DEPARTMENT OF THE AIR FORCE
HEADQUARTERS TACTICAL AIR COMMAND
LANGLEY AIR FORCE BASE, VA 23665

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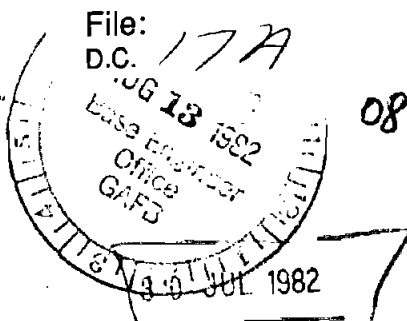
REPLY TO ATTN OF: DEEV

SUBJECT: Installation Restoration Program (IRP) Records Search George AFB

TO: See Distribution

1 We provided your office with copies of the subject report on or about 26 Jan 82. This study used a site rating model developed in Jun 1981 to identify the potential for contamination resulting from past disposal practices. On 26-27 Jan 82, representatives of USAF OEHL, AFESC, several major commands, Engineering Science, and CH2M Hill met at our office to develop an improved rating system. The new rating model, Hazardous Assesment Rating Methodology (HARM), is now used for all Air Force IRP studies. To maintain consistency, AFESC had their on-call contractors review their phase I studies performed before the advent of HARM and provide two additional appendices. The new appendices address the background of the HARM system and evaluate each of the phase I sites using the Jan 82 rating methodology.

2. Enclosed are copies of the added appendices for the Installation Restoration Program (IRP) Records Search at George AFB. Request you attach these appendices to the phase I reports we provided you in Jan 82.

3. For AFRCE-WR: Request you distribute copies of the new appendices to the Regional Environmental Protection Agency, California Solid Waste Management Board and California regional Water Quality Control Board-Lahonton Region.

4. For DTIC: Request you integrate the enclosed appendices with the Installation Restoration Program Records Search for George AFB into the National Technical Information System (NTIS). The report and new appendices are approved for public release with unlimited distribution.

5. Our project officer for IRP is Mr. Burnet, A/V 432-4430.

FOR THE COMMANDER

GEORGE C. WINDROW
Actg/Dir of Eng & Env Plng

1 Atch
Appendices

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INSTALLATION RESTORATION
PROGRAM RECORDS SEARCH

HAZARD ASSESSMENT RATING METHODOLOGY
FOR GEORGE AIR FORCE BASE, CALIFORNIA

Prepared for

Air Force Engineering and Services Center
Directorate of Environmental Planning
Tyndall Air Force Base, Florida 32403

Prepared by

CH2M HILL
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CH2M
HILL

June 1982
Contract No. FO863780 G0010 0015

Appendix N
NEW HAZARDOUS ASSESSMENT RATING METHODOLOGY

USAF INSTALLATION RESTORATION PROGRAM
HAZARD ASSESSMENT RATING METHODOLOGY

BACKGROUND

The Department of Defense (DOD) has established a comprehensive program to identify, evaluate, and control problems associated with past disposal practices at DOD facilities. One of the actions required under this program is to:

> "develop and maintain a priority listing of con-
> taminated installations and facilities for remedial
> action based on potential hazard to public health,
> welfare, and environmental impacts." (Reference:
> DEQPPM 81-5, 11 December 1981).

Accordingly, the United States Air Force (USAF) has sought to establish a system to set priorities for taking further actions at sites based upon information gathered during the Records Search phase of its Installation Restoration Program (IRP).

The first site rating model was developed in June 1981 at a meeting with representatives from USAF Occupational Environmental Health Laboratory (OEHL), Air Force Engineering Services Center (AFESC), Engineering-Science (ES) and CH_2M Hill. The basis for this model was a system developed for EPA by JRB Associates of McLean, Virginia. The JRB model was modified to meet Air Force needs.

After using this model for 6 months at over 20 Air Force installations, certain inadequacies became apparent. Therefore, on January 26 and 27, 1982, representatives of USAF OEHL, AFESC, various major commands, Engineering Science, and CH_2M Hill met to address the inadequacies. The result of the meeting was a new site rating model designed to present a better picture of the hazards posed by sites at Air Force installations. The new rating model described in this presentation is referred to as the Hazard Assessment Rating Methodology.

PURPOSE

The purpose of the site rating model is to provide a relative ranking of sites of suspected contamination from hazardous substances. This model will assist the Air Force in setting priorities for follow-on site investigations and confirmation work under Phase II of IRP.

This rating system is used only after it has been determined that (1) potential for contamination exists (hazardous wastes present in sufficient quantity), and (2) potential for migration exists. A site can be deleted from consideration for rating on either basis.

DESCRIPTION OF MODEL

Like the other hazardous waste site ranking models, the U.S. Air Force's site rating model uses a scoring system to rank sites for priority attention. However, in developing this model, the designers incorporated some special features to meet specific DOD program needs.

The model uses data readily obtained during the Record Search portion (Phase I) of the IRP. Scoring judgments and computations are easily made. In assessing the hazards at a given site, the model develops a score based on the most likely routes of contamination and the worst hazards at the site. Sites are given low scores only if there are clearly no hazards at the site. This approach meshes well with the policy for evaluating and setting restrictions on excess DOD properties.

Site scores are developed using the appropriate ranking factors according to the method presented in the flow chart (Figure 1). The site rating form is provided in Figure 2 and the rating factor guidelines are provided in Table 1.

