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

Via FedEx

June 13, 2012
In reply refer to SHEA - 112069

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

Subject: Notification of Planned Demolition for Building 4015 (Area 4)
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 Building 4015 aka Building 15, located within Area 4.

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.

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.

As outlined in DTSC memos and discussions with Boeing, this Boeing submittal will be followed by a 30-day DTSC review of information provided. Boeing plans to begin demolition starting July 16, 2012.

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:ST:jag

Enclosures:

Attachment A - Work Scope Info for Removal of Buildings and Structures
Attachment B - In-Situ Concrete and Road Base report
Attachment C - Radiological Release Survey and Waste Certification
Attachment C1 - USEPA Data from the Surrounds of Building 4015
Attachment D - Radiological Document Review and Operations Certification
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Attachment F - SSFL Site Map with Location
Attachment G - Project area detailed view
Attachment H - RFI feature Map

cc: Mr. Paul Carpenter, DTSC (FedEx)
Mr. Mark Malinowski, DTSC
Ms. Jill Benson, CH2MHILL

Attachment A

Work Scope Information for Removal of Buildings and Structures

Work Scope Information
Removal of Building 4015 in Area 4
Boeing Santa Susana Field Laboratory
June 11, 2012

Introduction

The Boeing Company (Boeing) plans to remove all man-made elements associated with building 4015 within the Boeing Santa Susana Field Laboratory (SSFL). This building no longer supports Boeing activity. The building has been cleared, inspected, sampled and prepared for demolition.

Description of Project

Demolition is defined as the complete removal of all building walls, foundation, roof system including interior and exterior elements, building utility support systems, and all related debris.

At the conclusion of demolition long term erosion and dust control measures will be implemented as recommended and designed by professional consultants and consistent with State accepted Storm Water Pollution Prevention Plan (SWPPP) protocols.

Location and Setting

The demolition site is located at SSFL within the Area IV Administrative Boundary. The approximate area encompassing the demolition (boundary) totals roughly 36,650 sqft or 0.84 acres.

1. Approximate Building size is 4,950 sqft
2. Approximate Area Asphaltic Pavement and Caps to be removed: 2,300 sqft
3. Please see Attachments F and G for project location details.

RCRA (RFI) Status

Building 4015 is located in the DOE Leach Field 3 RFI Site in Group 5. The draft RFI Report for the DOE Leach Field 3 site was present to DTSC in the RFI Report titled Group 5 – Central Portion of Areas III and IV RCRA Facility Investigation Report Santa Susan Field Laboratory, Ventura County, California, Volume VIII – RFI Site Reports – Appendix Q, dated November 2008. Draft comments on surficial media and groundwater portions of the Group 5 Report were received from DTSC's Geologic Services Unit in December 2009. Future soil characterization work will be performed by the Department of Energy (DOE), pursuant to the AOC signed by the DOE and DTSC.

Piezometer PZ-104 is located approximately 90 feet to the northeast of Building 4015. Work will exclude removal of the piezometer.

Removal Timing

The intended start date for demolition activities will be on or around July 16, 2012 pending the completion of a DTSC 30-day review of this notification. The demolition effort, including removal of all debris, final dust control measures and erosion control implementation, will take ~2-weeks from start through completion.

Description of Buildings and Major Structures

Building 4015 was used as a construction staging building, beginning in 1974 and was also used for general storage.

Existing Buildings
Building 4015, warehouse @ 4,950 sqft. Primary construction is steel framed, steel sided, and steel roofed, with an unfinished interior.

Former Buildings
NA

Potential Impacts To Active RFI And Remediation Efforts/Systems
Infrastructure associated with existing remediation systems (i.e., Groundwater Extraction Treatment System, air stripping towers, etc.) is not located within the Building 4015 demolition boundary.

Potential Impacts To Permanent Groundwater Monitoring.
Piezometer PZ-104 is located approximately 90 feet to the northeast of Building 4015. Work will exclude removal of the piezometer.

Chemical Waste Characterization
Characterization of potential waste from the Bldg. 4015 demolition project involved:

1) A review of existing records related to laboratory analyses from environmental sampling in the area, as well as historical documents pertaining to the building occupancy and operational history.
2) Visual inspection of asphalt and concrete at the project site.
3) Sampling and laboratory analysis of stained or otherwise atypical appearing concrete, as well as areas where releases may be expected to have accumulated.
4) Random sampling and laboratory analysis of concrete to obtain additional information regarding the average properties of the anticipated waste.

Details including an overview of sampling, sample analysis, results characterization and disposition can be found on Attachment B, In-Situ Asphalt, Concrete, Roadbase, and Paint Characterization Report.

Asphalt Characterization Summary
A short section of asphalt approximately 36-feet in length is incorporated in the driveway leading up to the southern bay door in Bldg. 4015. Additional, small sections of asphalt walkway are located outside the two pedestrian doors. A final asphalt remnant is located to the northwest of Bldg. 4015. A visual inspection of all asphalt at the project site did not reveal any indications of chemical impacts or other causes for concern. This asphalt is suitable for recycling.

Details including an overview of sampling, sample analysis, results characterization and disposition can be found on Attachment B, In-Situ Asphalt, Concrete, Roadbase, Characterization Report.

Base Material (Roadbase) Characterization

Base material underlying asphalt pavement is potentially present on west side of Bldg. 4015, beneath the asphalt portion of the driveway leading up to the southern bay door of the building. No sampling of roadbase was conducted because there is a very limited amount of area potentially containing base material at the demolition site. Additionally, there has not been a significant presence of hazardous materials with a potential for involvement in releases at this building. Furthermore, extensive roadbase sampling and analysis at SSFL has demonstrated that base material used at the site is Non-Hazardous in the majority of cases.

Details including an overview of sampling, sample analysis, results characterization and disposition can be found on Attachment B, In-Situ Asphalt, Concrete, Roadbase Characterization Report.

Concrete Characterization Summary

The Bldg. 4015 concrete slab was visually inspected and also subjected to sampling and laboratory analysis. Three areas of potential concern were identified within the building. These included an area at the south end of the building, beneath metal shelving, where drum corrosion rings are apparent on the floor. Two areas where water pooling occurs were also identified. Chip samples were collected from all three areas. In addition to these samples, concrete chip sampling was also conducted at three randomly identified locations within Bldg. 4015. All samples were analyzed for TPH, CAM 17 Metals, Polychlorinated Biphenyls (PCB), and Semi-Volatile Organic Compounds (SVOC).

Based upon the analytical results, Bldg. 4015 concrete will be managed as follows:

1) The concrete inside Bldg. 4015 is Non-Hazardous. As a result of the Petroleum Hydrocarbon impacts, this material will not be recycled, but will be shipped to a Class 3 landfill for disposal.
2) The concrete driveways are Non-Hazardous and will be recycled.

Details including an overview of sampling, sample analysis, results characterization and disposition can be found on Attachment B, In-Situ Asphalt, Concrete, Roadbase Characterization Report.

Radiologic Release Survey and Waste Certification

Building 4015 is not a former radiological facility. The post-demolition debris is certified to be radiologically acceptable for off-site disposal and/or recycling. There are no radiological controls or restrictions imposed on future disposition or use of this debris. Waste from this demolition project meets the requirements of disposal facility permits and complies with the California Health & Safety Code.

As part of its Area IV Radiological Characterization Survey, the USEPA performed a surface gamma scan of the land surrounding Building 4015. There is therefore no indication of any contamination from the gamma scan results, and the USEPA did not identify any PGRAYs in the vicinity of Building 4015.

Additional details including an overview of sampling, conclusions, references, field survey results can be found on the attached Radiological Release Survey and Waste Certification.

Metal Structure

The structure of Bldg. 4015 is constructed of metal and covered with sheet metal. Metal structural components from the building will be shipped to a scrap metal recycling facility.

Attachment B

In-Situ Asphalt, Roadbase, and Concrete Characterization Report

The Boeing Company
5800 Woolsey Canyon Road
Simi Valley, California 93063

SSFL Bldg. 4015

In-Situ Asphalt, Roadbase, and Concrete Characterization Report

June 2012

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Bldg. 4015 In-Situ Asphalt, Roadbase, and Concrete Characterization Report

Introduction

Bldg. 4015 is located in southern region of Area 4 at SSFL. It was constructed in 1974. Records indicate that the Bldg. 4015 site was likely a parking lot for a building that was demolished in earlier years. The current building is steel framed, steel sided, and steel roofed, with an unfinished interior. Initially, it was used as a construction staging warehouse, a storage area for construction materials only. Demolition is planned for the building itself and the concrete slab upon which it was constructed. Two short driveways, one concrete and the other of asphalt and concrete construction, lead up to the bay doors and will also be included in the demolition project. Pertinent records do not indicate any evidence of significant chemical releases that may have impacted the building and associated features.

In preparing for building and driveway demolition, characterization of materials requiring recycling or disposal was conducted to facilitate waste management.

Characterization of potential waste from the Bldg. 4015 demolition project involved:

1) A review of existing records related to laboratory analyses from environmental sampling in the area, as well as historical documents pertaining to the building occupancy and operational history.
2) Visual inspection of asphalt and concrete at the project site.
3) Sampling and laboratory analysis of stained or otherwise atypical appearing concrete, as well as areas where releases may be expected to have accumulated.
4) Random sampling and laboratory analysis of concrete to obtain additional information regarding the average properties of the anticipated waste.

A Figure showing the Bldg. 4015 waste sample collection points and significant analytical results is presented in Appendix B: "Figure 1 Bldg. 4015 Significant Waste Characterization Detections."

Asphalt Characterization

A short section of asphalt approximately 36-feet in length is incorporated in the driveway leading up to the southern bay door in Bldg. 4015. Additional, small sections of asphalt walkway are located outside the two pedestrian doors. A final asphalt remnant is located to the northwest of Bldg. 4015. A visual inspection of all asphalt at the project site did not reveal any indications of chemical impacts or other causes for concern.

Disposition

This asphalt is suitable for recycling.

Asphalt dispositions are presented in Appendix C, "Figure 2 Bldg. 4015 Waste Dispositions."

Base Material (Roadbase) Characterization

Base material underlying asphalt pavement is potentially present on west side of Bldg. 4015, beneath the asphalt portion of the driveway leading up to the southern bay door of the building. No sampling of roadbase was conducted because there is a very limited amount of area potentially containing base material at the demolition site. Additionally, there has not been a

significant presence of hazardous materials with a potential for involvement in releases at this building. Furthermore, extensive roadbase sampling and analysis at SSFL has demonstrated that base material used at the site is Non-Hazardous in the majority of cases.

Disposition

For the reasons cited above, roadbase removed from beneath the small section of asphalt paved driveway has been determined to be non-hazardous. This material will be shipped to a Class 3 landfill for disposal.

Concrete Characterization

The Bldg. 4015 concrete slab was visually inspected and also subjected to sampling and laboratory analysis. Three areas of potential concern were identified within the building. These included an area at the south end of the building, beneath metal shelving, where drum corrosion rings are apparent on the floor. Two areas where water pooling occurs were also identified. Chip samples were collected from all three areas. In addition to these samples, concrete chip sampling was also conducted at three randomly identified locations within Bldg. 4015. All samples were analyzed for TPH, CAM 17 Metals, Polychlorinated Biphenyls (PCB), and Semi-Volatile Organic Compounds (SVOC).

According to analytical results, Petroleum Hydrocarbons were detected at elevated concentrations in two samples. Diesel Range Organics (DRO) in the C10-C24 range were detected at 630 ppm in a sample from one of the water accumulation locations, which is also aligned with one of the bay doors. Another DRO detection occurred in one of the random samples at a concentration of 180 ppm. The sample collected from the area where drum corrosion rings were present yielded a Chromium concentration of 84 ppm. As this exceeds the California 10X STLC threshold of 50 ppm, a Waste Extraction Test (WET) was performed. It resulted in a Chromium leachate concentration of 0.38 mg/L, below the STLC limit of 5 mg/L. All other Regulated Metals were well-below their respective regulatory thresholds and limits. Trace concentrations of PCBs were detected in three of the concrete samples. These detections of Aroclor 1254 ranged between 0.072 ppm and 0.22 ppm. Trace concentrations of 2-Methylnaphthalene (0.36 ppm), Bis(2-ethylhexyl) phthalate (0.3 ppm), and Isophorone (0.23 ppm) were also detected. None of these detections are significant with respect to hazardous waste regulations. No other SVOCs were detected, and Method Detection Limits were within acceptable ranges for waste characterization purposes.

No samples specifically targeting the concrete driveways were collected. This concrete was visually inspected and displayed no evidence of impacts that would affect waste management.

Disposition

Based upon the visual inspection and analytical results discussed above, and the concrete recycling explanation found later in this document, Bldg. 4015 concrete will be managed as follows:

1) The concrete inside Bldg. 4015 is Non-Hazardous. As a result of the Petroleum Hydrocarbon impacts, this material will not be recycled, but will be shipped to a Class 3 landfill for disposal.
2) The concrete driveways are Non-Hazardous and will be recycled.

Concrete dispositions are presented in Appendix C, "Figure 2 Bldg. 4015 Waste Dispositions."

Concrete Recycling

An attempt is made to recycle as much SSFL concrete as possible in compliance with governmental landfill waste diversion programs, but only when the material is clearly suitable for this purpose. Although concrete must be non-hazardous to be eligible for recycling, regulations further stipulate that no soluble pollutants can be present at concentrations in excess of applicable water quality objectives.

