

HSWA HAFB G/M/01



**DEPARTMENT OF THE AIR FORCE**

HEADQUARTERS 49TH FIGHTER WING (ACC)  
HOLLOMAN AIR FORCE BASE, NEW MEXICO



**MEMORANDUM FOR NEW MEXICO ENVIRONMENT DEPARTMENT**

Cornelius Amindyas  
New Mexico Environment Department  
Hazardous Waste Bureau  
4131 Montgomery NE  
Albuquerque, NM 87109

03 JUL 2001

**FROM:** 49 CES/CEV  
550 Tabosa Avenue  
Holloman AFB NM 88330-8458

**SUBJECT:** Submittal of Environmental Indicators CA725 and CA750 for Holloman AFB

1. Please find attached the pertinent Environmental Indicator (EI) forms (Atchs 1 and 2) and supplemental tables (Atchs 3 and 4). The information contained in these documents reflects a thorough review of site information for those corrective action units found on Table A.1 of Holloman's HSWA permit (ID# NM 6572124422).
2. Information was gathered from documents previously submitted to your office except for SWMUs 39, 127, 123 and 136 where draft documents were used. The draft documents referenced will propose No Further Action at these SWMUs. They are being finalized and will soon be submitted for your review.
3. If you have any questions or require additional information, please contact Mr. Jose Gallegos at 572-5395.

JOHN R. POLAND, REM  
Chief, Environmental Flight

**Attachments:**

1. Documentation of Environmental Indicator Determination – CA725, Current Human Exposures Under Control
2. Documentation of Environmental Indicator Determination – CA750, Migration of Groundwater Contamination Under Control
3. Table H-1: CA725 – Question 2 and 6 Responses
4. Table H-2: CA750 – Question 2 and 8 Responses

cc (w/o attachment):

Mr. James Bearzi  
Hazardous Waste Bureau  
P.O. Box 26110  
Santa Fe NM 87502

Mr. John Kieling  
Hazardous Waste Bureau  
P.O. Box 26110  
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Mr. Steve Pullen  
Hazardous Waste Bureau  
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7/3/01

REGIONAL  
ENTERED

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action  
Environmental Indicator (EI) RCRIS code (CA750)

NM ENVIRONMENT DEPARTMENT  
RECEIVED

Migration of Contaminated Groundwater Under Control

JUL 09 2001

Facility Name: Holloman Air Force Base  
Facility Address: 49 CES/CEV, 550 Tabosa Ave  
Facility EPA ID #: EPA ID: NM6572124422

DISTRICT 1 OFFICE

1. Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?

- If yes - check here and continue with #2 below.
- If no - re-evaluate existing data, or
- If data are not available, skip to #8 and enter "IN" (more information needed) status code.

**BACKGROUND**

**Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

**Definition of "Migration of Contaminated Groundwater Under Control" EI**

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

**Relationship of EI to Final Remedies**

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

**Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

ATEH 2

**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)  
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2. Is **groundwater** known or reasonably suspected to be “contaminated”<sup>1</sup> above appropriately protective “levels” (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

Varies from site to site. See attached table, “Table H-2: CA750 – Question 2 and 8 Responses”

**For sites with response “Yes” under “GW Contamination?” column on Table H-2:**

- X If yes - continue after identifying key contaminants, citing appropriate “levels,” and referencing supporting documentation.

**For sites with response “None” under “GW Contamination?” column on Table H-2:**

- X If no - skip to #8 and enter “YE” status code, after citing appropriate “levels,” and referencing supporting documentation to demonstrate that groundwater is not “contaminated.”

**For sites with response “Unknown” under “GW Contamination?” column on Table H-2:**

- X If unknown - skip to #8 and enter “IN” status code.

Rationale and Reference(s): See attached table for specific references. Those sites listed as “None” under “GW Contamination?” column showed insignificant (if any) contamination either during an investigative stage or as a part of Holloman’s Long-Term Monitoring (LTM) of groundwater under the base’s Environmental Restoration Program (ERP) formerly known as the Installation Restoration Program (IRP). Many of these sites have undergone some type of corrective measure, e.g., removal of an oil-water separator and petroleum, oil, or lubricant-contaminated soil.

For those sites whose response to Question 2 is “yes”, the data show that some level of contamination does exist at the site. However, of these sites, those that are a part of HAFB’s LTM program have shown a downward trend over the years. These sites include SWMUs 82, 104, 105, 108, 113B and AOC-T.

For the remainder of sites with “yes”, i.e., SWMUs 39, 114, 127, 135, 170, 229 and AOC-1001 more recent data is required to better assess groundwater contamination and its migration. However, the underlying aquifer in non-potable (contains > 10,000 mg/L TDS) and, in addition, does not present a potential exposure pathway.

The sites marked “unknown”, i.e., SWMUs 111, 123, and 183, these sites require additional characterization. SWMU 136 is marked “unknown”, however, the contaminant source has been removed and GW contamination is unlikely.

Footnotes:

<sup>1</sup>“Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate “levels” (appropriate for the protection of the groundwater resource and its beneficial uses).

**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**

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3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"<sup>2</sup> as defined by the monitoring locations designated at the time of this determination)?

**For SWMUs 39, 82, 104, 105, 108, 113B, 114, 127, 135, 170, 229 and AOC-T:**

- X** If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"<sup>2</sup>).
- If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"<sup>2</sup>) - skip to #8 and enter "NO" status code, after providing an explanation.
- If unknown - skip to #8 and enter "IN" status code.

**Rationale and Reference(s): See attached table and previous responses for reference material and background. For LTM sites, all evidence indicates a downward trend in contaminants. For other sites showing contamination, a corrective measure has already taken place to remove potential contaminant sources.**

<sup>2</sup> "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

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4. Does "contaminated" groundwater discharge into surface water bodies?

\_\_\_\_\_ If yes - continue after identifying potentially affected surface water bodies.

**For SWMUs 39, 82, 104, 105, 108, 113B, 114, 127, 135, 170, 229 and AOC-T:**

If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

\_\_\_\_\_ If unknown - skip to #8 and enter "IN" status code.

**Rationale and Reference(s): All references are given in Table H-2. Through previous investigations and quantitative Risk Assessments, it has been shown that none these units discharge to surface water.**

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5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant**" (i.e., the maximum concentration<sup>3</sup> of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

**SKIPPED per instructions...**

\_\_\_\_\_ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration<sup>3</sup> of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

\_\_\_\_\_ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration<sup>3</sup> of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations<sup>3</sup> greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

\_\_\_\_\_ If unknown - enter "IN" status code in #8.

Rationale and Reference(s): \_\_\_\_\_  
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<sup>3</sup> As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

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6. Can the **discharge** of “contaminated” groundwater into surface water be shown to be “**currently acceptable**” (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented<sup>4</sup>)?

**SKIPPED per instructions...**

\_\_\_\_\_ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site’s surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,<sup>5</sup> appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment “levels,” as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

\_\_\_\_\_ If no - (the discharge of “contaminated” groundwater can not be shown to be “**currently acceptable**”) - skip to #8 and enter “NO” status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

\_\_\_\_\_ If unknown - skip to 8 and enter “IN” status code.