As with the previous model, this model considers four aspects of the hazard posed by a specific site: the possible receptors of the contamination the waste and its characteristics, potential pathways for waste contaminant migration, and any efforts to contain the contaminants. Each of these categories contains a number of rating factors that are used in the overall hazard rating.
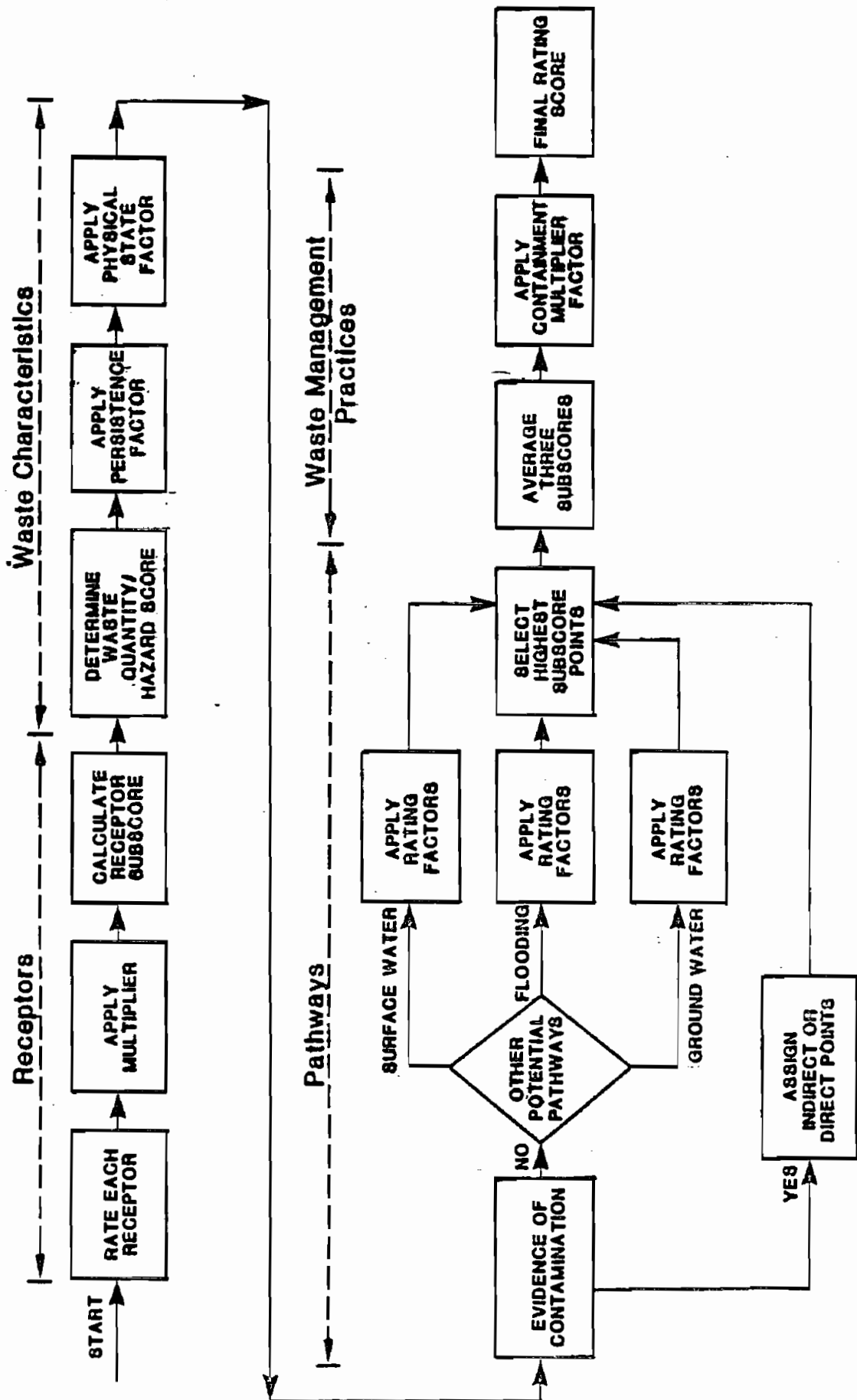
The receptors category rating is calculated by scoring each factor, multiplying by a factor weighting constant and adding the weighted scores to obtain a total category score.

The pathways category rating is based on evidence of contaminant migration or an evaluation of the highest potential (worst case) for contaminant migration along one of three pathways. If evidence of contaminant migration exists, the category is given a subscore of 80 to 100 points. For indirect evidence, 80 points are assigned and for direct evidence 100 points are assigned. If no evidence is found, the highest score among three possible routes is used. These routes are surface water migration, flooding, and ground-water migration. Evaluation of each route involves factors associated with the particular migration route. The three pathways are evaluated and the highest score among all four of the potential scores is used.

The waste characteristics category is scored in three steps. First, a point rating is assigned based on an assessment of the waste quantity and the hazard (worst case) associated with the site. The level of confidence in the information is also factored into the assessment. Next, the score is multiplied by a waste persistence factor, which acts to reduce the score if the waste is not very persistent. Finally, the score is further modified by the physical state of the waste. Liquid wastes receive the maximum score, while scores for sludges and solids are reduced.

The scores for each of the three categories are then added together and normalized to a maximum possible score of 100. Then the waste management practice category is scored. Sites at which there is no containment are not reduced in score. Scores for sites with limited containment can be reduced by 5 percent. If a site is contained and well managed, its score can be reduced by 90 percent. The final site score is calculated by applying the waste managment practices category factor to the sum of the scores for the other three categories.

FIGURE 1

SITE RATING
METHODOLOGY FLOW CHART

Receptors

START → RATE EACH RECEPTOR → APPLY MULTIPLIER → CALCULATE RECEPTOR SUBSCORE →

Waste Characteristics

DETERMINE WASTE QUANTITY/HAZARD SCORE → APPLY PERSISTENCE FACTOR → APPLY PHYSICAL STATE FACTOR →

Pathways

EVIDENCE OF CONTAMINATION

OTHER POTENTIAL PATHWAYS

NO → YES → ASSIGN INDIRECT OR DIRECT POINTS

SURFACE WATER → APPLY RATING FACTORS

FLOODING → APPLY RATING FACTORS

GROUND WATER → APPLY RATING FACTORS

SELECT HIGHEST SUBSCORE POINTS

Waste Management Practices

AVERAGE THREE SUBSCORES → APPLY CONTAINMENT MULTIPLIER FACTOR → FINAL RATING SCORE

FIGURE 2

HAZARDOUS ASSESSMENT RATING FORM

NAME OF SITE_____

LOCATION_____

DATE OF OPERATION OR OCCURRENCE_____

OWNER/OPERATOR_____

COMMENTS/DESCRIPTION_____

SITE RATED BY_____

I. RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site		4		
B. Distance to nearest well		10		
C. Land use/zoning within 1 mile radius		3		
D. Distance to reservation boundary		6		
E. Critical environments within 1 mile radius of site		10		
F. Water quality of nearest surface water body		6		
G. Ground water use of uppermost aquifer		9		
H. Population served by surface water supply within 3 miles downstream of site		6		
I. Population served by ground-water supply within 3 miles of site		6		

Subtotals _____ _____

Receptors subscore (100 X factor score subtotal/maximum score subtotal) _____

II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large)   _____

2. Confidence level (C = confirmed, S = suspected)   _____

3. Hazard rating (H = high, M = medium, L = low)   _____

Factor Subscore A (from 20 to 100 based on factor score matrix)   _____

B. Apply persistence factor
Factor Subscore A X Persistence Factor = Subscore B

_____ X _____ = _____

C. Apply physical state multiplier

Subscore B X Physical State Multiplier = Waste Characteristics Subscore

_____ X _____ = _____

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score

A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.

Subscore _____

B. Rate the migration potential for 3 potential pathways: surface water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

1. Surface water migration

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Distance to nearest surface water		8		
Net precipitation		6		
Surface erosion		8		
Surface permeability		6		
Rainfall intensity		8		
Subtotals			_____	_____

Subscore (100 X factor score subtotal/maximum score subtotal) _____

2. Flooding

		1		

Subscore (100 x factor score/3) _____

3. Ground-water migration

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Depth to ground water		8		
Net precipitation		6		
Soil permeability		8		
Subsurface flows		8		
Direct access to ground water		8		
Subtotals			_____	_____

Subscore (100 x factor score subtotal/maximum score subtotal) _____

C. Highest pathway subscore.

Enter the highest subscore value from A, B-1, B-2 or B-3 above.