Boeing SSFL generally employs U.S. EPA Region IX Preliminary residential soil Remediation Goals (PRG) for the purpose of determining whether or not non-hazardous waste concrete is suitable for recycling. Although the PRGs were not developed for this purpose, no numerical standards exist that specifically address recycling requirements. In this context, the PRGs do provide an indication of soil safety as it relates to human and environmental health. Recycled concrete from SSFL is typically transformed into Miscellaneous Base for roads and similar applications. This recycled product is not nearly as finely divided as soil, any concrete impacts are likely to exhibit a greater degree of adhesion and/or pore containment than those adsorbed to soil, and the product is used in situations where it is placed beneath a generally protective surface such as pavement or a concrete pad. For these reasons, when PRGs are applied to concrete recycling, the result is far more conservative than originally intended where environmental leaching and human exposure are unrestrained.

PRGs are directly applied to all detected impacts to concrete when determining whether it is suitable for recycling, with the exception of PCBs, Arsenic, and impacts that are not addressed by PRGs. A total summative Aroclor limit of 1 ppm has been set for PCBs based on SSFL recycled concrete usage and penetration data. Concrete is also determined to be unsuitable for recycling when it exhibits an Arsenic concentration of 10 ppm or greater, based on SSFL recycled concrete usage, penetration data, and background Arsenic studies in California.

Metal Structure Recycling

The structure of Bldg. 4015 is constructed of metal and covered with sheet metal. Metal structural components from the building will be shipped to a scrap metal recycling facility.

Appendices

Appendix A

Bldg. 4015 Sampling Analytical Results

		CONCRETE					
Analyte All units ppm unless specified otherwise	Threshold Values: [a]20XTCLP/10XSTLC, [b]PRG, [c]LNDFL, [d]TSCA, [e]ESL (SFRWQCB), [f]Other CCR Title 22	125473_CNCR_C1	125473_CNCR_C2	125473_CNCR_C3	125473_CNCR_C4	125473_CNCR_C5	125473_CNCR_C6
DRO (C10-C24)	[c]100 [e]370	17	630	8.1	38	15	180
EFH (C10-C40)	[c]1000 [e]83	5.4	110	ND	14	ND	51
ORO (C25-C40)	[c]1000 [e]100	11	510	4.7	21	10	130
GRO (C6-C12)	[c]100	ND	ND	ND	ND	ND	ND
Antimony	[a]NA/150 [b]31	ND	ND	ND	ND	ND	ND
Arsenic	[a]100/50 [b]0.062	3.6	4.6	4.4	7.5	4.4	4.5
Barium	[a]2000/1000 [b]5400	61	60	43	62	58	62
Beryllium	[a]NA/7.5 [b]150	ND	ND	ND	ND	ND	ND
Cadmium	[a]20/10 [b]37	ND	ND	ND	ND	ND	ND
Chromium	[a]100/50 [b]210	84	26	9.6	13	14	48
TCLP/STLC	5/5	NA / 0.38					
Cobalt	[a]NA/800 [b]900	4.1	3.9	2.8	2.6	3.7	3.6
Copper	[a]NA/250 [b]3100	9.9	7.6	7.4	9.8	12	8.8
Lead	[a]100/50 [b]150	13	9	7.4	7.5	8.9	8.5
Mercury	[a]4/2 [b]23	0.034	0.026	0.021	0.051	0.017	0.025
Molybdenum	[a]NA/3500 [b]390	4.2	ND	ND	ND	ND	ND
Nickel	[a]NA/200 [b]1600	70	7.5	4.6	9	7.6	6.6
Selenium	[a]20/10 [b]390	ND	ND	ND	ND	ND	ND
Silver	[a]100/50 [b]390	ND	ND	ND	ND	ND	ND
Thallium	[a]NA/70 [b]5.2	ND	ND	ND	ND	ND	ND
Vanadium	[a]NA/240 [b]78	19	20	14	14	17	18
Zinc	[a]NA/2500 [b]23000	150	47	25	28	140	68
Aroclor 1016	[a]NA/50 [b]0.22 [d]50	ND	ND	ND	ND	ND	ND
Aroclor 1221	[a]NA/50 [b]0.22 [d]50	ND	ND	ND	ND	ND	ND
Aroclor 1232	[a]NA/50 [b]0.22 [d]50	ND	ND	ND	ND	ND	ND
Aroclor 1242	[a]NA/50 [b]0.22 [d]50	ND	ND	ND	ND	ND	ND
Aroclor 1248	[a]NA/50 [b]0.22 [d]50	ND	ND	ND	ND	ND	ND
Aroclor 1254	[a]NA/50 [b]0.22 [d]50	0.072	ND	ND	0.22	ND	0.1
Aroclor 1260	[a]NA/50 [b]0.22 [d]50	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene		ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene		ND	ND	ND	ND	ND	ND
1,2-Diphenylhydrazine (as Azobenzene)		ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene		ND	ND	ND	ND	ND	ND
1,3-Dinitrobenzene		ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene		ND	ND	ND	ND	ND	ND
1-Naphthylamine		ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol		ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol		ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol		ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol		ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol		ND	ND	ND	ND	ND	ND

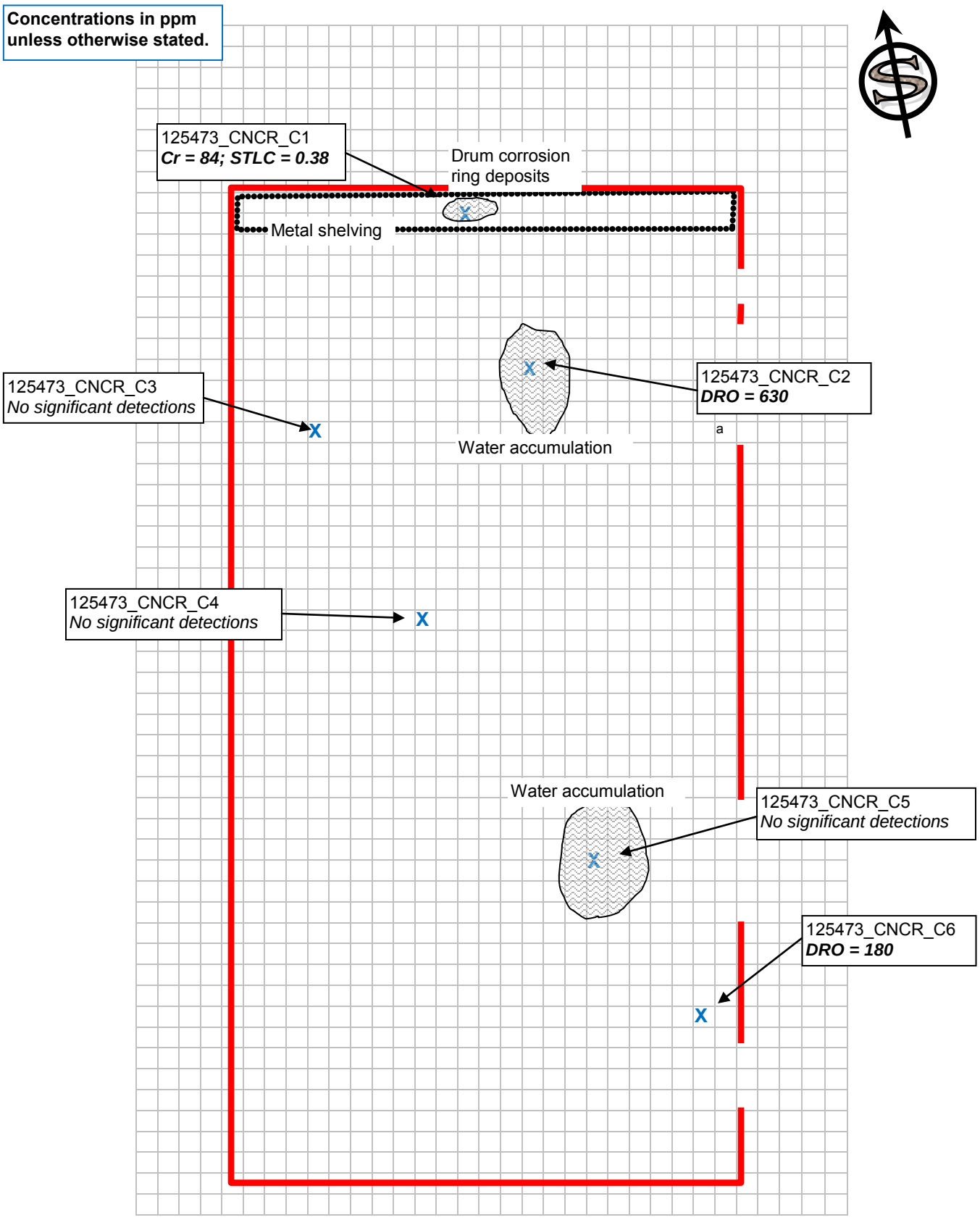
		CONCRETE					
Analyte All units ppm unless specified otherwise	Threshold Values: [a]20XTCLP/10XSTLC, [b]PRG, [c]LNDFL, [d]TSCA, [e]ESL (SFRWQCB), [f]Other CCR Title 22	125473_CNCR_C1	125473_CNCR_C2	125473_CNCR_C3	125473_CNCR_C4	125473_CNCR_C5	125473_CNCR_C6
2,4-Dinitrotoluene	[a]2.6/NA	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene		ND	ND	ND	ND	ND	ND
2-Chloronaphthalene		ND	ND	ND	ND	ND	ND
2-Chlorophenol		ND	ND	ND	ND	ND	ND
2-Methylnaphthalene		ND	ND	ND	ND	0.36	ND
2-Methylphenol		ND	ND	ND	ND	ND	ND
2-Naphthylamine		ND	ND	ND	ND	ND	ND
2-Nitroaniline		ND	ND	ND	ND	ND	ND
2-Nitrophenol		ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	[f]10	ND	ND	ND	ND	ND	ND
3-Methylphenol + 4-Methylphenol	[a]4000/NA [b]3100	ND	ND	ND	ND	ND	ND
3-Nitroaniline		ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol		ND	ND	ND	ND	ND	ND
4-Aminobiphenyl		ND	ND	ND	ND	ND	ND
4-Bromophenyl phenyl ether		ND	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol		ND	ND	ND	ND	ND	ND
4-Chloroaniline		ND	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether		ND	ND	ND	ND	ND	ND
4-Nitroaniline		ND	ND	ND	ND	ND	ND
4-Nitrophenol		ND	ND	ND	ND	ND	ND
Acenaphthene		ND	ND	ND	ND	ND	ND
Acenaphthylene	[b]3700	ND	ND	ND	ND	ND	ND
Aniline		ND	ND	ND	ND	ND	ND
Anthracene		ND	ND	ND	ND	ND	ND
Benzidine	[f]10	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene		ND	ND	ND	ND	ND	ND
Benzo[a]pyrene		ND	ND	ND	ND	ND	ND
Benzo[b]fluoranthene		ND	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	[b]NA	ND	ND	ND	ND	ND	ND
Benzo[k]fluoranthene		ND	ND	ND	ND	ND	ND
Benzoic acid	[b]100000	ND	ND	ND	ND	ND	ND
Benzyl alcohol	[b]18000	ND	ND	ND	ND	ND	ND
bis (2-chloroisopropyl) ether		ND	ND	ND	ND	ND	ND
Bis(2-chloroethoxy)methane		ND	ND	ND	ND	ND	ND
Bis(2-chloroethyl)ether		ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	[b]35	ND	ND	ND	0.3	ND	ND
Butyl benzyl phthalate	[b]12000	ND	ND	ND	ND	ND	ND
Chrysene	[b]62	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene		ND	ND	ND	ND	ND	ND
Dibenzofuran	[b]150	ND	ND	ND	ND	ND	ND
Diethyl phthalate	[b]49000	ND	ND	ND	ND	ND	ND
Dimethyl aminoazobenzene		ND	ND	ND	ND	ND	ND

		CONCRETE					
Analyte All units ppm unless specified otherwise	Threshold Values: [a]20XTCLP/10XSTLC, [b]PRG, [c]LNDFL, [d]TSCA, [e]ESL (SFRWQCB), [f]Other CCR Title 22	125473_CNCR_C1	125473_CNCR_C2	125473_CNCR_C3	125473_CNCR_C4	125473_CNCR_C5	125473_CNCR_C6
Dimethyl phthalate		ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	[b]6100	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	[b]2400	ND	ND	ND	ND	ND	ND
Fluoranthene	[b]2300	ND	ND	ND	ND	ND	ND
Fluorene	[b]2700	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	[a]2.6/NA	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	[a]10/NA	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene		ND	ND	ND	ND	ND	ND
Hexachloroethane	[a]60/NA	ND	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene		ND	ND	ND	ND	ND	ND
Isophorone	[b]510	ND	ND	0.23	ND	ND	ND
Kepone		ND	ND	ND	ND	ND	ND
Naphthalene	[b]1.7	ND	ND	ND	ND	ND	ND
Nitrobenzene		ND	ND	ND	ND	ND	ND
N-Nitrosodimethylamine		ND	ND	ND	ND	ND	ND
N-Nitrosodi-n-propylamine		ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine		ND	ND	ND	ND	ND	ND
Pentachlorophenol	[a]2000/17	ND	ND	ND	ND	ND	ND
Phenanthrene		ND	ND	ND	ND	ND	ND
Phenol	[b]18000	ND	ND	ND	ND	ND	ND
Pyrene	[b]2300	ND	ND	ND	ND	ND	ND