Rationale and Reference(s): \_\_\_\_\_  
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<sup>4</sup> Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

<sup>5</sup> The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

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7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

**SWMUs 82, 104, 105, 108, 113B and AOC-T (sites undergoing LTM):**

**X** If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

If no - enter "NO" status code in #8.

**SWMUs 39, 114, 127, 135 , 170, 229 and AOC-1001:**

**X** If unknown - enter "IN" status code in #8.

Rationale and Reference(s): **For SWMUs 82, 104, 105, 108, 113B and AOC-T (sites undergoing LTM), these sites are part of HAFB's LTM program. The next sampling event will occur during mid-2001. Sampling events occur biennially. All LTM sites are in various stages with two or three sampling events completed (not including the 2001 event). Well locations can be found in the LTM references given in the attached tables. All wells are within the site areas.**

**It is unknown at this time whether LTM will be required at SWMUs 39, 114, 127, 135 , 170, 229 and AOC-1001.**

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**Migration of Contaminated Groundwater Under Control  
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8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

(See attached Table H-2)

**YE** - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Listed sites (see attached table in response to questions 2 and 8) facility, EPA ID # NM6572124422, located at Holloman AFB NM. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

**NO** - Unacceptable migration of contaminated groundwater is observed or expected.  
(See attached Table H-2)

**IN** - More information is needed to make a determination.

Signed: ① Cornelius Amindyas, NMED/HWB Date 07/10/01

Completed by (signature) [Signature] Date 3 Jul 01  
(print) Jose A. Gallegos  
(title) Restoration Element Leader, Environmental Engineer

Supervisor (signature) [Signature] Date 3 July 01  
(print) John R. Poland  
(title) Chief, Environmental Flight  
NMEO-HWB  
(EPA Region or State) New Mexico

Signed ① John E. Kieling Date 7/10/01  
Locations where References may be found:

References may be found at the Environmental Flight, Building 55 at Holloman AFB. Also, the same documents have been filed with the New Mexico Environment Department Hazardous Waste Bureau, formerly, the Hazardous and Radioactive Materials Bureau or HRMB. Many of the documents also are part of Holloman's Information Repository located at the City of Alamogordo (NM) Public Library.

Contact telephone and e-mail numbers

(name) Jose A. Gallegos  
(phone #) 505-572-5395  
(e-mail) josea.gallegos@holloman.af.mil

JUL 09 2001

TABLE H-2: CA750 - Question 2 and 8 Responses

CA750 - QUESTION 2 RESPONSE								Question 8: RCRIS CODE
no.	SWMU/A OC ID	Related ERP Site (alias)	Unit Name	Status	GW Contamination?	Key Contaminants (maximum values at site)	References used for EI Evaluation	
1	4	N/A	Bldg. 131 O/WS	SC/LTM	None	None	Draft Final RFI Report Table 3 RCRA Facility Investigation Volume I, 22-B-3-B, Radian, Oct 97; Draft Final RFI Report Table 3 RCRA Facility Investigation Volume I, AR 909, 22-B-3-B, Radian, Jul 95.	YE
2	8	N/A	Bldg. 231 O/WS	SC	None	None	Final Closure Report Addendum Phase II Remediation of POL-Contaminated Site & OWS/WOT Removals, AR 1093, 22-G-2, FWENC, 97.	YE
3	19	N/A	Bldg. 638 O/WS	SC	None	None	Draft Final RFI Report Table 3 RCRA Facility Investigation Volume I, 22-B-3-B, Radian, Oct 97; Draft Final RFI Report Table 3 RCRA Facility Investigation Volume I, AR 909, 22-B-3-B, Radian, Jul 95.	YE
4	20	N/A	Bldg. 639 O/WS	SC	None	None	Draft Final RFI Report Table 3 RCRA Facility Investigation Volume I, 22-B-3-B, Radian, Oct 97; Draft Final RFI Report Table 3 RCRA Facility Investigation Volume I, AR 909, 22-B-3-B, Radian, Jul 95.	YE
5	39	FT-31	Bldg. 1092 O/WS	SC	Yes	Ethylbenzene, 2,300 ug/L at MW-08.	Draft Closure Report for SWMU 136-Building 1119 Washrack Drainage Pit and SWMUs 39, 127, and 135-IRP Site FT-31, FWENC, Sep 00; Final Closure Report Phase II Remediation of POL-Contaminated Sites & OWS/WOT Removals, AR 1056, FWENC, Jul 97; Final Phase II RCRA Facility Investigation Report - Table 1 SWMUs, Vol I-II, 17-A-66, FWENC/Radian, Jun 97.	IN
6	82	SD-08	Bldg. 131 Washrack	SC/LTM	Yes	At MW-08-01 (ug/L): 1,2-Dichloroethane, 130; Iron, 6,620; Manganese, 3,720. Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Phase II RCRA Facility Investigation Report - Table 1 SWMUs, AR 899, 17-A-66, Radian, Jun 95; Draft Final Feasibility Study & Investigation, Study, and Recommendation for 29 Waste Sites, AR 751 (AR 588, Feb 93 Draft), 17-A-46, Radian, Dec 93.	YE
7	101	LF-10	Bldg. 121 Landfill	SC/LTM	None	None, Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; IRP Decision Documents, AR 674, 17-B-xx, HAFB, Nov 90; Installation Restoration Program Final Remedial - Final Remedial Investigation Report, Vol I, AR 511, 17-A, Walk, Haydel & Assoc., Dec 89.	YE
8	104	LF-29	Former Army Landfill	SC/LTM	Yes	At MW-29-07 and MW-29-08, respectively (ug/L): 1,2-Dichloroethane, 11 and 15. Source: FWENC, Jun 99	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Final Phase II RCRA Facility Investigation Report - Table 1 SWMUs, Vol I-II, 17-A-66, FWENC/Radian, Jun 97; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Sites, 17-A-46, Radian, Jun 92.	YE
9	105	LF-19	Golf Course Landfill	SC/LTM	Yes	Manganese, 284 ug/L Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Sites, 17-A-46, Radian, Jun 92.	YE