Pathways Subscore _____

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors _____
Waste Characteristics _____
Pathways _____

Total _____ divided by 3 =

Gross Total Score _____

B. Apply factor for waste containment from waste management practices

Gross Total Score X Waste Management Practices Factor = Final Score

_____ X _____ = [ ]

TABLE 1

HAZARDOUS ASSESSMENT RATING METHODOLOGY GUIDELINES

I. RECEPTORS CATEGORY

Rating Factors	Rating Scale Levels				Multiplier
	0	1	2	3	
A. Population within 1,000 feet (includes on-base facilities)	0	1 - 25	26 - 100	Greater than 100	4
B. Distance to nearest water well	Greater than 3 miles	1 to 3 miles	3,001 feet to 1 mile	0 to 3,000 feet	10
C. Distance to installation boundary	Greater than 2 miles	1 to 2 miles	1,001 feet to 1 mile	0 to 1,000 feet	3
D. Land use/zoning (within 1 mile radius)	Completely remote (zoning not applicable)	Agricultural	Commercial or Industrial	Residential	6
E. Critical environments (within 1 mile radius)	Not a critical environment	Natural areas	Pristine natural areas; minor wetlands; preserved areas; presence of economically important natural resources susceptible to contamination.	Major habitat of an endangered or threatened species; presence of recharge area; major wetlands.	10
F. Water quality/use designation of nearest surface water body	Agricultural or industrial use.	Recreation, propagation and management of fish and wildlife.	Shellfish propagation and harvesting.	Potable water supplies	6
G. Ground-Water use of uppermost aquifer	Not used, other sources readily available.	Commercial, industrial, or irrigation, very limited other water sources.	Drinking water, municipal water available.	Drinking water, no municipal water available; commercial, industrial, or irrigation, no other water source available.	9
H. Population served by surface water supplies within 3 miles downstream of site	0	1 - 50	51 - 1,000	Greater than 1,000	6
I. Population served by aquifer supplies within 3 miles of site	0	1 - 50	51 - 1,000	Greater than 1, 000	6

TABLE 1 (Continued)

HAZARDOUS ASSESSMENT RATING METHODOLOGY GUIDELINES (Cont'd)

II. WASTE CHARACTERISTICS

A-1 Hazardous Waste Quantity

S = Small quantity (5 tons or 20 drums of liquid)
M = Moderate quantity (5 to 20 tons or 21 to 85 drums of liquid)
L = Large quantity (20 tons or 85 drums of liquid)

A-2 Confidence Level of Information

C = Confirmed confidence level (minimum criteria below)

   o Verbal reports from interviewer (at least 2) or written information from the records.

   o Knowledge of types and quantities of wastes generated by shops and other areas on base.

   o Based on the above, a determination of the types and quantities of waste disposed of at the site.

S = Suspected confidence level

   o No verbal reports or conflicting verbal reports and no written information from the records.

   o Logic based on a knowledge of the types and quantities of hazardous wastes generated at the base, and a history of past waste disposal practices indicate that these wastes were disposed of at a site.

A-3 Hazard Rating

Hazard Category	Rating Scale Levels			
	0	1	2	3
Toxicity	Sax's Level 0	Sax's Level 1	Sax's Level 2	Sax's Level 3
Ignitability	Flash point greater than 200°F	Flash point at 140°F to 200°F	Flash point at 80°F to 140°F	Flash point less than 80°F
Radioactivity	At or below background levels	1 to 3 times back-ground levels	3 to 5 times back-ground levels	Over 5 times back-ground levels

Hazard Rating	Points
High (H)	3
Medium (M)	2
Low (L)	1

Use the highest individual rating based on toxicity, ignitability and radioactivity and determine the hazard rating.

HAZARDOUS ASSESSMENT RATING METHODOLOGY GUIDELINES (Cont'd)

II. WASTE CHARACTERISTICS (Continued)

Waste Characteristics Matrix

Point Rating	Hazardous Waste Quantity	Confidence Level of Information	Hazard Rating
100	L	C	H
80	L	C	M
	M	C	H
70	L	B	H
60	S	C	H
	M	C	M
50	L	B	M
	L	C	H
	M	B	H
	S	C	M
40	S	B	H
	M	A	M
	M	C	L
	L	B	L
30	S	C	L
	M	B	L
	S	B	M
20	S	B	L

Notes:

For a site with more than one hazardous waste, the waste quantities may be added using the following rules:

Confidence Level
o Confirmed confidence levels (C) can be added
o Suspected confidence levels (B) can be added
o Confirmed confidence levels cannot be added with suspected confidence levels

Waste Hazard Rating
o Wastes with the same hazard rating can be added
o Wastes with different hazard ratings can only be added in a downgrade mode, e.g., MCM + SCH = LCM if the total quantity is greater than 20 tons.

Example: Several wastes may be present at a site, each having an MCM designation (60 points). By adding the quantities of each waste, the designation may change to LCM (80 points). In this case, the correct point rating for the waste is 80.

B. Persistence Multiplier for Point Rating

Persistence Criteria	Multiply Point Rating From Part A by the Following
Metals, polycyclic compounds, and halogenated hydrocarbons	1.0
Substituted and other ring compounds	0.9
Straight chain hydrocarbons	0.8
Easily biodegradable compounds	0.4

C. Physical State Multiplier

Physical State	Multiply Point Total From Parts A and B by the Following
Liquid	1.0
Sludge	0.75
Solid	0.50

TABLE 1 (Continued)

HAZARDOUS ASSESSMENT RATING METHODOLOGY GUIDELINES (Cont'd)

III. PATHWAYS CATEGORY

A. Evidence of Contamination

Direct evidence is obtained from laboratory analyses of hazardous contaminants present above natural background levels in surface water, ground water, or air. Evidence should confirm that the source of contamination is the site being evaluated.

Indirect evidence might be from visual observation (i.e., leachate), vegetation stress, sludge deposits, presence of taste and odors in drinking water, or reported discharges that cannot be directly confirmed as resulting from the site, but the site is greatly suspected of being a source of contamination.

B-1 POTENTIAL FOR SURFACE WATER CONTAMINATION

Rating Factor	Rating Scale Levels				Multiplier
	0	1	2	3	
Distance to nearest surface water (includes drainage ditches and storm sewers)	Greater than 1 mile	2,001 feet to 1 mile	501 feet to 2,000 feet	0 to 500 feet	8
Net precipitation	Less than -10 in.	-10 to +5 in.	+5 to +20 in.	Greater than +20 in.	6
Surface erosion	None	Slight	Moderate	Severe	8
Surface permeability	0% to 15% clay ($>10^{-2}$ cm/sec)	15% to 30% clay (10^{-2} to 10^{-4} cm/sec)	30% to 50% clay (10^{-4} to 10^{-6} cm/sec)	Greater than 50% clay ($<10^{-6}$ cm/sec)	6
Rainfall intensity based on 1 year 24-hr rainfall	<1.0 inch	1.0-2.0 inches	2.1-3.0 inches	>3.0 inches	8

B-2 POTENTIAL FOR FLOODING

Rating Factor	0	1	2	3	Multiplier
Floodplain	Beyond 100-year floodplain	In 25-year floodplain	In 10-year floodplain	Floods annually	1

