLandManagement.aspx>.

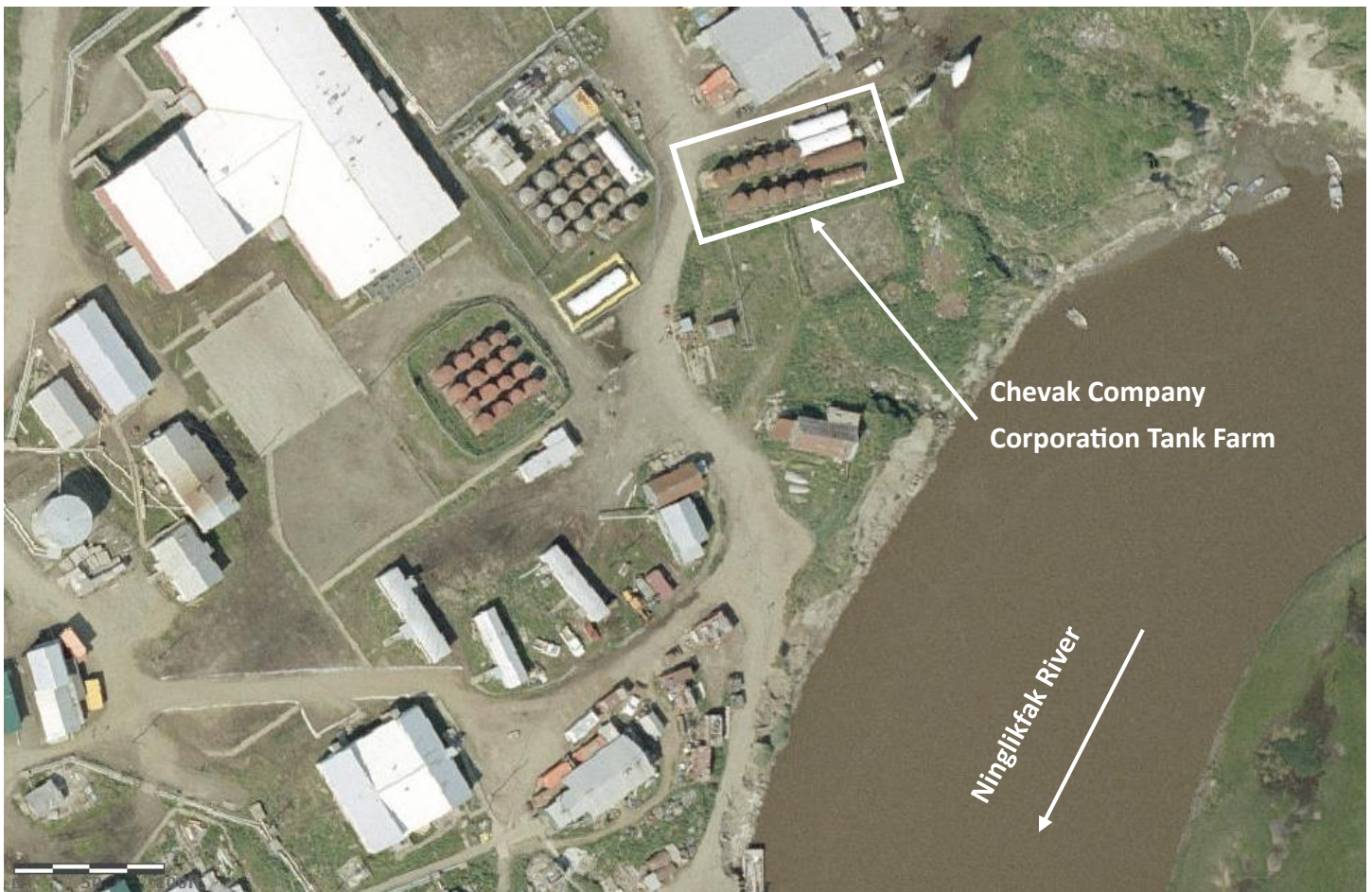
SUMMARY

The Chevak Company Corporation Tank Farm poses a significant contaminant risk due to fuel contamination, the close proximity to residences, and location within the drinking water protection zone for the community water system. The tank farm poses an erosion risk as the Ninglikfak River is actively eroding and is estimated to impact the tank farm by 2034. A sand bag wall and chain link mesh were the primary mitigation measures employed, but erosion is still occurring.

RECOMMENDATIONS

As the Chevak Company Corporation Tank Farm is no longer in service, it is recommended to remove the site. It has been inactive since the construction of the new consolidated tank farm in 2010 and is unlikely to be in service in the future. The empty fuel tanks could be cut into smaller pieces for easier transport to and disposal at the permitted Chevak Landfill. After the site has been cleared, the underlying soil should be characterized to determine if any contamination remains and then, if needed, a plan developed for cleanup. A sampling plan and cleanup plan would need to be approved by the ADEC Contaminated Sites Program.

The Chevak Water System Main Well should continue to be monitored for VOCs to ensure no fuels are impacting it. Monitoring and further evaluation of erosion should be conducted to more accurately assess the severity of erosion. If erosion will impact significant infrastructure, the benefits of erosion mitigation should be carefully compared with the cost of construction.



Imagery Dated 2007. WEAR Map at <http://dec.alaska.gov/eh/sw/wear.html>

*Community Database Online, Division of Community and Regional Affairs, Department of Commerce, Community and Economic Development

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