THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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File No: 300.38.317

April 13, 2016

Ms. Sarah Kenshalo
ConocoPhillips Alaska
700 G Street
Anchorage, AK. 99519

Re: Decision Document; ConocoPhillips Kuparuk KCS Pad
Cleanup Complete Determination

Dear Ms. Kenshalo:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with ConocoPhillips Kuparuk KCS Pad site located in the Kuparuk Oilfield on the North Slope of Alaska. Based on the information provided to date, it has been determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment and this site will be closed. No further remedial action is required.

This decision is based on the ConocoPhillips Kuparuk KCS Pad administrative record which is located in the offices of the ADEC in Anchorage, Alaska. This letter summarizes the decision process used to determine the environmental status of this site and provides a summary of the regulatory issues considered in the Cleanup Complete determination.

Introduction

Site Name and Location
ConocoPhillips Kuparuk KCS Pad
Kuparuk Oilfield, Alaska

Name and Mailing Address of Contact Party:
Ms. Sarah Kenshalo
ConocoPhillips Alaska
700 G Street
Anchorage, AK 99501

ADEC Site Identifiers
File 300.38.317
Hazard ID: 26378

Regulatory Authority for Determination:
18 AAC 75

Background

During a March 2015 geotechnical effort associated with a proposed construction project in the northeast corner of the ConocoPhillips Kuparuk Construction Services (KCS) pad, a diesel odor was noted in a soil sample. Soil samples were collected for laboratory analyses from a total of ten boreholes in the footprint area of the proposed building. The hydrocarbon impacted soil appeared to have been concentrated in the eastern portion of the proposed building footprint. The source of the contamination is unknown, although this area was formerly used for vehicle and equipment parking, as well as snow melting operations.

Contaminants of Concern

During the investigations at this site, soil samples were analyzed for GRO, DRO, RRO, lead, PAHs and BTEX. Based on these analyses and knowledge of the source area, the following Contaminants of Concern (COCs), above approved cleanup levels, were identified in soil:

- Diesel Range Organics (DRO)

Cleanup Levels

The factors below are considered by ADEC when evaluating site specific cleanup levels and the need for institutional controls in the Arctic Zone.

- Arctic Zone cleanup levels promulgated in 18 AAC 75
- ecological impacts
- surface water quality
- presence of free phase product
- whether a cleanup action would cause more severe or long-lasting damage than the discharge or release for undisturbed tundra and native vegetation
- other factors that might cause a deleterious impact to the environment.

The migration to groundwater pathway is not considered applicable in the Arctic Zone due to the presence of continuous permafrost. However, the migration to surface water pathway must be protective.

Arctic Zone cleanup levels promulgated in 18 AAC 75.341, Method One Table A2 (for manmade gravel pads and roads) are applicable to this site. If cleanup levels in Method One Table A.2 are met, the site may be considered for unrestricted closure without institutional controls (ICs). For this site, Method Two levels are not applicable because contamination was in the gravel pad, and not to soil below or off the pad. Contaminants of concern and applicable cleanup levels for the site are listed in the table below.

Table 1 – Approved Arctic Zone Cleanup Levels

Contaminants of Concern	Method One, BTEX < 15, mg/kg
DRO	500

Site Characterization and Cleanup Activities

ConocoPhillips communicated that historic contamination from an unknown source was discovered in the course of the initial stages of a construction (proposed shop building) project occurring on the northeast corner of the KCS pad in Kuparuk. Field staff smelled hydrocarbon odors while performing geotechnical boreholes and proceeded to sample in the northeast area of the pad.

In March 2015, ten boreholes were advanced within the footprint of the proposed shop building. As many as two soil samples were taken from each borehole in the areas with the highest photoionization detector (PID) readings and/or the areas with the most prominent petroleum staining or odor. Samples were collected from between zero and five feet below pad surface and were analyzed for: gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), lead, as well as benzene, toluene, ethylbenzene, xylenes (BTEX). The soil sample with the highest DRO result was also analyzed for polynuclear aromatic hydrocarbons (PAHs). DRO exceeded DEC Method One cleanup criteria in three of ten borehole locations with concentrations up to 2,000 mg/kg, which ranged from 1.5 to 5 feet below pad grade. GRO, RRO, toluene, ethylbenzene, total xylenes, and lead were detected but well below cleanup levels. Benzene was not detected at this site.

