
**REHABILITATION REPORT FOR KUPARUK RIVER STATE #1
EXPLORATORY WELL SITE
PRUDHOE BAY OILFIELD, ALASKA**

**KRS 33-12-16, API No. 50029-2002-00
USACE Permit No. 071-0026-0**

**Prepared by
ABR, Inc.—Environmental Research & Services, Fairbanks, AK
and
BP Environmental Studies Group, Anchorage, AK**

30 December 2008



Aerial view of Kuparuk River State, 3 July 2008 (photograph provided by AERO-METRIC, Inc.).

INTRODUCTION

This monitoring report has been prepared to provide information on the rehabilitation of the Kuparuk River State #1 exploratory well site through 2008. This report follows BP Exploration (Alaska) Inc.'s (BPXA) standard format for rehabilitation reports. This is the fourth rehabilitation report submitted for this site, and was prepared to satisfy requirements established in the *Rehabilitation Plan for Kuparuk River State, Prudhoe Bay Oilfield, Alaska*, dated 4 February 2002.

LOCATION: The Kuparuk River State #1 exploratory well site is located within the active floodplain on the east side of the Kuparuk River (70.380°N, 148.854°W). The site is accessible only by helicopter.

HISTORY: The Kuparuk River State #1 exploratory well was drilled in 1969, suspended on 27 June 1969 and plugged and abandoned in 1972. After closure, some clean gravel (approximately two-thirds of the airstrip) was removed from the site for use in the construction of Northstar Island. Contaminated gravel was removed from the site 28 March–2 April 2002, and the remaining clean gravel from the pad was used to fill excavated areas. Efforts were made during gravel removal to avoid straight lines along the edge of the pad and remaining portions of the airstrip. The well marker was cut and capped at a depth of 5 ft below the final surface elevation.

In 2006, some additional remedial work was conducted at the site to remove hydrocarbon-contaminated gravel. The excavated areas were backfilled using clean ($\text{DRO} < 200 \text{ mg/kg}$) and conditional-use ($200 < \text{DRO} < 500 \text{ mg/kg}$) material collected from the excavation, and material stockpiled at the western end of the air strip and the northwestern corner of the former pad. The backfilled areas were leveled to minimize ponding of water on the surface.

No plant cultivation treatments were applied at this site following gravel removal, since the surrounding area is mostly unvegetated. The rehabilitation goal is for the site to become well integrated with the surrounding floodplain. Rehabilitation reports summarizing site conditions were previously submitted by ABR and BPXA (2002), Lazy Mountain Research, LGL Alaska Research Associates, Inc., and BPXA (2003), and OASIS Environmental, Inc. and BPXA (2005).

SITE SIZE: The total area of the Kuparuk River State rehabilitation site is 8.6 acres, including a former gravel airstrip (6.9 acres) and a thin gravel pad that supported the exploration well (1.7 acres).

SITE DESCRIPTION: The site is located in a braided river channel of the Kuparuk River, and consists primarily of gravel and sand deposits. As a result of annual flooding, the outline of the gravel pad and airstrip is barely visible (Figures 1 and 2). In areas that are infrequently flooded, trace cover of a variety of plant species is present, including *Artemisia* (wormwood) sp., *Salix ovalifolia* (oval-leaf willow), *Astragalus alpinus* (alpine milkvetch), and several grasses. A photographic log of site conditions is provided in Appendix A.

