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ANALYSIS OF SITING SUITABILITY, MX LAND MOBILE MISSILE SYSTEM, --ETC(U)
SEP 76 K L WILSON, J R MILLER, J W LAVIOLETTE F04701-74-C-0013
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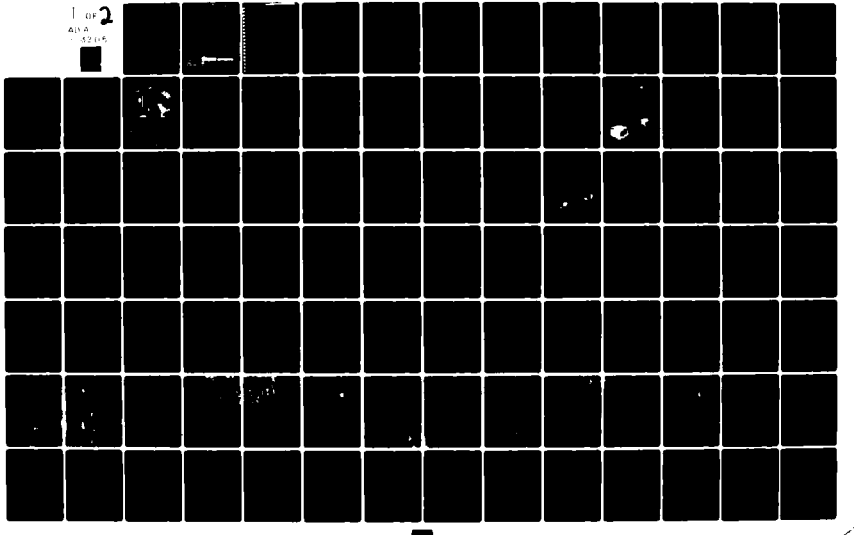

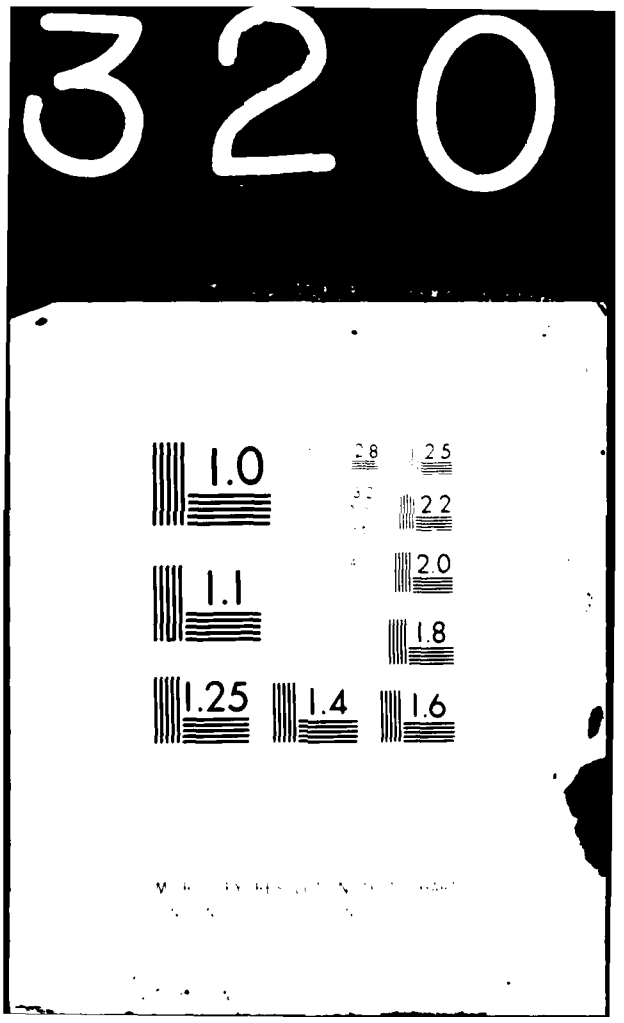
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ANALYSIS OF SITING SUITABILITY, MX LAND MOBILE MISSILE SYSTEM, BUREAU OF LAND MANAGEMENT AND DEPARTMENT OF DEFENSE LANDS

