THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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December 21, 2016

Via electronic mail only
Mr. Paul Nielsen
NRC Alaska Inc.
619 East Ship Creek Ave. Suite 309
Anchorage, AK 99501

Mr. Jason Ginter
Nortech Engineering Inc.
5438 Shaune Drive
Juneau, AK 99801

RE: Wrangell Junkyard Cleanup Final Report
Site name Wrangell Junkyard
Hazard ID# 3295

Dear Mr. Nielsen and Mr. Ginter,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has reviewed: *Wrangell Junkyard Final Report* (Report), dated September 30, 2016. Nortech Engineering Inc. (Nortech) completed the report documenting the emergency removal of soil for treatment and stockpiling and the sampling of lead contaminated soil performed by NRC Alaska Inc. (NRC) and Nortech at the Wrangell Junkyard Site (Site) designated with EPA number AKR000206474. With minor modification, the Report states the following:

The Site is located at Mile 4 of the Zimovia Highway, adjacent to Zimovia Strait in Wrangell, Alaska. Environmental sampling conducted in 2000, 2002, and 2014, identified high levels of lead in surface soils, elevated concentrations of lead in surface water and groundwater, and trace concentrations of lead and other metals in sediments and bi-valve tissue in the intertidal area downgradient of the site. The City and Borough of Wrangell (CBW) has advised residents who might clam on the beach below the Wrangell Junkyard Site that shellfish harvested in this area may contain low levels of lead and other contaminants transported by storm water into the intertidal zone.

Lead was the primary contaminant of concern at the Site historically used as an auto salvage yard. Previous investigations found lead concentrations of up to 155,000 milligrams per kilogram (mg/kg)

in surface soil and concentrations up to 8,440 mg/kg at 3.0 feet below ground surface (BGS). These investigations also confirmed that the lead was leachable (i.e., mobile) and posed a significant threat to residents on adjacent properties and biological resources in the marine waters of Zimovia Strait. Drums, debris, and pockets of petroleum, oil, and lubricant, (POL) contamination were also identified in multiple locations across the Site.

The Alaska Department of Environmental Conservation (ADEC) contracted NRC to conduct a Remedial Action at the Site under the Spill Prevention and Response (SPAR) Term Contract 18-7002-01. The ADEC approved the Interim Removal Action Plan (IRAP) that called for the excavation, removal of debris and oversized fraction, chemical treatment, and off-site disposal of the non-hazardous lead contaminated soil.

The edge of the Zimovia Highway right-of-way is the southern boundary of the Site. Initial remedial action at the Site began in February 2016, with the installation of Storm Water Pollution Prevention Plan (SWPPP) measures, removal of drums, visible lead plates and other surface debris and vegetation from the Site. NRC began excavating contaminated material closest to Zimovia Highway to develop clean access to the Site.

The initial observations and laboratory results showed that lead contamination extended down to the glacial till, up to six feet BGS, across the Site. This increased the expected quantity of contaminated soil to 19,000 cubic yards, significantly higher than the 4,000 cubic yards described in the original project documents. The total included approximately 300 cubic yards from adjoining land owned by the Alaska Mental Health Trust (AMHT), and a total of approximately 620 cubic yards from the two neighboring residential properties.

The Report states the following:

1. The scope of the project was to reduce the risk posed to human health and the environment from contamination resulting from historic junkyard activity in two phases: the Interim Removal Action and Remedial Treatment. Site activities were carefully planned and executed to prevent accidental or inadvertent releases of contaminants to adjacent properties or Zimovia Strait from hazardous materials and debris at the Site (e.g., drums, batteries, soil, etc.), and from on-site equipment used during the remedial action (e.g., fuel, lubricants, coolants, etc.).
2. ADEC reviewed and approved several planning documents: Storm Water Pollution Prevention Plan for Contaminated Soil & Hazardous Materials Cleanup, Shipment & Disposal, Wrangell Junkyard Site (SWPPP) on January 14, 2016, the Interim Removal Action Plan (IRAP) on January 16, 2016, and the Site Cleanup Plan (SCP) on April 4, 2016.
3. NRC completed the project in accordance with several permits: the Alaska Construction General Permit for Discharges from Large and Small Construction Activity Permit (CGP) #AKR10FG27 and the Alaska Pollutant Discharge Elimination System General Permit for Excavation Dewatering General Permit (Dewater) #AKG002040.
4. ADEC approved a Notice of Intent (NOI) for coverage under the CGP on February 22, 2016. A Nortech Certified Erosion and Sedimentation Control Lead inspected erosion and sediment control measures at least once per week during the project. Final stabilization of the Site, as defined in section 4.5.2 of the CGP, was achieved on July 27, 2016. NRC filed a Notice of Termination (NOT) of the CGP on August 19, 2016.
5. NRC installed a water treatment plant (WTP) to address contaminated water and aid with storm water management. The Dewater Permit stipulated requirements for sampling and discharge of