TABLE H-2: CA750 - Questions 2 and 8 Responses

CA750 - QUESTION 2 RESPONSE								Question 8:
no.	SWMU/A OC ID	Related ERP Site (alias)	Unit Name	Status	GW Contamination?	Key Contaminants (maximum values at site)	References used for EI Evaluation	RCRIS CODE
10	106	LF-01	Main Base Landfill	SC/LTM	None	None, Source: FWENC, Jun 00.	Letter from Mr. Butch Tongate, NMED-Solid Waste Bureau, 17-B-1, NMED-SWB, 2 Dec 99; Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Closure Report for the Main Base Landfill, 17-B-1, FWENC, Sep 99; IRP Decision Documents, AR 674, 17-B-xx, HAFB, Nov 90; Installation Restoration Program Final Remedial - Final Remedial Investigation Report, Vol I, AR 511, 17-A, Walk, Haydel & Assoc., Dec 89.	YE
11	108	LF-23	MOBSS Landfill Disposal Trench	SC/LTM	Yes	Manganese, 348; Selenium, 57.4 (in ug/L) Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
12	109	LF-10	Old Main Base Landfill	SC/LTM	None	None, Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; IRP Decision Documents, AR 674, 17-B-xx, HAFB, Nov 90; Installation Restoration Program Final Remedial - Final Remedial Investigation Report, Vol I, AR 511, 17-A, Walk, Haydel & Assoc., Dec 89.	YE
13	111	RW-42	Radioactive Waste Disposal Area	SC	Unknown	Unknown	Decision Documents - Investigation, Study and Recommendations for 29 Waste Sites, AR 821, 17-A-46, HAFB, Sep 94; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92.	IN
14	114	OT-03	TEL Disposal Site	SC	Yes	At MW 2/5-05 (ug/L): Benzene, 250; Ethylbenzene, 860. Source: FWENC, Jun 99	Decision Documents IRP, AR 973, HAFB, Sep 95; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	IN
15	115	LF-22	West Area Landfill #1 PCB Disposal Area	SC/LTM	None	None, Source: FWENC, Jun 00.	Decision Documents - Investigation, Study and Recommendations for 29 Waste Sites, AR 821, 17-A-46, HAFB, Sep 94; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
16	116	LF-21	West Area Landfill #2	SC/LTM	None	None, Source: FWENC, Jun 00.	Decision Documents - Investigation, Study and Recommendations for 29 Waste Sites, AR 821, 17-A-46, HAFB, Sep 94; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
17	118	OT-16	Bldg. 21 Pesticides Holding Tank	SC/LTM	None	None, Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Final Closure Report Addendum Phase II Remediation of POL-Contaminated Site & OWS/WOT Removals, AR 1093, 22-G-2, FWENC, 97; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE

TABLE H-2: CA750 - Question 2 and 8 Responses

CA750 - QUESTION 2 RESPONSE								Question 8 RCRIS CODE
no.	SWMU/A OC ID	Related ERP Site (alias)	Unit Name	Status	GW Contamination?	Key Contaminants (maximum values at site)	References used for EI Evaluation	
18	122	N/A	Bldg. 702 Waste Oil Tank	SC	None	None	Draft Final Report - RI/RFI Investigation Report for Site SD-47, 17-A-64, Woodward-Clyde, Jan 94.	YE
19	123	N/A	Bldg. 704 Waste Oil Tank	SC	Unknown	Unknown	Results of Additional Soil Sampling for Remediation of the POL-Contaminated SWMU 123, 22-F-2, FWENC, Apr 99; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Phase I RFI Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	IN
20	127	FT-31	Bldg. 1092 Waste Oil Tank	SC	Yes	Ethylbenzene, 2,300 ug/L at MW-08.	Draft Closure Report for SWMU 136-Building 1119 Washrack Drainage Pit and SWMUs 39, 127, and 135-IRP Site FT-31, FWENC, Sep 00; Final Closure Report Phase II Remediation of POL-Contaminated Sites & OWS/WOT Removals, AR 1056, FWENC, Jul 97; Final Phase II RCRA Facility Investigation Report - Table 1 SWMUs, Vol I-II, 17-A-66, FWENC/Radian, Jun 97.	IN
21	130	SS-46	Taxiway 4 Tank 28, JP-4 Underground Waste Tank	SC/LTM	None	None, Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; IRP Decision Documents, AR 674, 17-B-xx, HAFB, Nov 90; IRP Final Remedial Investigation Report, AR 511, Walk, Haydel & Assoc., Dec 89	YE
22	132	OT-16	Bldg. 21 Entomology Leachfield	SC/LTM	None	None, Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Final Closure Report Addendum Phase II Remediation of POL-Contaminated Site & OWS/WOT Removals, AR 1093, 22-G-2, FWENC, 97; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE
23	135	FT-31	Bldg. 1092 Oil/Water Separator Drainage Pit	SC	Yes	Ethylbenzene, 2,300 ug/L at MW-08.	Draft Closure Report for SWMU 136-Building 1119 Washrack Drainage Pit and SWMUs 39, 127, and 135-IRP Site FT-31, FWENC, Sep 00; Final Phase II RCRA Facility Investigation Report - Table 1 SWMUs, Vol I-II, 17-A-66, FWENC/Radian, Jun 97.	IN
24	136	N/A	Bldg. 1119 Washrack Drainage Area	SC	Unknown	Unknown	Draft Closure Report for SWMU 136-Building 1119 Washrack Drainage Pit and SWMUs 39, 127, and 135-IRP Site FT-31, FWENC, Sep 00; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	IN
25	137	OT-38	Bldg. 1166 Test Track Drain Field	SC	None	None, Source: HAFB, Sep 94.	Decision Documents - Investigation, Study and Recommendations for 29 Waste Sites, AR 821, 17-A-46, HAFB, Sep 94; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
26	139	N/A	Lake Holloman	SC	None	None	Characterization Summary and NFA Documentation, FWENC/Radian, Jun 97; Site Characterization Report Sewage Lagoons and Lakes Investigations, Radian, 92.	YE
27	140	N/A	Lake Stinky	SC	None	None	Characterization Summary and NFA Documentation, FWENC/Radian, Jun 97; Site Characterization Report Sewage Lagoons and Lakes Investigations, Radian, 92.	YE

TABLE H-2: CA750 - Question 2 and 8 Responses

CA750 - QUESTION 2 RESPONSE								Question 8:
No.	SWMU/A OC ID	Related ERP Site (alias)	Unit Name	Status	GW Contamination?	Key Contaminants (maximum values at site)	References used for EI Evaluation	RCRIS CODE
28	141	SD-27	Pad 9 Drainage Pit	SC	None	None	Preliminary Assessment/Site Investigation Report, Investigation of Four Waste Sites, AR 740, Radian, Nov 93.	YE
29	165	SS-39	Bldg. 1176 Pond	SC/LTM	None	None, Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Additional Groundwater Sampling at Site SS-39, AR 1140, 17-A-74, GW Technology, Sep 98; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE
30	166	SD-25	MOBSS Drainage Lagoon	SC	None	None	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; IRP Decision Documents, AR 674, 17-B-xx, HAFB, Nov 90; Installation Restoration Program Final Remedial - Final Remedial Investigation Report, Vol I, AR 511, 17-A, Walk, Haydel & Assoc., Dec 89.	YE
31	170	FT-31	Fire Department Training Area 1	CMI	Yes	Ethylbenzene, 2,300 ug/L at MW-08.	Final Phase II RCRA Facility Investigation Report - Table 1 SWMUs, Vol I-II, 17-A-66, FWENC/Radian, Jun 97.	IN
32	177	SS-39	Bldg. 1176 Sumps	SC/LTM	None	None, Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Additional Groundwater Sampling at Site SS-39, AR 1140, 17-A-74, GW Technology, Sep 98; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE
33	179	SS-39	Discharge Box	SC/LTM	None	None, Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Additional Groundwater Sampling at Site SS-39, AR 1140, 17-A-74, GW Technology, Sep 98; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE
34	181	SS-39	Bldg. 1176 Drainage Trough	SC/LTM	None	None, Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Additional Groundwater Sampling at Site SS-39, AR 1140, 17-A-74, GW Technology, Sep 98; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE
35	183	N/A	Air Base Sewer System	PhII RFI	Unknown	Unknown	Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Phase I RFI Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	IN
36	197	OT-14	Former Entomology Shop	SC	None	N/A; Source: HAFB, Sep 95.	Decision Documents IRP, AR 973, HAFB, Sep 95; Draft Final Feasibility Study & Investigation, Study, and Recommendation for 29 Waste Sites, AR 751 (AR 588, Feb 93 Draft), 17-A-46, Radian, Dec 93.	YE
37	229	SS-59	T-38 Test Cell Fuel Spill Site	CMI	Yes	(ug/L) Benzene, 9,700; Toluene, 11,000; Ethylbenzene, 1,900; Xylenes, 3,800; JP-4 (free product).	Final Report RCRA Facility Investigation Report for SWMUs 229 and 230, 22-B-4-2, Woodward-Clyde, Jun 94; Final Report Quality Control Summary Report for SWMUs 229 and 230, 22-B-4-2, Woodward-Clyde, Jun 94.	IN

