The Boeing Company
Santa Susana Field Laboratory
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148

Via FedEx

October 8, 2012
In reply refer to SHEA - 112526

Mr. Stewart Black
SSFL Project Director
Calif. Environmental Protection Agency
Dept. of Toxic Substance Control
1001 "I" Street
Sacramento, California 95812-0806

Subject: Notification of Planned Demolition for Abandoned Water Tanks, Boeing, Santa Susana Field Laboratory, Ventura County, California.

Dear Mr. Black:

At the request of the Department of Toxic Substance Control (DTSC), the Boeing Company (Boeing) provides this demolition notification with summary information that describes the planned scope of effort to remove two (2) abandoned water tanks located within the administrative boundary for Area 4 at SSFL.

This demolition notification and the summary information included is provided consistent with DTSC request made in memorandum "DTSC Comments on Draft Standard Operating Procedures for Building Demolition Debris Characterization and Management" dated 2-11-2010 and the protocols established in the Boeing Standard Operating Procedures (SOP) for Building Demolition and Debris Characterization and Management for the Santa Susana Field Laboratory dated 2-24-2010. Please see attached for further detail.

Boeing will complete the demolition project in accordance with the protocols established in the Boeing Standard Operating Procedures (SOP) for Building Demolition and Debris Characterization and Management for the Santa Susana Field Laboratory dated 2-24-2010.

If you have any questions, please contact Art Lenox at 818-466-8795 or Steve Fischer at 562-209-4998.

Respectfully,

Art Lenox
Environmental Remediation

Steve Fischer
Demolition Project Management

AL:SF:jag

Cc: Mr. Mark Malinowski, DTSC
Mr. Roger Paulson, DTSC
Mr. Paul Carpenter, DTSC
Ms. Jill Benson, CH2M Hill

From: Fischer, Steven D

Sent: Tuesday, August 07, 2012 2:44 PM

To: Paulson, Roger@DTSC; 'Carpenter, Paul@DTSC'

Cc: Lenox, Arthur J; Ueshiro, Randal Y

Subject: Area 4 water tanks

Attachments: Watertank Ovrvw.pdf

Roger and Paul,

Boeing has an infrastructure removal project we'd like to take care of in the near future.
No buildings or structures are involved in the scope of effort.
Boeing is providing this email summary in lieu of a formal Demolition Notification Summary consistent with other non-building removal advisories performed in the past where DTSC has determined that the activity described is not a removal action and did not have any comments.

1. Old Property Yard follow-up removals. (Sept – 2011)
2. Perimeter Pond Failing Road Removal (Feb – 2012)

This project involves removing two (2) abandoned water tanks located within the administrative boundary for Area 4 at SSFL. Both tanks supported site potable water needs, primarily fire suppression systems, and are no longer part of the plant water system or contain water at this point.
The approximate area within demolition boundary totals roughly 4,200 sqft, sitting at an elevation of 2,150', and is roughly 1,775 linear feet from the closest significant structure in Area 4.
Please see attached drawings for further location details.

Adjacent asphalt aprons and related foundations on which these tanks reside. The associated water supply system piping will not be within the scope of this removal.

All the Demolition SOP protocols have been applied to these investigation and preparation efforts. To demonstrate our consistent use of these steps. The following summaries are offered:

1. Proximity map along with photos to help explain the simple nature of this removal. (attached)
2. Waste Characterization review and summary (attached)
3. Radiological survey results performed and summary of steps to go (attached).
4. There are no impacts to permanent groundwater monitoring.
5. RCRA (RFI) status is not affected.
6. Boeing will advise should any emergent situations/anomalies arise during removal.
7. A qualified geologist will be present during soil exposure.
8. Boeing will advise if disposal disposition is changed from that noted on the waste characterization summary.
9. No soil will be hauled and any soil handled during the debris picking effort will remain in place.
10. A radiologic non-activity certification is not applicable here as this was not a test or development function area.
11. Biological assessment has been performed and no impact concerns exist for tank removal.
12. No historical preservation considerations apply.

The physical removal effort should last 4-5 days.
Boeing intends to perform the week of September 5th.

