

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

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Figure 1. Kuparuk River State Rehabilitation Site (looking northwest), August 2005, 4 years after restoration began.

## **INTRODUCTION**

This monitoring report has been prepared to provide information on the rehabilitation of the Kuparuk River State #1 Exploratory Well Site through 2005. The report follows BP Exploration (Alaska) Inc.'s standard format for rehabilitation progress reports. This is the third progress report submitted for this site. Previous progress reports for this site are available from the Environmental Studies Program at BP. This report was prepared to comply with the requirements of the rehabilitation work plan for the site dated 4 February 2002. The plan stipulates that there should be a progress report describing conditions at this site in 2003. However, it should be noted that the requirement was probably the result of a transcription error, in that Table 1 of the rehabilitation plan calls for a report in "year 4

(2003)” when year 4 is actually 2005. Nevertheless, to avoid questions about compliance, reports were completed in both 2003 and 2005. Performance standards require visual integration of the site with the surrounding habitat. Currently it is reasonable to expect that these performance standards will be met by year 10 (2011) of this project as required.

**LOCATION:** The Kuparuk River State #1 Exploratory Well Site (N 70°22.767'; W 148°51.227') is located within the active floodplain on the east side of the Kuparuk River. The site can be accessed by helicopter only.

**HISTORY:** The site consists of a gravel airstrip (2000 feet long by 150 wide) and an exploration well. The area is covered with a thin gravel exploration pad and has a total “footprint”, including the airstrip, of approximately 8.6 acres. The exploration well was drilled in 1969, suspended on 27 June 1969 and plugged and abandoned in 1972.

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 28 March to 2 April, 2002, and the remaining clean gravel from the pad was used to fill excavated areas. The well marker was cut and capped at a depth of 5 ft below the final elevation.

The goal of rehabilitation at this site is to visually integrate it into the surrounding gravel bars of the active floodplain. Efforts were made during gravel removal to remove straight lines along the edge of the pad and remaining portions of the airstrip. No plant cultivation treatments have been used at this site and no specific performance standards for vegetation have been developed for the site.

A site visit on 29 August 2002 (described in detail in the 2002 progress report for this site) indicated that the site was visible but mostly inconspicuous from the air. Straight lines were noticeable only along the edges of the central portion of the airstrip, where wet, low-lying areas are present on both sides of the airstrip. The surface elevation of most of the airstrip was at or below that of nearby riparian gravel bars. Native plants including dune grass (*Elymus arenarius*) and alpine wormwood (*Artemisia glomerata*) were reported colonizing the edges of the former pad.

A site visit on 6 August 2003 (described in detail in the 2003 progress report for this site) also indicated that the site was still visible from the air. General site characteristics were noted and three samples of soils were collected for analysis.

This report details the site visit that was conducted on 30 August 2005 to photograph and document site characteristics as required in the Rehabilitation Plan (4 February 2002).

**SITE DESCRIPTION:** Figure 1 shows an aerial photograph of the Kuparuk River State #1 Rehabilitation Site. The site footprint is 7.1 acres and includes the airstrip, reserve pit, staging and wellhead areas. Riverine processes had affected this site for a number of years before its removal. Evidence that these processes are still occurring include: debris and ripples in the sand and irregularly placed gravel on the pad by flooding water levels. The site is located in the braided river channel of the Kuparuk River, which consists primarily of gravel and sand deposits. A number of species were

noted colonizing on and around the site (See Appendix 1 for site photographs) including the grasses *Agropyron spp.*, *Elymus arenarius*, and *Poa glauca*, forb species including *Astragalus alpinus*, *Gentiana propinqua*, *Hedysarum mackenzii*, *Papaver sp.*, *Potentilla sp.*, *Sagina intermedia*, *Salix arctolitoralis*, *Artemisia glomerata*, and *Cochlearia officinalis*. Several other unidentified grass and forb species were also present at the site. Substantial vegetation cover is present on the higher elevation areas of the site, in particular *Elymus arenarius* clumps. Low lying areas adjacent to the river are eroded to some extent, likely from flowing water.

**REHABILITATION GOALS, OBJECTIVES, AND PERFORMANCE STANDARDS:** The goal for rehabilitation for the Kuparuk River State #1 site is for the site to become integrated with the surrounding habitat. Table 1 shows the treatment and monitoring schedule by year for the site. Year 4 (2005) work consists of visiting and photographing the site. Goals, objectives, performance standards, and monitoring methods for the site are shown in Table 2.

