STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM

SEAN PARNELL, GOVERNOR

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File: # 300.38.036

October 28, 2009

Kelly Sperbeck
Schlumberger Technology Corp.
2525 Gambell Street Suite 400
Anchorage, AK 99503

Re: Record of Decision; Dowell Schlumberger Lease Tracts 32 & 33
Cleanup Complete Determination- Institutional Controls

Dear Ms. Sperbeck:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Dowell Schlumberger Lease Tracts 32 and 33 located on Spine Road in Deadhorse, 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 no further remedial action will be required as long as the site is in compliance with established institutional controls.

This decision is based on the administrative record for Dowell Schlumberger Lease Tracts 32 & 33 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 with ICs determination.

Introduction

Site Name and Location
Dowell Schlumberger Lease Tracts 32 & 33
Spine Road
Deadhorse, Alaska

Name and Mailing Address of Contact Party:
Kelly Sperbeck
Schlumberger Technology Corp.
2525 Gambell Street Suite 400
Anchorage, AK 99503

ADEC Site Identifiers:
Hazard ID #585
ADEC Reckey # 1988730105904
CS file # 300.38.036

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

Background
This facility provides services to Prudhoe Bay oil companies such as cementing, and well work over. These activities require the storage, and handling of various chemicals including liquid nitrogen, hydrochloric and hydrofluoric acids, and other chemicals. The facility was the site of a catastrophic fire followed by an acid spill that potentially impacted the gravel pad, pad pore water, and areas of tundra in 1990. Prior to the fire, benzene and total petroleum hydrocarbons had been detected in soil and porewater at the facility at concentrations above cleanup levels in place at the time.

Contaminants of Concern
During the various investigations at this site, soil, surface water, and/or porewater samples were analyzed for total petroleum hydrocarbons (TPH) which includes both DRO and GRO; diesel range organics (DRO); gasoline range organics (GRO); metals; semi-volatile organic compounds (SVOCs); anions (fluoride, chloride, nitrite, bromide, etc); and volatile organic compounds (VOCs) including benzene, toluene, ethylbenzene, and xylenes (BTEX). Based on analytical results from these investigations the following Contaminants of Concern were identified in soil and groundwater:

- Diesel Range Organics (DRO)
- Benzene

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

The fire at the facility in 1990 destroyed the acid storage building, rupturing containers of acid chemicals, and fuel. Much of this material was consumed in the fire, or disposed of as regulated waste during the cleanup effort that followed. The 7,200-gallon acid spill shortly after the fire was largely contained in the secondary containment unit. The acid that was lost was neutralized with soda ash and lime. Following these events, soil samples were collected around and underneath the acid storage building. Impacts were most significant under the building where fluids had migrated through cracks in the slab during and after the fire. Soil samples collected under the building shortly after the fire contained DRO up to 90,300 mg/kg and benzene up to 7.9 mg/kg. Contamination under the building appeared concentrated along cracks in the foundation where fluids migrated during the fire.

To inhibit the potential migration of contaminants from the pad to the tundra, a vertical barrier liner was installed around the perimeter of the pad and keyed into the permafrost. Collection sumps were installed inside the liner at several areas of the pad to dewater the pad and for sampling of porewater. Porewater samples were collected most recently in 1998 and none of the samples contained contaminants above Table C groundwater cleanup levels.

Surface soil, tundra, and surface water sampling was conducted in 1993 to evaluate any impact to the tundra surrounding the pad. DRO was detected up to 4,400 mg/kg in surface soil samples along a swale separating this pad from an adjacent pad. The source of this contamination is suspected to be drum storage and releases from the adjacent pad occupied by Peak Oil Services, which occurred prior to 1993. Surface water samples did not contain contaminants above Alaska Water Quality Criteria.

ADEC conducted a site visit in 2008 to evaluate any remaining impacts to the pad. No evidence of contamination was noted anywhere on the pad and the surrounding tundra was also free from impacts such as sheen on surface water or stressed vegetation.

In 2009, additional soil sampling was conducted under the acid storage building in the same locations as those sampled in 1990. DRO was detected in surface soil up to 16,000 mg/kg. and no other contaminants were detected above cleanup levels.

Pathway Evaluation

Following investigation and cleanup at the site, human health and ecological exposure to the remaining contaminants in soil was evaluated using ADEC's Exposure Tracking Model. The human health exposure pathways that were evaluated for this decision document included: inhalation of indoor and outdoor air, ingestion of soil, dermal contact with soil, and ingestion of groundwater.

The inhalation pathway is considered incomplete as the building is constructed on pilings where ventilation keeps vapors from accumulating or entering the building from beneath. The ingestion and dermal contact pathways may be complete, but the remaining contamination is beneath the building and is not available to receptors.

In the Arctic Zone, the migration to surface water pathway is evaluated for a possible risk to human health as a drinking water source. The surface water adjacent to this pad is not a drinking water source; therefore, the human exposure pathway is not considered complete. 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; and for compliance with Alaska Water Quality standards (18 AAC 70). The migration to surface water pathway is considered incomplete as surface was not found to be impacted following the spill and fire in the early 1990's.

The exposure pathway analysis above was supported by the most recent ADEC Exposure Tracking Model (ETM) ranking. The ETM results showed all pathways to be one of the following: De Minimis Exposure, Exposure Controlled, or Pathway Incomplete.

ADEC Decision
The ADEC has determined there is no unacceptable risk to human health or the environment, and this site will be granted a Cleanup Complete- ICs determination subject to the following.