Appendix B

Bldg. 4015 Sample Collection Points and Significant Detections

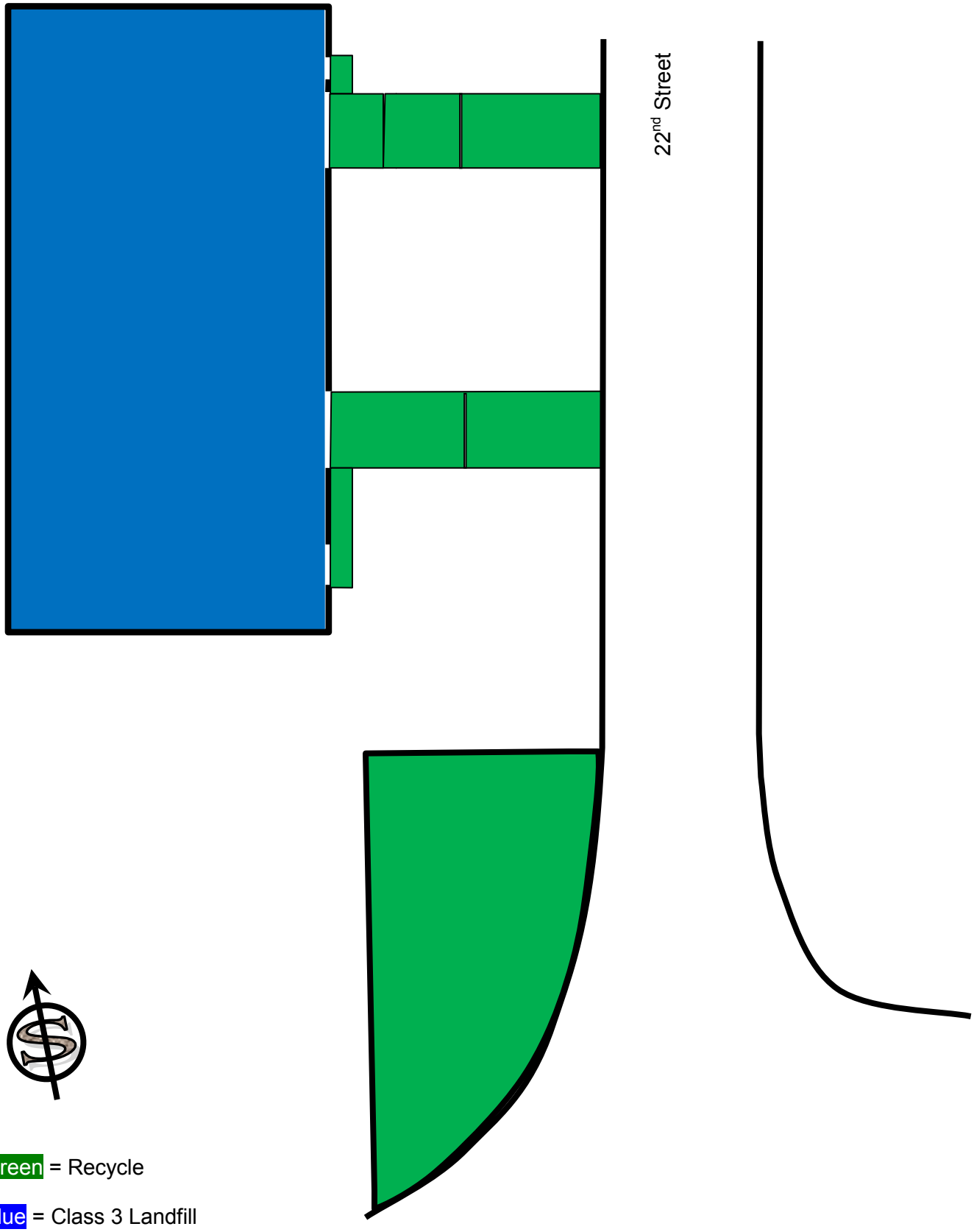
Figure 1 Bldg. 4015 Significant Waste Characterization Detections



Appendix C

Waste Dispositions

Figure 2 Bldg. 4015 Waste Dispositions



Attachment C

Radiological Release Survey and Waste Certification

Building 4015, Area IV
Radiological Release Survey and
Waste Certification

Introduction

This data package provides the pre-demolition radiation survey results of the Building 4015 in 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].

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 251 to 337 dpm/100 cm^2 alpha and 687 to 1,025 dpm/100 cm^2 beta (Ludlum 43-89 probe). Removable activity MDAs for the Tennelec were 10 to 17 dpm/100 cm^2 alpha and 23 to 28 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 and 3.

Results

440 surface activity measurements and 110 exposure measurements were taken at Building 4015.

The majority (439 of 440 or 99.8%) 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].

[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 (439 of 440 or 99.8%) 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.

Conclusions

Building 4015 is not a former radiological facility.

The post-demolition debris is certified to be radiologically acceptable for off-site disposal and/or recycling. There are no radiological controls or restrictions imposed on future disposition or use of this debris.

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

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

[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

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

Interior

RADIATION SURVEY REPORT

FACILITY: Area IV

LOCATION: B4015 interior

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	5/8/2012	5/9/2012	wall		< 20	< 100	0	0	9
2	5/8/2012	5/9/2012	girder		< 20	< 100	0	0	7
3	5/8/2012	5/9/2012	wall		< 20	< 100	0	219	7
4	5/8/2012	5/9/2012	↓		< 20	< 100	0	0	9
5	5/8/2012	5/9/2012			< 20	< 100	0	362	9
6	5/8/2012	5/9/2012	girder		< 20	< 100	0	0	8
7	5/8/2012	5/9/2012	wall		< 20	< 100	0	481	8
8	5/8/2012	5/9/2012	wall		< 20	< 100	0	302	9
9	5/8/2012	5/9/2012	shelf bracket		< 20	< 100	0	0	8
10	5/8/2012	5/9/2012	wall		< 20	< 100	0	243	9
11	5/8/2012	5/9/2012	wall		< 20	< 100	0	433	9
12	5/8/2012	5/9/2012	shelf bracket		< 20	< 100	0	0	9
13	5/8/2012	5/9/2012	wall		< 20	< 100	0	0	8
14	5/8/2012	5/9/2012	shelf bracket		< 20	< 100	0	0	8
15	5/8/2012	5/9/2012	metal plate		< 20	< 100	0	0	7
16	5/8/2012	5/9/2012	metal plate		< 20	< 100	0	0	6
17	5/8/2012	5/9/2012	wall		< 20	< 100	0	0	7
18	5/8/2012	5/9/2012	door		< 20	< 100	0	29	7
19	5/8/2012	5/9/2012	wall		< 20	< 100	0	0	8
20	5/8/2012	5/9/2012	wall		< 20	< 100	0	183	9

COMMENTS: MDA = minimum detectable activity

[1]Tennelec (MDA = 10 dpm/100 cm^2 α and 23 dpm/100 cm^2 β)

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

(MDA 295 - 303 dpm/100 cm^2 α and 697 - 966 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	2.5	9	238 to 470	5 to 11 μrem/h
INSTR. EFFICIENCY	30.14%	36.94%	18.4%	16.8%	NA
COUNT TIME	1 min.		1 min		Scan

SAMPLED BY: E. Sorrels DATE: 5/11/2012

REVIEWED BY: Phil Rutherford DATE: 5/21/2012

FORM 732-A REV 2012-01-31

BOEING®

RADIATION SURVEY REPORT

FACILITY: Area IV

LOCATION: B4015 interior

LOCATION NUMBER	DATE SAMPLED	DATE MONITORED	PURPOSE: / 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	5/8/2012	5/9/2012	girder		< 20	< 100	0	0	8
22	5/8/2012	5/9/2012	wall		< 20	< 100	0	338	8
23	5/8/2012	5/9/2012	girder		< 20	< 100	0	0	9
24	5/8/2012	5/9/2012	door		< 20	< 100	0	0	9
25	5/8/2012	5/9/2012	wall		< 20	< 100	0	160	10
26	5/8/2012	5/9/2012	controller box		< 20	< 100	0	0	7
27	5/8/2012	5/9/2012	metal plate		< 20	< 100	0	0	7
28	5/8/2012	5/9/2012	top of tool box		< 20	< 100	0	0	8
29	5/8/2012	5/9/2012	top of shelf		< 20	< 100	0	0	8
30	5/8/2012	5/9/2012	pallet jack		< 20	< 100	0	0	9
31	5/8/2012	5/9/2012	inside metal box		< 20	< 100	0	0	7
32	5/8/2012	5/9/2012	bottom of cart		< 20	< 100	0	219	7
33	5/8/2012	5/9/2012	transformer		< 20	< 100	0	0	6
34	5/8/2012	5/9/2012	floor		< 20	< 100	0	0	8
35	5/8/2012	5/9/2012			< 20	< 100	0	0	9
36	5/8/2012	5/9/2012			< 20	< 100	0	0	9
37	5/8/2012	5/9/2012			< 20	< 100	0	0	9
38	5/8/2012	5/9/2012			< 20	< 100	0	0	10
39	5/8/2012	5/9/2012			< 20	< 100	0	0	8
40	5/8/2012	5/9/2012			< 20	< 100	0	0	8

COMMENTS: MDA = minimum detectable activity

[1]Tennelec (MDA = 10 dpm/100 cm^2 α and 23 dpm/100 cm^2 β)

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

(MDA 295 - 303 dpm/100 cm^2 α and 697 - 966 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	2.5	2 to 9	238 to 470	5 to 11 µrem/h
INSTR. EFFICIENCY	30.14%	36.94%	18.4%	16.8%	NA
COUNT TIME	1 min.		1 min		Scan

SAMPLED BY: E. Sorrels DATE: 5/11/2012

REVIEWED BY: Phil Rutherford DATE: 5/21/2012

FORM 732-A REV 2012-01-31

RADIATION SURVEY REPORT

FACILITY: Area IV

LOCATION: B4015 interior

LOCATION NUMBER	DATE SAMPLED	DATE MONITORED	PURPOSE: / 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
41	5/8/2012	5/9/2012	floor		< 20	< 100	0	0	9
42	5/8/2012	5/9/2012			< 20	< 100	0	0	9
43	5/8/2012	5/9/2012			< 20	< 100	0	0	8
44	5/8/2012	5/9/2012			< 20	< 100	0	0	8
45	5/8/2012	5/9/2012			< 20	< 100	0	0	8
46	5/8/2012	5/9/2012			< 20	< 100	0	0	9
47	5/8/2012	5/9/2012			< 20	< 100	0	0	9
48	5/8/2012	5/9/2012			< 20	< 100	0	0	9
49	5/8/2012	5/9/2012			< 20	< 100	0	0	9
50	5/8/2012	5/9/2012			< 20	< 100	0	0	9
51	5/8/2012	5/9/2012			< 20	< 100	0	0	9
52	5/8/2012	5/9/2012			< 20	< 100	0	0	9
53	5/8/2012	5/9/2012			< 20	< 100	0	0	9
54	5/8/2012	5/9/2012			< 20	< 100	0	0	9

COMMENTS: MDA = minimum detectable activity

[1]Tennelec (MDA = 10 dpm/100 cm^2 α and 23 dpm/100 cm^2 β)

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

(MDA 295 - 303 dpm/100 cm^2 α and 697 - 966 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	2.5	2 to 9	238 to 470	5 to 11 µrem/h
INSTR. EFFICIENCY	30.14%	36.94%	18.4%	16.8%	NA
COUNT TIME	1 min.		1 min		Scan

SAMPLED BY: E. Sorrels DATE: 5/11/2012

REVIEWED BY: Phil Rutherford DATE: 5/21/2012

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FORM 732-A REV 2012-01-31

RADIATION SURVEY REPORT

FACILITY: Area IV

LOCATION: B4015 interior

LOCATION NUMBER	DATE SAMPLED	DATE MONITORED	PURPOSE: / 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
55	5/11/2012	5/11/2012	girder		< 20	< 100	0	0	7
56	5/11/2012	5/11/2012	wall		< 20	< 100	0	486	6
57	5/11/2012	5/11/2012	support bear		< 20	< 100	0	212	7
58	5/11/2012	5/11/2012	shelf stand		< 20	< 100	0	140	6
59	5/11/2012	5/11/2012	floor		< 20	< 100	0	0	8
60	5/11/2012	5/11/2012	↓		< 20	< 100	0	0	8
61	5/11/2012	5/11/2012	↓		< 20	< 100	0	0	8

COMMENTS: MDA = minimum detectable activity

[1]Tennelec (MDA = 14 dpm/100 cm^2 α and 28 dpm/100 cm^2 β)

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

(MDA 303 - 337 dpm/100 cm^2 α and 687 - 973 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)	0.1	4.1	9 to 12	230 to 477	5 to 11 µrem/h
INSTR. EFFICIENCY	29.65%	36.54%	18.4%	16.8%	NA
COUNT TIME	1 min.		1 min		Scan

SAMPLED BY: E. Sorrels DATE: 5/11/2012

REVIEWED BY: Phil Rutherford DATE: 5/21/2012

FORM 732-A REV 2012-01-31

Surface Activity Calculation using Daily Background and MDA

Facility	Area IV
Location	B4014 interior
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							
Sample	**Date**	**Description (Location, Object)**	**Material Type**	**Bkgd Count Time (min)**	**Sample Count Time (min)**	**Bkgd Gross Count**	**Bkgd Count Rate (cpm)**	**Bkgd Gross Activity (dpm/ 100 cm^2)**	**L_C (counts)**	**L_D (counts)**	**MDA (dpm/ 100 cm^2)**	**Bkgd Count Time (min)**	**Sample Count Time (min)**	**Bkgd Gross Count**	**Bkgd Count Rate (cpm)**	**Bkgd Gross Activity (dpm/ 100 cm^2)**	**L_C (counts)**	**L_D (counts)**	**MDA (dpm/ 100 cm^2)**
1	5/9/2012	31-436 Reference Location	Concrete	5	1	46	9	200	5	14	303	5	1	2351	470	5598	39	81	966
2	5/9/2012	31-436 Reference Location	Asphalt	5	1	11	2	48	3	8	181	5	1	2502	500	5957	40	84	995
3	5/9/2012	31-436 Reference Location	Construction	5	1	43	9	187	5	14	295	5	1	1188	238	2829	28	59	697
4																			
5																			
		Average	**Miscellaneous**	**5**	**1**	**33**	**7**	**145**	**4**	**12**	**260**	**5**	**1**	**2014**	**403**	**4794**	**36**	**74**	**886**