B-3 POTENTIAL FOR GROUND-WATER CONTAMINATION

Rating Factor	0	1	2	3	Multiplier
Depth to ground water	Greater than 500 ft	50 to 500 feet	11 to 50 feet	0 to 10 feet	8
Net precipitation	Less than -10 in.	-10 to +5 in.	+5 to +20 in.	Greater than +20 in.	6
Soil permeability	Greater than 50% clay ($>10^{-6}$ cm/sec)	30% to 50% clay (10^{-4} to 10^{-6} cm/sec)	15% to 30% clay (10^{-2} to 10^{-4} cm/sec)	0% to 15% clay ($<10^{-2}$ cm/sec)	8
Subsurface flows	Bottom of site greater than 5 feet above high ground-water level	Bottom of site occasionally submerged	Bottom of site frequently submerged	Bottom of site located below mean ground-water level	8
Direct access to ground water (through faults, fractures, faulty well casings, subsidence fissures,	No evidence of risk	Low risk	Moderate risk	High risk	8

TABLE 1 (Continued)

HAZARDOUS ASSESSMENT RATING METHODOLOGY GUIDELINES (Cont'd)

IV. WASTE MANAGEMENT PRACTICES CATEGORY

A. This category adjusts the total risk as determined from the receptors, pathways, and waste characteristics categories for waste management practices and engineering controls designed to reduce this risk. The total risk is determined by first averaging the receptors, pathways, and waste characteristics subscores.

B. WASTE MANAGEMENT PRACTICES FACTOR

The following multipliers are then applied to the total risk points (from A):

Waste Management Practice	Multiplier
No containment	1.0
Limited containment	0.95
Fully contained and in full compliance	0.10

Guidelines for fully contained:

Landfills:

o Clay cap or other impermeable cover

o Leachate collection system

o Liners in good condition

o Adequate monitoring wells

Spills:

o Quick spill cleanup action taken

o Contaminated soil removed

o Soil and/or water samples confirm total cleanup of the spill

Surface Impoundments:

o Liners in good condition

o Sound dikes and adequate freeboard

o Adequate monitoring wells

Fire Protection Training Areas:

o Concrete, surface and berms

o Oil/water separator for pretreatment of runoff

o Effluent from oil/water separator to treatment plant

General Note: If data are not available or known to be complete the factor ratings under items I-A through I, III-B-1 or III-B-3, then leave blank for calculation of factor score and maximum possible score.

Appendix O
NEW SITE RATING FORMS

Table 1

SUMMARY OF RESULTS OF SITE ASSESSMENTS

Site No.	Site Description	Subscores (% of Maximum Possible Score in Each Category)			Overall Score (Sum of Subscores/3)
		Receptors	Pathways	Waste Characteristics	
M-2	Munitions Disposal	44	28	50	41
L-1	Base Landfill	50	28	60	46
L-2	TEL Disposal Site	44	28	60	44
L-3	Radioactive Disposal Site	44	28	60	44
L-11	Street Sweepings Disposal	47	28	40	38
L-12	Original Base Landfill	44	28	40	37
L-13	Base Landfill	48	35	60	48
B-2	Paint Drum Burial	48	28	40	39
B-8	Pesticide and Paint Burial	48	28	40	39
B-9	Acid/Oil Burial	41	28	30	33
B-10	Pesticide and Oil Burial	41	28	40	36
S-1	POL Leach Field	49	28	24	34
S-3	POL Leach Field	49	28	24	34
S-4	Fuel/Oil Disposal	42	28	54	41
S-5	Fire Department Training Area	46	28	54	43
S-6	Abandoned Fire Department Training Area	44	28	54	42
S-7	Tip Tank Drainage Area	49	28	48	42
S-12	Golf Course	63	28	40	44
S-20	Industrial Outfall and Pipeline	52	56	80	63
S-21	WWTP Percolation Ponds	44	28	60	44
S-22	French Drain	49	28	54	44
S-23	French Drain	49	28	36	38
S-25	Sludge Drying Beds	44	28	30	34
C-1	Landfill	44	28	60	44
C-6	Miscellaneous Burial	44	28	50	41

HAZARDOUS ASSESSMENT RATING FORM

NAME OF SITE: M-2, Munitions Disposal

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Munitions residue POL

SITE RATED BY: Michael Kemp   -

I.   RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	1	4	4	12
B.	Distance to nearest well	1	10	10	30
C.	Land use/zoning within 1 mile radius	3	3	9	9
D.	Distance to reservation boundary	2	6	12	18
E.	Critical environments within 1 mile radius of site	0	10	0	30
F.	Water quality of nearest surface-water body	0	6	0	18
C.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	80	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   44

II. WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence
     level of the information.

1.   Waste quantity (S = small, M = medium, L = large)   S

2.   Confidence level (C = confirmed, S = suspected)   C

3.   Hazard rating (H = high, M = medium, L = low)   M

Factor Subscore A (from 20 to 100 based on factor score matrix)   50

B.   Apply persistence factor
     Factor Subscore A x Persistence Factor = Subscore B

          50 x 1.0 = 50

C.   Apply physical state multiplier

     Subscore B x Physical State Multiplier = Waste Characteristics Subscore

          50 x 1.0 = 50

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0

B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
1. Surface-water migration				
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	2	8	16	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	22	108

Subscore (100 x factor score subtotal/maximum score subtotal)   20

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
2. Flooding	0	1	0	100

Subscore (100 x factor score/3)   0

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114

Subscore (100 x factor score subtotal/maximum score subtotal)   28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   <u>28</u>

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   44
Waste Characteristics   50
Pathways   28
Total 122 divided by 3 =   41
Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

41 x 1.0 =   <u>41</u>

NAME OF SITE: L-1, Base Landfill

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Industrial, domestic

SITE RATED BY: Michael Kemp

I.   RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	1	4	4	12
B. Distance to nearest well	2	10	20	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	2	6	12	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
		Subtotals	90	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   50

II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

    1. Waste quantity (S = small, M = medium, L = large)   M

    2. Confidence level (C = confirmed, S = suspected)   C

    3. Hazard rating (H = high, M = medium, L = low)   M

    Factor Subscore A (from 20 to 100 based on factor score matrix)   60

B. Apply persistence factor
    Factor Subscore A x Persistence Factor = Subscore B

            60 x 1.0 = 60

C. Apply physical state multiplier

    Subscore B x Physical State Multiplier = Waste Characteristics Subscore

            60 x 1.0 = 60

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
Subscore				0

B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

1. Surface-water migration

	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	2	8	16	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
Subtotals			22	108

Subscore (100 x factor score subtotal/maximum score subtotal)   20

	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
2. Flooding	0	1	0	100

Subscore (100 x factor score/3)   0

3. Ground-water migration

	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
Subtotals			32	114

Subscore (100 x factor score subtotal/maximum score subtotal)   28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   28

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   50
Waste Characteristics   60
Pathways   28
Total 138 divided by 3 =   46
Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

