

Decision Document Diesel Spill (SS005)

FINAL

Point Lonely SRRS, Alaska

Prepared By

United States Air Force Pacific Air Forces Command 611 CES, Alaska

August 2008

PART 1: THE DECLARATION

SITE NAME AND LOCATION: This Environmental Restoration Program (ERP) site is known as Diesel Spill, SS005. It is located at the Point Lonely Short Range Radar Station (SRRS), adjacent to the Beaufort Sea (Figure 1-1). The Alaska Department of Environmental Conservation (ADEC) Record Key number for this site is 199731X106207. The site is located at 70°54'36.03" N latitude, 153°15'75.39" W longitude (these coordinates represent the location of sample SS5SS27-4.5, which is at the approximate center of the site). The Point Lonely SRRS is not listed on the National Priorities List (NPL).

STATEMENT OF BASIS AND PURPOSE: This decision document (DD) presents the U.S Air Force's (USAF's) decision that no action is necessary at SS005 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). No CERCLA action is being proposed or selected because no CERCLA hazardous substances are present. This DD was developed in accordance with the Defense Environmental Restoration Program (DERP), 10 United States Code (USC) 2701, consistent with CERCLA, 42 USC 9601 (et seq.); Executive Order 12580, 52 Federal Register 2923, and to the extent practicable, with Title 40, Part 300 of the Code of Federal Regulations (CFR): National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Releases at SS005 are solely petroleum products, and under CERCLA 101 (14) and (33), petroleum products, including any fraction or derivatives of crude oil, are excluded from the definitions of hazardous substances, pollutants or contaminants. Therefore, the site is being addressed in accordance with State of Alaska laws and regulations.

This decision is based on the Administrative Record file for this site. The Administrative Record can be accessed by contacting the Community Relations Coordinator at (907) 552-4506 or (800) 222-4137. A web site with some documents is available at: http://www.adminrec.com/PACAF.asp?Location=Alaska.

The CERCLA lead agency addressing SS005 is the USAF and the support agency is the ADEC. The USAF and the State of Alaska, through the ADEC, agree with the decision of no further action (NFA) under CERCLA. The U.S. Environmental Protection Agency (USEPA) has deferred regulatory authority at Point Lonely SRRS to the ADEC.

DESCRIPTION OF THE SELECTED REMEDY UNDER CERCLA: No remedy has been proposed or selected under CERCLA, as releases at the site are excluded from the CERCLA definition of hazardous substances, pollutants, or contaminants.

STATUTORY DETERMINATIONS: Because only fuel and related substances are associated with this site, no action is required under CERCLA. Petroleum is excluded from the definition of hazardous substances and pollutants and contaminants under 42 USC § 9601 (14) and (33). Releases of petroleum and related substances identified at SS005 are being addressed in accordance with State of Alaska laws and regulations.

DESCRIPTION OF THE SELECTED REMEDY UNDER STATE LAW: The risk attributed to the concentrations of petroleum and related substances detected at SS005 has been

determined to be insignificant to human health and the environment at its present state. All detected substances were below risk-based thresholds established by ADEC for residential land use.

No contaminants remain above ADEC Method Two soil cleanup levels for the Arctic Zone (18 Alaska Administrative Code (AAC) 75.341, Tables B1 and B2). These cleanup standards meet the risk management standards of 18 AAC 75.325 (h), (i.e., the risk from hazardous substances does not exceed a cumulative carcinogenic risk of 1 in 100,000 and a cumulative non-carcinogenic hazard index of 1.0). The site conditions are protective of human health under all current and projected site uses, including unrestricted residential land use.

Therefore, no further investigation or cleanup is necessary under 18 AAC 75. However, in accordance with 18 AAC 75.325 (i), approval shall be obtained from ADEC prior to disposing of or transporting soil from Site SS005.