Sample Area Measurements

				Alpha								Beta							
Sample	**Date**	**Description (Location, Object)**	**Material Type**	**Sample Count Time (min)**	**Gross Sample Count**	**Gross Count Rate (cpm)**	**Bkgd Count Rate (cpm)**	**Net Count Rate (cpm)**	**Net Activity (dpm/ 100 cm^2)**	**MDA (dpm/ 100 cm^2)**	**> MDA or < MDA ?**	**Sample Count Time (min)**	**Gross Sample Count**	**Gross Count Rate (cpm)**	**Bkgd Count Rate (cpm)**	**Net Count Rate (cpm)**	**Net Activity (dpm/ 100 cm^2)**	**MDA (dpm/ 100 cm^2)**	**> MDA or < MDA ?**
1	5/9/2012	wall	Construction	1	1	1	9	-8	0	295	<MDA	1	214	214	238	-24	0	697	<MDA
2	5/9/2012	girder	Construction	1	1	1	9	-8	0	295	<MDA	1	203	203	238	-35	0	697	<MDA
3	5/9/2012	wall	Construction	1	1	1	9	-8	0	295	<MDA	1	256	256	238	18	219	697	<MDA
4	5/9/2012	↓	Construction	1	2	2	9	-7	0	295	<MDA	1	234	234	238	-4	0	697	<MDA
5	5/9/2012		Construction	1	2	2	9	-7	0	295	<MDA	1	268	268	238	30	362	697	<MDA
6	5/9/2012	girder	Construction	1	4	4	9	-5	0	295	<MDA	1	212	212	238	-26	0	697	<MDA
7	5/9/2012	wall	Construction	1	3	3	9	-6	0	295	<MDA	1	278	278	238	40	481	697	<MDA
8	5/9/2012	wall	Construction	1	1	1	9	-8	0	295	<MDA	1	263	263	238	25	302	697	<MDA
9	5/9/2012	shelf bracket	Construction	1	2	2	9	-7	0	295	<MDA	1	203	203	238	-35	0	697	<MDA
10	5/9/2012	wall	Construction	1	2	2	9	-7	0	295	<MDA	1	258	258	238	20	243	697	<MDA
11	5/9/2012	wall	Construction	1	0	0	9	-9	0	295	<MDA	1	274	274	238	36	433	697	<MDA
12	5/9/2012	shelf bracket	Construction	1	3	3	9	-6	0	295	<MDA	1	202	202	238	-36	0	697	<MDA
13	5/9/2012	wall	Construction	1	1	1	9	-8	0	295	<MDA	1	212	212	238	-26	0	697	<MDA
14	5/9/2012	shelf bracket	Construction	1	1	1	9	-8	0	295	<MDA	1	220	220	238	-18	0	697	<MDA
15	5/9/2012	metal plate	Construction	1	2	2	9	-7	0	295	<MDA	1	188	188	238	-50	0	697	<MDA
16	5/9/2012	metal plate	Construction	1	4	4	9	-5	0	295	<MDA	1	206	206	238	-32	0	697	<MDA
17	5/9/2012	wall	Construction	1	2	2	9	-7	0	295	<MDA	1	232	232	238	-6	0	697	<MDA
18	5/9/2012	door	Construction	1	2	2	9	-7	0	295	<MDA	1	240	240	238	2	29	697	<MDA
19	5/9/2012	wall	Construction	1	1	1	9	-8	0	295	<MDA	1	227	227	238	-11	0	697	<MDA
20	5/9/2012	wall	Construction	1	1	1	9	-8	0	295	<MDA	1	253	253	238	15	183	697	<MDA
21	5/9/2012	girder	Construction	1	1	1	9	-8	0	295	<MDA	1	209	209	238	-29	0	697	<MDA
22	5/9/2012	wall	Construction	1	1	1	9	-8	0	295	<MDA	1	266	266	238	28	338	697	<MDA
23	5/9/2012	girder	Construction	1	2	2	9	-7	0	295	<MDA	1	230	230	238	-8	0	697	<MDA
24	5/9/2012	door	Construction	1	0	0	9	-9	0	295	<MDA	1	213	213	238	-25	0	697	<MDA
25	5/9/2012	wall	Construction	1	0	0	9	-9	0	295	<MDA	1	251	251	238	13	160	697	<MDA
26	5/9/2012	controller box	Construction	1	6	6	9	-3	0	295	<MDA	1	227	227	238	-11	0	697	<MDA
27	5/9/2012	metal plate	Construction	1	9	9	9	0	9	295	<MDA	1	200	200	238	-38	0	697	<MDA
28	5/9/2012	top of tool box	Construction	1	1	1	9	-8	0	295	<MDA	1	206	206	238	-32	0	697	<MDA
29	5/9/2012	top of shelf	Construction	1	0	0	9	-9	0	295	<MDA	1	235	235	238	-3	0	697	<MDA
30	5/9/2012	pallet jack	Construction	1	6	6	9	-3	0	295	<MDA	1	213	213	238	-25	0	697	<MDA

Surface Activity Calculation using Daily Background and MDA

Facility	Area IV
Location	B4014 interior
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							
Sample	**Date**	**Description (Location, Object)**	**Material Type**	**Bkgd Count Time (min)**	**Sample Count Time (min)**	**Bkgd Gross Count**	**Bkgd Count Rate (cpm)**	**Bkgd Gross Activity (dpm/ 100 cm^2)**	**L_C (counts)**	**L_D (counts)**	**MDA (dpm/ 100 cm^2)**	**Bkgd Count Time (min)**	**Sample Count Time (min)**	**Bkgd Gross Count**	**Bkgd Count Rate (cpm)**	**Bkgd Gross Activity (dpm/ 100 cm^2)**	**L_C (counts)**	**L_D (counts)**	**MDA (dpm/ 100 cm^2)**
1	5/9/2012	31-436 Reference Location	Concrete	5	1	46	9	200	5	14	303	5	1	2351	470	5598	39	81	966
2	5/9/2012	31-436 Reference Location	Asphalt	5	1	11	2	48	3	8	181	5	1	2502	500	5957	40	84	995
3	5/9/2012	31-436 Reference Location	Construction	5	1	43	9	187	5	14	295	5	1	1188	238	2829	28	59	697
4																			
5																			
		Average	**Miscellaneous**	**5**	**1**	**33**	**7**	**145**	**4**	**12**	**260**	**5**	**1**	**2014**	**403**	**4794**	**36**	**74**	**886**

Sample Area Measurements

				Alpha								Beta							
Sample	**Date**	**Description (Location, Object)**	**Material Type**	**Sample Count Time (min)**	**Gross Sample Count**	**Gross Count Rate (cpm)**	**Bkgd Count Rate (cpm)**	**Net Count Rate (cpm)**	**Net Activity (dpm/ 100 cm^2)**	**MDA (dpm/ 100 cm^2)**	**> MDA or < MDA ?**	**Sample Count Time (min)**	**Gross Sample Count**	**Gross Count Rate (cpm)**	**Bkgd Count Rate (cpm)**	**Net Count Rate (cpm)**	**Net Activity (dpm/ 100 cm^2)**	**MDA (dpm/ 100 cm^2)**	**> MDA or < MDA ?**
31	5/9/2012	inside metal box	Construction	1	1	1	9	-8	0	295	<MDA	1	177	177	238	-61	0	697	<MDA
32	5/9/2012	bottom of cart	Construction	1	6	6	9	-3	0	295	<MDA	1	256	256	238	18	219	697	<MDA
33	5/9/2012	transformer	Construction	1	3	3	9	-6	0	295	<MDA	1	206	206	238	-32	0	697	<MDA
34	5/9/2012	floor	Concrete	1	0	0	9	-9	0	303	<MDA	1	353	353	470	-117	0	966	<MDA
35	5/9/2012		Concrete	1	5	5	9	-4	0	303	<MDA	1	414	414	470	-56	0	966	<MDA
36	5/9/2012		Concrete	1	2	2	9	-7	0	303	<MDA	1	403	403	470	-67	0	966	<MDA
37	5/9/2012		Concrete	1	3	3	9	-6	0	303	<MDA	1	413	413	470	-57	0	966	<MDA
38	5/9/2012		Concrete	1	4	4	9	-5	0	303	<MDA	1	401	401	470	-69	0	966	<MDA
39	5/9/2012		Concrete	1	2	2	9	-7	0	303	<MDA	1	394	394	470	-76	0	966	<MDA
40	5/9/2012		Concrete	1	3	3	9	-6	0	303	<MDA	1	392	392	470	-78	0	966	<MDA
41	5/9/2012		Concrete	1	5	5	9	-4	0	303	<MDA	1	353	353	470	-117	0	966	<MDA
42	5/9/2012		Concrete	1	2	2	9	-7	0	303	<MDA	1	411	411	470	-59	0	966	<MDA
43	5/9/2012		Concrete	1	5	5	9	-4	0	303	<MDA	1	409	409	470	-61	0	966	<MDA
44	5/9/2012		Concrete	1	4	4	9	-5	0	303	<MDA	1	387	387	470	-83	0	966	<MDA
45	5/9/2012		Concrete	1	2	2	9	-7	0	303	<MDA	1	417	417	470	-53	0	966	<MDA
46	5/9/2012		Concrete	1	4	4	9	-5	0	303	<MDA	1	327	327	470	-143	0	966	<MDA
47	5/9/2012		Concrete	1	0	0	9	-9	0	303	<MDA	1	453	453	470	-17	0	966	<MDA
48	5/9/2012		Concrete	1	4	4	9	-5	0	303	<MDA	1	375	375	470	-95	0	966	<MDA
49	5/9/2012		Concrete	1	2	2	9	-7	0	303	<MDA	1	446	446	470	-24	0	966	<MDA
50	5/9/2012		Concrete	1	0	0	9	-9	0	303	<MDA	1	392	392	470	-78	0	966	<MDA
51	5/9/2012		Concrete	1	1	1	9	-8	0	303	<MDA	1	363	363	470	-107	0	966	<MDA
52	5/9/2012		Concrete	1	0	0	9	-9	0	303	<MDA	1	427	427	470	-43	0	966	<MDA
53	5/9/2012		Concrete	1	2	2	9	-7	0	303	<MDA	1	408	408	470	-62	0	966	<MDA
54	5/9/2012		Concrete	1	2	2	9	-7	0	303	<MDA	1	431	431	470	-39	0	966	<MDA

Surface Activity Calculation using Daily Background and MDA

Facility	Area IV
Location	B4015 interior
Purpose	pre-demolition

Input data in blue cells

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

Daily Background Measurements

				Alpha								Beta							
Sample	**Date**	**Description (Location, Object)**	**Material Type**	**Bkgd Count Time (min)**	**Sample Count Time (min)**	**Bkgd Gross Count**	**Bkgd Count Rate (cpm)**	**Bkgd Gross Activity (dpm/ 100 cm^2)**	**L_C (counts)**	**L_D (counts)**	**MDA (dpm/ 100 cm^2)**	**Bkgd Count Time (min)**	**Sample Count Time (min)**	**Bkgd Gross Count**	**Bkgd Count Rate (cpm)**	**Bkgd Gross Activity (dpm/ 100 cm^2)**	**L_C (counts)**	**L_D (counts)**	**MDA (dpm/ 100 cm^2)**
1	5/11/2012	31-436 Reference Location	Concrete	5	1	46	9	200	5	14	303	5	1	2385	477	5679	39	82	973
2	5/11/2012	31-436 Reference Location	Asphalt	5	1	28	6	122	4	12	251	5	1	2659	532	6331	42	86	1025
3	5/11/2012	31-436 Reference Location	Construction	5	1	60	12	261	6	15	337	5	1	1151	230	2740	27	58	687
4																			
5																			
		Average	**Miscellaneous**	**5**	**1**	**45**	**9**	**194**	**5**	**14**	**297**	**5**	**1**	**2065**	**413**	**4917**	**36**	**75**	**895**

Sample Area Measurements

				Alpha								Beta							
Sample	**Date**	**Description (Location, Object)**	**Material Type**	**Sample Count Time (min)**	**Gross Sample Count**	**Gross Count Rate (cpm)**	**Bkgd Count Rate (cpm)**	**Net Count Rate (cpm)**	**Net Activity (dpm/ 100 cm^2)**	**MDA (dpm/ 100 cm^2)**	**> MDA or < MDA ?**	**Sample Count Time (min)**	**Gross Sample Count**	**Gross Count Rate (cpm)**	**Bkgd Count Rate (cpm)**	**Net Count Rate (cpm)**	**Net Activity (dpm/ 100 cm^2)**	**MDA (dpm/ 100 cm^2)**	**> MDA or < MDA ?**
55	5/11/2012	girder	Construction	1	2	2	12	-10	0	337	<MDA	1	188	188	230	-42	0	687	<MDA
56	5/11/2012	wall	Construction	1	1	1	12	-11	0	337	<MDA	1	271	271	230	41	486	687	<MDA
57	5/11/2012	support beam	Construction	1	2	2	12	-10	0	337	<MDA	1	248	248	230	18	212	687	<MDA
58	5/11/2012	shelf stand	Construction	1	0	0	12	-12	0	337	<MDA	1	242	242	230	12	140	687	<MDA
59	5/11/2012	floor	Concrete	1	4	4	9	-5	0	303	<MDA	1	434	434	477	-43	0	973	<MDA
60	5/11/2012	↓	Concrete	1	5	5	9	-4	0	303	<MDA	1	396	396	477	-81	0	973	<MDA
61	5/11/2012	↓	Concrete	1	1	1	9	-8	0	303	<MDA	1	433	433	477	-44	0	973	<MDA

Sample Report

Batch ID:	Smears 1 Minute Count - 201205081622	**Count Date:**	5/8/2012 4:22:35PM
Group:	D	**Count Minutes:**	1.00
Device:	RMHF Tennelec (NR 007137)	**Count Mode:**	Simultaneous
Batch Key:	2721	**Operating Volts:**	1455
Selected	Swipe/Smear	**Comments:**	Area IV B4015 interior smear