Conducted For:

Department of the Air Force
Space and Missile Systems Organization (SAMSO)
Contract No.: F04701-74-D-0013

Prepared by:

Fugro National, Inc.
3777 Long Beach Boulevard
Long Beach, California 90807

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Draft
3 September 1976

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3. RECIPIENT'S CATALOG NUMBER

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Matrix analysis, geology, soils, ~~Engineering~~, ~~[illegible]~~ Hydrology, caliche, sand dunes, playas, seismicity, ground water, [illegible], surface water, grain size, faults, [illegible]

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Draft geotechnical report for evaluation and ranking of 68 Valleys in land control by DOD and BLM in Arisona, Nevada and New Mexico is given. Valley ranking is based on criteria of Depth to Rock, Depth to Water and Topographic profile.

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ANALYSIS OF SITING SUITABILITY,

MX LAND MOBILE MISSILE SYSTEM,

BUREAU OF LAND MANAGEMENT AND

DEPARTMENT OF DEFENSE LANDS

Conducted For:

Department of the Air Force
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Matrix analysis, Geology, Soils, ~~Engineering~~, ~~[redacted]~~, hydrology, Caliche, sand dunes, Playas, Seismicity, ~~[illegible]~~, surface water, ~~[illegible]~~

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Draft geotechnical report for evaluation and ranking of 68 Valleys in land control by DOD and BLM in Arizona, Nevada and New Mexico. Valley ranking is based on criteria of Depth to Rock, Depth to water and Topographic profile.

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DRAFT

ABSTRACT

Areal, geotechnical, and cultural factors pertaining to 33 Department of Defense (DoD) and 35 Bureau of Land Management (BLM) Valleys in Arizona, Nevada, and New Mexico siting regions were evaluated to rank Valleys according to their relative favorability for siting of the MX system. Suitable Valley areas totalling 10,000 square nautical miles (nm^2) were delineated based on established criteria, derivative maps were produced at a scale of 1:62,500 and areas of suitable Valleys were measured. A matrix analysis utilizing a computer program was developed to obtain Valley ranking scores based on 15 ranking factors and corresponding weighting factors. Maps of the three siting regions, at a scale of 1:1,000,000, depict suitable Valley areas.

Over 70 percent of all Arizona BLM and DoD, and Nevada BLM ~~Lands rank~~ Valleys rate in the upper ~~50 percent~~ rate of the total. Nevada DoD and New Mexico BLM and DoD rank predominantly in the lower 50 percent. Seventy-four percent (7423 nm^2) of the total suitable Valley area is in the upper 50 percent; 30 percent (2248 nm^2) of this is DoD land of which 76 percent (1715 nm^2) is in Arizona. Eighty-eight percent (1514 nm^2) of the Arizona DoD land is in Luke Bombing and Gunnery Range.

It is recognized that the heavy weight placed on areal factors dominates the final ranking and smaller key suitable Valleys are important considerations. Matrix analysis scores and final rankings are used with judgement to recommend Arizona DoD and BLM and Nevada BLM core areas for possible wing deployment consideration. It is also suggested that the New Mexico siting region be considered low priority, and Arizona siting region high priority for Phase 1 and Phase 2 field studies.

FOREWORD

This report was prepared for the Department of the Air Force, Space and Missile Systems Organization (SAMSO) in compliance with conditions of the statement of work as part of Contract No. F04701-74-D-0013 and deals with siting of the MX Land Mobile Advanced ICBM system.

The report was prepared by Kenneth L. Wilson, Project Manager; James R. Miller, Project Geologist; and John W. LaViolette and Gary E. Christenson, Staff Geologists. The graphics were prepared by Edd V. Joy, Gordon M. Brown, and Bruce A. Bowen. TRW Systems personnel monitored the study for SAMSO.

A list of applicable MX siting reports is presented in Appendix A to avoid extensive referencing of the geotechnical and siting reports. A partial list of the abbreviations and term definitions used in this report is presented in Table 1. Figure 1 and Table 2 illustrate the relationship of suitable siting area to siting valleys and geographic valleys.