Site SS005 may be used for placement of petroleum contaminated soil excavated from sites SS002 (Drum Storage Area) and SS003 (Beach Diesel Tanks). It is not anticipated that these soils will result in a need for further action because soils moved to the site will not contain petroleum hydrocarbons above ADEC Method Two cleanup levels for the Arctic Zone and surface water will be protected. Furthermore, the soils will be placed in areas already impacted by petroleum hydrocarbons. Therefore, there will be no significant change to site conditions. The DDs for sites SS002 and SS003 provide detail regarding sampling to be conducted at the landspreading location to demonstrate that closure criteria are met and no further action is necessary.

AUTHORIZING SIGNATURE: These signatures document the USAF and ADEC approval of the remedy selected in this DD for the Diesel Spill (SS005) at Point Lonely SRRS, Alaska.

This decision may be reviewed and modified in the future if new information becomes available which indicates the presence of contamination or exposure that may cause a risk to human health or the environment.

29/08

JOHN HALVERSON DOD Cleanup Unit Lead Federal Facilities Environmental Restoration Alaska Department of Environmental Conservation

nuso

BRENT A. JOHNSON/ Colonel, USAF Commander, 611th Air Support Group

27AVG 2008

Date

Date

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PART 2: THE DECISION SUMMARY

SITE NAME, LOCATION, AND DESCRIPTION: The Diesel Spill site is designated as SS005, an inactive tank farm. SS005 is part of Point Lonely SRRS (Figure 1-1). This site consists of two above ground storage tank farms (eastern and western) and a pumphouse on a gravel pad located southwest of the main installation (Figures 2-1 and 2-2). The area between the two tank farms consists of a large gravel pad. A road separates the two tank farms. The eastern tank farm contains the installation's two original diesel tanks on an unlined gravel pad surrounded by a containment berm. It was reported that a 25,000-gallon diesel spill occurred from a break in the fuel line in 1978 near the two diesel tanks. The specific location of the spill is not documented, but is believed to be near the western side of the area based on a 1981 site figure. There is no record of product recovery actions occurring after the spill. The western tank farm is located approximately 200 feet west of the eastern tank farm. It contains six large tanks with a combined capacity of two million gallons. Each of the six tanks within the western tank farm is contained inside a lined berm.

Groundwater is not a viable current or future source of drinking water at Point Lonely SRRS because the site is underlain by 650 to 1,330 feet of continuous permafrost and does not contain a reliable year-round high quality aquifer above the permafrost. Permafrost was encountered at 3 feet below ground surface during the 2005 remedial investigation (RI), just north of the pumphouse (Figure 2-2).

SITE HISTORY AND ENFORCEMENT ACTIVITIES: Point Lonely SRRS, also known as POW-1, was operated as an auxiliary Distant Early Warning Line Station beginning in 1953. The high frequency radio was activated in 1953 and continued to be active until 1989. In 1993, the Point Lonely installation was converted over to a SRRS, which operated until 2005. The radar system consisted of a radar structure, support buildings, a helicopter landing area, and an airstrip used for landing fixed wing aircraft. The SRRS was unmanned except for periodic maintenance visits. There are no plans to reactivate the radar station at Point Lonely. The inactive structures at Point Lonely SRRS are scheduled for demolition in 2008 under the USAF Clean Sweep Program.

The overall cleanup strategy for Point Lonely SRRS includes the following:

- Source reduction and implementation of remedies consistent with the USAF's limited presence at the site.
- Cleaning up of soil contamination to 18 AAC 75.341 Method Two cleanup levels for the Arctic Zone [hereafter, Method Two will refer to 18 AAC 75.341 (c) and (d), Tables B1 and B2 for the Arctic Zone].
- Cleaning up petroleum soil concentrations to 18 AAC 75.341 Method One cleanup levels for the Arctic Zone [hereafter, Method One will refer to 18 AAC 75.341, Table A2] at sites considered to have a high susceptibility to coastal erosion.

SS005 is one of twelve sites located at the Point Lonely SRRS (Figure 2-1). Past activities potentially resulting in contaminant release at the Point Lonely SRRS include:

- Spills during the transfer of fuels in and out of storage tanks;
- Leaks from fuel lines, drums, and tanks;
- Spills or leaks of fuel, lubricants, or solvents during vehicle and equipment maintenance activities;
- Spills or leaks from transformers or other electrical equipment containing polychlorinated biphenyls (PCBs); and
- Disposal of wastes and other discarded material containing hazardous substances.