the WTP. NRC filed a Notice of Intent to Dewater on April 15, 2016, and submitted monthly reports to ADEC using the Discharge Monitoring Reports.

6. The IRAP Waste Management Plan (WMP) includes descriptions of the waste characterization process NRC utilized in the identification, segregation, shipping and disposal of various waste streams, such as Resource Compensations and Recovery Act (RCRA)-regulated wastes and non-hazardous solid wastes. Solid wastes not caked with contaminated soil were collected and disposed of at the Wrangell Landfill. Solid wastes caked with contaminated soil such as tires, automotive parts, and large pieces of scrap metal were collected in 20 cubic yard containers and shipped to a hazardous waste disposal site in Arlington, Oregon. The WMP included the collection, characterization, and packaging of drums containing non-hazardous and hazardous wastes for shipment to an offsite disposal or treatment facility.
7. Significant portions of the SWPPP were installed and implemented during IRAP activities, including implementation of best management practices to minimize sediment runoff from the Site and re-contouring drainages on-site to eliminate and/or reduce water run on. The IRAP removed major contaminant sources and prepared the Site for the SCP.
8. In accordance with the approved Sampling and Analysis Plan (SAP), soil excavation areas were mapped into 10-foot grid sections and soil samples representing every one-foot lift in each area of the site were screened using X-Ray Fluorescence (XRF) meter readings. Nortech compared XRF screening samples results to laboratory sample results to develop a Site-specific field screening action level (FSAL). The correlated XRF reading of 35ppm is the FSAL for the Site. The FSAL reading was confirmed by in-situ sample laboratory results that were below the ADEC approved residential soil cleanup level of 400 mg/kg.
9. Soil samples with the screening results above the Site-specific correlated level reading indicated the necessity for Remedial Treatment and the soil was stockpiled on-site and covered. When in-situ sample XRF readings were below the correlated level, laboratory confirmation samples were collected. When laboratory results confirmed the area was below the cleanup level, NRC placed a one foot thick layer of six-inch plus rock over the area and compacted it. The depth BGS when XRF screening and laboratory samples were confirmed clean was in a layer of grey glacial till that consistently appeared across the Site, but at differing depths BGS.
10. During implementation of the IRAP in February and March, 2016, it became apparent to NRC that the quantity of contaminated soil was substantially greater the original estimate of 4,000 cubic yards. NRC submitted a revised estimate to ADEC of 19,000 cubic yards of contaminated soil with a cost to complete the work under the approved IRAP and the draft SCP.
11. Since the revised estimate exceeded the authorized budget for the project, ADEC requested alternatives to offsite disposal of chemically treated soils. NRC recommended construction of an onsite containment of stabilized soil until ADEC secured additional funding for offsite disposal. ADEC approved additional funding for the design and construction of an onsite containment that would handle the increased volume of contaminated soil and its removal and treatment.
12. Remedial treatment of the stockpiled contaminated soil was accomplished using the MT2 Environmental Solutions for Life, Ex-Situ Ecobond Treatment: Lead-impacted Soils, Wrangell Junkyard Plan. MT2 conducted experiments chemically stabilizing the lead in soil and concluded that mixing the soil with between 2-4% ECOBOND® by volume would achieve the project goal.
13. The treated soil was then analyzed for the Toxic Characteristic Leaching Procedure (TCLP) and the Synthetic Precipitation Leaching Procedure (SPLP). When analytical results confirmed the lead in soil was non-hazardous (<5 mg/L) the soil was placed in the containment cells and covered.