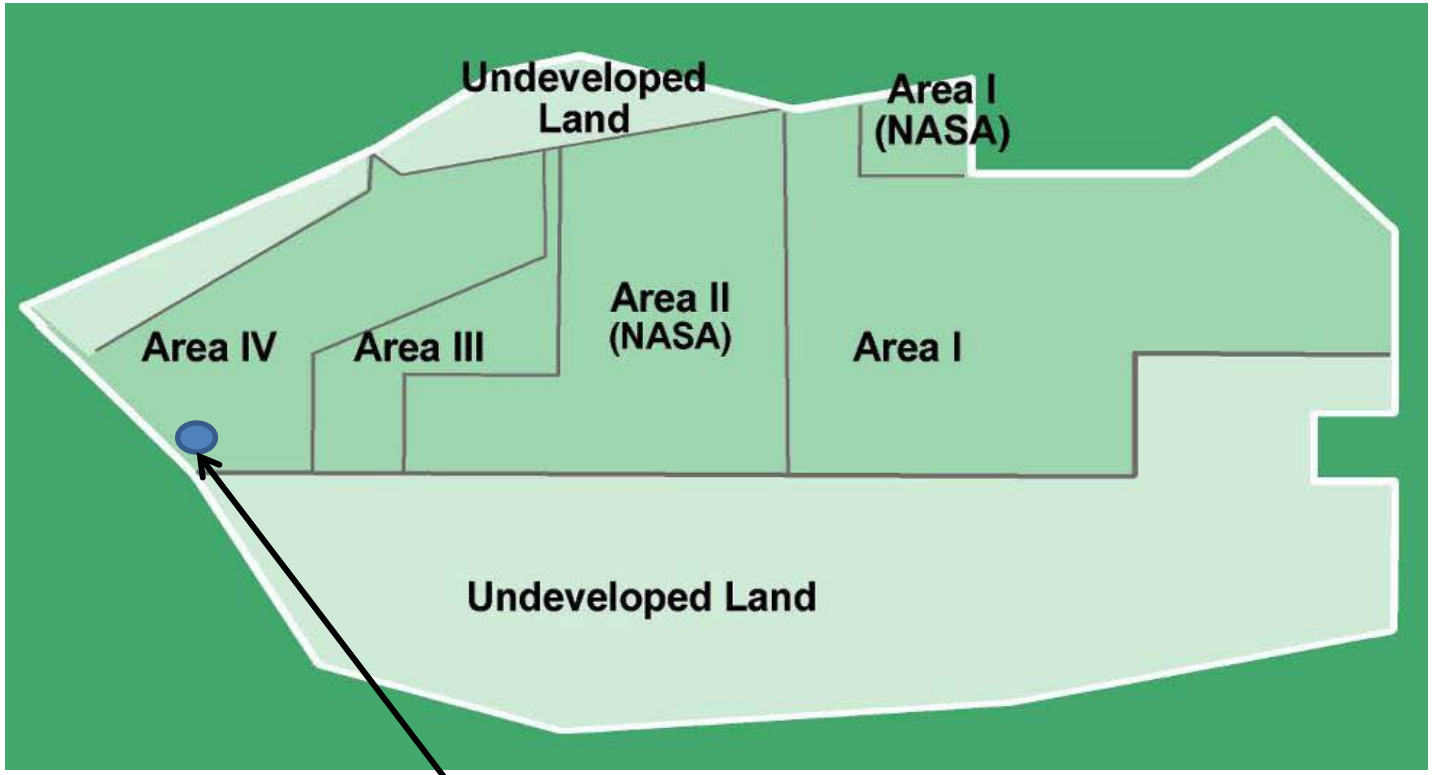
Please contact myself or Art Lenox if you have questions.
Thank you

Steve Fischer
BOEING, Site Services
Cell 562-209-4998

Overview Materials

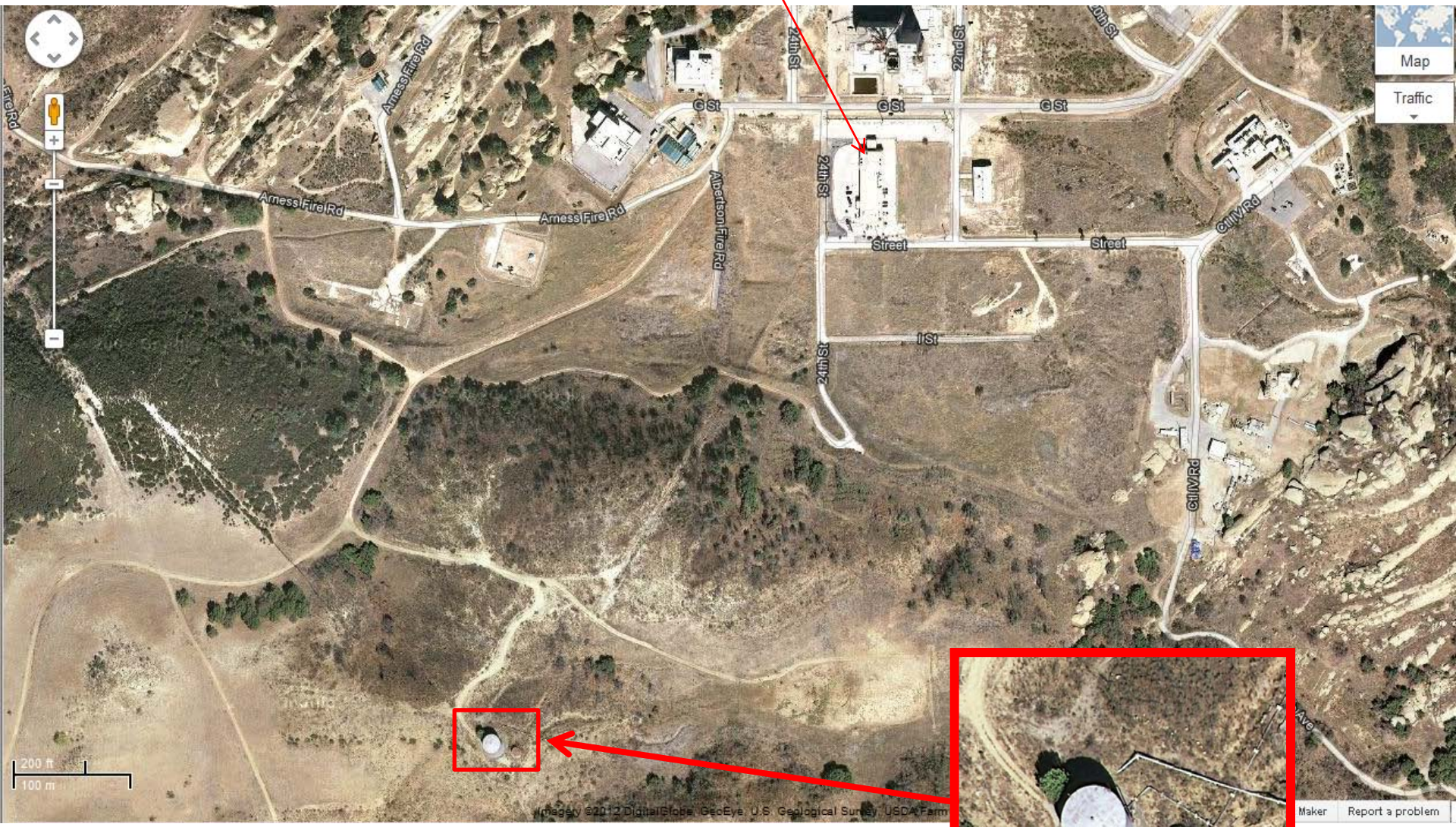
Surplus Infrastructure Water Storage Tank Removals