Some of the contaminants encountered during investigations at Point Lonely SRRS are benzene, toluene, ethylbenzene, and total xylenes compounds (BTEX); DRO; gasoline range organics (GRO); polynuclear aromatic hydrocarbons (PAHs); PCBs; petroleum, oil and lubricants (POL); residual range organics (RRO); semi-volatile organic compounds (SVOCs); metals; and volatile organic compounds (VOCs). Most of these contaminants are the result of fuel or oil spills.

The selected remedy of NFA under CERCLA and no cleanup under State of Alaska laws and regulations for SS005 fits into the overall site management plan since there are no chemicals or contaminants of concern (COCs) at the site above ADEC Method Two cleanup levels and no remedial action is necessary in order to fulfill the overall objectives.

SS005 was investigated in 1993 and 2005. Studies and reports providing details can be found in the Administrative Record file or the Information Repository. SS005 investigations and actions are summarized or documented in 1993 and 2005 RI reports (ICF 1996; HCG 2006), and in the proposed plan (USAF 2007).

COMMUNITY PARTICIPATION: A proposed plan (USAF 2007) that presented the cleanup alternatives and remedies proposed by the USAF for Point Lonely SRRS was submitted for public review at a public meeting in Barrow on December 13, 2007. The public comment period for the Proposed Plan was December 13, 2007 to January 11, 2008. A Proposed Plan update for site LF007 was submitted for public review on February 21, 2008. The public comment period for LF007 was extended to March 6, 2008. Both written and verbal comments were received on the Proposed Plan. Some comments were general with regard to the Point Lonely SRRS while others were site specific. A list of comments specific to the Diesel Spill site (SS005) are provided in Table A-1 of Appendix A. Public comments and the USAF's responses to those comments are contained in Appendix A.

Additional community involvement activities for Point Lonely SRRS include Restoration Advisory Board (RAB) meetings. Point Lonely SRRS is part of the Barrow RAB, which typically meets quarterly. A mailing list of interested parties is maintained and updated regularly by the Air Force Community Relations Coordinator. The administrative record for the Point Lonely SRRS contains the information used to support this decision and is accessible to the public. A website with some documents is also available to the public at: <u>http://www.adminrec.com/PACAF.asp?Location=Alaska</u>. An information repository for the Point Lonely SRRS is located in Barrow and is managed by the Barrow RAB co-chair, Tommy Brower III. The most recent Management Action Plan was published in 2002 (USAF 2002) and is part of the Administrative Record. **SCOPE AND ROLE OF OPERABLE UNIT OR RESPONSE ACTION:** The site is not part of an operable unit. There are 12 sites at Point Lonely (Figure 2-1) being addressed under the USAF ERP; however, there is no anticipated migration of contaminants or chemical interaction between SS005 and the other sites. Response actions at this site will not affect response actions at any other site.

The overall cleanup strategy for the installation includes source reduction and implementing remedies that are consistent with the USAF's limited presence at the site. Consistent with these strategies, ADEC Method Two cleanup levels have been deemed appropriate for inland ERP sites. For sites considered to have a high probability of erosion, petroleum hydrocarbon ADEC Method One cleanup levels are considered appropriate. SS005 is located sufficiently inland that it is not considered threatened by coastal erosion.

SITE CHARACTERISTICS: RIs have been performed at SS005 in 1993 and 2005 (ICF 1996; HCG 2006). Results for contaminants with detections are summarized in Tables 2-1 (soil sample results) and 2-2 (sediment and surface water sample results). Sample locations and results from 2005 are shown on Figure 2-2.