TABLE H-2: CA750 - Question 2 and 8 Responses

CA750 - QUESTION 2 RESPONSE								Question 8:
no.	SWMU/A OC ID	Related ERP Site (alias)	Unit Name	Status	GW Contamination?	Key Contaminants (maximum values at site)	References used for EI Evaluation	RCRIS CODE
38	113A	OT-20	Sludge Disposal Trenches near Lagoons	SC	None	None. Source: Radian, Jan 00. Note: Lab results compared against risk-based Analyte Concentration Limits (ACL)	Final 1999 Sampling Report - Sewage Lagoons Long-term Groundwater Monitoring Program, 17-B-49, Radian, Jan 00; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
39	113B	DP-30/SD-33	Sludge Disposal Trenches near Fire Training Area	SC/LTM	Yes	At MW-30/33-04 (ug/L): 1,1-Dichloroethane, 27; TCE, 150. Source: FWENC, Jun 99	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Decision Documents IRP, AR 973, HAFB, Sep 95; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
40	AOC-1001	SS-61	Building 1001 Fuel Spill Site	SC	Yes	(ug/L) Benzene, 13,000; Toluene, 7,900; Ethylbenzen, 3,700; 1,2-Dichloroethane, 160.	Final Phase II Remedial Investigation Report for SS-61, Spill Site 61, 17-A-90, FWENC, Dec 00; Final Remedial Investigation for Spill Site 61, 17-A-88, FWENC, Aug 99.	IN
41	AOC-A	OT-16	Bldg. 21 Pesticide Rinsewater Spill Area	SC/LTM	None	None. Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Final Closure Report Addendum Phase II Remediation of POL-Contaminated Site & OWS/WOT Removals, AR 1093, 22-G-2, FWENC, 97; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Oct 94.	YE
42	AOC-FST837	N/A	Building 837 Fuel Septic Tank	SC	None	None	Voluntary Corrective Action Completion Report for the German Air Force II Project (letter report), FWENC, Jan 00.	YE
43	AOC-L	OT-37	Early Missile Test Site	SC	None	None. Source: HAFB, Sep 94.	Decision Documents - Investigation, Study and Recommendations for 29 Waste Sites, AR 821, 17-A-46, HAFB, Sep 94; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
44	AOC-P	OT-44	Bldg. 301 Fuel Tank Leak	SC/LTM	None	None. Source: FWENC, Jun 00.	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Final Closure Report Addendum Phase II Remediation of POL-Contaminated Site & OWS/WOT Removals, AR 1093, 22-G-2, FWENC, 97; IRP Decision Documents, AR 674, 17-B-xx, HAFB, Nov 90; Installation Restoration Program Final Remedial - Final Remedial Investigation Report, Vol I, AR 511, 17-A, Walk, Haydel & Assoc., Dec 89.	YE
45	AOC-T	SS-02/SS-05	POL Storage Tank Leaks	CMI/LTM	Yes	At MW 2/5-05 (ug/L): Benzene, 250; Ethylbenzene, 860. Source: FWENC, Jun 99	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Characterization Summary and NFA Documentation for IRP Sites SS-2/5, SD-47, and SS-60, AR 1103, FWENC, Mar 98; Final Phase II RCRA Facility Investigation Report - Table 1 SWMUs, Vol I-II, 17-A-66, FWENC/Radian, Jun 97; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92.	YE
46	AOC-U	N/A	Lost River Basin	SC	None	None	Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Phase I RFI Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE

TABLE H-2: CA750 - Que 2 and 8 Responses

CA750 - QUESTION 2 RESPONSE								Question 8: RCRIS CODE
no.	SWMU/A OC ID	Related ERP Site (alias)	Unit Name	Status	GW Contamination?	Key Contaminants (maximum values at site)	References used for EI Evaluation	
47	AOC-V	SS-57	Officer's Club	CMI	None	None	RA-O Site Reevaluation, FWENC, Jun 01.	YE

7/3/01

UNIONAL



DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action  
Environmental Indicator (EI) RCRIS code (CA725)

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Current Human Exposures Under Control

JUL 09 2001

Facility Name: Holloman Air Force Base  
Facility Address: 49 CES/CEV, 550 Tabosa Ave  
Facility EPA ID #: Holloman AFB, NM 88330-8458

DISTRICT OFFICE

1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

If yes - check here and continue with #2 below.

If no - re-evaluate existing data, or

if data are not available skip to #6 and enter "IN" (more information needed) status code.

**BACKGROUND**

**Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

**Definition of "Current Human Exposures Under Control" EI**

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

**Relationship of EI to Final Remedies**

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

**Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

ATCH 1

**Current Human Exposures Under Control  
Environmental Indicator (EI) RCRIS code (CA725)  
Page 2**

2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be “contaminated”<sup>1</sup> above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

**Varies from site to site; mainly groundwater and soils impacted.  
See attached table, “TABLE H-1: CA725 - Question 2 and 6 Responses”**

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	<u>X</u>	___	___	<u>See attached table, Table H-1</u>
Air (indoors) <sup>2</sup>	___	<u>X</u>	___	_____
Surface Soil (e.g., <2 ft)	<u>X</u>	___	___	_____
Surface Water	___	<u>X</u>	___	_____
Sediment	___	<u>X</u>	___	_____
Subsurf. Soil (e.g., >2 ft)	<u>X</u>	___	___	_____
Air (outdoors)	___	<u>X</u>	___	_____

**For SWMUs/AOCs with response “NONE” under “Media” column on Table H-1:**

- X If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded.

**For SWMUs/AOCs with response OTHER THAN “NONE” under “Media” column on Table H-1: SWMUs 39, 82, 104, 105, 108, 115, 116, 127, 135, 137, 170, 197, 229, 113A, 113B, AOC-L, AOC-T and AOC-V:**

- X If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

**For SWMU 183:**

- X If unknown (for any media) - skip to #6 and enter “IN” status code.