46 x 1.0 =   46

NAME OF SITE: L-2, TEL Disposal Site

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Leaded fuel sludge

SITE RATED BY: Michael Kemp

I.   RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	1	4	4	12
B.	Distance to nearest well	1	10	10	30
C.	Land use/zoning within 1 mile radius	3	3	9	9
D.	Distance to reservation boundary	2	6	12	18
E.	Critical environments within 1 mile radius of site	0	10	0	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9.	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	80	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   44

II. WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence
     level of the information.

     1. Waste quantity (S = small, M = medium, L = large)   M

     2. Confidence level (C = confirmed, S = suspected)   C

     3. Hazard rating (H = high, M = medium, L = low) .   H ·

     Factor Subscore A (from 20 to 100 based on factor score matrix)   80

B.   Apply persistence factor
     Factor Subscore A x Persistence Factor = Subscore B

               80 x 1.0 = 80

C.   Apply physical state multiplier

     Subscore B x Physical State Multiplier = Waste Characteristics Subscore

               80 x .75 = 60

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0

B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

1. Surface-water migration

	Factor Rating	Multiplier	Factor Score	Maximum Possible Score
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	1	8	8	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	14	108

Subscore (100 x factor score subtotal/maximum score subtotal)   13

	Factor Rating	Multiplier	Factor Score	Maximum Possible Score
2. Flooding	0	1	0	100

Subscore (100 x factor score/3)   0

3. Ground-water migration

	Factor Rating	Multiplier	Factor Score	Maximum Possible Score
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114

Subscore (100 x factor score subtotal/maximum score subtotal)   28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   28

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   44
Waste Characteristics   60
Pathways   28
Total 132 divided by 3 =   44
Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

44 x 1.0 =   44

HAZARDOUS ASSESSMENT RATING FORM

NAME OF SITE: L-3, Radioactive Disposal Site

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Possible toxics

SITE RATED BY: Michael Kemp

I.   RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	1	4	4	12
B.	Distance to nearest well	1	10	10	30
C.	Land use/zoning within 1 mile radius	3	3	9	9
D.	Distance to reservation boundary	2	6	12	18
E.	Critical environments within 1 mile radius of site	0	10	0	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	80	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   44

II. WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large)   S

2. Confidence level (C = confirmed, S = suspected)   C.

3. Hazard rating (H = high, M = medium, L = low)   H

Factor Subscore A (from 20 to 100 based on factor score matrix)   60

B.   Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

$$60 \times 1.0 = 60$$

C.   Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$60 \times 1.0 = \underline{60}$$

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	1	8	8	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	14	108
Subscore (100 x factor score subtotal/maximum score subtotal)				13
2. Flooding	0	1	0	100
		Subscore (100 x factor score/3)		0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   28

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   44
Waste Characteristics   60
Pathways   28
Total 132 divided by 3 =   44
                      Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

44 x 1.0 =   44

NAME OF SITE: L-11, Street Sweepings Disposal

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Possible industrial domestic

SITE RATED BY: Michael Kemp

I. RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	2	4	8	12
B. Distance to nearest well	1	10	10	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	2	6	12	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
		Subtotals	84	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   47

II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large)   M

2. Confidence level (C = confirmed, S = suspected)   S

3. Hazard rating (H = high, M = medium, L = low)   M

Factor Subscore A (from 20 to 100 based on factor score matrix)   40

B. Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

$$40 \times 1.0 = 40$$

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$40 \times 1.0 = \underline{40}$$

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0

B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

1. Surface-water migration

	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Distance to nearest surface water	1	8	8	24
Net precipitation	0	6	0	18
Surface erosion	2	8	16	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	30	108

Subscore (100 x factor score subtotal/maximum score subtotal)   28

	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
2.. Flooding	0	1	0	100

Subscore (100 x factor score/3)   0

3. Ground-water migration

	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114

Subscore (100 x factor score subtotal/maximum score subtotal)   28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   28

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	47
Waste Characteristics	40
Pathways	28
Total 115 divided by 3 =	38
	Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

38 x 1.0 =   38

NAME OF SITE: L-12, Original Base Landfill

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Industrial, domestic

SITE RATED BY: Michael Kemp

I.   RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	1	4	4	12
B. Distance to nearest well	1	10	10	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	2	6	12	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
		Subtotals	80	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   44

II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

   1. Waste quantity (S = small, M = medium, L = large)   M

   2. Confidence level (C = confirmed, S = suspected)   S

   3. Hazard rating (H = high, M = medium, L = low)   M

   Factor Subscore A (from 20 to 100 based on factor score matrix)   40

B. Apply persistence factor
    Factor Subscore A x Persistence Factor = Subscore B

          40 x 1.0 = 40

C. Apply physical state multiplier

    Subscore B x Physical State Multiplier = Waste Characteristics Subscore

          40 x 1.0 = 40

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	--
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	1	8	8	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	14	108
Subscore (100 x factor score subtotal/maximum score subtotal)				13
2. Flooding	0	1	0	100
		Subscore (100 x factor score/3)		0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   <u>28</u>

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   44
Waste Characteristics   40
Pathways   28
Total 111 divided by 3 =   37
Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

37 x 1.0 =   <u>37</u>

NAME OF SITE: L-13

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Industrial, domestic fill

SITE RATED BY: Michael Kemp

I. RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	1	4	4	12
B. Distance to nearest well	1	10	10	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	3	6	18	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
		Subtotals	86	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   48

II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large)   M

2. Confidence level (C = confirmed, S = suspected)   C

3. Hazard rating (H = high, M = medium, L = low)   M

Factor Subscore A (from 20 to 100 based on factor score matrix)   60

B. Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

$$60 \times 1.0 = 60$$

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$60 \times 1.0 = \underline{60}$$

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0

B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

1. Surface-water migration

Distance to nearest surface water	1	8	8	24
Net precipitation	0	6	0	18
Surface erosion	2	8	16	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	30	108

Subscore (100 x factor score subtotal/maximum score subtotal) 28

2. Flooding   0 1 0 100

Subscore (100 x factor score/3) 0

3. Ground-water migration

Depth to ground water	2	8	16	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	40	114

Subscore (100 x factor score subtotal/maximum score subtotal) 35

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore <u>35</u>

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors 48
Waste Characteristics 60
Pathways 35
Total 143 divided by 3 = 48
Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

48 x 1.0 = <u>48</u>

NAME OF SITE: B-2, Paint Drum Burial

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: --

SITE RATED BY: Michael Kemp

I. RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	1	4	4	12
B. Distance to nearest well	1	10	10	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	3	6	18	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
Subtotals			86	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   48

II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large)   S

2. Confidence level (C = confirmed, S = suspected)   S

3. Hazard rating (H = high, M = medium, L = low)   H

Factor Subscore A (from 20 to 100 based on factor score matrix)   40

B. Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

$$40 \times 1.0 = 40$$

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$40 \times 1.0 = 40$$

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	6	108
Subscore (100 x factor score subtotal/maximum score subtotal)				6
2. Flooding	0	1	0	100
Subscore (100 x factor score/3)				0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   <u>28</u>

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   48
Waste Characteristics   40
Pathways   28
Total 116 divided by 3 =   39
Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