SSFL



Location Of Water Tank Removal Site

For Location reference - Bldg 4055



Area 4 Water tanks

Images of abandoned water tanks to be removed

WASTE CHARACTERIZATION: AREA 4 WATER TANKS
July 2012

Two potable water storage tanks are located on a hilltop southwest and overlooking Area 4. The tanks are identified as No. 812 (map designation 702) and No. 851 (map designation 701). They have been used to supply SSFL potable water needs, primarily fire suppression systems, but also restrooms, etc. Beginning in 1964, the water supply for the tanks originated from a municipal water source (Calleguas Municipal Water District). Prior to that, wells were presumably used to fill the older of the two tanks (No. 851). Access to the tanks is limited, resulting from the steep, unpaved entrance road. Demolition of both tanks is planned.

Tank No. 812 is a 500,000-gallon tank constructed of welded plate steel with an aluminized paint coating. The coating is in fair condition and well-adhered to the metal. Installation of the tank was completed in 1964. It has a diameter of 50-feet. A ten to eleven-foot wide asphalt apron is in place surrounding the tank. Additional remnant asphalt pavement, possibly an old maintenance parking area, is present to the south, approximately 20-feet downgradient from the tank.

Tank No. 851 is a 50,000-gallon tank constructed of corrugated, galvanized steel. It has a diameter of 22-feet. The steel sections are riveted together and the seams have been soldered to seal them. The tank itself is in very poor condition, with some areas that are corroded completely through the metal. This tank has been out of service for an indeterminate, yet extended period of time. Gravel surrounds the tank, expanding outward to a distance of approximately 10 feet. Some small patches of asphalt are present on the southeast side of the tank near the perimeter of the gravel.

For waste characterization purposes, a thorough visual inspection was conducted. This was determined to be the appropriate course because the tank site is extremely remote, with difficult access. Potential chemical impacts at the site that may affect waste management are limited. Furthermore, the tanks have contained only potable water, wastes designated for removal from the site are well-defined, and waste characteristics that may determine suitable final dispositions are visibly apparent or subject to generator knowledge.

Results

Tank No. 812 is coated with aluminized paint. During the inspection, paint on the tank was found to be tightly adhered, with no significant peeling. The asphalt apron surrounding the tank was very weathered but there were no signs of chemical contamination. Furthermore, there were no signs of paint migrating from the tank to the asphalt. Additionally, the asphalt has been subject to very minimal vehicular exposure as a result of the site location and accessibility difficulties. Without a source of significant surface contaminants, which is the case due to the lack of paint residues and the absence of vehicular traffic, the opportunity for chemical impacts to the asphalt and any underlying base material is absent. No other potential concerns were noted.

Galvanized metal was used to construct Tank No. 851. The tank exhibits substantial corrosion, especially on the top and the upper ¼ of the sidewalls. These areas are almost completely rusted. There are eight areas where corrosion has completely penetrated the metal, with holes ranging from quarter-sized to one that is larger than a baseball. The large areas of severe corrosion indicate that zinc salts will have migrated down the sides of the tank to the

surrounding gravel. Furthermore, the gravel surrounding the tank displays rust-colored staining, which also suggests the presence of Zinc. No other concerns were noted.

As both tanks are intact at this time, the condition of the foundation beneath them could not be confirmed.

Waste Determinations - Metal

The steel from both tanks is SCRAP METAL and will be shipped to a metal recycler.

If the steel is not recycled, it must be transported to a CLASS 1 LANDFILL for disposal.