Soil, sediment, and surface water samples were collected outside the containment areas during the 1993 RI. Samples were analyzed for petroleum hydrocarbons and related compounds. The maximum concentration of GRO and DRO were 120 milligrams per kilogram (mg/Kg) and 4,300 mg/Kg, respectively. This sample was collected in the gravel pad between the two tank farms. Benzene was detected in one of seven surface water samples at 21 μ g/L (micrograms per liter); this exceeds the drinking water maximum contaminant level (MCL). Ethylbenzene (10 μ g/L) and total xylene (46 μ g/L) exceeded National Oceanic and Atmospheric Administration (NOAA) Screening Quick Reference Tables (SQuiRT) probable effects levels (PELs) [NOAA 1999] in the same sample. The ethylbenzene and xylene results did not exceed drinking water MCLs (ADEC 2006). The 1993 RI recommended SS005 for remedial action due to the exceedances of current (2008) Method One soil cleanup levels.

During the 2005 RI, soil samples were collected within the containment areas and in the central gravel pad. In addition, surface water and sediment samples were collected in the surrounding tundra. The sample results indicated that portions of the pad had been impacted by diesel spills. In general, petroleum concentrations were higher in the eastern tank farm, with a maximum DRO concentration of 6,040 mg/Kg. The western tank farm had a maximum DRO concentration of 2,070 mg/Kg. DRO was also detected in the pad areas between the two tank farms with a concentration up to 1,040 mg/Kg. DRO was detected in the soils at the pumphouse up to 1,850 mg/Kg. The average concentrations of DRO in these areas were considerably less than these maximums. In the soil, no contaminants exceeded current (2008) ADEC Method Two cleanup levels. Three surface water samples were collected; results indicated that contaminant concentrations are decreasing and that minimal migration is occurring. Most compounds were not detected in the water and none exceeded screening criteria. The 2005 RI recommended SS005 for NFA.

There are no COCs at SS005 that require cleanup under CERCLA or 18 AAC 75. No CERCLA hazardous substances are present. No contaminants exceed Method Two cleanup levels for the Arctic Zone. These cleanup levels are protective of human health and the environment, including

surface water under current and future site conditions. In 2005, ethylbenzene and xylene were detected above one-tenth Method Two cleanup levels. However, cumulative risk calculations performed during the 2005 RI resulted in a human cancer risk of 0 and a hazard index of 0.02. The current site conditions meet ADEC risk management standards of 18 AAC 75.325(h). The residual levels of petroleum hydrocarbons present in the soil should remain in place and degrade over time. The site is not susceptible to erosion, and sampling has proven the current site conditions are protective of surface water. The ADEC concurred that the 2005 RI report, which covers SS005, has met the requirements of State regulations. No additional investigation of SS005 is necessary.

STATUTORY AUTHORITY FINDING: Only fuel and related substances are associated with this site. No action is necessary under CERCLA because petroleum is excluded from the definition of hazardous substances and pollutants and contaminants under 42 USC § 9601 (14) and (33). Releases of petroleum and related substances at SS005 will be addressed in accordance with State of Alaska laws and regulations, as described in Part 1 (See page 1-2).

REFERENCES:

- Alaska Department of Environmental Conservation (ADEC). 2006. 18 AAC 70 Water Quality Standards December 28.
- Hoefler Consulting Group (HCG). 2006. *Remedial Investigation Report for Twelve Sites, Point Lonely Short Range Radar Station, Alaska.* Prepared for the USAF. October.
- ICF Technology, Inc. (ICF). 1996. Remedial Investigation and Feasibility Study, Point Lonely Radar Installation, Alaska. April.
- National Oceanic and Atmospheric Administration (NOAA). 1999. Screening Quick Reference Tables (SQuiRT). September.
- United States Air Force (USAF). 2007. Proposed Plan for Twelve ERP Sites at Point Lonely Short Range Radar Station. December.
- USAF. 2002. United States Air Force 611th Air Support Group; 611th Civil Engineering Squadron Elmendorf, AFB Alaska; Management Action Plan Point Lonely Short Range Radar Station, Alaska. July.