TABLE 1

List of Abbreviations and Definitions

AZB	Arizona BLM Siting Area (Gila Bend Study Area)
AZD	Arizona DoD Siting Area
BLM	Bureau of Land Management
DoD	Department of Defense
Final Score	The summation of all matrix scores times their corresponding weighting factors for each Valley
Four-Quad	Four combined USGS 15-minute quadrangle maps (scale 1:62,500) comprising Volume II Geotechnical Report large graphics
LBGR	Luke Bombing and Gunnery Range
Matrix Score	Value from 0 to 10 for each ranking factor in the matrix analysis assigned to the smoothed area in each Valley
NBGR	Nellis Bombing and Gunnery Range
NVB	Nevada BLM Siting Area (Nellis Group)
NVD	Nevada DoD Siting Area
NMB	New Mexico BLM Siting Area (White Sands Extension Area)
NMD	New Mexico DoD Siting Area
Ranking Factor	Category used in ranking suitable Valley areas in matrix analysis, i.e., Columns A-O
Ranking Score	Summation of matrix scores for each Valley in the matrix analysis
Siting Region (Siting Area)	Three DoD and Three BLM study areas in Arizona, Nevada, and New Mexico.
Siting Valley (or Available Area)	The portion of a Valley described in Volume II Geotechnical Reports (DoD and BLM) considered available for siting of the MX system (see Figure 1).
Suitable Valley Area (or Suitable Area)	The portion of available area within the siting Valley remaining after application of all criteria defining unsuitable area (see Figure 1)

Suitable Contiguous Area	Suitable area in a siting Valley which is connected to an adjacent given siting Valley by less than ten percent topographic grade
Terrain Analysis Rating	A rating of basin-fill units based on analysis of terrain characteristics such as drainage incision, drainage density, surface slope, drainage shape, surface CBR values, etc.
Terrain Analysis Scaling Factor	Values of 0.25, 0.5, 0.75, 1.0 assigned to terrain analysis ratings of very poor, poor, fair, and good, respectively
Valley	See Figure 1 and Table 2
Weighting Factor	A value, specific to each ranking factor, multiplied by the matrix score in order to give appropriate relative importance to each factor when deriving a ranking score
WSMR/FBMR	White Sands Missile Range/Fort Bliss Military Reservation
YPG	Yuma Proving Grounds

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ENGINEERING REVIEW COMMENTS

SHEET 1 OF 4

☐ CRITERIA
☐ PRE-DESIGN
☐ CONCEPT
☐ IN-PROGRESS
☐ FINAL
☐ _____

PROJECT: Report Review - Analysis of Siting Suitability, MX LM System, BLM and DOD Lands

LOCATION:

A/E: FNI

☐ MECH. ☐ ARCH. ☐ STRUCT. ☐ CIVIL ☐ ELEC. ☐

DATE:

BY: Capt Kent J. Rohlof

DWG. NO. OR PAGE NO.	ITEM NO.	COMMENTS	ACTION BY REV. CONF.	ACTION BY PROJ. ENGR.
Abstract	1	Abstract page should be numbered and included in table of contents. Renumber pages to accomodate.	WD	
Abstract	2	Statement that "70 percent of all Arizona DOD/BLM and Nevada BLM rank in upper 50 percent of total" is unclear. This type of sentence appears throughout the text. Restructure to clarify and resolve the apparent ambiguity.	A	
Abstract	3	Last paragraph of abstract. Reword to say "initial" in lieu of "Phase 1 and Phase 2". These terms are not defined here and have no meaning in the context of the report. Similar comments apply throughout the report.	A	
V.	4	Clarify the difference between BLM and DOD Valleys by direct explanation, i.e., The DOD "Valley" includes mountainous regions while BLM "Valleys" a priori excludes greater than 10% grade or something to that effect.	A	
Figure 1	5 a b	Page number should be IV. Key is not legible.	A	
1	6	Sect 1.1, first paragraph: Information in this paragraph is essentially repeated in third paragraph. Restructure third paragraph into two paragraphs, the last containing info from first paragraph. Then delete first paragraph.	A	
1	7	Sect 1.1, second paragraph, last line: Rephrase to clarify "considerable siting area was determined".	A	
1	8	Sect 1.1, third paragraph, first line: Clarify "available" siting area.	A	
1	9	Sect 1.1, third paragraph, lines 2 and 3: The statement is unclear and awkward. Rephrase or delete.	A	