Waste Determinations - Asphalt

The asphalt is suitable for recycling.

Waste Determinations - Roadbase

Any roadbase that may be present beneath the asphalt surrounding Tank No. 812 is Non-Hazardous and may be shipped to a Class 3 landfill.

Waste Determinations - Gravel

The gravel is California-Only Hazardous for Zinc.

Water Tanks, Area IV
Radiological Release Survey and
Waste Certification
Preliminary Data

Introduction

This data package provides the preliminary pre-demolition radiation survey results of the water tanks in the southwestern portion of Area IV of SSFL. This survey complies with Standard Operation Procedures: Building Demolition Debris Characterization and Management[1] and with Boeing procedure RS-00012[2]. Additional surveys will be performed following demolition when more surface area of the tanks will become accessible.

Methodology

Instrument measurements (1 minute static counts) were made for alpha and beta/gamma total surface activity (Ludlum 2224 plus Ludlum 43-89 plastic scintillator probe) and gamma exposure rate (Bicron microRem meter). Wipes were taken for removable alpha/beta activity and counted in a low-background Tennelec laboratory alpha/beta counter.

Instrument minimum detectable activities (MDA) for total activity measurements were 237 to 308 dpm/100 cm^2 alpha and 687 to 1,062 dpm/100 cm^2 beta (Ludlum 43-89 probe). Removable activity MDAs for the Tennelec were 10 dpm/100 cm^2 alpha and 27 dpm/100 cm^2 beta. These MDAs meet the regulatory limits for surface activity shown in Appendix 1. The Bicron MDA is ~4 μR/hr. Survey results are provided in Appendix 2.

Results

124 surface activity measurements and 31 exposure measurements were taken at the water tanks.

The majority (123 of 124 or 99.2%) of instrument surface activity measurements and wipe tests were non-detect (i.e. less than the MDA) and are therefore indistinguishable from background. The dose from any resulting post-demolition solid debris would therefore be zero mrem per year. If it were conservatively assumed that all the debris was actually contaminated at the MDA levels, then the effective dose would be much less than 1 mrem per year[3,4].

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[1] "Standard Operation Procedures: Building Demolition Debris Characterization and Management." Appendix A. "Radiation Screening Procedures for Non-radiological Buildings, Equipment and Debris." Letter from A. Lenox (Boeing) to R. Brausch (DTSC), February 24, 2010.

[2] Boeing, "Methods and Procedures for Radiological Monitoring." RS-00012, Revision B, August 6, 2006.

[3] ANSI N13.12-1999. "Surface and Volume Radioactivity Standards for Clearance." American National Standards Institute/Health Physics Society, 1999. The most limiting beta/gamma screening value is 6,000 dpm/100 cm^2 corresponding to a dose of 1 mrem per year. The most limiting alpha screening value is 600 dpm/100 cm^2 corresponding to a dose of 1 mrem per year.

[4] NUREG-1640. "Radiological Assessments for Clearance of Materials from Nuclear Facilities." Nuclear Regulatory Commission, June 2003. The most restrictive beta/gamma dose conversion from Table 2.1 is 0.16 μrem/y per dpm/100 cm^2. This corresponds to 0.8 mrem/y per 5,000 dpm/100 cm^2.

The majority (118 of 124 or 95.2%) of surface activity measurements meet the most restrictive regulatory surface activity limits for release/clearance of equipment and material for unrestricted use from former radiological facilities[5,6,7].

All (100%) surface activity measurements meet the general surface activity limits for release/clearance of equipment and material for unrestricted use from former radiological facilities[5,6,7]. See Appendix 1 for regulatory limits for surface activity.

Preliminary Conclusions

The water tanks are not former radiological facilities.

Based on measurements taken so far, the post-demolition debris appears to be radiologically acceptable for off-site disposal and/or recycling. There would be radiological controls or restrictions imposed on future disposition or use of this debris. Further post-demolition surveys will be conducted to confirm this conclusion prior to off-site disposal.

Waste from this demolition project meets the requirements of disposal facility permits[8,9] and complies with the California Health & Safety Code[10].

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[5] U.S. Nuclear Regulatory Commission Regulatory Guide 1.86. "Termination of Operating Licenses for Nuclear Reactors." June 1974. and U.S. NRC "Guidelines for Decontamination of Facilities and Equipment Prior to Release to Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," August 1987.

[6] U.S. Department of Energy Order 5400.5. "Radiation Protection of the Public and Environment." Chapter IV. January 7, 1993. and U.S. Department of Energy Guide DOE G 441.1-XX. "Control and Release of Property with Residual Radioactive Material." April 4, 2002.

[7] California Department of Public Health. DECON-1. "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use." and IPM-88-2. "Clearance Inspection and Survey." December 1, 1997.

[8] This waste is exempt from regulation and licensing or is expressly authorized for disposal under the Radiation Control Law (Division 104, Part 9, Chapter 8 of the California Health & Safety Code).

[9] This waste is not prohibited from disposal by any government agency with jurisdictional authority over this waste.