		Screening Criteria		•		
Media	Analyte	18 AAC 75 Method Two Cleanup Level (Arctic Zone) ¹	18 AAC 75 1/10 th Method Two Cleanup Level ²	1993 RI/FS Maximum Concentration ^{3,4}	2005 RI/FS Maximum Concentration ^{3,4}	2005 RI/FS Frequency of Detections ⁵
	Fuels ⁶					
Soil (mg/Kg)	GRO	1,400	NA	120	612 J	5/5
	DRO	12,500	NA	4300 J	6,040 M	44/44
	RRO	13,700	NA	ND (200)	186 M	34/44
	VOCs					
	Benzene	13	1.3	1.2 J	0.434 J	2/5
	Toluene	180	18	0.7	1.66 J	3/5
	Ethylbenzene	89	8.9	3	9.45 J	4/5
	Xylene (total)	81	8.1	7.0 J	16.0 J	5/5
	PAH					
	1-Methylnaphthalene	5,500	550	NS	8.7 M	5/5
	2-Methylnaphthalene	2,740	274	NS	7.77 M	5/5
	Acenaphthene	8,200	820	NS	0.292	5/5
	Acenaphthylene	8,200	820	NS	0.011 M	1/5
	Fluorene	5,500	550	NS	0.444 M	5/5
	Naphthalene	180	18	NS	3.26 M	5/5
	Phenanthrene	41,000	4,100	NS	0.235	4/5

Table 2-1 SS005 Summary of Soil Sample Results

Notes

1- Lowest value of ingestion or inhalation shown from 18 AAC 75.341, Tables B1 and B2, referred to as "Method Two Cleanup Levels" for the Arctic Zone.

2 - This value corresponds to one-tenth the Method Two Cleanup level. Per 18 AAC 75.340(k), a chemical ≥ this value must be

included in cumulative risk calculations. This requirement is not applicable to GRO, DRO, RRO and lead.

3- Highest detected values shown. If the compound was nondetect in all samples, "ND" is shown with the highest PQL in parentheses.

4- 1993 data taken from the Final RI/FS, Vol. 1, Point Lonely Radar Installation, Alaska (ICF 1996).

2005 data taken from the Final RI/FS Study Report for 12 Sites, Point Lonely SRRS, Alaska (HCG 2006).

5- The frequency of detections is the number of times the analyte was detected in the samples collected at the site.

Frequencies do not include replicate samples collected.

6- Methods used in 1993 were GRPH, DRPH and RRPH, which are comparable to current AK Methods for GRO, DRO and RRO.

Data Flags		Abbreviations	
J	Estimated value	AAC	Alaska Administrative Code
М	Matrix effect	BTEX	Benzene, toluene, ethylbenzene and xy
NA	Not Applicable	DRO	Diesel Range Organics
ND	Compound not detected	GRO	Gasoline Range Organics
NS	Not Sampled	mg/Kg	milligrams per kilogram
		PAH	Polynuclear Aromatic Hydrocarbons
		PQL	Practical Quantitation Limit
		RI/FS	Remedial Investigation/Feasibility Study
		RRO	Residual Range Organics
		SRRS	Short Range Radar Station
		VOC	Volatile Organic Compounds

Bold and shaded indicates an exceedance of ADEC Method Two cleanup levels. Shaded indicates an exceedance of one-tenth ADEC Method Two cleanup levels for the Arctic Zone. (This page intentionally blank)