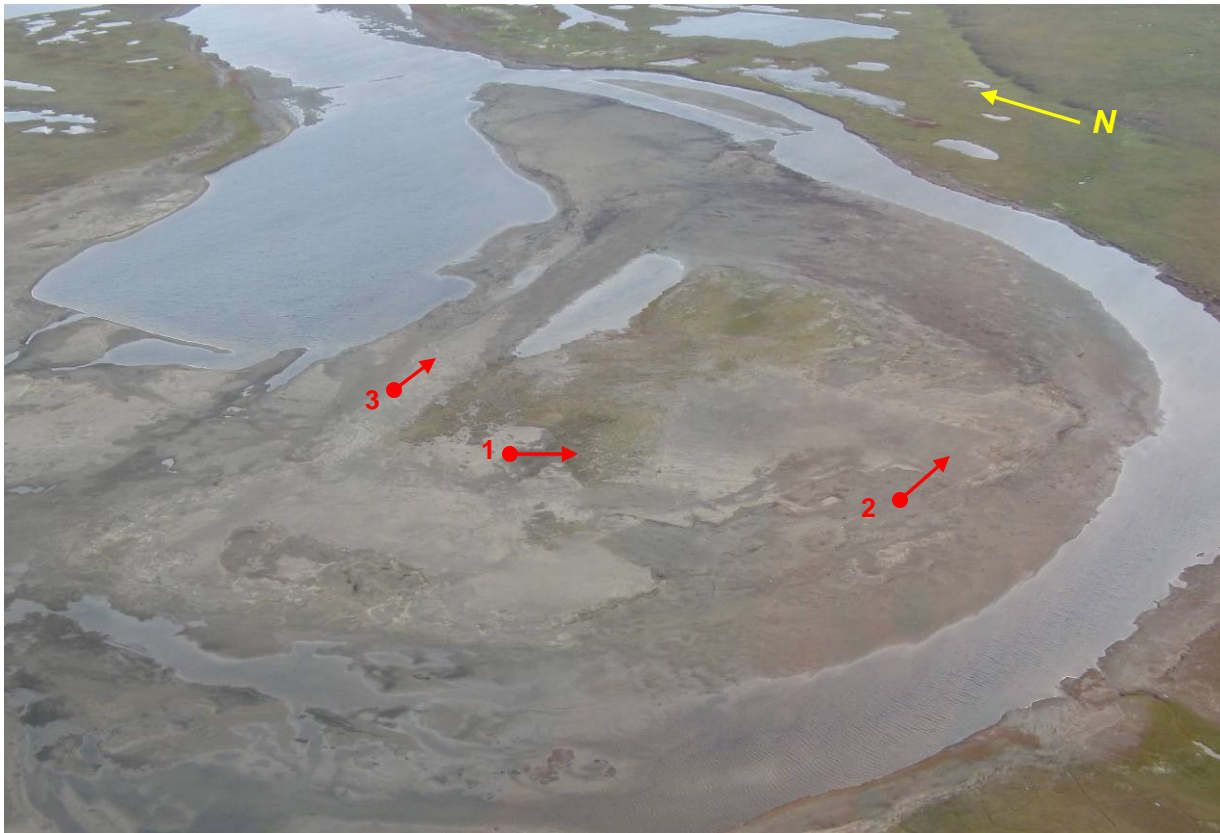


Figure 1. Aerial view of Kuparuk River State showing locations of photographic points, 12 August 2008.



Figure 2. Aerial views of Kuparuk River State, (a) 23 August 2000 and (b) 3 July 2008. (2008 photograph provided by AERO-METRIC, Inc.)

REHABILITATION GOALS, OBJECTIVES, AND PERFORMANCE STANDARDS: Goals, objectives, performance standards and monitoring methods for the Kuparuk River State #1 exploratory well site are summarized in Table 1.

Table 1. Goals, objectives, performance standards and monitoring methods for rehabilitation of Kuparuk River State #1 exploratory well site, Prudhoe Bay Oilfield, Alaska (based on the rehabilitation plan, dated 4 February 2002).

Goals	Site to become integrated with surrounding habitat.
Objectives	Contour site so that it is visually integrated with surrounding tidal flats.
Performance Standard	1. Year 1: site visually integrated with adjacent habitat 2. Year 10: site remains integrated with adjacent habitat
Monitoring Methods	Site visits, photographs.

REHABILITATION APPROACH: The rehabilitation approach for the site is summarized in Table 2.

Table 2. Rehabilitation approach for the Kuparuk River State #1 exploratory well site (based on the rehabilitation plan, dated 4 February 2002).

	Year 0 (2002) ^a (completed)	Year 3 (2005) (completed)	Year 6 (2008) (completed)	Year 10 (2012) (planned)
Overall Site	Gravel removal, visit and photograph site. Progress report describing findings	Visit and photograph site. Progress report describing findings	Visit and photograph site. Progress report describing findings	Visit and photograph site. Final report describing findings

^a Numbering of years has been modified; Year 0 reflects the year rehabilitation treatments were initiated and is equivalent to Year 1 in the rehabilitation plan.

PLANT MONITORING: The site is regularly flooded and is surrounded by unvegetated tidal flats. Thus, no vegetation monitoring is warranted.

ELEVATION MONITORING: No quantitative monitoring of elevation was conducted in 2008. Based on qualitative assessment of surface elevation characteristics, the site continues to be modified by riverine processes and is almost indistinguishable from the surrounding terrain (Figures 1 and 2).

SOIL MONITORING: The establishment of vegetation is not one of the rehabilitation goals for this site. Thus, the monitoring of soil properties is not warranted.

WILDLIFE USE OF AREA: No wildlife was observed on the site, but caribou scat was present.

OTHER: There is no other relevant information to include in this report.

PROGRESS TOWARD PERFORMANCE STANDARDS AND RECOMMENDED REMEDIAL ACTION

Based on the conditions at the site on 12 August 2008, we believe that the performance standard of integration of Kuparuk River State with the surrounding terrain has been mostly achieved, and will be maintained to the end of the performance period (2012) and beyond.

No remedial action is warranted at this time.

REPORTING

The final version of this report will be submitted by 30 December 2008 to the following agency personnel:

July McKim	U.S. Army Corps of Engineers
Gary Schultz	Alaska Department of Natural Resources
Lori Aldrich	Alaska Department of Environmental Conservation
Louise Smith	U.S. Fish & Wildlife Service
Jack Winters	Alaska Department of Fish & Game
Ted Rockwell	U.S. Environmental Protection Agency

APPENDICES

Appendix A. Photographic log of Kuparuk River State #1 exploratory well site, Prudhoe Bay Oilfield, Alaska, August 2008.

**APPENDIX A. PHOTOGRAPHIC LOG OF KUPARUK RIVER STATE
#1 EXPLORATORY WELL SITE, PRUDHOE BAY
OILFIELD, ALASKA, AUGUST 2008**



Figure A1. View (from photo point 1) of former gravel pad, 12 August 2008.



Figure A2. View (from photo point 2) of former gravel pad, 12 August 2008.



Figure A3. View (from photo point 3) of former airstrip, 12 August 2008.



*Figure A4. View of plant species colonizing former gravel pad area, including *Artemisia glomerata* and *Elymus arenarius*, 12 August 2008.*