39 x 1.0 =   <u>39</u>

NAME OF SITE: B-8, Pesticide and Paint Burial

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: --

SITE RATED BY: Michael Kemp

I.   RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	0	4	0	12
B.	Distance to nearest well	1	10	10	30
C.	Land use/zoning within 1 mile radius	3	3	9	9
D.	Distance to reservation boundary	2	6	12	18
E.	Critical environments within 1 mile radius of site	0	10	0	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	86	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   48

II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large)   S

2. Confidence level (C = confirmed, S = suspected)   S

3. Hazard rating (H = high, M = medium, L = low)   H

Factor Subscore A (from 20 to 100 based on factor score matrix)   40

B. Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

40 x 1.0 = 40

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

40 x 1.0 = 40

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	'
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	1	8	8	24
Net precipitation	0	6	0	18
Surface erosion	1	8	8	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	22	108
Subscore (100 x factor score subtotal/maximum score subtotal)				20
2. Flooding	0	1	0	100
		Subscore (100 x factor score/3)		0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   <u>28</u>

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   48
Waste Characteristics   40
Pathways   28
Total 116 divided by 3 =   39
Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

39 x 1.0 =   <u>39</u>

NAME OF SITE: B-9, Acid and Oil Burial

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: --

SITE RATED BY: Michael Kemp

I.   RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	0	4	0	12
B.	Distance to nearest well	1	10	10	30
C.	Land use/zoning within 1 mile radius	2	3	6	9
O.	Distance to reservation boundary	2	6	12	18
E.	Critical environments within 1 mile radius of site	0	10	0	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	73	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   41

II. WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large)   S

2. Confidence level (C = confirmed, S = suspected)   S

3. Hazard rating (H = high, M = medium, L = low)   M

Factor Subscore A (from 20 to 100 based on factor score matrix)   30

B.   Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

$$30 \times 1.0 = 30$$

C.   Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$30 \times 1.0 = \underline{30}$$

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	1	8	8	24
Net precipitation	0	6	0	18
Surface erosion	1	8	8	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	22	108
Subscore (100 x factor score subtotal/maximum score subtotal)				20
2. Flooding	0	1	0	100
	Subscore (100 x factor score/3)			0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   28

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   41
Waste Characteristics   30
Pathways   28
Total 99 divided by 3 =   33
Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

33 x 1.0 =   33

NAME OF SITE: B-10, Pesticide and Oil Burial

LOCATION: · George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: --

SITE RATED BY: Michael Kemp

I.   RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	0	4	0	12
B.	Distance to nearest well	1	10	10	30
C.	Land use/zoning within 1 mile radius	2	3	6	9
D.	Distance to reservation boundary	2	6	12	18
E.	Critical environments within 1 mile radius of site	0	10	0	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	73	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   41

II.   WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1.   Waste quantity (S = small, M = medium, L = large)   S

2.   Confidence level (C = confirmed, S = suspected)   S

3.   Hazard rating (H = high, M = medium, L = low)   H

Factor Subscore A (from 20 to 100 based on factor score matrix)   40

B.   Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

$$40 \times 1.0 = 40$$

C.   Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$40 \times 1.0 = \underline{40}$$

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	1	8	8	24
Net precipitation	0	6	0	18
Surface erosion	1	8	8	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	22	108
Subscore (100 x factor score subtotal/maximum score subtotal)				20
2. Flooding	0	1	0	100
		Subscore (100 x factor score/3)		0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   <u>28</u>

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   41
Waste Characteristics   40
Pathways   28
Total 109 divided by 3 =   36
Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

36 x 1.0 =   <u>36</u>

NAME OF SITE: S-1, POL Leach Field

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: --

SITE RATED BY: Michael Kemp

I.   RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	3	4	12	12
B. Distance to nearest well	1	10	10	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	2	6	12	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
		Subtotals	88	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   49

II.   WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

    1. Waste quantity (S = small, M = medium, L = large)   S

    2. Confidence level (C = confirmed, S = suspected)   S

    3. Hazard rating (H = high, M = medium, L = low)   M

    Factor Subscore A (from 20 to 100 based on factor score matrix)   30

B.   Apply persistence factor
     Factor Subscore A x Persistence Factor = Subscore B

            30 x .8 = 24

C.   Apply physical state multiplier

     Subscore B x Physical State Multiplier = Waste Characteristics Subscore

            24 x 1.0 = 24

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	6	108
Subscore (100 x factor score subtotal/maximum score subtotal)				6
2. Flooding	0	1	0	100
		Subscore (100 x factor score/3)		0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   28

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	49
Waste Characteristics	24
Pathways	28
Total 101 divided by 3 =	34

Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

34 x 1.0 =   34

NAME OF SITE: S-3, POL Leah Field

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: --

SITE RATED BY: Michael Kemp

I.   RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	3	4	12	12
B.	Distance to nearest well	1	10	10	30
C.	Land use/zoning within 1 mile radius	3	3	9	9
D.	Distance to reservation boundary	2	6	12	18
E.	Critical environments within 1 mile radius of site	0	10	0	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	88	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   49

II.   WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence
      level of the information.

      1. Waste quantity (S = small, M = medium, L = large)   S

      2. Confidence level (C = confirmed, S = suspected)   S

      3. Hazard rating (H = high, M = medium, L = low)   M

      Factor Subscore A (from 20 to 100 based on factor score matrix)   30

B.   Apply persistence factor
      Factor Subscore A x Persistence Factor = Subscore B

           30 x .8 = 24

C.   Apply physical state multiplier

      Subscore B x Physical State Multiplier = Waste Characteristics Subscore

           24 x 1.0 = 24

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
Subscore				0
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
Subtotals			6	108
Subscore (100 x factor score subtotal/maximum score subtotal)				6
2. Flooding	0	1	0	100
Subscore (100 x factor score/3)				0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
Subtotals			32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   28

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   49
Waste Characteristics   24
Pathways   28
Total 101 divided by 3 = 34
                         Cross Total Score

B. Apply factor for waste containment from waste management practices

Cross Total Score x Waste Management Practices Factor = Final Score

34 x 1.0 =   34

NAME OF SITE: S-4, Fuel Oil Disposal

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: --

SITE RATED BY: Michael Kemp

I. RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	1	4	4	12
B.	Distance to nearest well	0	10	0	30
C.	Land use/zoning within 1 mile radius	3	3	9	9
D.	Distance to reservation boundary	3	6	18	18
E.	Critical environments within 1 mile radius of site	0	10	0	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	76	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   42

II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

    1. Waste quantity (S = small, M = medium, L = large)   M

    2. Confidence level (C = confirmed, S = suspected)   C

    3. Hazard rating (H = high, M = medium, L = low)   M

    Factor Subscore A (from 20 to 100 based on factor score matrix)   60

B. Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

        60 x .9 = 54

C. Apply physical state multiplier

    Subscore B x Physical State Multiplier = Waste Characteristics Subscore

        60 x 1.0 = 54

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
Subscore				0

B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

1. Surface-water migration

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
Subtotals			6	108

Subscore (100 x factor score subtotal/maximum score subtotal) 6

	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
2. Flooding	0	1	0	100

Subscore (100 x factor score/3) 0

3. Ground-water migration

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
Subtotals			32	114

Subscore (100 x factor score subtotal/maximum score subtotal) 28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore 28