Rationale and Reference(s): Forty-seven SWMU/AOCs were evaluated from Holloman AFB’s HSWA permit. All units are on Table A.1 of the permit. Also, they are all located within the base’s boundaries. All units have been remediated, have institutional controls (e.g., land restrictions, caps, etc...), or are in the process of being remediated with an appropriate system in place.

In general, groundwater, surface soil, and subsurface soils have been investigated. The investigations were conducted under the Department of Defense’s Installation Restoration Program (also known as the Environmental Restoration Program) and HAFB’s RCRA Corrective Action Program. At least one quantitative risk assessment (RA) was conducted for all sites except AOC-V (Officer’s Club). Many sites had more than one RA conducted. This information as well as any corrective measures taken following the RA (i.e., cap construction at SWMU 197) have been taken into consideration.

The attached table, CA725-HAFB Jun01, contains the pertinent data. The latest data is reported gathered from previous investigations (e.g., RCRA Facility Investigations) or from Holloman’s groundwater Long-Term Monitoring program where applicable.

The attached sheet contains site information where appropriate.

**Current Human Exposures Under Control  
Environmental Indicator (EI) RCRIS code (CA725)**

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3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

**All sites listed under Question 2 DO NOT have complete pathways. This is reflected in the response below. References are given in the Question 2 response. Rationale for remaining sites is discussed below.**

**Th following is specifically for SWMUs/AOCs: SWMUs 39, 82, 104, 105, 108, 115, 116, 127, 135, 137, 170, 197, 229, 113A, 113B, AOC-L, AOC-T and AOC-V**

Potential Human Receptors (Under Current Conditions)

<b>“Contaminated” Media</b>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
Groundwater	_No_	No_	No_	No_			_No_
Air (indoors)	___	___	___				
Soil (surface, e.g., <2 ft)	No_	No_	No_	No_	No_	No_	No_
Surface Water	___	___			___	___	___
Sediment	___	___			___	___	___
Soil (subsurface e.g., >2 ft)				_ No_			No_
Air (outdoors)	___	___	___	___	___		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated”) as identified in #2 above.
2. enter “yes” or “no” for potential “completeness” under each “Contaminated” Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces (“\_\_\_”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

- X If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).
- \_\_\_\_\_ If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.
- \_\_\_\_\_ If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code

**Rationale and Reference(s): Where contaminants of concern (COC) were identified (see Question 2 response), quantitative risk assessments identified no complete pathways. These assessment are in large part due to the non-potable status of the underlying aquifer below HAFB where TDS is greater than 10,000 mg/L.**

**See attached Table H-1**

Footnotes:

<sup>1</sup> "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

<sup>2</sup> Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

**Current Human Exposures Under Control**  
**Environmental Indicator (EI) RCRIS code (CA725)**  
Page 4

4. Can the exposures from any of the complete pathways identified in #3 be reasonably expected to be "significant"<sup>4</sup> (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

**SKIPPED per instructions....**

\_\_\_\_\_ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

\_\_\_\_\_ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

\_\_\_\_\_ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s): \_\_\_\_\_  
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<sup>4</sup> If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

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<sup>3</sup> Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)



**Current Human Exposures Under Control**  
**Environmental Indicator (EI) RCRIS code (CA725)**  
Page 6

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

**For ALL SWMU/AOCs except SWMU 183:**

- YE** - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the **Table A.1 sites except SWMU 183 (see attached table given in response to question 2)** facility, EPA ID # NM6572124422, located at Holloman AFB NM under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.
- NO** - "Current Human Exposures" are NOT "Under Control."

**For SWMU 183:**

- IN** - More information is needed to make a determination.

Signed ① Cornelius Arriandias, NMED/HWB Date 07/10/01

Completed by (signature) [Signature] Date 3 Jul 01  
(print) Jose A Gallegos  
(title) Restoration Element Leader, Environmental Engineer

Supervisor (signature) [Signature] Date 3 July 01  
(print) John R. Poland  
(title) Chief, Environmental Flight  
(EPA Region or State) New Mexico

Signed ② John E. Kielins Date 7/10/01  
Locations where References may be found:

References may be found at the Environmental Flight, Building 55 at Holloman AFB. Also, the same documents have been filed with the New Mexico Environment Department Hazardous Waste Bureau, formerly, the Hazardous and Radioactive Materials Bureau or HRMB. Many of the documents also are part of Holloman's Information Repository located at the City of Alamogordo (NM) Public Library.

Contact telephone and e-mail numbers

(name) Jose A. Gallegos  
(phone #) 505-572-5395  
(e-mail) josea.gallegos@holloman.af.mil

**FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.**

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TABLE H-1: CA725 - Question 2 and 6 Responses

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CA725 - Question 2: Media Contamination

no.	SWMU/ AOC ID	Related ERP Site (alias)	Unit Name	Media	Contaminants above trigger level? (maximum values)	Risk Assessment Info / Date	References used for EI Evaluation	Question 6: RCRIS CODE
1	4	N/A	Bldg. 131 O/WS	None	None	Clean Closure	Draft Final RFI Report Table 3 RCRA Facility Investigation Volume I, 22-B-3-B, Radian, Oct 97; Draft Final RFI Report Table 3 RCRA Facility Investigation Volume I, AR 909, 22-B-3-B, Radian, Jul 95.	YE
2	8	N/A	Bldg. 231 O/WS	None	None	Clean Closure	Final Closure Report Addendum Phase II Remediation of POL-Contaminated Site & OWS/WOT Removals, AR 1093, 22-G-2, FWENC, 97.	YE
3	19	N/A	Bldg. 638 O/WS	None	None	OWS Removal	Draft Final RFI Report Table 3 RCRA Facility Investigation Volume I, 22-B-3-B, Radian, Oct 97; Draft Final RFI Report Table 3 RCRA Facility Investigation Volume I, AR 909, 22-B-3-B, Radian, Jul 95.	YE
4	20	N/A	Bldg. 639 O/WS	None	None	Clean Closure	Draft Final RFI Report Table 3 RCRA Facility Investigation Volume I, 22-B-3-B, Radian, Oct 97; Draft Final RFI Report Table 3 RCRA Facility Investigation Volume I, AR 909, 22-B-3-B, Radian, Jul 95.	YE
5	39	FT-31	Bldg. 1092 O/WS	GW, Subsurface Soil	CPOC: Arsenic, Barium, Benzene, Benzo(a)pyrene, Benzo(b)fluoranthene, Cadmium, 4-Chloroaniline, Ethylbenzene, Selenium, Toluene.	FWENC/ Radian, Jun 97	Draft Closure Report for SWMU 136-Building 1119 Washrack Drainage Pit and SWMUs 39, 127, and 135-IRP Site FT-31, FWENC, Sep 00; Final Closure Report Phase II Remediation of POL-Contaminated Sites & OWS/WOT Removals, AR 1056, FWENC, Jul 97; Final Phase II RCRA Facility Investigation Report - Table 1 SWMUs, Vol I-II, 17-A-66, FWENC/Radian, Jun 97.	YE
6	82	SD-08	Bldg. 131 Washrack	Subsurface Soil	Soil: Following metals in mg/kg: Cadmium, 3,710; Lead, 370,000; Mercury, 2.20; following pesticides in ug/kg: 4,4'-DDD, 4,000; 4,4'-DDE, 5,600; 4,4'-DDT, 9,300; Chlordane, 4,000	1993	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Phase II RCRA Facility Investigation Report - Table 1 SWMUs, AR 899, 17-A-66, Radian, Jun 95; Draft Final Feasibility Study & Investigation, Study, and Recommendation for 29 Waste Sites, AR 751 (AR 588, Feb 93 Draft), 17-A-46, Radian, Dec 93.	YE
7	101	LF-10	Bldg. 121 Landfill	None	None	1989	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; IRP Decision Documents, AR 674, 17-B-xx, HAFB, Nov 90; Installation Restoration Program Final Remedial - Final Remedial Investigation Report, Vol I, AR 511, 17-A, Walk, Haydel & Assoc., Dec 89.	YE
8	104	LF-29	Former Army Landfill	GW	Groundwater (mg/L): Antimony, 0.23; Beryllium, 0.0049; Chloroform, 0.022; Chromium, 0.066	Radian, Jun 92	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Final Phase II RCRA Facility Investigation Report - Table 1 SWMUs, Vol I-II, 17-A-66, FWENC/Radian, Jun 97; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
9	105	LF-19	Golf Course Landfill	GW	Groundwater (mg/L): Antimony, 0.14; Cadmium, 0.0063; Fluoride, 3.2; Lead, 0.021	Radian, Jun 92	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
10	106	LF-01	Main Base Landfill	None	None	1989	Letter from Mr. Butch Tongate, NMED-Solid Waste Bureau, 17-B-1, NMED-SWB, 2 Dec 99; Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Closure Report for the Main Base Landfill, 17-B-1, FWENC, Sep 99; IRP Decision Documents, AR 674, 17-B-xx, HAFB, Nov 90; Installation Restoration Program Final Remedial - Final Remedial Investigation Report, Vol I, AR 511, 17-A, Walk, Haydel & Assoc., Dec 89.	YE
11	108	LF-23	MOBSS Landfill Disposal Trench	GW	Groundwater (mg/L): Cadmium, 0.0059	Radian, Jun 92	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE

TABLE H-1: CA725 - Question 2 and 6 Responses

CA725 - Question 2: Media Contamination								Question 6: RCRIS CODE
no.	SWMU AOC ID	Related ERP Site (alias)	Unit Name	Media	Contaminants above trigger level? (maximum values)	Risk Assessment Info / Date	References used for EI Evaluation	
12	109	LF-10	Old Main Base Landfill	None	None	1989	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; IRP Decision Documents, AR 674, 17-B-xx, HAFB, Nov 90; Installation Restoration Program Final Remedial - Final Remedial Investigation Report, Vol I, AR 511, 17-A, Walk, Haydel & Assoc., Dec 89.	YE
13	111	RW-42	Radioactive Waste Disposal Area	None	None	Radian, Jun 92	Decision Documents - Investigation, Study and Recommendations for 29 Waste Sites, AR 821, 17-A-46, HAFB, Sep 94; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92.	YE
14	114	OT-03	TEL Disposal Site	None	None	HAFB, Sep 95	Decision Documents IRP, AR 973, HAFB, Sep 95; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
15	115	LF-22	West Area Landfill #1 PCB Disposal Area	GW	Groundwater (mg/L): Cadmium, 0.011; Fluoride, 3; alpha-BHC, 0.000015	Radian, Jun 92	Decision Documents - Investigation, Study and Recommendations for 29 Waste Sites, AR 821, 17-A-46, HAFB, Sep 94; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
16	116	LF-21	West Area Landfill #2	GW	Groundwater (mg/L): Arsenic, 0.011; Benzene, 0.0014; Cadmium, 0.024; Fluoride, 2.8	Radian, Jun 92	Decision Documents - Investigation, Study and Recommendations for 29 Waste Sites, AR 821, 17-A-46, HAFB, Sep 94; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
17	118	OT-16	Bldg. 21 Pesticides Holding Tank	None	None	Radian, Jun 92	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Final Closure Report Addendum Phase II Remediation of POL-Contaminated Site & OWS/WOT Removals, AR 1093, 22-G-2, FWENC, 97; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE
18	122	N/A	Bldg. 702 Waste Oil Tank	None	None	Woodward-Clyde, Jan 94	Draft Final Report - RI/RFI Investigation Report for Site SD-47, 17-A-64, Woodward-Clyde, Jan 94.	YE
19	123	N/A	Bldg. 704 Waste Oil Tank	None	None	FWENC, Sep 97	Results of Additional Soil Sampling for Remediation of the POL-Contaminated SWMU 123, 22-F-2, FWENC, Apr 99; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Phase I RFI Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE
20	127	FT-31	Bldg. 1092 Waste Oil Tank	GW, Subsurface Soil	CPOC: Arsenic, Barium, Benzene, Benzo(a)pyrene, Benzo(b)fluoranthene, Cadmium, 4-Chloroaniline, Ethylbenzene, Selenium, Toluene.	FWENC/Radian, Jun 97	Draft Closure Report for SWMU 136-Building 1119 Washrack Drainage Pit and SWMUs 39, 127, and 135-IRP Site FT-31, FWENC, Sep 00; Final Closure Report Phase II Remediation of POL-Contaminated Sites & OWS/WOT Removals, AR 1056, FWENC, Jul 97; Final Phase II RCRA Facility Investigation Report - Table 1 SWMUs, Vol I-II, 17-A-66, FWENC/Radian, Jun 97.	YE
21	130	SS-46	Taxiway 4 Tank 28, JP-4 Underground Waste Tank	None	None	1989	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; IRP Decision Documents, AR 674, 17-B-xx, HAFB, Nov 90; IRP Final Remedial Investigation Report, AR 511, Walk, Haydel & Assoc., Dec 89	YE