14. Based on the increased quantities, excavation and treatment occurred as planned and the treated soil was placed in lined, engineered containment cells on the Site instead of being shipped out of state. The containment cell was lined and bermed between six and 15 feet high with six-inch minus rock. Each cell was first lined with D1 rock then was covered with a 20 millimeter (mm) high density polyethylene (HDPE), a layer of felt, and then a second 20mm HDPE liner which was sealed to the first with adhesive. Once the cell was filled with treated soil, the berms were extended along the open edge and the process repeated. Once the last of the treated soil had be placed, the cells were covered with HDPE geotextile over the outside of each side berm, overlapping the edge of the lower liner and the seams were sealed with adhesive. Water collecting in the cells was pumped into the WTS for treatment and then discharged to the ground surface at the lower end of the Site.
15. Approximately 10% of the materials excavated from the Site consisted of other debris or oversize cobble and small boulders. Screening removed these resulting in a volume estimated at 18,350 cubic yards of treated soil being placed in the containment cell.
16. Other debris consisted mainly of automotive parts, including axles, tires, engine blocks and transmissions, which were loaded into shipping containers with an estimated volume of 170 cubic yards of POL contaminated soils for off-site disposal at Columbia Ridge Landfill in Arlington Oregon.
17. Loose battery plates, battery shards, and other lead debris were collected and stored in water-tight covered shipping containers at the Site. When full, the containers were sealed and shipped in accordance with ADOT&PF regulations for hazardous waste to a permitted off-site facility.
18. Woody debris was cleaned of soil and then burned at the former Wrangell Institute site. The ash was collected for disposal with the other debris for off-site disposal. Clean scrap metal was disposed of at the Wrangell Landfill.
19. NRC shipped a total of 22 drums and 57 containers of contaminated debris from the Site to appropriately permitted remedial disposal facilities located in the Lower 48.

The Report concludes the following:

1. Verification of the excavation limits was completed through field screening and laboratory sampling. During the removal action, a total of 1,275 excavation bottom samples field screened below the residential cleanup levels for total lead. Based on data collected during the removal action, the 35ppm FSAL had 99% pass rate. The 1% failure rate where XRF readings were below the FSAL and confirmation results were above the cleanup level came in three locations, each of which were re-excavated until the sample analysis was below the cleanup level.
2. Although a minor contaminant of concern, areas of petroleum, oil and liquids (POL) were present at the Site. A total of 29 confirmation samples collected from the Site were analyzed for gasoline (GRO), diesel (DRO), and residual (RRO) hydrocarbons and benzene, toluene, ethylbenzene, and total xylenes (BTEX). The sample results were below laboratory reporting limits for GRO, RRO, toluene, ethylbenzene, and total xylenes. Samples from excavations in the lower area of the Site had elevated results for benzene in one location and DRO in another. Further excavation in each of these areas removed the contamination and the final samples met the cleanup levels for the POL contaminants.
3. Samples analyzed for RCRA metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and/or asbestos were used to characterize soils or solid wastes for disposal. The sample results for RCRA metals was consistent with background levels for the area. The characterization sample results for PCBs identified a creosote timber and confirmation sample

results were below either the cleanup level or the laboratory reporting limit. PAH sample characterization results identified POL soil and asbestos sample result identified a transit pipe.
4. A total of 268 excavation bottom soil samples, 46 soil samples taken from 1,338 linear feet of excavation sidewall, 62 treated soil TCLP, 30 treated soil SPLP, and 10 water samples from the WTS were collected during the project field effort for laboratory analysis. A total of 44 soil duplicate samples and three water duplicate samples were submitted for laboratory analysis for lead.
5. A total of 114,383 gallons of water was processed through the WTS; it was decommissioned and a Notice of Termination (NOT) was filed with ADEC on July 11, 2016. All temporary BMPs were removed from the Site and an NOT was submitted to ADEC on August 19, 2016.
6. Data quality failures did not significantly affect data usability. Data quality failures for confirmation samples were the result of the soil not being homogenous for lead. Relative Percent Differences between matrix (MS) and matrix spike duplicates (MSD) were the most common failures. The SGS laboratory noted that quality control (QC) failures of the MS/MSD were due to samples being non-homogeneous for lead, which also explains the differences in total lead within some field duplicate pairs. Due to the origin of the lead contamination on-site, non-homogeneity of lead concentrations in soil and confirmation samples was expected.
7. Due to NRC Alaska's request to SGS for Level 1 reporting for the project, QC data such as matrix spikes, method blanks, and laboratory control samples were not routinely reported by the laboratory.