[10] Division 104, Part 9, Chapter 5, Article 1, Section 114715, "No person shall bury, throw away, or in any manner dispose of radioactive wastes within the state except in a manner and at locations as will result in no significant radioactive contamination of the environment." For the purposes of this requirement, "significant" is defined in Section 114710 as amounts of radioactive materials that are likely to expose persons to ionizing radiation greater than the guide levels published by the Federal Radiation Council (FRC). The FRC no longer exists, but the applicable guide level last published by the FRC was 500 mrem per year to a member of the public. Because the regulatory dose limit to members of the public has since been lowered to 100 mrem per year, CDPH/RHB conservatively utilizes the lower dose for purposes of defining "significant" radioactive contamination in this Article of the California Health and Safety Code. http://www.leginfo.ca.gov/cgi-bin/displaycode?section=hsc&group=114001-115000&file=114705-114780

The Governor's Executive Order D-62-02 (September 2002) prohibits the *"disposal of decommissioned materials to Class 3 landfills or unclassified management units."* The subject debris is not decommissioned material, and has not originated from a radiological facility. The survey in this certification has therefore been conducted as a best management practice, which also complies with the requirements of D-62-02. Verification surveys and/or approval by the California Department of Public Health (CDPH) Radiologic Health Branch (RHB) are not required for the off-site disposal of decommissioned material or of the subject material[11].

Phil Rutherford
Manager, Health, Safety & Radiation Services

[11] The California Department of Public Health (CDPH) Radiologic Health Branch (RHB) has stated in a November 9, 2007 email to Phil Rutherford (Boeing) … *"The Governor's Executive Order D-62-02, does not specifically require the Department of Health Services (now the Department of Public Health) to perform verification sampling of decommissioned material or to provide approval for disposal of specific decommissioned material shipped offsite (e.g., to Class I or II landfills). The California DPH has not imposed a requirement that Boeing or the Department of Energy (DOE) seek DPH verification sampling or approval of all decommissioned material destined for Class I or II landfills in compliance with the Governor's Executive Order."*

Appendix 1

Surface Activity Limits

Surface Activity Limits (dpm/100 cm^2)

	Alpha			Beta		
	Total		Removable[5]	Total		Removable[5]
	Average[4]	Maximum[5]		Average[4]	Maximum[5]	
Isotope-specific Regulatory Limits[1,2,3]						
Mixed beta/gamma emitters (Cs-137, Sr-90, Co-60, etc.)	-	-	-	5,000	15,000	1,000
Uranium, U-235, U-238 and decay products	5,000	15,000	1,000	5,000	15,000	1,000
Thorium, Th-232	1,000	3,000	200	-	-	-
Sr-90 (separated)				1,000	3,000	200
Transuranics, plutonium, radium-226	100	300	20	-	-	-
General Regulatory Limits	5,000	15,000	1,000	5,000	15,000	1,000
Most Restrictive Regulatory Limit	100	300	20	1,000	3,000	200
Preferred Boeing Limit	100		20	1,000		100
Typical Minimum Detectable Activities	~400		<20	~1,000		<30

[1] U.S. Nuclear Regulatory Commission Regulatory Guide 1.86. "Termination of Operating Licenses for Nuclear Reactors." June 1974. and U.S. NRC "Guidelines for Decontamination of Facilities and Equipment Prior to Release to Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," August 1987.

[2] U.S. Department of Energy Order 5400.5. "Radiation Protection of the Public and Environment." Chapter IV. January 7, 1993. and U.S. Department of Energy Guide DOE G 441.1-XX. "Control and Release of Property with Residual Radioactive Material." April 4, 2002.

[3] California Department of Public Health. DECON-1. "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use." and IPM-88-2. "Clearance Inspection and Survey." December 1, 1997.

[4] Averaged over 1 m^2.

[5] Maximum measured over 100 cm^2.

Appendix 2

Field Survey Results

RADIATION SURVEY REPORT

FACILITY: Area IV

LOCATION: Site water tanks - exterior

LOCATION NUMBER	DATE SAMPLED	DATE MONITORED	PURPOSE: Pre-demolition survey / LOCATON/OBJECT DESCRIPTION	UNITS / LIMITS	Alpha Removable dpm/100 cm^2 < 20	Beta Removable dpm/100 cm^2 < 100	Alpha Total dpm/100 cm^2 < 100 (< 5,000)	Beta Total dpm/100 cm^2 < 1,000 (< 5,000)	Gamma μrem/h < MDA
1	5/3/2012	5/3/2012	side of small water tank		< 20	< 100	0	0	6
2	5/3/2012	5/3/2012			< 20	< 100	30	64	7
3	5/3/2012	5/3/2012			< 20	< 100	0	410	6
4	5/3/2012	5/3/2012			< 20	< 100	117	600	7
5	5/3/2012	5/3/2012			< 20	< 100	0	64	5
6	5/3/2012	5/3/2012	top of pipe tee		< 20	< 100	0	314	5
7	5/3/2012	5/3/2012	inside pipe-cut from small tank		< 20	< 100	0	0	5
8	5/3/2012	5/3/2012	on support		< 20	< 100	135	0	8
9	5/3/2012	5/3/2012	outside pipe from large water tank		< 20	< 100	74	433	6
10	5/3/2012	5/3/2012	outside pipe from large water tank		< 20	< 100	0	171	6
11	5/3/2012	5/3/2012	on support		< 20	< 100	0	90	7
12	5/3/2012	5/3/2012	on support		< 20	< 100	178	245	7
13	5/3/2012	5/3/2012	outside pipe from large water tank		< 20	< 100	74	0	6
14	5/3/2012	5/3/2012	outside pipe from large water tank		< 20	< 100	30	267	5
15	5/3/2012	5/3/2012	on support		< 20	< 100	70	543	6
16	5/3/2012	5/3/2012	on support		< 20	< 100	91	0	6
17	5/3/2012	5/3/2012	rusty pipe at large water tank		< 20	< 100	313	529	6
18	5/3/2012	5/3/2012	brace pad - rusty		< 20	< 100	0	0	6
19	5/3/2012	5/3/2012	on support		< 20	< 100	135	0	6
20	5/3/2012	5/3/2012	rusty pipe at large water tank		< 20	< 100	291	195	6