TABLE H-1: CA725 - Question 2 and 6 Responses

CA725 - Question 2: Media Contamination								Question 6: RCRIS CODE
no.	SWMU AOC ID	Related ERP Site (alias)	Unit Name	Media	Contaminants above trigger level? (maximum values)	Risk Assessment Info / Date	References used for EI Evaluation	
22	432	OT-16	Bldg. 21 Entomology Leachfield	None	None	Radian, Jun 92	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Final Closure Report Addendum Phase II Remediation of POL-Contaminated Site & OWS/WOT Removals, AR 1093, 22-G-2, FWENC, 97; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE
23	135	FT-31	Bldg. 1092 Oil/Water Separator Drainage Pit	GW, Subsurface Soil	CPOC: Arsenic, Barium, Benzene, Benzo(a)pyrene, Benzo(b)fluoranthene, Cadmium, 4-Chloroaniline, Ethylbenzene, Selenium, Toluene.	FWENC/Radian, Jun 97	Draft Closure Report for SWMU 136-Building 1119 Washrack Drainage Pit and SWMUs 39, 127, and 135-IRP Site FT-31, FWENC, Sep 00; Final Phase II RCRA Facility Investigation Report - Table 1 SWMUs, Vol I-II, 17-A-66, FWENC/Radian, Jun 97.	YE
24	136	N/A	Bldg. 1119 Washrack Drainage Area	None	None	FWENC, Sep 97	Draft Closure Report for SWMU 136-Building 1119 Washrack Drainage Pit and SWMUs 39, 127, and 135-IRP Site FT-31, FWENC, Sep 00; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE
25	137	OT-38	Bldg. 1166 Test Track Drain Field	GW	Groundwater (mg/L): Antimony, 0.14; Fluoride, 2.1; Trichloroethene, 0.0031	Radian, Jun 92	Decision Documents - Investigation, Study and Recommendations for 29 Waste Sites, AR 821, 17-A-46, HAFB, Sep 94; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
26	139	N/A	Lake Holloman	None	None	Multiple	Characterization Summary and NFA Documentation, FWENC/Radian, Jun 97; Site Characterization Report Sewage Lagoons and Lakes Investigations, Radian, 92.	YE
27	140	N/A	Lake Stinky	None	None	Multiple	Characterization Summary and NFA Documentation, FWENC/Radian, Jun 97; Site Characterization Report Sewage Lagoons and Lakes Investigations, Radian, 92.	YE
28	141	SD-27	Pad 9 Drainage Pit	None	None	Radian, Nov 93	Preliminary Assessment/Site Investigation Report, Investigation of Four Waste Sites, AR 740, Radian, Nov 93.	YE
29	165	SS-39	Bldg. 1176 Pond	None	None	Radian, Jun 92	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Additional Groundwater Sampling at Site SS-39, AR 1140, 17-A-74, GW Technology, Sep 98; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE
30	166	SD-25	MOBSS Drainage Lagoon	None	None	1989	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; IRP Decision Documents, AR 674, 17-B-xx, HAFB, Nov 90; Installation Restoration Program Final Remedial - Final Remedial Investigation Report, Vol I, AR 511, 17-A, Walk, Haydel & Assoc., Dec 89.	YE
31	170	FT-31	Fire Department Training Area 1	GW, Subsurface Soil	CPOC: Arsenic, Barium, Benzene, Benzo(a)pyrene, Benzo(b)fluoranthene, Cadmium, 4-Chloroaniline, Ethylbenzene, Selenium, Toluene.	FWENC/Radian, Jun 97	Final Phase II RCRA Facility Investigation Report - Table 1 SWMUs, Vol I-II, 17-A-66, FWENC/Radian, Jun 97.	YE

TABLE H-1: CA725 - Q' Question 2 and 6 Responses

CA725 - Question 2: Media Contamination								Question 6: RCRIS CODE
no.	SWMU/AOC ID	Related ERP Site (alias)	Unit Name	Media	Contaminants above trigger level? (maximum values)	Risk Assessment Info / Date	References used for EI Evaluation	
32	177	SS-39	Bldg. 1176 Sumps	None	None	Radian, Jun 92	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Additional Groundwater Sampling at Site SS-39, AR 1140, 17-A-74, GW Technology, Sep 98; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III,22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III,AR 810, Radian, Oct 94.	YE
33	179	SS-39	Discharge Box	None	None	Radian, Jun 92	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Additional Groundwater Sampling at Site SS-39, AR 1140, 17-A-74, GW Technology, Sep 98; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III,22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III,AR 810, Radian, Oct 94.	YE
34	181	SS-39	Bldg. 1176 Drainage Trough	None	None	Radian, Jun 92	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Additional Groundwater Sampling at Site SS-39, AR 1140, 17-A-74, GW Technology, Sep 98; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III,22-B-2-B, Radian, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III,AR 810, Radian, Oct 94.	YE
35	183	N/A	Air Base Sewer System	Unknown, Status "IN"	N/A	N/A	Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III,22-B-2-B, Radian, Sep 97; Phase I RFI Report Table 2 SWMUs, Vol I-III,AR 810, Radian, Oct 94.	IN
36	197	OT-14	Former Entomology Shop	Soil	Soil (ug/kg): 4,4'-DDD, 10,000; 4,4'-DDE, 6,100; 4,4'-DDT, 36,000; Aldrin, 1,700; Chlordane, 34,000; Heptachlor, 770; gamma-RHC, 2,800	1993	Decision Documents IRP, AR 973, HAFB, Sep 95; Draft Final Feasibility Study & Investigation, Study, and Recommendation for 29 Waste Sites, AR 751 (AR 588, Feb 93 Draft), 17-A-46, Radian, Dec 93.	YE
37	229	SS-59	T-38 Test Cell Fuel Spill Site	GW, Subsurface Soil	COPC: Benzene, Toluene, Ethylbenzene, Xylene and Total Petroleum Hydrocarbons (TPH)	Woodward-Clyde, Jun 94	Final Report RCRA Facility Investigation Report for SWMUs 229 and 230, 22-B-4-2, Woodward-Clyde, Jun 94; Final Report Quality Control Summary Report for SWMUs 229 and 230, 22-B-4-2, Woodward-Clyde, Jun 94.	YE
38	113A	OT-20	Sludge Disposal Trenches near Lagoons	Soil	Soil (mg/kg): Heptachlor epoxide, 5.0; Lead, 48; PCB-1254, 4.8	Radian, Jun 92	Final 1999 Sampling Report - Sewage Lagoons Long-term Groundwater Monitoring Program, 17-B-49, Radian, Jan 00; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site,17-A-46, Radian, Jun 92.	YE
39	113B	DP-30/SD-33	Sludge Disposal Trenches near Fire Training Area	GW, Subsurface Soil	Soil (mg/kg): Beryllium, 0.7; Dieldrin, 0.14; Heptachlore epoxide, 0.94; Lead, 2400; PCB-1254, 19.0; Groundwater (mg/L): Antimony, 0.14; Beryllium, 0.0054; Cadmium, 0.0065; Chromium, 0.05; Lead, 0.024; Selenium, 0.059; bis(2-ethylhexyl)phthalate, 0.037	Radian, Jun 92	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Decision Documents IRP, AR 973, HAFB, Sep 95; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site,17-A-46, Radian, Jun 92.	YE