Background (cpm)		Efficiency (%)	
Alpha Rate:	0.00 ± 0.00	**Alpha:**	30.14 ± 0.90
Beta Rate:	2.50 ± 0.50	**Beta:**	36.94 ± 0.94

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
1	Unknown	0.00	0.00	10.00	9.48	6.77	23.00
2	Unknown	0.00	0.00	10.00	14.89	7.78	23.00
3	Unknown	0.00	0.00	10.00	-1.35	4.06	23.00
4	Unknown	0.00	0.00	10.00	1.35	4.88	23.00
5	Unknown	0.00	0.00	10.00	9.48	6.77	23.00
6	Unknown	0.00	0.00	10.00	12.18	7.30	23.00
7	Unknown	0.00	0.00	10.00	-4.06	3.03	23.00
8	Unknown	0.00	0.00	10.00	4.06	5.58	23.00
9	Unknown	0.00	0.00	10.00	9.48	6.77	23.00
10	Unknown	0.00	0.00	10.00	4.06	5.58	23.00
11	Unknown	0.00	0.00	10.00	-4.06	3.03	23.00
12	Unknown	0.00	0.00	10.00	1.35	4.88	23.00
13	Unknown	0.00	0.00	10.00	14.89	7.78	23.00
14	Unknown	0.00	0.00	10.00	4.06	5.58	23.00
15	Unknown	0.00	0.00	10.00	-4.06	3.03	23.00
16	Unknown	0.00	0.00	10.00	4.06	5.58	23.00
17	Unknown	0.00	0.00	10.00	-1.35	4.06	23.00
18	Unknown	0.00	0.00	10.00	4.06	5.58	23.00
19	Unknown	0.00	0.00	10.00	6.77	6.21	23.00
20	Unknown	0.00	0.00	10.00	1.35	4.88	23.00
21	Unknown	3.32	3.32	10.00	12.18	7.30	23.00
22	Unknown	3.32	3.32	10.00	14.89	7.78	23.00
23	Unknown	3.32	3.32	10.00	12.18	7.30	23.00
24	Unknown	3.32	3.32	10.00	1.35	4.88	23.00
25	Unknown	0.00	0.00	10.00	9.48	6.77	23.00
26	Unknown	0.00	0.00	10.00	1.35	4.88	23.00
27	Unknown	0.00	0.00	10.00	6.77	6.21	23.00
28	Unknown	0.00	0.00	10.00	14.89	7.78	23.00
29	Unknown	0.00	0.00	10.00	1.35	4.88	23.00
30	Unknown	0.00	0.00	10.00	9.48	6.77	23.00
31	Unknown	6.64	4.70	10.00	-1.35	4.06	23.00
32	Unknown	0.00	0.00	10.00	1.35	4.88	23.00
33	Unknown	0.00	0.00	10.00	1.35	4.88	23.00
34	Unknown	0.00	0.00	10.00	-1.35	4.06	23.00
35	Unknown	0.00	0.00	10.00	-4.06	3.03	23.00
36	Unknown	0.00	0.00	10.00	6.77	6.21	23.00
37	Unknown	3.32	3.32	10.00	4.06	5.58	23.00
38	Unknown	0.00	0.00	10.00	-1.35	4.06	23.00
39	Unknown	0.00	0.00	10.00	6.77	6.21	23.00
40	Unknown	0.00	0.00	10.00	6.77	6.21	23.00
41	Unknown	0.00	0.00	10.00	6.77	6.21	23.00

Batch ID:	Smears 1 Minute Count - 201205081622	**Count Date:**	5/8/2012 4:22:35PM
Group:	D	**Count Minutes:**	1.00
Device:	RMHF Tennelec (NR 007137)	**Count Mode:**	Simultaneous
Batch Key:	2721	**Operating Volts:**	1455
Selected	Swipe/Smear	**Comments:**	Area IV B4015 interior smear

Background (cpm)		**Efficiency (%)**	
Alpha Rate:	0.00 ± 0.00	**Alpha:**	30.14 ± 0.90
Beta Rate:	2.50 ± 0.50	**Beta:**	36.94 ± 0.94

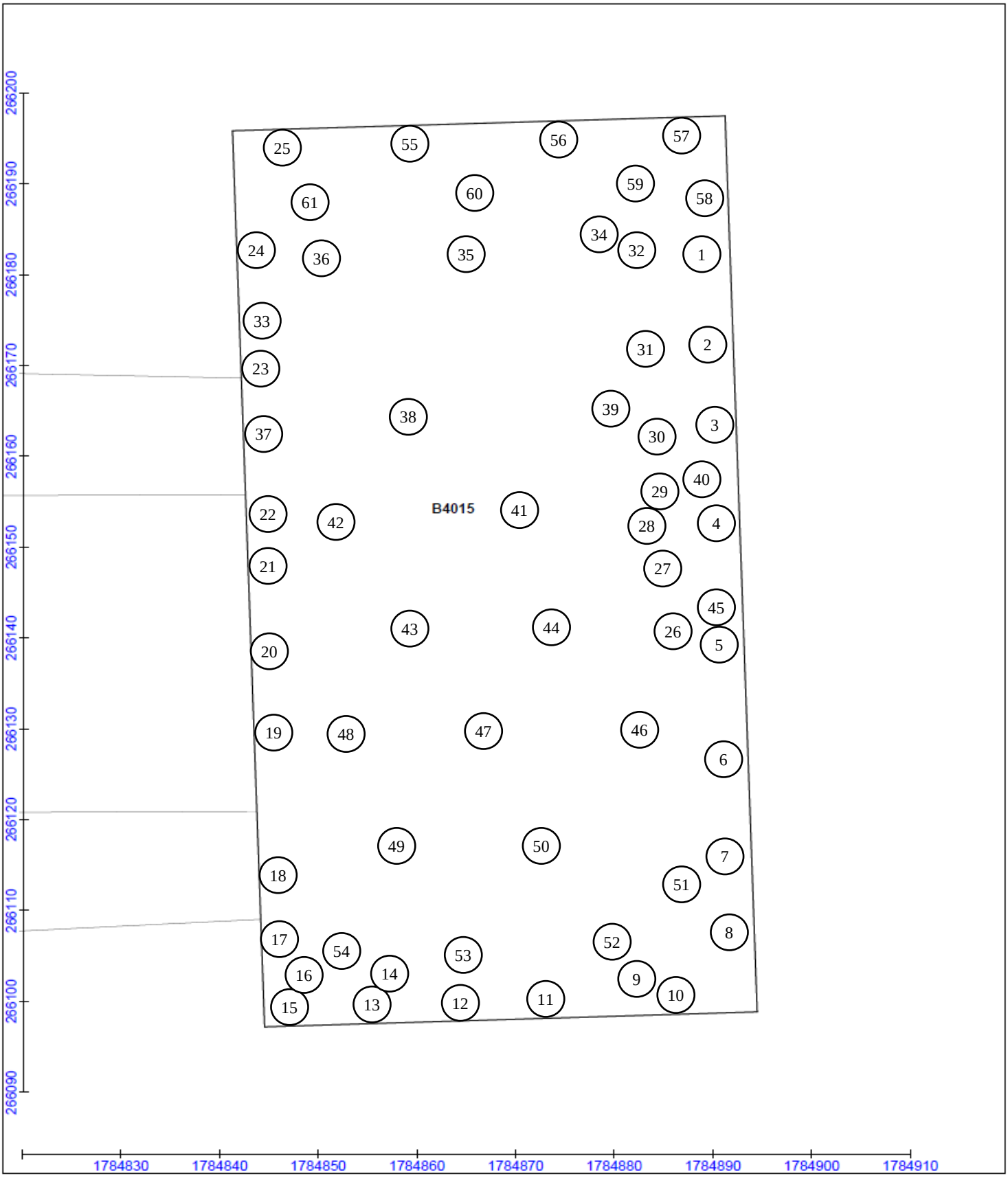
Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
42	Unknown	0.00	0.00	10.00	4.06	5.58	23.00
43	Unknown	0.00	0.00	10.00	6.77	6.21	23.00
44	Unknown	0.00	0.00	10.00	6.77	6.21	23.00
45	Unknown	6.64	4.70	10.00	4.06	5.58	23.00
46	Unknown	3.32	3.32	10.00	4.06	5.58	23.00
47	Unknown	0.00	0.00	10.00	12.18	7.30	23.00
48	Unknown	0.00	0.00	10.00	4.06	5.58	23.00
49	Unknown	6.64	4.70	10.00	1.35	4.88	23.00
50	Unknown	0.00	0.00	10.00	4.06	5.58	23.00
51	Unknown	3.32	3.32	10.00	1.35	4.88	23.00
52	Unknown	0.00	0.00	10.00	9.48	6.77	23.00
53	Unknown	0.00	0.00	10.00	14.89	7.78	23.00
54	Unknown	0.00	0.00	10.00	4.06	5.58	23.00

Sample Report

Batch ID:	Smears 1 Minute Count - 201205111435	**Count Date:**	5/11/2012 2:35:13PM
Group:	D	**Count Minutes:**	1.00
Device:	RMHF Tennelec (NR 007137)	**Count Mode:**	Simultaneous
Batch Key:	2737	**Operating Volts:**	1455
Selected	Swipe/Smear	**Comments:**	Area I B4015 interior north area smear

Background (cpm)		Efficiency (%)	
Alpha Rate:	0.10 ± 0.10	**Alpha:**	29.65 ± 0.89
Beta Rate:	4.10 ± 0.64	**Beta:**	36.54 ± 0.93

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
55	Unknown	-0.34	0.34	14.00	-3.01	5.05	28.00
56	Unknown	-0.34	0.34	14.00	-0.27	5.75	28.00
57	Unknown	-0.34	0.34	14.00	5.20	6.93	28.00
58	Unknown	-0.34	0.34	14.00	2.46	6.37	28.00
59	Unknown	-0.34	0.34	14.00	-0.27	5.75	28.00
60	Unknown	-0.34	0.34	14.00	-8.48	3.26	28.00
61	Unknown	-0.34	0.34	14.00	-8.48	3.26	28.00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Appendix 3

Field Survey Results

Exterior & Structures

RADIATION SURVEY REPORT

FACILITY: Area IV B4015

LOCATION: Exterior & structures

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	5/9/2012	5/11/2012	wall		< 20	< 100	0	248	9
2	5/9/2012	5/11/2012	truck door		< 20	< 100	0	188	7
3	5/9/2012	5/11/2012	wall		< 20	< 100	0	140	8
4	5/9/2012	5/11/2012			< 20	< 100	0	271	6
5	5/9/2012	5/11/2012			< 20	< 100	0	10	7
6	5/9/2012	5/11/2012			< 20	< 100	0	271	7
7	5/9/2012	5/11/2012			< 20	< 100	0	33	7
8	5/9/2012	5/11/2012			< 20	< 100	0	355	7
9	5/9/2012	5/11/2012			< 20	< 100	0	248	7
10	5/9/2012	5/11/2012			< 20	< 100	0	367	7
11	5/9/2012	5/11/2012			< 20	< 100	0	343	7
12	5/9/2012	5/11/2012			< 20	< 100	0	260	7
13	5/9/2012	5/11/2012			< 20	< 100	0	129	7
14	5/9/2012	5/11/2012			< 20	< 100	0	152	7
15	5/9/2012	5/11/2012	fire main header pipe		< 20	< 100	0	926	8
16	5/9/2012	5/11/2012	wall		< 20	< 100	0	402	8
17	5/9/2012	5/11/2012			< 20	< 100	0	379	7
18	5/9/2012	5/11/2012			< 20	< 100	0	426	8
19	5/9/2012	5/11/2012			< 20	< 100	0	390	7
20	5/9/2012	5/11/2012			< 20	< 100	0	271	9

COMMENTS: MDA = minimum detectable activity

[1]Tennelec (MDA = 17 dpm/100 cm^2 α and 26 dpm/100 cm^2 β)

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

(MDA 251 - 337 dpm/100 cm^2 α and 687 - 1025 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)	0.4	3.4	6 to 12	230 to 532	5 to 12 μrem/h
INSTR. EFFICIENCY	30.43%	36.91%	18.4%	16.8%	NA
COUNT TIME	1 min.		1 min		Scan

SAMPLED BY: E. Sorrels DATE: 5/11/2012

REVIEWED BY: Phil Rutherford DATE: 5/21/2012

FORM 732-A REV 2012-01-31

RADIATION SURVEY REPORT

FACILITY: Area IV B4015

LOCATION: Exterior & structures

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	5/9/2012	5/11/2012	wall		< 20	< 100	0	260	8
22	5/9/2012	5/11/2012	walk		< 20	< 100	30	74	8
23	5/9/2012	5/11/2012	driveway		< 20	< 100	39	0	9
24	5/9/2012	5/11/2012	"		< 20	< 100	9	0	10
25	5/9/2012	5/11/2012	"		< 20	< 100	52	0	10
26	5/9/2012	5/11/2012	"		< 20	< 100	0	0	10
27	5/9/2012	5/11/2012	"		< 20	< 100	0	0	8
28	5/9/2012	5/11/2012	"		< 20	< 100	83	0	9
29	5/9/2012	5/11/2012	▼		< 20	< 100	0	0	10
30	5/9/2012	5/11/2012	walk		< 20	< 100	0	0	9
31	5/9/2012	5/11/2012	walk		< 20	< 100	52	0	9
32	5/9/2012	5/11/2012	pad		< 20	< 100	30	0	10
33	5/9/2012	5/11/2012	"		< 20	< 100	0	0	10
34	5/9/2012	5/11/2012	"		< 20	< 100	0	0	10
35	5/9/2012	5/11/2012	"		< 20	< 100	52	0	9
36	5/9/2012	5/11/2012	"		< 20	< 100	0	0	11
37	5/9/2012	5/11/2012	"		< 20	< 100	117	0	10
38	5/9/2012	5/11/2012	▼		< 20	< 100	0	0	10
39	5/9/2012	5/11/2012	drainage		< 20	< 100	0	74	10
40	5/9/2012	5/11/2012	drainage		< 20	< 100	0	0	10

