



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: 300.38.316

November 18, 2016

Sarah Kenshalo  
ConocoPhillips Alaska, Inc.  
PO Box 300360  
Anchorage, AK 99510

Re: Decision Document: ConocoPhillips Gwydyr Bay 2/2A  
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 the ConocoPhillips Gwydyr Bay 2/2A site, located roughly 16 miles northwest of Deadhorse. 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 no further remedial action will be required unless new information becomes available that indicates residual contaminants may pose an unacceptable risk.

This Cleanup Complete determination is based on the administrative record for the ConocoPhillips Gwydyr Bay 2/2A site, which is located in the ADEC office in Anchorage, Alaska. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

**Site Name and Location:**

ConocoPhillips Gwydyr Bay 2/2A  
ADL 047466  
Latitude: 70.408555  
Longitude: -148.753091

**Name and Mailing Address of Contact Party:**

Sarah Kenshalo  
Conoco Phillips Alaska, Inc.  
PO Box 300360  
Anchorage, AK 99510

**DEC Site Identifiers:**

File No.: 300.38.316  
Hazard ID.: 26368

**Regulatory Authority for Determination:**

18 AAC 75

**Site History**

The former exploration site ConocoPhillips Gwydyr Bay 2/2A site is located along the Beaufort Sea, roughly 16 miles northwest of Deadhorse. A Phase II Environmental Sites Assessment (ESA) was completed in August 2014 to determine if residual petroleum contamination remains at the site from previous drilling activities. Over 30 soil samples were collected from 17 soil borings advanced at the site. Generally, two soil samples were collected from each borehole; one sample from the surface soils and a



second sample from the tundra-gravel pad interface. All soil samples were submitted for laboratory analysis of one or more of the following: gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAH), DRO Silica Gel Cleanup (SGCU), and RRO SGCU. Analytical results for GRO, DRO, and RRO varied, but up to maximum concentrations of 612 mg/kg, 3,300 mg/kg, and 3,550 mg/kg, respectively. DRO results after SGCU were not substantially different from the original results; however, RRO concentrations did reduce to below 2,000 mg/kg using SGCU.

In addition to the soil samples, shovel sheen testing was performed along the perimeter of any standing water or ponds at the site. Sheening was observed at two locations (SW4 and SW5). A surface water sample was collected from SW4 and SW5, as well as three other surface water locations around the perimeter of the Gwydyr Bay pad. All water samples were analyzed for DRO, RRO, BTEX, PAHs, metals, and DRO SGCU and RRO SGCU. None of the samples exceeded total aromatic hydrocarbons (TAH) or total aqueous hydrocarbons (TAqH) for the Alaska Water Quality Standards (AWQS). However, one water sample, collected from SW4, exhibited a level of DRO at 2.78 mg/l. This DRO result was reduced to 0.663 mg/l after SGCU, which is below the Table C groundwater cleanup level for DRO of 1.5 mg/l.

**Figure 1 – 2014 Sheen Observations**



Based on the information in the Phase II ESA, ADEC requested additional monitoring in 2015. Visual monitoring was conducted on June 25, 2015. No sheens were observed during this event, and as such, no samples were collected for analysis.

### **Contaminants of Concern**

During the site investigation and cleanup activities at this site, samples were collected from soil and surface water and were analyzed for GRO, DRO, RRO, BTEX, PAH, DRO SGCU, RRO SGCU, and metals. Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern at this site:

- Gasoline Range Organics (GRO)
- Diesel Range Organics (DRO)
- Residual Range Organics (RRO)

### 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 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. For the purposes of this Cleanup Complete Determination, the following cleanup levels from 18 AAC 75 were used:

**Table 1 – ADEC Soil Cleanup Levels**

Contaminant	Method Two – Table B2 (mg/kg)	<i>Maximum Concentration Remaining (mg/kg)</i>	<i>Maximum Concentration Remaining following SGCU analysis (mg/kg)</i>
GRO	1,400	612	N/A
DRO	12,500	3,300	2,880
RRO	13,700	3,550	1,140

#### Notes to Table 1

GRO = gasoline range organics; DRO = diesel range organics; RRO = residual range organics; SGCU = analysis with silica gel cleanup; mg/kg = milligrams per kilogram; N/A = not analyzed

### 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 meet the human health cumulative risk criteria for residential land use.

### 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, Exposure Controlled, 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 Exposure	Contamination remains in the surface, but is below ingestion cleanup levels
Sub-Surface Soil Contact	De-Minimis Exposure	Contamination remains in the sub-surface, but is below ingestion cleanup levels
Inhalation – Outdoor Air	De-Minimis Exposure	Contamination remains in the sub-surface, but is below inhalation cleanup levels
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	There are no buildings present or expected in the future.
Groundwater Ingestion	Pathway Incomplete	Groundwater is not utilized as a drinking water source in this area
Surface Water Ingestion	De-Minimis Exposure	Sample results from the adjacent surface water bodies at this site were all below AWQS for TAH and TAqH
Wild and Farmed Foods Ingestion	Pathway Incomplete	Wild foods are not collected in this area
Exposure to Ecological Receptors	De-Minimis Exposure	Contaminants detected in surface water are below AWQS indicating a low potential for exposure to ecological receptors

**Notes to Table 2:** “De-Minimis Exposure” means that in ADEC’s judgment receptors are unlikely to be adversely affected by the minimal volume or concentration of remaining contamination. “Pathway Incomplete” means that in ADEC’s judgment contamination has no potential to contact receptors. “Exposure Controlled” means there is an institutional control in place limiting land or groundwater use and there may be a physical barrier in place that prevents contact with residual contamination.

### ADEC Decision

Contamination remains on site below the Method Two Table B2 default arctic zone cleanup levels. ADEC has determined there is no unacceptable risk to human health or the environment. This site will receive a “Cleanup Complete” 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(i). 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.

2. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.
3. Groundwater throughout Alaska is protected for use as a water supply for drinking, culinary and food processing, agriculture including irrigation and stock watering, aquaculture, and industrial use. Contaminated site cleanup complete determinations are based on groundwater being considered a potential drinking water source. In the event that groundwater from this site is to be used for other purposes in the future, such as aquaculture, additional testing and treatment may be required to ensure the water is suitable for its intended use.

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 contaminants at this site may pose an unacceptable risk to human health, safety, or welfare or to 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, 555 Cordova Street, Anchorage, Alaska 99501-2617, 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, PO Box 111800, Juneau, Alaska 99811-1800, 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 feel free to contact me at (907) 269-7691 or email at [Joshua.Barsis@alaska.gov](mailto:Joshua.Barsis@alaska.gov).

Sincerely,



Joshua Barsis  
Project Manager

Electronic cc: Spill Prevention and Response, Cost Recovery Unit  
Melissa Head/Patty Burns, DNR