STATE OF ALASKA

SEAN PARNELL, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM

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May 11, 2012

Mike McAnulty
BP Exploration (Alaska) Inc
900 East Benson Blvd, 223B
Anchorage, AK 99519

Re: Decision Document; BPX North Kuparuk State 26-12-12
Cleanup Complete Determination

Dear Mr. McAnulty:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with BPX North Kuparuk State 26-12-12 site which is located in the Western Operating Area of Prudhoe Bay, 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.

This decision is based on the environmental records including the project file which are 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
BPX North Kuparuk State 26-12-12
Western Operating Area
Prudhoe Bay, Alaska

Name and Mailing Address of Contact Party:
Mike McAnulty
BP Exploration (Alaska) Inc
900 East Benson Blvd, 223B
Anchorage, AK 99519

ADEC Site Identifiers:

Hazard ID #4386
CS file # 300.38.261

Regulatory authority under which the site is being cleaned up:
18 AAC 75

Background
One well was drilled at this exploration site in June 1969, then plugged and abandoned in January 1971. The site is located approximately one half mile north of S Pad in the Western Operating Area of Prudhoe Bay, Alaska. Site features included a gravel pad, a gravel-capped reserve pit, a flare pit, as well as an airstrip and access road. Contamination at the site is the result of releases and disposal practices associated with oil exploration activities. Contamination is also attributed to two specific source areas as follows: (1) a former fuel storage area; and (2) a suspected flow-test area where crude oil was released directly to the pad and adjacent tundra. Regulatory oversight for closure of the reserve pit is provided by the ADEC Solid Waste Program in accordance with 18 AAC 60.

Contaminants of Concern
During the various investigations at this site, soil samples were analyzed for one or more of the following: diesel range organics (DRO), residual range organics (RRO), gasoline range organics (GRO), and benzene, toluene, ethylbenzene, and xylenes (BTEX), and polynuclear aromatic hydrocarbons (PAHs). Based on the results of these investigations, the only contaminant of concern identified was diesel range organics (DRO).

Cleanup Levels
The cleanup levels for petroleum hydrocarbon-contaminated soil on manmade gravel pads and roads in the Arctic Zone are established in 18 AAC 75.341 Method One, Table A2 and 18 AAC 75.341 Method Two Tables B1 and B2.

A number of factors are considered by ADEC when evaluating site specific cleanup levels in the Arctic Zone including:

- human health (ingestion/inhalation);
- ecological impacts (contamination impacting ecological species other than humans);
- groundwater and surface water quality;
- presence of free phase product; and
- any other factors that might cause a deleterious impact to the environment.

In the Arctic Zone, the migration to surface water pathway is evaluated as the primary migration pathway because the migration to groundwater pathway is not considered applicable due to the presence of continuous permafrost. Impacted surface water can adversely affect both human and ecological receptors, depending on the location of the contaminant source, its proximity to surface waters, and water usage in the impacted area. Therefore the migration to surface water pathway is evaluated as a possible risk to human health (drinking water source) and/or for compliance with Alaska Water Quality standards (18 AAC 70).

In addition, the migration to surface water is evaluated as a possible exposure pathway for ecological receptors because of the tundra wetland ecosystem that exists throughout the Arctic

region. Potential future use of the property must also be taken into account when determining closure status. Differentiating between a "Cleanup Complete" and a "Cleanup Complete with Institutional Controls" determination will be based on site specific conditions and exposure pathways as determined by ADEC.

Site Characterization and Cleanup

In 1991, 2001, and 2007, site assessment activities were conducted to investigate and delineate the nature and extent of contamination at the gravel pad, flare pit, flow test area, and former fuel storage area. Maximum concentrations of DRO detected were 25,100 mg/kg at the gravel pad; 20,900 mg/kg in the flare pit; 9,020 mg/kg at the flow test area; and 35,600 mg/kg at the former fuel storage area which was located on native tundra material.