COMMENTS: MDA = minimum detectable activity

[1]Tennelec (MDA = 10 dpm/100 cm^2 α and 27 dpm/100 cm^2 β)

[2]Ludlum 2224 with 43-89 dual alpha beta probe

(MDA 237 - 308 dpm/100 cm^2 α and 687 - 1062 dpm/100 cm^2 β)

[3]Bicron microrem meter (MDA ≤ 4 μrem/h)

INSTRUMENT	Tennelec[1]		Ludlum 2224 & 43-89[2]		Bicron[3]
IDENTIFICATION	NR007137		275211		EX041002
CALIBRATION DUE	Daily		8/23/2012		1/24/2013
BACKGROUND (cpm)	0	3.7	5 to 10	231 to 572	4 to 10 μrem/h
INSTR. EFFICIENCY	30.12%	36.57%	18.4%	16.8%	NA
COUNT TIME	1 min.		1 min		Scan

SAMPLED BY: E. Sorrels DATE: 5/3/2012

REVIEWED BY: Phil Rutherford DATE: 8/6/2012

FORM 732-A REV 2012-01-31

RADIATION SURVEY REPORT

FACILITY: Area IV

LOCATION: Site water tanks - exterior

LOCATION NUMBER	DATE SAMPLED	DATE MONITORED	PURPOSE: Pre-demolition survey / LOCATON/OBJECT DESCRIPTION	UNITS / LIMITS	Alpha Removable dpm/100 cm^2 < 20	Beta Removable dpm/100 cm^2 < 100	Alpha Total dpm/100 cm^2 < 100 (< 5,000)	Beta Total dpm/100 cm^2 < 1,000 (< 5,000)	Gamma µrem/h < MDA
21	5/3/2012	5/3/2012	side of gate valve		< 20	< 100	0	0	5
22	5/3/2012	5/3/2012	large water tank berm basin		< 20	< 100	4	0	6
23	5/3/2012	5/3/2012	near storm drain grate		< 20	< 100	26	0	7
24	5/3/2012	5/3/2012	large water tank berm basin		< 20	< 100	26	0	7
25	5/3/2012	5/3/2012			< 20	< 100	70	0	8
26	5/3/2012	5/3/2012			< 20	< 100	0	0	7
27	5/3/2012	5/3/2012			< 20	< 100	113	0	7
28	5/3/2012	5/3/2012			< 20	< 100	0	0	7
29	5/3/2012	5/3/2012			< 20	< 100	0	0	6
30	5/3/2012	5/3/2012	side of small water tank		< 20	< 100	0	0	5
31	5/3/2012	5/3/2012	side of pipe on large water tank		< 20	< 100	0	0	6

COMMENTS: MDA = minimum detectable activity

[1]Tennelec (MDA = 10 dpm/100 cm^2 α and 27 dpm/100 cm^2 β)

[2]Ludlum 2224 with 43-89 dual alpha beta probe

(MDA 237 - 308 dpm/100 cm^2 α and 687 - 1062 dpm/100 cm^2 β)

[3]Bicron microrem meter (MDA $\leq$ 4 µrem/h)

INSTRUMENT	Tennelec[1]		Ludlum 2224 & 43-89[2]		Bicron[3]
IDENTIFICATION	NR007137		275211		EX041002
CALIBRATION DUE	Daily		8/23/2012		1/24/2013
BACKGROUND (cpm)	0	3.7	5 to 10	231 to 572	4 to 10 µrem/h
INSTR. EFFICIENCY	30.12%	36.57%	18.4%	16.8%	NA
COUNT TIME	1 min.		1 min		Scan

SAMPLED BY: E. Sorrels DATE: 5/3/2012

REVIEWED BY: Phil Rutherford DATE: 8/6/2012

FORM 732-A REV 2012-01-31

Surface Activity Calculation using Daily Background and MDA

Facility	Area IV
Location	Site water tanks-exterior
Purpose	pre-demolition

Instrument Type	2224-1/43-89	
Instument ID	275211	
Calibration Due Date	8/23/2012	
Radiation	alpha	beta
Instrument Efficiency (cpm/emission)	0.184	0.168
Surface Efficiency (emission/dpm)	0.25	0.5
Probe Area (cm^2)	100	100