TABLE H-1: CA725 - Q1 on 2 and 6 Responses

CA725 - Question 2: Media Contamination								Question 6: RCRIS CODE
no.	SWMU/AOC ID	Related ERP Site (alias)	Unit Name	Media	Contaminants above trigger level? (maximum values)	Risk Assessment Info / Date	References used for EI Evaluation	
40	AOC-1001	SS-61	Building 1001 Fuel Spill Site	None	None	FWENC, Dec 00	Final Phase II Remedial Investigation Report for SS-61, Spill Site 61, 17-A-90, FWENC, Dec 00; Final Remedial Investigation for Spill Site 61, 17-A-88, FWENC, Aug 99.	YE
41	AOC-A	OT-16	Bldg. 21 Pesticide Rinsewater Spill Area	None	None	Radian, Jun 92	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Final Closure Report Addendum Phase II Remediation of POL-Contaminated Site & OWS/WOT Removals, AR 1093, 22-G-2, FWENC, 97; Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Sep 97; Draft Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, AR 810, Oct 94.	YE
42	AOC-FST837	N/A	Building 837 Fuel Septic Tank	None	None	N/A	Voluntary Corrective Action Completion Report for the German Air Force II Project (letter report), FWENC, Jan 00.	YE
43	AOC-L	OT-37	Early Missile Test Site	GW, Subsurface Soil	Soil (mg/kg): Beryllium, 0.78; PCB-1260, 3.2 Groundwater (mg/L): Antimony, 0.12; Arsenic, 0.016; Cadmium, 0.0055; Chloroform, 0.0074; Fluoride, 2.0	Radian, Jun 92	Decision Documents - Investigation, Study and Recommendations for 29 Waste Sites, AR 821, 17-A-46, HAFB, Sep 94; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92; Final Draft Risk Assessment Report for the Remedial Investigation - Investigation, Study, and Recommendations for 29 Waste Site, 17-A-46, Radian, Jun 92.	YE
44	AOC-P	OT-44	Bldg. 301 Fuel Tank Leak	None	None	1989	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Final Closure Report Addendum Phase II Remediation of POL-Contaminated Site & OWS/WOT Removals, AR 1093, 22-G-2, FWENC, 97; IRP Decision Documents, AR 674, 17-B-xx, HAFB, Nov 90; Installation Restoration Program Final Remedial - Final Remedial Investigation Report, Vol I, AR 511, 17-A, Walk, Haydel & Assoc., Dec 89.	YE
45	AOC-T	SS-02/SS 05	POL Storage Tank Leaks	GW, Subsurface Soil	Soil (mg/kg): Benzene, 48; Beryllium, 0.49; Lead, 42; Groundwater (mg/L): 1,2-Dichloroethane, 0.0014; Antimony, 0.1; Benzene, 2.9; Cadmium, 0.0073; Ethylbenzene, 1.2; Lead, 0.029; Xylenes, 2.0	Radian, Jun 92	Final 1999 Long-Term Groundwater Monitoring Report, 17-A-87, FWENC, Jun 00; Characterization Summary and NFA Documentation for IRP Sites SS-2/5, SD-47, and SS-60, AR 1103, FWENC, Mar 98; Final Phase II RCRA Facility Investigation Report - Table 1 SWMUs, Vol I-II, 17-A-66, FWENC/Radian, Jun 97; RI Report Investigation, Study, and Recommendation for 29 Waste Sites, AR 468, Radian, Oct 92.	YE
46	AOC-U	N/A	Lost River Basin	None	None	FWENC, Sep 97	Final Phase I RCRA Facility Investigation Report Table 2 SWMUs, Vol I-III, 22-B-2-B, Radian, Sep 97; Phase I RFI Report Table 2 SWMUs, Vol I-III, AR 810, Radian, Oct 94.	YE
47	AOC-V	SS-57	Officer's Club	Soil	Risk Assessment not conducted	N/A	RA-O Site Reevaluation, FWENC, Jun 01.	YE



SUSANA MARTINEZ  
Governor

JOHN A. SANCHEZ  
Lieutenant Governor

**NEW MEXICO  
ENVIRONMENT DEPARTMENT**

***Hazardous Waste Bureau***

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RYAN FLYNN  
Cabinet Secretary-Designate

BUTCH TONGATE  
Deputy Secretary

TOM BLAINE, P. E.  
Director  
Environmental Health Division

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

January 21, 2014

DeAnna Rothhaupt  
Chief, Compliance and Restoration  
49 CES/CEAN  
550 Tabosa Avenue  
Holloman AFB, NM 88330-8261

**RE: APPROVAL  
VOLUNTARY CORRECTIVE MEASURE REQUEST GROUP 2  
FIVE FORMER UNDERGROUND STORAGE TANK SITES, HOLLOMAN AIR  
FORCE BASE, NEW MEXICO, FEBRUARY 2012  
HOLLOMAN AIR FORCE BASE, EPA ID# NM6572124422  
HWB-HAFB-12-004**

Dear Ms. Rothhaupt:

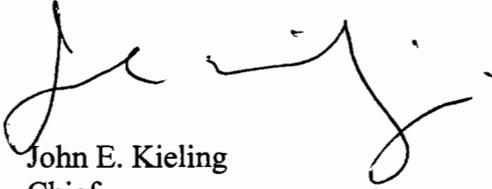
The New Mexico Environment Department (NMED) has reviewed Holloman Air Force Base's (the Permittee) *Voluntary Corrective Measure Request Group 2 – Five Former Underground Storage Tank Sites, Holloman Air Force Base, New Mexico, February 2012* which was received on February 15, 2012. The subject VCM Request is hereby approved.

The work proposed under the VCM Request has been performed and reported in subsequent RFI Reports recently submitted to NMED. NMED will review the RFI Reports to determine their completeness and submit its review to HAFB in future correspondence.

Ms. Rothhaupt  
January 21, 2014  
Page 2

If you have any questions regarding this matter, please contact Brian Salem at (505) 222-9576.

Sincerely,

A handwritten signature in black ink, appearing to read "John E. Kieling". The signature is fluid and cursive, with a large initial "J" and a long horizontal stroke.

John E. Kieling  
Chief  
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
W. Moats, NMED HWB  
B. Salem, NMED HWB  
C. Amindyas, NMED HWB  
D. Strasser, NMED HWB  
C. Hendrickson, EPA, Region 6 (6PD-F)

File: HAFB 2014 and Reading



SUSANA MARTINEZ  
Governor

JOHN A. SANCHEZ  
Lieutenant Governor

**NEW MEXICO  
ENVIRONMENT DEPARTMENT**

***Hazardous Waste Bureau***

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RYAN FLYNN  
Cabinet Secretary-Designate

BUTCH TONGATE  
Deputy Secretary

THOMAS BLAINE, P.E.  
Director  
Environmental Health Division

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

January 24, 2014

DeAnna Rothhaupt  
Chief, Compliance and Restoration  
49 CES/CEAN  
550 Tabosa Avenue  
Holloman AFB, NM 88330-8261

**RE: APPROVAL  
SD-08 LONG TERM MONITORING REPORT, QUARTER 6  
SPRING 2013, MAY 2013  
HOLLOMAN AIR FORCE BASE, EPA ID# NM6572124422  
HWB-HAFB-13-005**

Dear Ms. Rothhaupt:

The New Mexico Environment Department has reviewed Holloman Air Force Base's sixth quarter Long Term Monitoring Report for SD-08 (SWMU 82) which was received on June 24, 2013. The subject report is hereby approved.

If you have any questions regarding this matter, please contact Mr. David Strasser of my staff at (505) 222-9526.

Sincerely,

John E. Kieling  
Chief  
Hazardous Waste Bureau

Ms. Rothhaupt  
January 24, 2014  
Page 2

cc: D. Cobrain, NMED HWB  
W. Moats, NMED HWB  
C. Amindyas, NMED HWB  
B. Salem, NMED HWB  
D. Strasser, NMED HWB  
C. Hendrickson, EPA, Region 6 (6PD-F)  
L. King, EPA, Region 6 (6PD-F)

File: HAFB 2013 and Reading  
HAFB-13-005