Corrective action conducted at the site in 2011 included augmenting and re-contouring the reserve pit cap; removal of the entire gravel pad, airstrip, and access road; and excavation of impacted tundra material from the flow test area and former fuel storage area. Gravel was segregated during removal for treatment or reuse based on the results of previous investigations.

Approximately 35,435 cubic yards (cy) of clean gravel were excavated and used as onsite backfill or hauled offsite for reuse. The Phase II sampling results indicated there were several areas on the gravel pad where hydrocarbon contamination was present, but at concentrations near or slightly above the conditional reuse threshold of 500 mg/kg. Gravel from these areas was excavated, placed into 200 cy stockpiles and sampled to determine suitability for reuse. Of the 6,900 cy of gravel excavated from these areas, 1,200 cy was designated as contaminated and hauled to the East Dock landfarm for treatment. An additional 4,120 cy of gravel and tundra was designated as contaminated based on Phase II sampling, and also hauled to the East Dock landfarm for treatment. The remainder of the stockpiled gravel was used as onsite backfill, or hauled offsite for conditional reuse.

Following excavation activities, confirmation soil samples were collected from areas where hydrocarbon contamination had been present. At the former gravel pad, confirmation samples contained DRO up to 707 mg/kg. At the former flare pit, confirmation samples contained DRO up to 415 mg/kg. At the former flow test area, confirmation samples contained DRO up to 378 mg/kg; and at the former fuel storage area, confirmation samples contained DRO up to 614 mg/kg.

Areas where excavation had occurred were backfilled with gravel to tundra grade, followed by the placement of 6-12 inches of organic overburden to facilitate revegetation at the site. Site revegetation will be conducted under an approved rehabilitation plan.

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, Exposure Controlled, or Pathway Incomplete. A summary of this pathway evaluation is included in Table 1.

Table 1 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Direct Contact with Surface Soil	Pathway Incomplete	Hydrocarbon contaminated soil has been excavated from the site and backfilled with clean fill.
Direct Contact with Sub-Surface Soil	De Minimis Exposure	The remaining hydrocarbon contamination in the subsurface is well below direct contact cleanup levels; and the area will be re-vegetated which will further mitigate risk via this pathway.
Inhalation-Outdoor Air	De Minimis Exposure	The remaining hydrocarbon contamination in the subsurface is well below inhalation cleanup levels, and the site is not frequented by receptors.
Inhalation-Indoor Air	Pathway Incomplete	Buildings are not located at the site and there are no plans for development in this area. Remaining DRO contamination is considered non-volatile.
Groundwater Ingestion	Pathway Incomplete	Groundwater is not utilized as a drinking water source in this area.
Surface Water Ingestion	Pathway Incomplete	Surface water is not utilized as a drinking water source in this area
Wild Foods Ingestion	Pathway Incomplete	Wild foods are not collected in this area.
Exposure to Ecological Receptors	De Minimis Exposure	The remaining hydrocarbon contamination is in the subsurface; not readily available to receptors; and covered with clean fill which will mitigate exposure to ecological receptors.

Notes to Table 1: "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

The cleanup actions to date have served to excavate and adequately remove contaminated soil from the site. Based on the information available, ADEC has determined no further assessment or cleanup action is required. There is no longer a risk to human health or the environment, and this site will be designated as closed on the Department's database.

Although a Cleanup Complete determination has been granted, ADEC approval is required for off-site soil disposal in accordance with 18 AAC 75.325(i). It should be noted that movement or use of potentially contaminated soil in a manner that results in a violation of 18 AAC 70 water quality standards is unlawful.

This determination is in accordance with 18 AAC 75.380(d) 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 William O'Connell at (907) 269-3057.

Approved By,

Linda Nuechterlein
Environmental Manager

Recommended By,

William O'Connell
Environmental Program Specialist

cc: Melissa Head, ADNR DMLW, Fairbanks