**Table 1** Proposed schedule for site preparation, site monitoring and reporting, Kuparuk River State Exploratory Well Site, Prudhoe Bay Oilfield, Alaska.

Year	Treatment and Monitoring	Reporting
Year 1 (2002)	Gravel removal, visit and photograph site.	Progress report describing conditions at site.
Year 4 (2005)	Visit and photograph site.	Progress report describing conditions at site.
Year 7 (2008)	Visit and photograph site.	Progress report describing conditions at site.
Year 10 (2011)	Visit and photograph site.	Final report describing conditions at site, determination of whether performance standard has been met.

**Table 2.** Goals, objectives, performance standards and monitoring methods for rehabilitation of the Kuparuk River State, Exploratory Well Site, Prudhoe Bay Oilfield, Alaska.

Goal	Site to become integrated with surrounding habitat.
Objective(s)	Contour site so that it is visually integrated with surrounding tidal flats.
Performance Standards	1. Year 1: site visually integrated with adjacent habitat 2. Year10: site remains integrated with adjacent habitat
Monitoring Methods	Site visits, photographs.

REHABILITATION APPROACH: 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 28 March to 2 April 2002, and the remaining clean gravel was used to fill excavated areas and to add fill to the backfilled reserve pit. The well marker was cut and capped at a depth of 5 ft below the final elevation.

The goal of rehabilitation at this site is to visually integrate it into the surrounding gravel bars of the active floodplain. Efforts were made during gravel removal to remove straight lines along the edge of the pad and remaining portions of the airstrip. No plant cultivation treatments have been used at this site and no specific performance standards for vegetation have been developed for the site.

## **MONITORING**

In August of 2005, photographs of the site on the ground and from the air were obtained (see Appendix 1).

PLANT MONITORING: Vegetation was not monitored during this site visit.

ELEVATION MONITORING: Elevation was not monitored during this site visit.

SOIL MONITORING: Soil was not monitored during this site period.

WILDLIFE USE OF AREA: A variety of wildlife uses this site on occasion. Caribou and waterfowl tracks were observed.

## **PROGRESS TOWARD PERFORMANCE STANDARDS**

The only performance standard that has been determined for this site is that it should become visually integrated with the adjacent habitat by Year 10 (2011). Due to the observed changes in the aerial photographs from 2003 to 2005, it is expected that this site will meet this standard.

## **REMEDIAL ACTION**

The Table describing the schedule for monitoring and reporting in the original site rehabilitation plan (4 February 2002) requires correction. The table lists site visit and reporting requirements for year 4 as occurring in 2003 and for year 7 in 2006. The project was begun in 2002, year 4 would be 2005 and year 7 would be 2008. Table 1 above provides the correct dates and activities for the Kuparuk River State Exploratory Well Site Rehabilitation Project and replaces Table 1 of the original rehabilitation plan (4 February 2002).

## **REPORTING**

Technical reports following BPXA's standard format are to be submitted by 30 December 2005, 2008, and 2011 to the Army Corps of Engineers, the U. S. Fish and Wildlife Service, the Environmental Protection Agency, the Alaska Department of Natural Resources, the Alaska Department of Environmental Conservation, and the Alaska Department of Fish and Game. Future reporting will follow the schedule established in the table presented above under rehabilitation goals, objectives, and performance standards.

## **REFERENCES**

BP Environmental Studies Group and ABR Inc., Environmental Research and Services. 2002. *Rehabilitation Plan for Kuparuk River State, Prudhoe Bay Oilfield, Alaska.*

## **APPENDICES**

APPENDIX 1: Photographs of the Kuparuk River State #1 site

## APPENDIX 1: Photographs of the Kuparuk River State #1 Site



Photo 1. Dune grass colonies forming and capturing sand at the Kuparuk River State Exploratory Well Site (looking southwest), 30 August 2005, 4 years after restoration began.



Photo 2. Natural colonization of the gravel surface at the Kuparuk River State Exploratory Well Site 30 August 2005, 4 years after restoration began.





Photo 3. Dune grass colonizing the pad at the Kuparuk River State Exploratory Well Site (looking southwest) 30 August 2005, 4 years after restoration began.