In June of 2015, further site characterization was conducted beginning with the gravel footprint for the building being excavated to three feet below pad grade. Gravel from the eastern 1/3 of the building footprint encompassed all of the boreholes that previously showed results above the 500 mg/kg cleanup level and was thus stockpiled separately from the gravel of the western 2/3 of the building footprint. Six samples were taken from the excavation sidewalls, seven from the excavation floor, and three from the excavation stockpiles. Sidewall and floor samples were collected 2-6 inches below the surface and stockpile samples were composites from five different points. There were no exceedances among the excavation sidewall or floor soil samples, however, sample F2-comp did meet the cleanup level of 100 mg/kg GRO exactly. With stockpile samples showing no exceedances, soil was approved by ADEC for use as backfill in the excavated area.

Surface water was sampled for: GRO, DRO, RRO, BTEX, PAHs, and lead from five locations among undisturbed ponds surrounding the northeast corner of the pad. While sampling, no sheen or odors were detected in any of these locations. All analytical results for surface water samples were below their applicable 18 AAC 75.345 Table C cleanup levels.

Cumulative Risk Evaluation

Pursuant to 18 AAC 75.325(g), when detectable contamination remains on-site following a cleanup, a cumulative risk determination must be made that the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative noncarcinogenic risk standard at a hazard index of one across all exposure pathways.

Based on a review of the environmental record, ADEC has determined that residual contaminant concentrations do not pose a cumulative health risk.

Exposure Pathway Evaluation

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using ADEC's Exposure Tracking Model (ETM). Exposure pathways are the conduits by which contamination may reach human or ecological receptors. ETM results show all pathways to be one of the following: De Minimis Exposure, or Pathway Incomplete. A summary of this pathway evaluation is included in Table 2.

Table 2 - – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De Minimis	Surface soil contaminations are well below the most stringent cleanup level.
Sub-Surface Soil Contact	De Minimis	Sub-surface soil concentrations are well below the most stringent cleanup levels.
Inhalation – Outdoor Air	De Minimis	Soil concentrations are well below the most stringent cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	There are currently no buildings above the site, and groundwater was not contaminated.
Groundwater Ingestion	Pathway Incomplete	Groundwater is not utilized as a drinking water source in this area because the groundwater is frozen as permafrost.
Surface Water Ingestion	De Minimis	Surface water samples collected adjacent to the pad show that contamination did not migrate offsite (off the pad).
Wild Foods Ingestion	Pathway Incomplete	DRO does not have the potential to bioaccumulate in plants or animals.
Exposure to Ecological Receptors	De Minimis	Site is on a man-made pad with an active facility on top of it. Known concentrations at the site are below most conservative cleanup levels and there is no evidence of offsite migration.

Notes to Table 2: "De-minimis exposure" means that in ADEC's judgment receptors are unlikely to be affected by the minimal volume of remaining contamination. "Pathway incomplete" means that in ADEC's judgment contamination has no potential to contact receptors. "Exposure controlled" means there is an administrative mechanism in place limiting land or groundwater use, or a physical barrier in place that deters contact with residual contamination.

ADEC Decision

Remaining DRO contamination in soil is below approved cleanup levels. This site will receive a "Closed" designation on the Contaminated Sites Database, subject to the following standard conditions.

Standard Conditions

1. Any proposal to transport soil or groundwater off-site requires ADEC approval in accordance with 18 AAC 75.325. A "site" [as defined by 18 AAC 75.990 (115)] means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership. (See attached site figure.)

2. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.

This determination is in accordance with 18 AAC 75.380 and does not preclude ADEC from requiring additional assessment and/or cleanup action if future information indicates that this site may pose an unacceptable risk to human health or the environment.

Appeal

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 -18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 15 days after receiving the department's decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 30 days after the date of issuance of this letter, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

If you have questions about this closure decision, please contact ADEC Project Manager Nathan Maxwell at (907) 269-3083 or Kara Kusche at (907) 269-7530.

Sincerely,

Nathan Maxwell
Environmental Program Technician

Kara Kusche
Environmental Program Manager

Attachment A: Site Figure

Attachment A: Site Figure