COMMENTS: MDA = minimum detectable activity

[1]Tennelec (MDA = 17 dpm/100 cm^2 α and 26 dpm/100 cm^2 β)

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

(MDA 251 - 337 dpm/100 cm^2 α and 687 - 1025 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)	0.4	3.4	6 to 12 / 230 to 532	5 to 12 µrem/h
INSTR. EFFICIENCY	30.43%	36.91%	18.4% / 16.8%	NA
COUNT TIME	1 min.		1 min	Scan

SAMPLED BY: E. Sorrels DATE: 5/11/2012

REVIEWED BY: Phil Rutherford DATE: 5/21/2012

Page 2 of 11

FORM 732-A REV 2012-01-31

RADIATION SURVEY REPORT

FACILITY: Area IV B4015

LOCATION: Exterior & structures

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
41	5/9/2012	5/11/2012	drainage		< 20	< 100	74	0	10
42	5/9/2012	5/11/2012	concrete debris		< 20	< 100	0	0	10
43	5/9/2012	5/11/2012	↓		< 20	< 100	0	0	9
44	5/9/2012	5/11/2012	↓		< 20	< 100	0	0	9

COMMENTS: MDA = minimum detectable activity

[1]Tennelec (MDA = 17 dpm/100 cm^2 α and 26 dpm/100 cm^2 β)

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

(MDA 251 - 337 dpm/100 cm^2 α and 687 - 1025 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)	0.4	3.4	6 to 12	230 to 532	5 to 12 µrem/h
INSTR. EFFICIENCY	30.43%	36.91%	18.4%	16.8%	NA
COUNT TIME	1 min.		1 min		Scan

SAMPLED BY: E. Sorrels DATE: 5/11/2012

REVIEWED BY: Phil Rutherford DATE: 5/21/2012

Page 3 of 11

FORM 732-A REV 2012-01-31

RADIATION SURVEY REPORT

FACILITY: Area IV B4015

LOCATION: Exterior & structures

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
45	5/11/2012	5/11/2012	asphalt debris		< 20	< 100	0	0	9
46	5/11/2012	5/11/2012			< 20	< 100	0	0	10
47	5/11/2012	5/11/2012			< 20	< 100	74	0	11
48	5/11/2012	5/11/2012			< 20	< 100	0	0	10
49	5/11/2012	5/11/2012			< 20	< 100	0	0	10

COMMENTS: MDA = minimum detectable activity

[1]Tennelec (MDA = 14 dpm/100 cm^2 α and 28 dpm/100 cm^2 β)

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

(MDA 251 - 337 dpm/100 cm^2 α and 687 - 1025 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)	0.1	4.1	6 to 12	230 to 532	5 to 12 μrem/h
INSTR. EFFICIENCY	29.65%	36.54%	18.4%	16.8%	NA
COUNT TIME	1 min.		1 min		Scan

SAMPLED BY: E. Sorrels DATE: 5/11/2012

REVIEWED BY: Phil Rutherford DATE: 5/21/2012

FORM 732-A REV 2012-01-31

Surface Activity Calculation using Daily Background and MDA

Facility	Area IV B4015
Location	Exterior & structures
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							
Sample	**Date**	**Description (Location, Object)**	**Material Type**	**Bkgd Count Time (min)**	**Sample Count Time (min)**	**Bkgd Gross Count**	**Bkgd Count Rate (cpm)**	**Bkgd Gross Activity (dpm/ 100 cm^2)**	**L_C (counts)**	**L_D (counts)**	**MDA (dpm/ 100 cm^2)**	**Bkgd Count Time (min)**	**Sample Count Time (min)**	**Bkgd Gross Count**	**Bkgd Count Rate (cpm)**	**Bkgd Gross Activity (dpm/ 100 cm^2)**	**L_C (counts)**	**L_D (counts)**	**MDA (dpm/ 100 cm^2)**
1	5/11/2012	31-436 Reference Location	Concrete	5	1	46	9	200	5	14	303	5	1	2385	477	5679	39	82	973
2	5/11/2012	31-436 Reference Location	Asphalt	5	1	28	6	122	4	12	251	5	1	2659	532	6331	42	86	1025
3	5/11/2012	31-436 Reference Location	Construction	5	1	60	12	261	6	15	337	5	1	1151	230	2740	27	58	687
4																			
5																			
		Average	**Miscellaneous**	**5**	**1**	**45**	**9**	**194**	**5**	**14**	**297**	**5**	**1**	**2065**	**413**	**4917**	**36**	**75**	**895**

Sample Area Measurements

				Alpha								Beta							
Sample	**Date**	**Description (Location, Object)**	**Material Type**	**Sample Count Time (min)**	**Gross Sample Count**	**Gross Count Rate (cpm)**	**Bkgd Count Rate (cpm)**	**Net Count Rate (cpm)**	**Net Activity (dpm/ 100 cm^2)**	**MDA (dpm/ 100 cm^2)**	**> MDA or < MDA ?**	**Sample Count Time (min)**	**Gross Sample Count**	**Gross Count Rate (cpm)**	**Bkgd Count Rate (cpm)**	**Net Count Rate (cpm)**	**Net Activity (dpm/ 100 cm^2)**	**MDA (dpm/ 100 cm^2)**	**> MDA or < MDA ?**
1	5/11/2012	wall	Construction	1	7	7	12	-5	0	337	<MDA	1	251	251	230	21	248	687	<MDA
2	5/11/2012	truck door	Construction	1	8	8	12	-4	0	337	<MDA	1	246	246	230	16	188	687	<MDA
3	5/11/2012	wall	Construction	1	1	1	12	-11	0	337	<MDA	1	242	242	230	12	140	687	<MDA
4	5/11/2012	"	Construction	1	2	2	12	-10	0	337	<MDA	1	253	253	230	23	271	687	<MDA
5	5/11/2012	"	Construction	1	4	4	12	-8	0	337	<MDA	1	231	231	230	1	10	687	<MDA
6	5/11/2012	"	Construction	1	6	6	12	-6	0	337	<MDA	1	253	253	230	23	271	687	<MDA
7	5/11/2012	"	Construction	1	2	2	12	-10	0	337	<MDA	1	233	233	230	3	33	687	<MDA
8	5/11/2012	"	Construction	1	5	5	12	-7	0	337	<MDA	1	260	260	230	30	355	687	<MDA
9	5/11/2012	"	Construction	1	6	6	12	-6	0	337	<MDA	1	251	251	230	21	248	687	<MDA
10	5/11/2012	"	Construction	1	7	7	12	-5	0	337	<MDA	1	261	261	230	31	367	687	<MDA
11	5/11/2012	"	Construction	1	7	7	12	-5	0	337	<MDA	1	259	259	230	29	343	687	<MDA
12	5/11/2012	"	Construction	1	7	7	12	-5	0	337	<MDA	1	252	252	230	22	260	687	<MDA
13	5/11/2012	"	Construction	1	7	7	12	-5	0	337	<MDA	1	241	241	230	11	129	687	<MDA
14	5/11/2012	"	Construction	1	4	4	12	-8	0	337	<MDA	1	243	243	230	13	152	687	<MDA
15	5/11/2012	fire main header pipe	Construction	1	2	2	12	-10	0	337	<MDA	1	308	308	230	78	926	687	>MDA
16	5/11/2012	wall	Construction	1	6	6	12	-6	0	337	<MDA	1	264	264	230	34	402	687	<MDA
17	5/11/2012	"	Construction	1	4	4	12	-8	0	337	<MDA	1	262	262	230	32	379	687	<MDA
18	5/11/2012	"	Construction	1	4	4	12	-8	0	337	<MDA	1	266	266	230	36	426	687	<MDA
19	5/11/2012	"	Construction	1	7	7	12	-5	0	337	<MDA	1	263	263	230	33	390	687	<MDA
20	5/11/2012	"	Construction	1	7	7	12	-5	0	337	<MDA	1	253	253	230	23	271	687	<MDA
21	5/11/2012	"	Construction	1	8	8	12	-4	0	337	<MDA	1	252	252	230	22	260	687	<MDA
22	5/11/2012	walk	Asphalt	1	7	7	6	1	30	251	<MDA	1	538	538	532	6	74	1025	<MDA
23	5/11/2012	driveway	Concrete	1	11	11	9	2	39	303	<MDA	1	455	455	477	-22	0	973	<MDA
24	5/11/2012	"	Asphalt	1	6	6	6	0	9	251	<MDA	1	510	510	532	-22	0	1025	<MDA
25	5/11/2012	"	Asphalt	1	8	8	6	2	52	251	<MDA	1	525	525	532	-7	0	1025	<MDA
26	5/11/2012	"	Concrete	1	6	6	9	-3	0	303	<MDA	1	403	403	477	-74	0	973	<MDA
27	5/11/2012	"	Concrete	1	4	4	9	-5	0	303	<MDA	1	450	450	477	-27	0	973	<MDA
28	5/11/2012	"	Concrete	1	13	13	9	4	83	303	<MDA	1	458	458	477	-19	0	973	<MDA
29	5/11/2012	"	Concrete	1	8	8	9	-1	0	303	<MDA	1	426	426	477	-51	0	973	<MDA
30	5/11/2012	walk	Asphalt	1	3	3	6	-3	0	251	<MDA	1	525	525	532	-7	0	1025	<MDA

Surface Activity Calculation using Daily Background and MDA

Facility	Area IV B4015
Location	Exterior & structures
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							
Sample	**Date**	**Description (Location, Object)**	**Material Type**	**Bkgd Count Time (min)**	**Sample Count Time (min)**	**Bkgd Gross Count**	**Bkgd Count Rate (cpm)**	**Bkgd Gross Activity (dpm/ 100 cm^2)**	**L_C (counts)**	**L_D (counts)**	**MDA (dpm/ 100 cm^2)**	**Bkgd Count Time (min)**	**Sample Count Time (min)**	**Bkgd Gross Count**	**Bkgd Count Rate (cpm)**	**Bkgd Gross Activity (dpm/ 100 cm^2)**	**L_C (counts)**	**L_D (counts)**	**MDA (dpm/ 100 cm^2)**
1	5/11/2012	31-436 Reference Location	Concrete	5	1	46	9	200	5	14	303	5	1	2385	477	5679	39	82	973
2	5/11/2012	31-436 Reference Location	Asphalt	5	1	28	6	122	4	12	251	5	1	2659	532	6331	42	86	1025
3	5/11/2012	31-436 Reference Location	Construction	5	1	60	12	261	6	15	337	5	1	1151	230	2740	27	58	687
4																			
5																			
		Average	**Miscellaneous**	**5**	**1**	**45**	**9**	**194**	**5**	**14**	**297**	**5**	**1**	**2065**	**413**	**4917**	**36**	**75**	**895**

Sample Area Measurements

				Alpha								Beta							
Sample	**Date**	**Description (Location, Object)**	**Material Type**	**Sample Count Time (min)**	**Gross Sample Count**	**Gross Count Rate (cpm)**	**Bkgd Count Rate (cpm)**	**Net Count Rate (cpm)**	**Net Activity (dpm/ 100 cm^2)**	**MDA (dpm/ 100 cm^2)**	**> MDA or < MDA ?**	**Sample Count Time (min)**	**Gross Sample Count**	**Gross Count Rate (cpm)**	**Bkgd Count Rate (cpm)**	**Net Count Rate (cpm)**	**Net Activity (dpm/ 100 cm^2)**	**MDA (dpm/ 100 cm^2)**	**> MDA or < MDA ?**
31	5/11/2012	walk	Asphalt	1	8	8	6	2	52	251	<MDA	1	494	494	532	-38	0	1025	<MDA
32	5/11/2012	pad	Asphalt	1	7	7	6	1	30	251	<MDA	1	509	509	532	-23	0	1025	<MDA
33	5/11/2012	〃	Asphalt	1	3	3	6	-3	0	251	<MDA	1	526	526	532	-6	0	1025	<MDA
34	5/11/2012	〃	Asphalt	1	3	3	6	-3	0	251	<MDA	1	466	466	532	-66	0	1025	<MDA
35	5/11/2012	〃	Asphalt	1	8	8	6	2	52	251	<MDA	1	457	457	532	-75	0	1025	<MDA
36	5/11/2012	〃	Asphalt	1	4	4	6	-2	0	251	<MDA	1	519	519	532	-13	0	1025	<MDA
37	5/11/2012	〃	Asphalt	1	11	11	6	5	117	251	<MDA	1	519	519	532	-13	0	1025	<MDA
38	5/11/2012	〃	Asphalt	1	5	5	6	-1	0	251	<MDA	1	496	496	532	-36	0	1025	<MDA
39	5/11/2012	drainage	Asphalt	1	5	5	6	-1	0	251	<MDA	1	538	538	532	6	74	1025	<MDA
40	5/11/2012	〃	Asphalt	1	1	1	6	-5	0	251	<MDA	1	524	524	532	-8	0	1025	<MDA
41	5/11/2012	〃	Asphalt	1	9	9	6	3	74	251	<MDA	1	509	509	532	-23	0	1025	<MDA
42	5/11/2012	concrete debris	Concrete	1	3	3	9	-6	0	303	<MDA	1	423	423	477	-54	0	973	<MDA
43	5/11/2012	〃	Concrete	1	7	7	9	-2	0	303	<MDA	1	418	418	477	-59	0	973	<MDA
44	5/11/2012	〃	Concrete	1	1	1	9	-8	0	303	<MDA	1	422	422	477	-55	0	973	<MDA
45	5/11/2012	asphalt debris	Asphalt	1	5	5	6	-1	0	251	<MDA	1	477	477	532	-55	0	1025	<MDA
46	5/11/2012	〃	Asphalt	1	4	4	6	-2	0	251	<MDA	1	500	500	532	-32	0	1025	<MDA
47	5/11/2012	〃	Asphalt	1	9	9	6	3	74	251	<MDA	1	508	508	532	-24	0	1025	<MDA
48	5/11/2012	〃	Asphalt	1	5	5	6	-1	0	251	<MDA	1	463	463	532	-69	0	1025	<MDA
49	5/11/2012	〃	Asphalt	1	4	4	6	-2	0	251	<MDA	1	501	501	532	-31	0	1025	<MDA