The Report recommends the following:
1. Based on the field observations and laboratory data gathered during the remedial actions, the Site now meets the residential cleanup criteria for lead, petroleum, and other suspected contaminants of concern. The excavated area has been backfilled with clean material and is stabilized to reduce the potential for erosion while the surface naturally revegetates.
2. The existing contaminated soil stockpiles are expected to be relocated to an off-site disposal location under a separate contract. The objectives of the project have been met and additional remedial action is necessary to complete the work as outlined in the contract documents.

DEC concurs with the Report conclusions/recommendations with the following comments:
1. Several of the data review checklists say that data quality and usability were not affected as only Level 1 reports were requested. However, not having QC data (i.e. a Level 1 report) doesn't necessarily mean that the data is high quality and usable. Please revise this wording. (Appendix 7, Data Review Checklists)
2. Calibration of the XRF is not included in the field notes. How often was the XRF calibrated?

Based on available information, DEC requests the following:
1. Several of the data review checklists say that LCS/LCSD data was not reported for QC. Only "Level 1" reports were requested, but other data review packages have LCS/LCSD QC data. Please explain why some data packages include this QC data and some do not. (Appendix 7, Data Review Checklists)
2. Several of the data review checklists say that data usability is not affected because the samples are not used for site closure. This is insufficient. Please explain what the samples are being used for if not site closure. (Appendix 7, Data Review Checklists)
3. The checklist notes that the benzene PQL is greater than the cleanup level, but the data usability is not affected. Please explain why. (checklist #1162925)

4. The LCS surrogate failed and the sample surrogate passed QC. The checklist says that data quality is unaffected, however, the data doesn't have the same quality as data without failing QC. Explain why/how data quality is or is not affected. For example, is this soil that was removed so a potential high bias is a moot point? Were the surrogates high but the samples non-detect? (checklist #1163137)
5. This checklist says that 2 surrogates failed, but later says that 3 surrogates failed. Please correct. Also, please explain why the data is still usable despite these failures. (checklist #1164137)

Report Approval
In accordance with Title 18 Alaska Administrative Code (AAC) 75.360, qualified person(s) collected the data in a manner consistent with DEC methodology in the approved sampling work plan. The DEC checklist evaluation of each laboratory report is acceptable and the data meet Contaminated Sites Program quality assurance requirements in 18 AAC 75.335(b)(2)(B)&(G), 75.335 (c)(3)&(4), 75.355(a), and 75.360(2). The precision, accuracy and completeness of the field and analytical data in the site investigation are acceptable, therefore the Report is approved in accordance with 18 AAC 75.335(d).

Please note that DEC is going paperless; please submit reports electronically only. If you request it, a copy of this letter will to be sent to you by regular mail. I am the DEC project manager assigned to the site and can be reached at 410 Willoughby Suite 302 in Juneau by telephone at 907-465-5210 or by email at bruce.wanstall@alaska.gov .

Sincerely,

Bruce Wanstall

Bruce Wanstall
Remedial Project Manager
Contaminated Sites Program

cc: Dan Strucher, Project Manager, NRC Alaska Inc., via email
Jeff Fowlow, EPA Emergency Response Region 10, via email
Dave Bartus, EPA RCRA Program, via email
Amber Al Haddad, City and Borough of Wrangell, via email
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Lee Cole, Southeast Lands Manager, ADNR Southeast Regional Office, via email
David Griffin, Southeast Lands Manager, Alaska Mental Health Trust, via email
Angela Hunt, DOW-Waste Water D/C Authorization Program, via email
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