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors 42
Waste Characteristics 54
Pathways 28
Total 124 divided by 3 = 41
Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

41 x 1.0 = 41

NAME OF SITE: S-5, Fire Training Area

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: POL, solvents

SITE RATED BY: Michael Kemp

I.   RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	1	4	4	12
B. Distance to nearest well	1	10	10	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	3	6	18	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
		Subtotals	86	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   46

II.   WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

      1. Waste quantity (S = small, M = medium, L = large)   M

      2. Confidence level (C = confirmed, S = suspected)   C

      3. Hazard rating (H = high, M = medium, L = low)   M

      Factor Subscore A (from 20 to 100 based on factor score matrix)   60

B.   Apply persistence factor
      Factor Subscore A x Persistence Factor = Subscore B

              60 x .9 = 54

C.   Apply physical state multiplier

      Subscore B x Physical State Multiplier = Waste Characteristics Subscore

              54 x 1.0 = 54

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
Subscore				0
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	1	8	8	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
Subtotals			14	108
Subscore (100 x factor score subtotal/maximum score subtotal)				13
2. Flooding	0	1	0	100
Subscore (100 x factor score/3)				0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
Subtotals			32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   <u>28</u>

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   46
Waste Characteristics   54
Pathways   28
Total 128 divided by 3 =   43
Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

43 x 1.0 =   <u>43</u>

HAZARDOUS ASSESSMENT RATING FORM

NAME OF SITE: S-6, Abandoned Fire Training Area

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: --

SITE RATED BY: Michael Kemp

I.   RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	1	4	4	12
B. Distance to nearest well	1	10	10	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	2	6	12	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
		Subtotals	80	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   44

II. WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

   1. Waste quantity (S = small, M = medium, L = large)   M

   2. Confidence level (C = confirmed, S = suspected)   C

   3. Hazard rating (H = high, M = medium, L = low)   M

   Factor Subscore A (from 20 to 100 based on factor score matrix)   60

B.   Apply persistence factor
     Factor Subscore A x Persistence Factor = Subscore B

          60 x .9 = 54

C.   Apply physical state multiplier

     Subscore B x Physical State Multiplier = Waste Characteristics Subscore

          54 x 1.0 = 54

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	2	8	16	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	22	108
Subscore (100 x factor score subtotal/maximum score subtotal)				20
2. Flooding	0	1	0	100
		Subscore (100 x factor score/3)		0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   <u>28</u>

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	44
Waste Characteristics	54
Pathways	28
Total 126 divided by 3 =	42
	Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

42 x 1.0 =   <u>42</u>

NAME OF SITE: S-7, Tip Tank Drainage Area

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Fuel

SITE RATED BY: Michael Kemp

I.   RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	3	4	12	12
B.	Distance to nearest well	1	10	10	30
C.	Land use/zoning within 1 mile radius	3	3	9	9
D.	Distance to reservation boundary	2	6	12	18
E.	Critical environments within 1 mile radius of site	0	10	0	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	88	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   <u>49</u>

II.   WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1.   Waste quantity (S = small, M = medium, L = large)   M

2.   Confidence level (C = confirmed, S = suspected)   C

3.   Hazard rating (H = high, M = medium, L = low)   M

Factor Subscore A (from 20 to 100 based on factor score matrix)   60

B.   Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

$$60 \times .8 = 48$$

C.   Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$48 \times 1.0 = \underline{48}$$

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0

B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

1. Surface-water migration

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	6	108

Subscore (100 x factor score subtotal/maximum score subtotal)   6

2. Flooding	0	1	0	100

Subscore (100 x factor score/3)   0

3. Ground-water migration

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114

Subscore (100 x factor score subtotal/maximum score subtotal)   28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   <u>28</u>

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	49
Waste Characteristics	48
Pathways	28
Total 125 divided by 3 =	42

Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

42 x 1.0 =   <u>42</u>

NAME OF SITE: S-12, Golf Course

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Percolation pond effluent irrigation

SITE RATED BY: Michael Kemp

I.   RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	3	4	12	12
B. Distance to nearest well	3	10	30	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	3	6	18	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
		Subtotals	114	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   63

II. WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence
     level of the information.

     1. Waste quantity (S = small, M = medium, L = large)   M

     2. Confidence level (C = confirmed, S = suspected)   S

     3. Hazard rating (H = high, M = medium, L = low)   M

     Factor Subscore A (from 20 to 100 based on factor score matrix)   40

B.   Apply persistence factor
     Factor Subscore A x Persistence Factor = Subscore B

             40 x 1.0 = 40

C.   Apply physical state multiplier

     Subscore B x Physical State Multiplier = Waste Characteristics Subscore

             40 x 1.0 = 40

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	2	8	16	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	22	108
Subscore (100 x factor score subtotal/maximum score subtotal)				20
2. Flooding	0	1	0	100
		Subscore (100 x factor score/3)		0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   28

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	63
Waste Characteristics	40
Pathways	28
Total 131 divided by 3 =	44
	Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

44 x 1.0 =   44

NAME OF SITE: S-20, Industrial Outfall and Pipeline

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: --

SITE RATED BY: Michael Kemp

I.   RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	3	4	12	12
B.	Distance to nearest well	1	10	10	30
C.	Land use/zoning within 1 mile radius	3	3	9	9
D.	Distance to reservation boundary	3	6	18	18
E.	Critical environments within 1 mile radius of site	0	10	0	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	94	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   52

II.   WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1.   Waste quantity (S = small, M = medium, L = large)   L

2.   Confidence level (C = confirmed, S = suspected)   C

3.   Hazard rating (H = high, M = medium, L = low)   M

Factor Subscore A (from 20 to 100 based on factor score matrix)   80

B.   Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

$$80 \times 1.0 = 80$$

C.   Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$80 \times 1.0 = \underline{80}$$

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0

B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

1. Surface-water migration

Distance to nearest surface water	3	8	24	24
Net precipitation	0	6	0	18
Surface erosion	2	8	16	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	46	108

Subscore (100 x factor score subtotal/maximum score subtotal) — 43

2. Flooding | 0 | 1 | 0 | 100 |

Subscore (100 x factor score/3) — 0

3. Ground-water migration

Depth to ground water	3	8	24	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	1	8	8	24
Direct access to ground water	2	8	16	24
		Subtotals	64	114

Subscore (100 x factor score subtotal/maximum score subtotal) — 56

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore — 56

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   52
Waste Characteristics   80
Pathways   56
Total 188 divided by 3 =   63
                   Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

63 x 1.0 =   63

0 - 40

NAME OF SITE: S-21, WWTP Percolation Ponds

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Sanitary, industrial

SITE RATED BY: Michael Kemp

I.   RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	1	4	4	12
B. Distance to nearest well	1	10	10	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	2	6	12	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
		Subtotals	80	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   44

II. WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large)   M

2. Confidence level (C = confirmed, S = suspected)   C

3. Hazard rating (H = high, M = medium, L = low)   M

Factor Subscore A (from 20 to 100 based on factor score matrix)   60

B.   Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

$$60 \times 1.0 = 60$$

C.   Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$60 \times 1.0 = \underline{60}$$

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	6	108
Subscore (100 x factor score subtotal/maximum score subtotal)				6
2. Flooding	0	1	0	100
		Subscore (100 x factor score/3)		0
3. Ground-water migration				
Depth to ground water	1	8	6	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   <u>28</u>

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   44
Waste Characteristics   60
Pathways   28
Total 132 divided by 3 =   44
                          Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

44 x 1.0 =   <u>44</u>

NAME OF SITE: S-22, French Drain

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Waste POL

SITE RATED BY: Michael Kemp

I.   RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	3	4	12	12
B.	Distance to nearest well	1	10	10	30
C.	Land use/zoning within 1 mile radius	3	3	9	9
D.	Distance to reservation boundary	2	6	12	18
E.	Critical environments within 1 mile radius of site	0	10	0	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	88	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   <u>49</u>

II.   WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1.   Waste quantity (S = small, M = medium, L = large)   M

2.   Confidence level (C = confirmed, S = suspected)   C

3.   Hazard rating (H = high, M = medium, L = low)   M

Factor Subscore A (from 20 to 100 based on factor score matrix)   60

B.   Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

60 x .9 = 54

C.   Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

54 x 1.0 = <u>54</u>

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0

B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

1. Surface-water migration

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	6	108

Subscore (100 x factor score subtotal/maximum score subtotal) — 6

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
2. Flooding	0	1	0	100

Subscore (100 x factor score/3) — 0

3. Ground-water migration

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114

Subscore (100 x factor score subtotal/maximum score subtotal) — 28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore — **28**

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	49
Waste Characteristics	54
Pathways	28
Total 131 divided by 3 =	44
	Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

44 x 1.0 = **44**

NAME OF SITE: S-23, French Drain

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George, AFB, California

COMMENTS/DESCRIPTION: Jet fuel, POL

SITE RATED BY: Michael Kemp

I. RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	3	4	12	12
B. Distance to nearest well	1	10	10	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	2	6	12	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
		Subtotals	88	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   49

II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large)   M

2. Confidence level (C = confirmed, S = suspected)   S

3. Hazard rating (H = high, M = medium, L = low)   M

Factor Subscore A (from 20 to 100 based on factor score matrix)   40

B. Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

40 x .9 = 36

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

36 x 1.0 = 36

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	0	8	0	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	6	108
Subscore (100 x factor score subtotal/maximum score subtotal)				6
2. Flooding	0	1	0	100
	Subscore (100 x factor score/3)			0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   <u>28</u>

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	49
Waste Characteristics	36
Pathways	28
Total 113 divided by 3 =	38
	Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

38 x 1.0 =   <u>38</u>

HAZARDOUS ASSESSMENT RATING FORM

NAME OF SITE: S-25, Sludge Drying Beds

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --'

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Sanitary, some industrial

SITE RATED BY: Michael Kemp

I.   RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	1	4	4	12
B. Distance to nearest well	1	10	10	30
C. Land use/zoning within 1 mile radius	3	3	9	9
D. Distance to reservation boundary	2	6	12	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	3	6	18	18
		Subtotals	80	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   44

II.   WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large)   M

2. Confidence level (C = confirmed, S = suspected)   S

3. Hazard rating (H = high, M = medium, L = low)   M

Factor Subscore A (from 20 to 100 based on factor score matrix)   40

B.   Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

$$40 \times 1.0 = 40$$

C.   Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$40 \times .75 = \underline{30}$$

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	2	8	16	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	22	108
Subscore (100 x factor score subtotal/maximum score subtotal)				20
2. Flooding	0	1	0	100
	Subscore (100 x factor score/3)			0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114
Subscore (100 x factor score subtotal/maximum score subtotal)				28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore   <u>28</u>

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors   44
Waste Characteristics   30
Pathways   28
Total 102 divided by 3 =   34
Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

34 x 1.0 =   <u>34</u>

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HAZARDOUS ASSESSMENT RATING FORM

Page 1 of 2

NAME OF SITE: C-1, Landfill

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Domestic, industrial, munitions

SITE RATED BY: Michael Kemp

I.   RECEPTORS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. Population within 1,000 feet of site	2	4	8	12
B. Distance to nearest well	2	10	20	30
C. Land use/zoning within 1 mile radius	2	3	6	9
D. Distance to reservation boundary	2	6	12	18
E. Critical environments within 1 mile radius of site	0	10	0	30
F. Water quality of nearest surface-water body	0	6	0	18
G. Ground-water use of uppermost aquifer	3	9	27	27
H. Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I. Population served by ground-water supply within 3 miles of site	1	6	6	18
		Subtotals	79	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   44

II. WASTE CHARACTERISTICS

A.   Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large)   M

2. Confidence level (C = confirmed, S = suspected)   C

3. Hazard rating (H = high, M = medium, L = low)   M

Factor Subscore A (from 20 to 100 based on factor score matrix)   60

B.   Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

   60 x 1.0 = 60

C.   Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

   60 x 1.0 = 60

0 - 49

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	0

B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

1. Surface-water migration

	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Distance to nearest surface water	0	8	0	24
Net precipitation	0	6	0	18
Surface erosion	2	8	16	24
Surface permeability	1	6	6	18
Rainfall intensity	0	8	0	24
		Subtotals	22	108

Subscore (100 x factor score subtotal/maximum score subtotal) — 20

2. Flooding

	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
	0	1	0	100

Subscore (100 x factor score/3) — 0

3. Ground-water migration

	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	2	8	16	24
Subsurface flows	0	8	0	24
Direct access to ground water	1	8	8	24
		Subtotals	32	114

Subscore (100 x factor score subtotal/maximum score subtotal) — 28

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore — 28

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	44
Waste Characteristics	60
Pathways	28
Total 132 divided by 3 =	44

Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

44 x 1.0 = 44

HAZARDOUS ASSESSMENT RATING FORM

NAME OF SITE: C-6, Miscellaneous Burial

LOCATION: George AFB, California

DATE OF OPERATION OR OCCURRENCE: --

OWNER/OPERATOR: George AFB, California

COMMENTS/DESCRIPTION: Possible industrial, domestic, munitions

SITE RATED BY: Michael Kemp

I. RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	2	4	8	12
B.	Distance to nearest well	2	10	20	30
C.	Land use/zoning within 1 mile radius	2	3	6	9
D.	Distance to reservation boundary	2	6	12	18
E.	Critical environments within 1 mile radius of site	0	10	0	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	1	6	6	18
			Subtotals	79	180

Receptors subscore (100 x factor score subtotal/maximum subtotal)   44

II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large)   S

2. Confidence level (C = confirmed, S = suspected)   C

3. Hazard rating (H = high, M = medium, L = low)   M

Factor Subscore A (from 20 to 100 based on factor score matrix)   50

B. Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

$$50 \times 1.0 = 50$$

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

$$50 \times 1.0 = \underline{50}$$

FINAL PAGE

ADMINISTRATIVE RECORD

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GEORGE AFB
CALIFORNIA

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number   *08*