Input data in blue cells

Daily Background Measurements

				Alpha								Beta							
				Bkgd Count Time	Sample Count Time	Bkgd Gross Count	Bkgd Count Rate	Bkgd Gross Activity	L_C	L_D	MDA	Bkgd Count Time	Sample Count Time	Bkgd Gross Count	Bkgd Count Rate	Bkgd Gross Activity	L_C	L_D	MDA
Sample	**Date**	**Description (Location, Object)**	**Material Type**	**(min)**	**(min)**		**(cpm)**	**(dpm/ 100 cm^2)**	**(counts)**	**(counts)**	**(dpm/ 100 cm^2)**	**(min)**	**(min)**		**(cpm)**	**(dpm/ 100 cm^2)**	**(counts)**	**(counts)**	**(dpm/ 100 cm^2)**
1	5/3/2012	31-436 Reference Location	Concrete	5	1	39	8	170	5	13	284	5	1	2452	490	5838	40	83	986
2	5/3/2012	31-436 Reference Location	Asphalt	5	1	24	5	104	4	11	237	5	1	2862	572	6814	43	89	1062
3	5/3/2012	31-436 Reference Location	Construction	5	1	48	10	209	6	14	308	5	1	1153	231	2745	27	58	687
4																			
5																			
		Average	**Miscellaneous**	**5**	**1**	**37**	**7**	**161**	**5**	**13**	**276**	**5**	**1**	**2156**	**431**	**5133**	**37**	**77**	**912**

Sample Area Measurements

				Alpha								Beta							
				Sample Count Time	Gross Sample Count	Gross Count Rate	Bkgd Count Rate	Net Count Rate	Net Activity	MDA	> MDA or < MDA ?	Sample Count Time	Gross Sample Count	Gross Count Rate	Bkgd Count Rate	Net Count Rate	Net Activity	MDA	> MDA or < MDA ?
Sample	**Date**	**Description (Location, Object)**	**Material Type**	**(min)**		**(cpm)**	**(cpm)**	**(cpm)**	**(dpm/ 100 cm^2)**	**(dpm/ 100 cm^2)**		**(min)**		**(cpm)**	**(cpm)**	**(cpm)**	**(dpm/ 100 cm^2)**	**(dpm/ 100 cm^2)**	
1	5/3/2012	side of small water tank	Construction	1	6	6	10	-4	0	308	<MDA	1	224	224	231	-7	0	687	<MDA
2	5/3/2012	〃	Construction	1	11	11	10	1	30	308	<MDA	1	236	236	231	5	64	687	<MDA
3	5/3/2012	〃	Construction	1	6	6	10	-4	0	308	<MDA	1	265	265	231	34	410	687	<MDA
4	5/3/2012	〃	Construction	1	15	15	10	5	117	308	<MDA	1	281	281	231	50	600	687	<MDA
5	5/3/2012	〃	Construction	1	4	4	10	-6	0	308	<MDA	1	236	236	231	5	64	687	<MDA
6	5/3/2012	top of pipe tee	Construction	1	7	7	10	-3	0	308	<MDA	1	257	257	231	26	314	687	<MDA
7	5/3/2012	inside pipe-cut from small tank	Construction	1	2	2	10	-8	0	308	<MDA	1	209	209	231	-22	0	687	<MDA
8	5/3/2012	on support	Concrete	1	14	14	8	6	135	284	<MDA	1	430	430	490	-60	0	986	<MDA
9	5/3/2012	outside pipe from large water tank	Construction	1	13	13	10	3	74	308	<MDA	1	267	267	231	36	433	687	<MDA
10	5/3/2012	outside pipe from large water tank	Construction	1	5	5	10	-5	0	308	<MDA	1	245	245	231	14	171	687	<MDA
11	5/3/2012	on support	Concrete	1	5	5	8	-3	0	284	<MDA	1	498	498	490	8	90	986	<MDA
12	5/3/2012	on support	Concrete	1	16	16	8	8	178	284	<MDA	1	511	511	490	21	245	986	<MDA
13	5/3/2012	outside pipe from large water tank	Construction	1	13	13	10	3	74	308	<MDA	1	228	228	231	-3	0	687	<MDA
14	5/3/2012	outside pipe from large water tank	Construction	1	11	11	10	1	30	308	<MDA	1	253	253	231	22	267	687	<MDA
15	5/3/2012	on support	Concrete	1	11	11	8	3	70	284	<MDA	1	536	536	490	46	543	986	<MDA
16	5/3/2012	on support	Concrete	1	12	12	8	4	91	284	<MDA	1	454	454	490	-36	0	986	<MDA
17	5/3/2012	rusty pipe at large water tank	Construction	1	24	24	10	14	313	308	>MDA	1	275	275	231	44	529	687	<MDA
18	5/3/2012	brace pad - rusty	Construction	1	9	9	10	-1	0	308	<MDA	1	221	221	231	-10	0	687	<MDA
19	5/3/2012	on support	Concrete	1	14	14	8	6	135	284	<MDA	1	490	490	490	0	0	986	<MDA
20	5/3/2012	rusty pipe at large water tank	Construction	1	23	23	10	13	291	308	<MDA	1	247	247	231	16	195	687	<MDA
21	5/3/2012	side of gate valve	Construction	1	7	7	10	-3	0	308	<MDA	1	139	139	231	-92	0	687	<MDA
22	5/3/2012	large water tank berm basin	Asphalt	1	5	5	5	0	4	237	<MDA	1	498	498	572	-74	0	1062	<MDA
23	5/3/2012	near storm drain grate	Asphalt	1	6	6	5	1	26	237	<MDA	1	511	511	572	-61	0	1062	<MDA
24	5/3/2012	large water tank berm basin	Asphalt	1	6	6	5	1	26	237	<MDA	1	458	458	572	-114	0	1062	<MDA
25	5/3/2012	〃	Asphalt	1	8	8	5	3	70	237	<MDA	1	467	467	572	-105	0	1062	<MDA
26	5/3/2012	〃	Asphalt	1	2	2	5	-3	0	237	<MDA	1	498	498	572	-74	0	1062	<MDA
27	5/3/2012	〃	Asphalt	1	10	10	5	5	113	237	<MDA	1	479	479	572	-93	0	1062	<MDA
28	5/3/2012	〃	Asphalt	1	4	4	5	-1	0	237	<MDA	1	504	504	572	-68	0	1062	<MDA
29	5/3/2012	〃	Asphalt	1	2	2	5	-3	0	237	<MDA	1	524	524	572	-48	0	1062	<MDA
30	5/3/2012	side of small water tank	Construction	1	7	7	10	-3	0	308	<MDA	1	210	210	231	-21	0	687	<MDA
31	5/3/2012	side of pipe on large water tank	Construction	1	9	9	10	-1	0	308	<MDA	1	215	215	231	-16	0	687	<MDA

