THE STATE of ALASKA
GOVERNOR MICHAEL J. DUNLEAVY

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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File: 2323.38.032

June 16, 2022

Meghan Teegarden
Sr. Advisor, Environmental Remediation
Safety, Health and Environment
Nutrien
5296 Harvest Lake Drive
Loveland, Colorado 80538

Re: UNOCAL/Agrium Ammonia Urea Plant
ADEC Spill # 1988230918305
Biosparge Remediation System Plan – ADEC Review

Ms. Teegarden:

On June 10, 2022, the Alaska Department of Environmental Conservation (ADEC) Contaminated Sites Program received the Biosparge Remediation System Plan, dated June 8, 2022 and prepared by Cook Inlet Environmental. ADEC has reviewed the document and found it inadequate. You can find work plan guidance at: https://dec.alaska.gov/media/12119/site-characterization-work-plan-reporting-guidance-2017.pdf. The following is a list of information that needs to be included in the work plan. The list should not be considered comprehensive. Any relevant information to explain the proposed remediation tactic, demonstration of efficacy of the tactic, and work already completed must be included in the work plan. A Qualified Environmental Professional (in accordance with 18 AAC 75.333) should prepare a document that satisfies regulatory requirements and our guidance on what constitutes an adequate work plan.

- Name and address of Qualified Environmental Professional who prepared the work plan.
- Name and address of person who the report is prepared for at Nutrien.
- DEC file number and Hazard ID number.
- What are the vertical contaminant distribution patterns within each aquifer?
- Is a five-foot screen adequate for air distribution within each aquifer?
- What are the designed screened intervals for proposed wells and what criteria are used to determine screen placement?
- What work has been completed on the remediation project to this point?
- List of qualified environmental professionals and qualified samplers that have worked on the site and will work on the site, including what each will be doing.
- What are the cleanup goals and how will success be determined?
- What screening samples will be collected while drilling?
- Provide a narrative of sample locations and rationale. What determines what screened intervals are and where air sparge wells are set within the aquifer?

- How is the monitoring network designed to determine the success of the air sparge system?
- How is the area of influence of the air sparge wells determined?
- Provide a narrative of well locations and rationale. What determines what screened intervals are and where monitoring wells are set within the aquifer?
- Options/decision process for additional step-out sampling
- Are there any deviations from field sampling guidance document?
- What laboratory will be used for samples collected?
- What drilling company is being used?
- Method of drilling and well installation.
- How are wells developed?
- What purging techniques are used?
- What well measurements and instrumentation are used?
- What groundwater elevations and benchmarks or measuring points are used (methodology)?
- Who is conducting elevation surveys and what standards are used?
- What are the proposed quality control of samples (temp. blanks, trip blanks, field duplicates, chain of custody etc.)?
- What are the sample preservation methods?
- How is equipment decontaminated?
- How is decontamination, monitoring well development and purge water managed?
- What are the field documentation procedures?
- What is the name of laboratory completing analysis?
- What are the turnaround times on analysis?
- What types of containers will be used for sample collection?
- Type of preservation and hold times and sample volume for samples?
- Limit of Detection and Limit of Quantitation
- A report documenting the drilling work conducted is required.
- A report documenting the results of sampling is required.
- Reports documenting remediation progress are required, monitoring and reporting deliverables should be described.
- Will the system be run in the winter?
- Will the piping runs be heat traced?

We do not have copies of the Quality Assurance Project Plan for Groundwater Monitoring (December 2009) or the KNO Groundwater Sampling and Analysis Plan (January 2007) in our electronic files. Please provide copies of these plans for our files. These plans likely need to be updated to reflect current conditions, methods, and personnel.

Provide an updated work plan to our office prior to conducting further remediation work at the site and the requested historic documents. If there are any questions, please contact me at (907) 262-3412 or by e-mail at peter.campbell@alaska.gov.

Sincerely,

Peter Campbell

Peter Campbell
Environmental Program Specialist

C: Electronic copies:
Jene' Worley - Cook Inlet Environmental
Lisa Krebs-Barsis - ADEC