Sample Report

Batch ID:	Smears 1 Minute Count - 201205091602	**Count Date:**	5/9/2012 4:02:03PM
Group:	D	**Count Minutes:**	1.00
Device:	RMHF Tennelec (NR 007137)	**Count Mode:**	Simultaneous
Batch Key:	2726	**Operating Volts:**	1455
Selected	Swipe/Smear	**Comments:**	Area IV B4015 exterior and structures smear

Background (cpm)		Efficiency (%)	
Alpha Rate:	0.40 ± 0.20	**Alpha:**	30.43 ± 0.91
Beta Rate:	3.40 ± 0.58	**Beta:**	36.91 ± 0.93

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
1	Unknown	1.97	3.35	17.00	1.63	5.64	26.00
2	Unknown	-1.31	0.66	17.00	1.63	5.64	26.00
3	Unknown	-1.31	0.66	17.00	-3.79	4.15	26.00
4	Unknown	-1.31	0.66	17.00	-1.08	4.95	26.00
5	Unknown	-1.31	0.66	17.00	9.75	7.34	26.00
6	Unknown	-1.31	0.66	17.00	1.63	5.64	26.00
7	Unknown	1.97	3.35	17.00	1.63	5.64	26.00
8	Unknown	-1.31	0.66	17.00	7.04	6.82	26.00
9	Unknown	-1.31	0.66	17.00	9.75	7.34	26.00
10	Unknown	-1.31	0.66	17.00	1.63	5.64	26.00
11	Unknown	1.97	3.35	17.00	4.33	6.26	26.00
12	Unknown	-1.31	0.66	17.00	-9.21	1.60	26.00
13	Unknown	-1.31	0.66	17.00	-1.08	4.95	26.00
14	Unknown	-1.31	0.66	17.00	-3.79	4.15	26.00
15	Unknown	-1.31	0.66	17.00	1.63	5.64	26.00
16	Unknown	-1.31	0.66	17.00	4.33	6.26	26.00
17	Unknown	-1.31	0.66	17.00	-6.50	3.14	26.00
18	Unknown	5.26	4.70	17.00	1.63	5.64	26.00
19	Unknown	-1.31	0.66	17.00	-3.79	4.15	26.00
20	Unknown	1.97	3.35	17.00	9.75	7.34	26.00
21	Unknown	-1.31	0.66	17.00	4.33	6.26	26.00
22	Unknown	-1.31	0.66	17.00	4.33	6.26	26.00
23	Unknown	-1.31	0.66	17.00	1.63	5.64	26.00
24	Unknown	-1.31	0.66	17.00	7.04	6.82	26.00
25	Unknown	-1.31	0.66	17.00	15.17	8.29	26.00
26	Unknown	-1.31	0.66	17.00	-1.08	4.95	26.00
27	Unknown	5.26	4.70	17.00	9.75	7.34	26.00
28	Unknown	-1.31	0.66	17.00	-9.21	1.60	26.00
29	Unknown	-1.31	0.66	17.00	-3.79	4.15	26.00
30	Unknown	-1.31	0.66	17.00	-1.08	4.95	26.00
31	Unknown	-1.31	0.66	17.00	-1.08	4.95	26.00
32	Unknown	-1.31	0.66	17.00	1.63	5.64	26.00
33	Unknown	-1.31	0.66	17.00	9.75	7.34	26.00
34	Unknown	-1.31	0.66	17.00	-1.08	4.95	26.00
35	Unknown	-1.31	0.66	17.00	-3.79	4.15	26.00
36	Unknown	-1.31	0.66	17.00	-6.50	3.14	26.00
37	Unknown	-1.31	0.66	17.00	7.04	6.82	26.00
38	Unknown	-1.31	0.66	17.00	-1.08	4.95	26.00
39	Unknown	-1.31	0.66	17.00	9.75	7.34	26.00
40	Unknown	-1.31	0.66	17.00	7.04	6.82	26.00
41	Unknown	-1.31	0.66	17.00	-1.08	4.95	26.00

Batch ID:	Smears 1 Minute Count - 201205091602	**Count Date:**	5/9/2012 4:02:03PM
Group:	D	**Count Minutes:**	1.00
Device:	RMHF Tennelec (NR 007137)	**Count Mode:**	Simultaneous
Batch Key:	2726	**Operating Volts:**	1455
Selected	Swipe/Smear	**Comments:**	Area IV B4015 exterior and structures smear

Background (cpm)		Efficiency (%)	
Alpha Rate:	0.40 ± 0.20	**Alpha:**	30.43 ± 0.91
Beta Rate:	3.40 ± 0.58	**Beta:**	36.91 ± 0.93

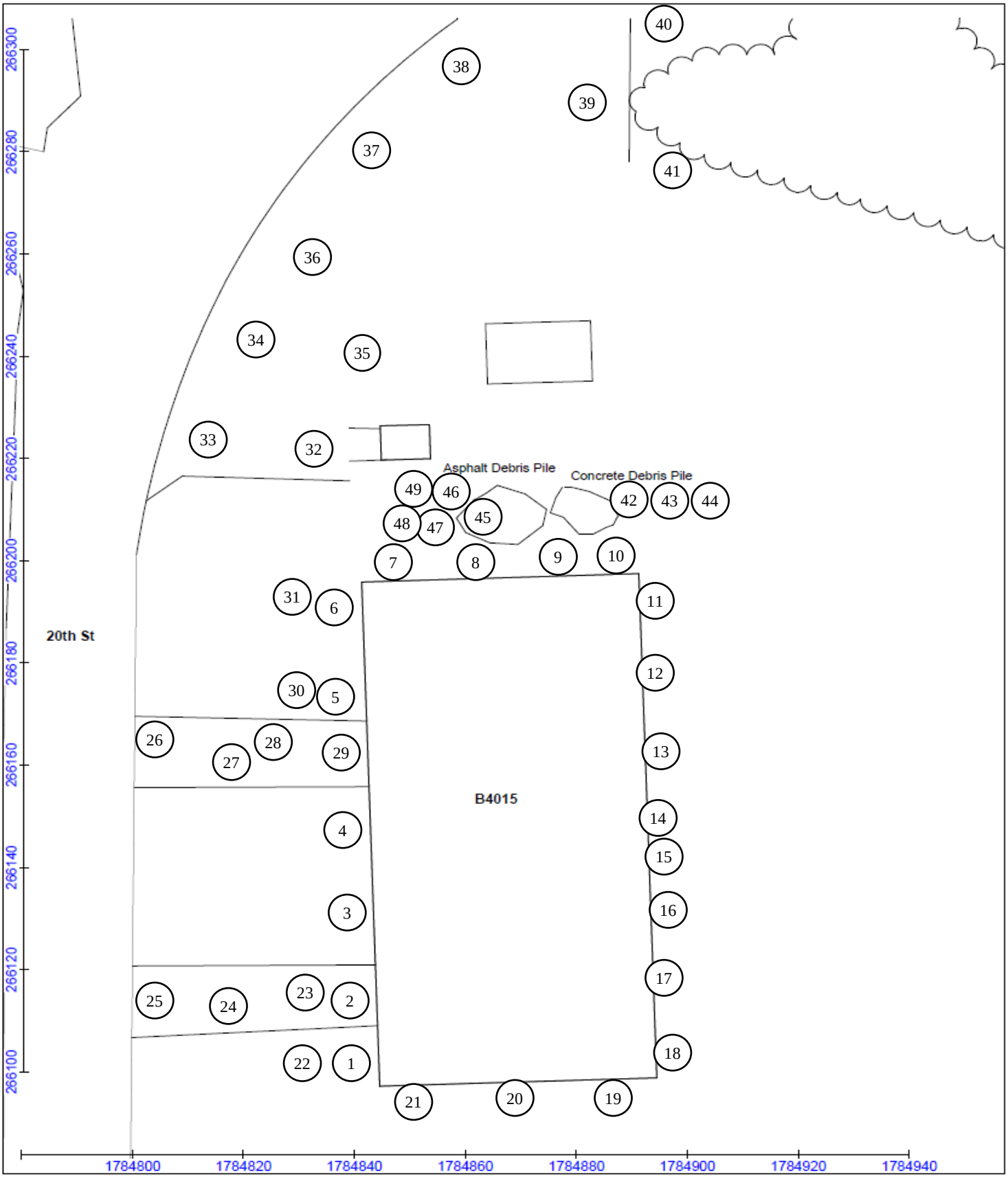
Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
42	Unknown	1.97	3.35	17.00	-3.79	4.15	26.00
43	Unknown	-1.31	0.66	17.00	7.04	6.82	26.00
44	Unknown	1.97	3.35	17.00	7.04	6.82	26.00

Sample Report

Batch ID:	Smears 1 Minute Count - 201205111447	**Count Date:**	5/11/2012 2:47:31PM
Group:	D	**Count Minutes:**	1.00
Device:	RMHF Tennelec (NR 007137)	**Count Mode:**	Simultaneous
Batch Key:	2739	**Operating Volts:**	1455
Selected	Swipe/Smear	**Comments:**	Area I B4015 exterior asphalt debris smear

Background (cpm)		Efficiency (%)	
Alpha Rate:	0.10 ± 0.10	**Alpha:**	29.65 ± 0.89
Beta Rate:	4.10 ± 0.64	**Beta:**	36.54 ± 0.93

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
45	Unknown	-0.34	0.34	14.00	10.67	7.94	28.00
46	Unknown	3.04	3.39	14.00	-0.27	5.75	28.00
47	Unknown	-0.34	0.34	14.00	-0.27	5.75	28.00
48	Unknown	-0.34	0.34	14.00	2.46	6.37	28.00
49	Unknown	-0.34	0.34	14.00	-3.01	5.05	28.00


266300
266280
266260
266240
266220
266200
266180
266160
266140
266120
266100
1784800
1784820
1784840
1784860
1784880
1784900
1784920
1784940
20th St
B4015
Asphalt Debris Pile
Concrete Debris Pile
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Attachment C1

USEPA Data from the Surrounds of Building 4015

USEPA Data from the Surrounds of Building 4015

Building 4015 is located in Subarea 5C of Area IV.

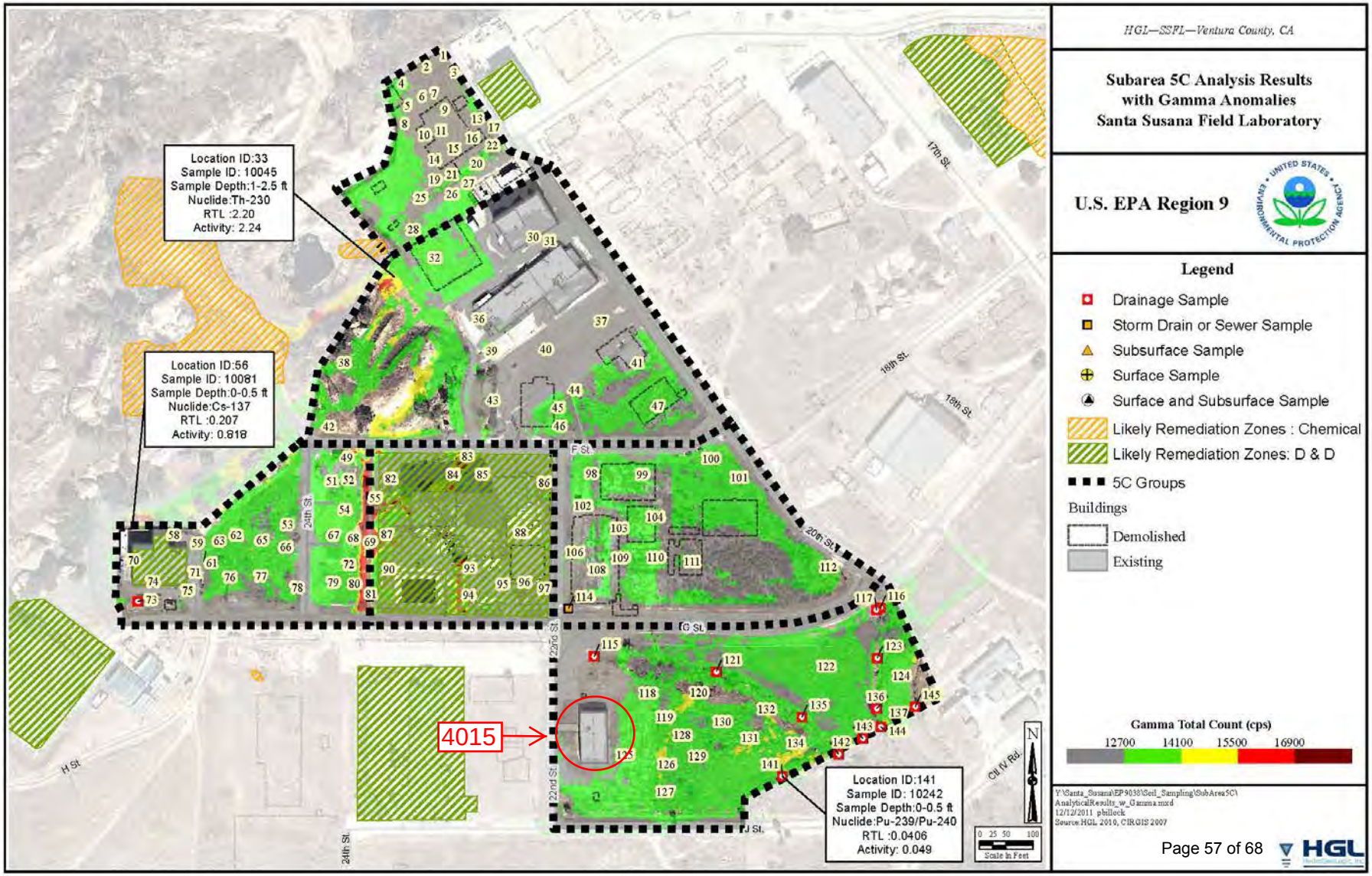
As part of its Area IV Radiological Characterization Survey, the USEPA performed a surface gamma scan of the land surrounding Building 4015. Color plots of the scan results are shown in Attachment 1 (subarea 5C). The mean gamma exposure (in units of counts per second [cps]) for subarea 5C is 12,700 cps. This is interpreted by the USEPA as mean local background. Color plots are defined by the legends are ...