Sample Report

Batch ID:	Smears 1 Minute Count - 201205031405	**Count Date:**	5/3/2012 2:05:32PM
Group:	D	**Count Minutes:**	1.00
Device:	RMHF Tennelec (NR 007137)	**Count Mode:**	Simultaneous
Batch Key:	2711	**Operating Volts:**	1455
Selected	Swipe/Smear	**Comments:**	site water tanks exterior smears

Background (cpm)		Efficiency (%)	
Alpha Rate:	0.00 ± 0.00	**Alpha:**	30.12 ± 0.90
Beta Rate:	3.70 ± 0.61	**Beta:**	36.57 ± 0.93

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
1	Unknown	0.00	0.00	10.00	9.02	7.43	27.00
2	Unknown	3.32	3.32	10.00	9.02	7.43	27.00
3	Unknown	0.00	0.00	10.00	-1.91	5.02	27.00
4	Unknown	0.00	0.00	10.00	6.29	6.90	27.00
5	Unknown	0.00	0.00	10.00	6.29	6.90	27.00
6	Unknown	0.00	0.00	10.00	0.82	5.72	27.00
7	Unknown	0.00	0.00	10.00	-7.38	3.21	27.00
8	Unknown	0.00	0.00	10.00	-1.91	5.02	27.00
9	Unknown	0.00	0.00	10.00	0.82	5.72	27.00
10	Unknown	0.00	0.00	10.00	-4.65	4.21	27.00
11	Unknown	0.00	0.00	10.00	-4.65	4.21	27.00
12	Unknown	3.32	3.32	10.00	3.55	6.34	27.00
13	Unknown	0.00	0.00	10.00	0.82	5.72	27.00
14	Unknown	0.00	0.00	10.00	-1.91	5.02	27.00
15	Unknown	3.32	3.32	10.00	-7.38	3.21	27.00
16	Unknown	0.00	0.00	10.00	3.55	6.34	27.00
17	Unknown	0.00	0.00	10.00	-1.91	5.02	27.00
18	Unknown	0.00	0.00	10.00	0.82	5.72	27.00
19	Unknown	0.00	0.00	10.00	0.82	5.72	27.00
20	Unknown	0.00	0.00	10.00	9.02	7.43	27.00
21	Unknown	0.00	0.00	10.00	-7.38	3.21	27.00
22	Unknown	0.00	0.00	10.00	-4.65	4.21	27.00
23	Unknown	0.00	0.00	10.00	3.55	6.34	27.00
24	Unknown	0.00	0.00	10.00	0.82	5.72	27.00
25	Unknown	3.32	3.32	10.00	11.76	7.92	27.00
26	Unknown	0.00	0.00	10.00	-1.91	5.02	27.00
27	Unknown	0.00	0.00	10.00	0.82	5.72	27.00
28	Unknown	0.00	0.00	10.00	0.82	5.72	27.00
29	Unknown	0.00	0.00	10.00	-1.91	5.02	27.00
30	Unknown	3.32	3.32	10.00	-7.38	3.21	27.00
31	Unknown	0.00	0.00	10.00	0.82	5.72	27.00


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