	Analyte	Screening Criteria					
Media		NOAA SQuiRT for Freshwater Sediment ¹	18 AAC 70 Alaska Water Quality Standards ²	NOAA SQuiRT for Freshwater ³	1993 RI/FS Maximum Concentration ^{4,5}	2005 RI/FS Maximum Concentration ^{4,5}	2005 RI/FS Frequency of Detections ⁶
	Fuels ⁷						
	GRO		NA	NA	80	NS	NA
	DRO		NA	NA	1,300	NS	NA
	RRO		NA	NA	420	NS	NA
	VOCs						
	Benzene		NA	NA	1.2 J	ND (0.00291)	0/3
Sediment	Toluene		NA	NA	2.0	ND (0.0109)	0/3
(mg/Kg)	Ethylbenzene		NA	NA	2.0	0.0104 F	1/3
	Xylene (total)		NA	NA	5.0 J	0.0444 F	1/3
	PAH						
	1-Methylnaphthalene		NA	NA	NA	0.0517 F,M	1/3
	2-Methylnaphthalene	(0.201) ⁸	NA	NA	ND (2.0)	0.0493 F,M	2/3
	Benzo[g,h,i]perylene		NA	NA	ND (2.0)	0.0066 F	1/3
	Naphthalene	(0.391) ⁸	NA	NA	ND (2.0)	0.0813 F,M	1/3
	Fuels ⁷						
	GRO	NA	1,300		240 J	NS	NA
	VOCs						
	Benzene	NA	5	130	21	0.897	1/3
	Toluene	NA	1,000	9.8	ND (1.0)	0.735 F	1/3
	Ethylbenzene	NA	700	7.3	10 J	0.982 F	1/3
Surface	Xylene (total)	NA	10,000	13	46 J	0.734 F	1/3
Water (µg/L)	1,2-Dichloroethene	NA			4.4 B	NS	NA
	Chloromethane	NA			2.3 J	NS	NA
	TAH	NA	10		77 J	2.60 F	2/3
	PAH						
	1-Methylnaphthalene	NA			NA	0.193	2/3
	2-Methylnaphthalene	NA			ND (11)	0.11	1/3
	Naphthalene	NA	700	620	ND (11)	0.172	1/3
	TAqH	NA	15		77 J	3.08 F	2/3

 Table 2-2
 SS005 Summary of Sediment and Surface Water Sample Results

Notes

1- NOAA SQuiRT value is the probable effects level (PEL) for freshwater sediment (NOAA 1999).

2- 18 AAC 70 Maximum Contaminant Level (MCL) values are from the Table I. Drinking Water Primary MCLs, adapted from 18 AAC 70.020b and referenced from the Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances, dated May 15th, 2003 (ADEC 2006).

3- NOAA SQuiRT values shown for fresh water criteria continuous concentration (CCC) unless otherwise indicated (NOAA 1999).

Criteria maximum concentration (CMC) shown if no CCC available.

4- Highest detected values shown. If the compound was nondetect in all samples, "ND" is shown with the highest PQL in parentheses.

5- 1993 data taken from the Final RI/FS, Vol. 1, Point Lonely Radar Installation, Alaska (ICF 1996).

2005 data taken from the Final RI/FS Study Report for 12 Sites, Point Lonely SRRS, Alaska (HCG 2006).

6- The frequency of detections is the number of times the analyte was detected in the samples collected at the site.

Frequencies do not include replicate samples collected.

7- Methods used in 1993 were GRPH, DRPH and RRPH, which are comparable to current AK Methods for GRO, DRO and RRO.

8- NOAA SQuiRT value is PEL for marine sediment (NOAA 1999).

Data Flags		Abbreviatio	ons
""	Screening criteria does not exist for this compound	AAC	Alaska Administrative Code
В	Compound detected in blank	µg/L	Micrograms per Liter
F	Estimated quantity below the PQL	DRO	Diesel Range Organics
J	Estimated value	GRO	Gasoline Range Organics
М	Matrix effect	mg/Kg	milligrams per kilogram
NA	Not Applicable or Not Analyzed	NOAA	National Oceanic and Atmospheric Administration
ND	Compound not detected	PAH	Polynuclear Aromatic Hydrocarbons
NS	Not Sampled	PQL	Practical Quantitation Limit
		RRO	Residual Range Organics
(TAH = Tota	l of BTEX components)	SQuiRT	Screening Quick Reference Tables
(TAqH = Total PAH + TAH)		SRRS	Short Range Radar Station
		TAH	Total Aromatic Hydrocarbons
		TAqH	Total Aqueous Hydrocarbons
		voċ	Volatile Organic Compounds
Shaded indi	cates an exceedance of the NOAA SOuiRT screening cri	toria	

Shaded indicates an exceedance of the NOAA SQuiRT screening criteria **Bold** and shaded indicates an exceedance of 18 AAC 70. (This page intentionally blank)



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