	Lower limit	**Upper limit**
Grey	0	Mean, 12,700 cps, 100%
Green	Mean, 12,700 cps, 100%	Mean + 2σ, 14,100 cps, 111%
Yellow	Mean + 2σ, 14,100 cps, 111%	Mean + 4σ, 15,500 cps, 122%
Red	Mean + 4σ, 15,500 cps, 122%	Mean + 6σ, 16,900 cps, 133%
Brown	Mean + 6σ, 16,900 cps, 133%	Unbound

USEPA utilizes a red zone to signify a “PGRAY” or potential gamma ray anomaly, which requires further investigation, including static gamma scan, in-situ spectroscopy, and targeted soil sampling, to determine if the PGRAY is due to natural occurring radioactive material (NORM) or contamination from nuclear operations. Inspection of Attachment 1 shows that Building 4015 is exclusively grey with green to the east and south (indicating less than 111% of mean). There is therefore no indication of any contamination from the gamma scan results, and the USEPA did not identify any PGRAYs in the vicinity of Building 4015. No areas were targeted for soil sampling based on the gamma scan results. Attachment 1 shows the locations of soil samples taken in the proximity of Building 4015 to the east of 22nd Street, that were chosen based on topographical, geophysical, aerial photography and operational reasons. No Round 1 soil sample results in the immediate vicinity (i.e. within 100 yards) of Building 4015 exceeded the EPA radiological trigger levels (RTL), and no step-out sampling in the vicinity of Building 4015 is planned for Round 2.

Attachment 1
Gamma Scan and Soil Sample Results for Subarea 5C

Preliminary 5C Results With Gamma Survey



Attachment D

Radiological Document Review and Operations Certification

Building 4015, Area IV
Document Review and Operations Certification

I certify that, to the best of my knowledge and belief, no nuclear or radiological research and development activities were conducted in building 4015.

During its 38 year life, building 4015 has been used as a general equipment storage building.

No radioactive material use authorizations exist for building 4015. No radiological incident reports exist for building 4015.

Neither the DOE nor the EPA Area IV Historical Site Assessment (HSA) teams found any evidence or documentation on the use or storage of radioactive materials in building 4015 earlier that 2010.

In 2010-2011, EPA's contractor, HGL, stored containers of purge water from tritium contaminated groundwater wells. This water was later evaporated at an outside location, distant from 4015. During 2010-2012, EPA's contractor, HGL, stored miscellaneous equipment in 4015. HGL has stated that they *"are certain that the equipment and purge water containers in building 4015 were free of external radioactive contamination which could have contaminated the building."*

The radiation survey conducted prior to demolition has confirmed that building 4015 is free of any radiological contamination.

Phil Rutherford
Manager, Health, Safety & Radiation Services

Attachment E

Certification of No Impacts to Biological, Cultural, or Historical Resources

BOEING

The Boeing Company
Santa Susana Field Laboratory

5800 Woolsey Canyon Rd.
Canoga Park, CA 91304-1148

Date: June 1, 2012

No.: **SHEA-112038**

To: Santa Susana Field Lab Employees

From: Art Lenox
Environmental Remediation
MS T487. ext. 68795

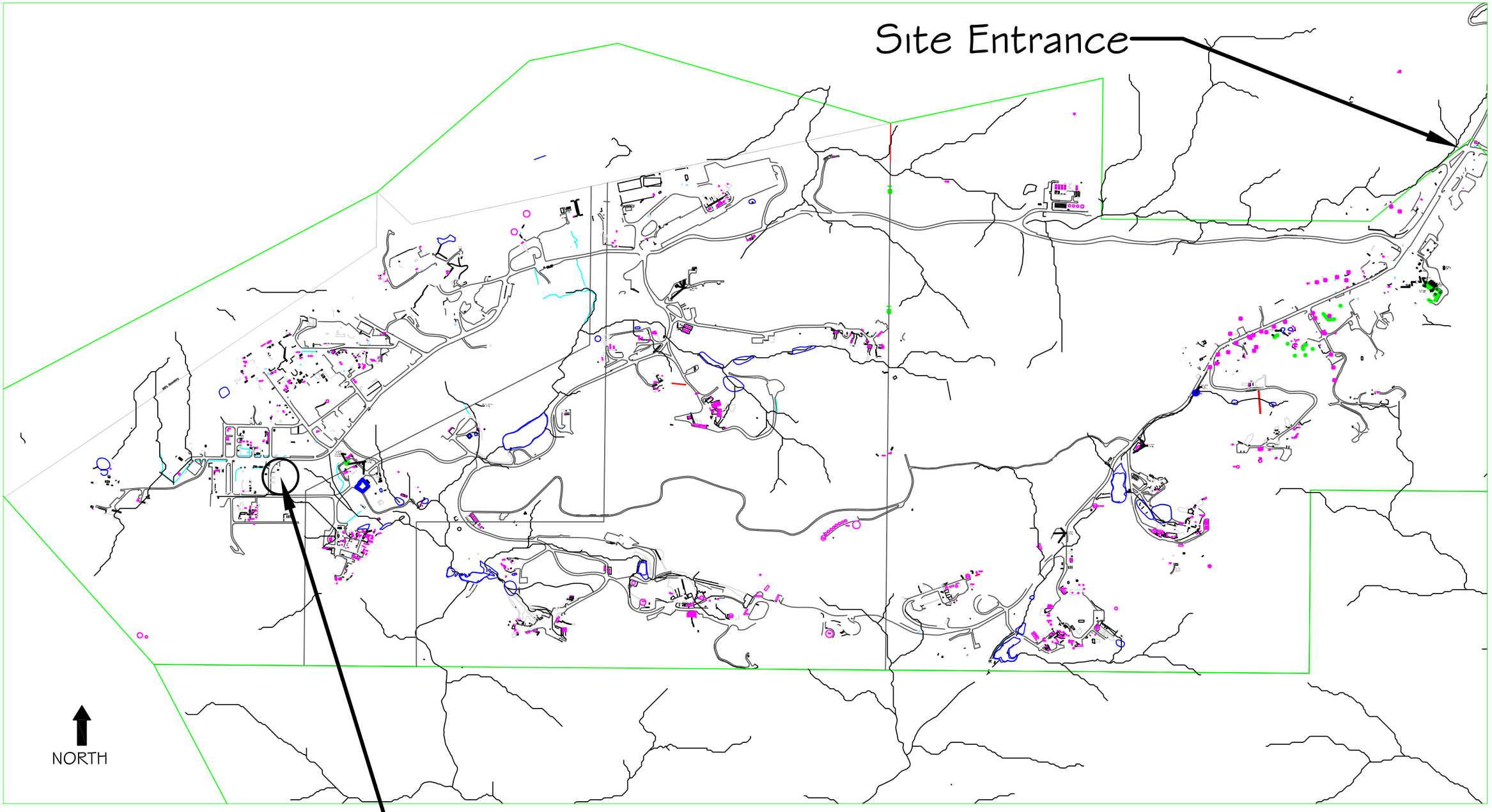
Subject: Area 4 Building 4015 – Certification of No Impact to Biological, Cultural, or Historical Preservation Due to Planned Demolition Activity 3

I certify that in accordance with a system designed to assure that qualified personnel properly gather and evaluate information relating to the building demolition, that to the best of my knowledge and belief, the building demolition will not impact endangered biological species, cultural resources, or conflict with historical preservation efforts.

Art Lenox
SSFL Remediation Project Manager

Attachment F

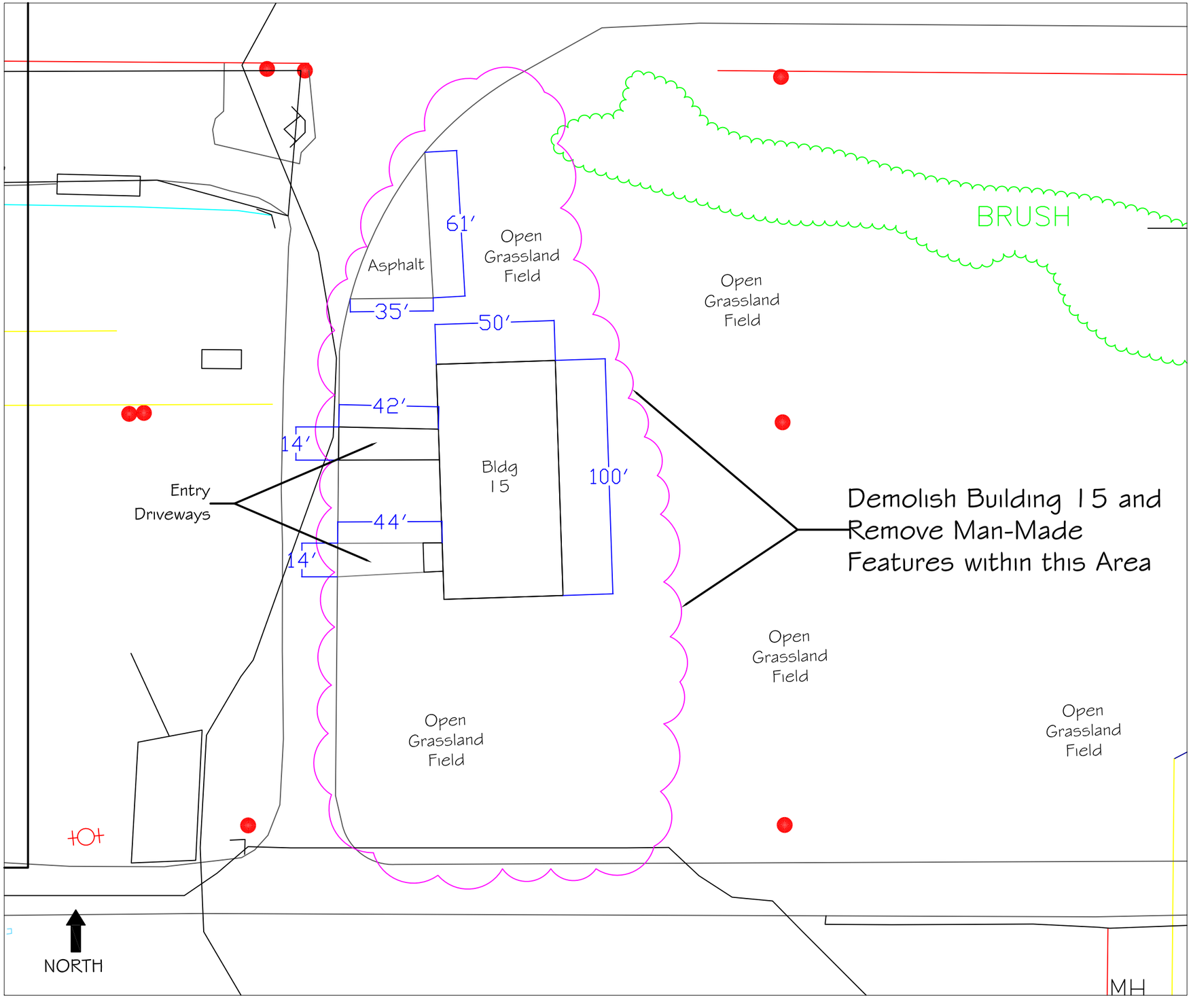
SSFL Site Map with Project Location



BOEING	DRAWN BY RHB	
	SCALE None	DATE May 10, 2012
TITLE Bldg 15 Area Location		
SSFL	DOCUMENT NUMBER Figure One	

Attachment G

Project Area
Detailed View and Photos



Notes:

1. Total Area:
   Approx 36,000 SF
2. Building Area:
   Approx 5,000 SF
3. Pavement Area:
   Approx 2,300 SF
4. Open Field Area:
   Approx 28,700 SF

BOEING	DRAWN BY: RHB	
	SCALE: None	DATE: June 8, 2012
TITLE: Building 15 Area		
SSFL	DOCUMENT NUMBER: Figure 1	

Image of Building 4015, Area 4, at SSFL

Attachment H

RFI Feature Map

BOEING

The Boeing Company
Santa Susana Field Laboratory

5800 Woolsey Canyon Rd.
Canoga Park, CA 91304-1148

Date: June 7, 2012

No.: **SHEA-112050**

To: Santa Susana Field Lab Employees

From: Art Lenox
Environmental Remediation
MS T487. ext. 68795

Subject: Building 4015 RFI Feature Map

Based on a review of SSFL Resource Conservation Recovery Act (RCRA), Facility Investigation Group 5 Report, 2008, no chemical impact areas to soil were identified. There are no special demolition requirements of note. As a result, an RFI feature map has not been provided.

Art Lenox
SSFL Remediation Project Manager