1. Any future change in land use may impact the exposure assumptions cited in this document. If land use and/or ownership changes, current ICs may not be protective and ADEC may require additional remediation and/or ICs. Therefore Dowell Schlumberger shall report to ADEC once every five years or as soon as they become aware of any change in land ownership and/or use, if earlier. **The report can be sent to the ADEC project manager or electronically to DEC.ICUnit@alaska.gov.**

2. Contaminated soil remaining beneath the acid storage building must be addressed under an ADEC approved work plan when the building is removed or if the soil is otherwise available for removal.

3. 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. (See attached site figure.)

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

The ADEC Contaminated Sites Database will be updated to reflect the change in site status as detailed above, and will include a description of the contamination remaining at the site. Institutional Controls will be terminated when contaminant concentrations are below applicable ADEC cleanup levels, or when the site meets the requirements for a Cleanup Complete as determined by ADEC.
This determination is in accordance with 18 AAC 75.380(d) and does not preclude ADEC from

ADEC File No.

Attachment A: Cleanup Complete-ICs Agreement and Signature Page

Dowell Schlumberger agrees to the terms of this Cleanup Complete-ICs determination as stated in this Record of Decision (ROD) document dated ***October 28, 2009*** *for Dowell Schlumberger Lease Tracts 32 and 33. Failure to comply with the terms of this agreement may result in ADEC reopening this site and requiring further remedial action in accordance with 18 AAC 75.380(d)(2).*

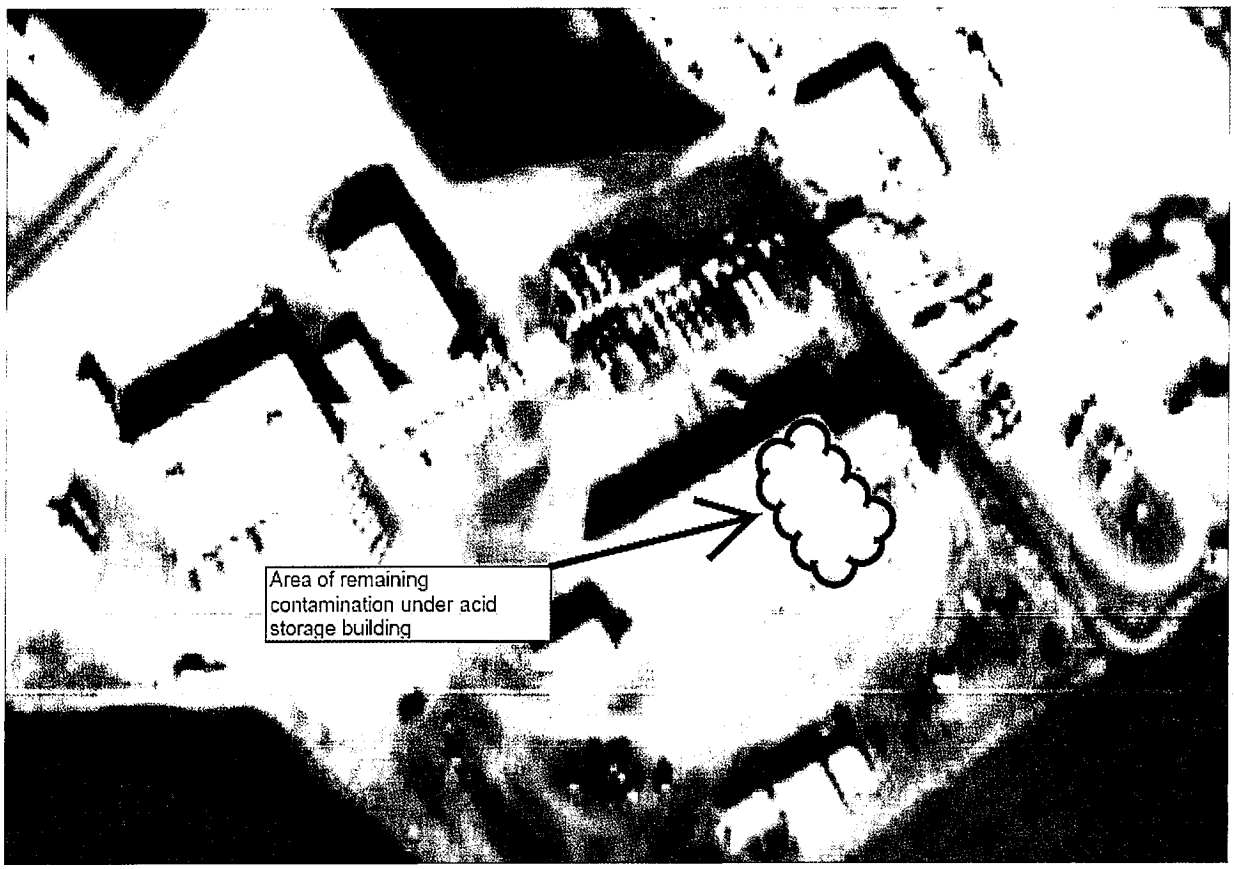
Signature of Authorized Representative
Dowell Schlumberger

RECEIVED
NOV 18 2009
DEPT. OF ENVIRONMENTAL CONSERVATION

Chris Barton
Printed Name of Authorized Representative
Dowell Schlumberger

Note to Responsible Person:
After making a copy for your records, please return a signed copy of this form to the ADEC project manager, William O'Connell, at the address on this correspondence within 30 days of receipt of this letter.
300.38.036

Attachment B: Site Figure



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: Margie Smith, North Slope Borough

Attachment: Attachment A: Cleanup Complete-ICs Agreement Signature Page
Attachment B: Site Figure