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ENGINEERING REVIEW COMMENTS

SHEET 2 OF 4

☐ CRITERIA
☐ PRE-DESIGN
☐ CONCEPT
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☐ FINAL
☐ _____

PROJECT

LOCATION

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☐ CIVIL ☐ ELEC. ☐

DATE

BY

DWG. NO. OR PAGE NO.	ITEM NO.	COMMENTS	ACTION BY REV. CONF.	ACTION BY PROJ. ENGR.
1	10	Sect 1.1, third paragraph: a. line 5: Add the word "most" between of and suitable.	A	
		b. line 6: Change "Phase 1" to read "initial". Add the word "final" before "select-".	A	
		c. line 7: Change "is" to "was".	A	
4	11	Sect 1.2, first paragraph, item 2: a. Explain "smoothed". This could be accomplished by reference to section 1.3 if you "beef up" the explanation there. (See comment No. 15).	A	
		b. Delete the word "and" at the end of the item.	A	
5	12	Sect 1.2, last paragraph: First sentence meaning is unclear. Clarify! Are they items?, factors?, categories? Are they based on regional data or evaluated on regional data? (evaluation based on regional data).	A	
6	13	Sect 1.3, first paragraph: line 7/8: Change beginning of sentence to read "Area reduction criteria..."	A	
	14	Sect 1.3 first para line 16: Clarify meaning of "base suitable" or rephrase.	A	
6	15	Sect 1.3, second paragraph: Expand the explanation of "smoothing". Provide rationale (See comment 11)	A	
7	16	Table 4: Set off from text. This applies throughout the report.	A	
8	17	Table 5: See Comment 16.	A	

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ENGINEERING REVIEW COMMENTS

SHEET 3 OF 4

☐ CRITERIA
☐ PRE-DESIGN
☐ CONCEPT
☐ IN-PROGRESS
☐ FINAL
☐ _____

PROJECT

LOCATION

A/E:

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☐ CIVIL ☐ ELEC. ☐

DATE

BY

DWG. NO. OR PAGE NO.	ITEM NO.	COMMENTS	ACTION BY REV. CONF.	ACTION BY PROJ. ENGR.
8	18	Sect 1.3, last paragraph; third line: What criteria eliminated them, 100/100 BR/WT? What would be effect of 30/30 vs 100/100? We may need to restructure some of the report based on the answers. Specific direction reserved pending discussion.	AE Study	
9	19	Sect 2.1.1, second paragraph (bottom of page 9): The paragraph structure is awkward; e.g., relationship between the five rankings and P, Q, R, S, and T is unclear. Clarify.	A	
9	20	Sect 2.1.1, second paragraph, line 5: Rewrite to read "The ~~various~~ ranking combinations..."	A	
13	21	Sect 2.1.2, first paragraph: Add a fifth criteria category to cover small valley reentrants etc.	A	
13	22	Sect 2.1.2, second paragraph, second line: What caused most reduction? Explain! (See Comment 18)	AE study	
16	23	Sect 2.1.2, second line on page 16: (See Comments 18, 22)	AE study	
17	24	Sect 2.1.4, first paragraph, second sentence: Clarify this statement.	A	
17	25	Sect 2.1.4, first paragraph, fourth sentence: Rewrite to read "...circles represent, respectively, ...available data."	A	
18	26	Sect 2.1.4.1: Delete extraneous discussion. The following are not relevant to the section:		
		a. line 5 - area of valley, area of siting valley.	A	
		b. line 7 - area	A	
		c. line 9 - Valley topographic conditions	A	
		d. line 10 - cultural and quantity distance criteria	Mod. by AE per comment	

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ENGINEERING REVIEW COMMENTS

SHEET 4 OF 4

☐ CRITERIA
☐ PRE-DESIGN
☐ CONCEPT
☐ IN-PROGRESS
☐ FINAL
☐ _____

PROJECT

LOCATION

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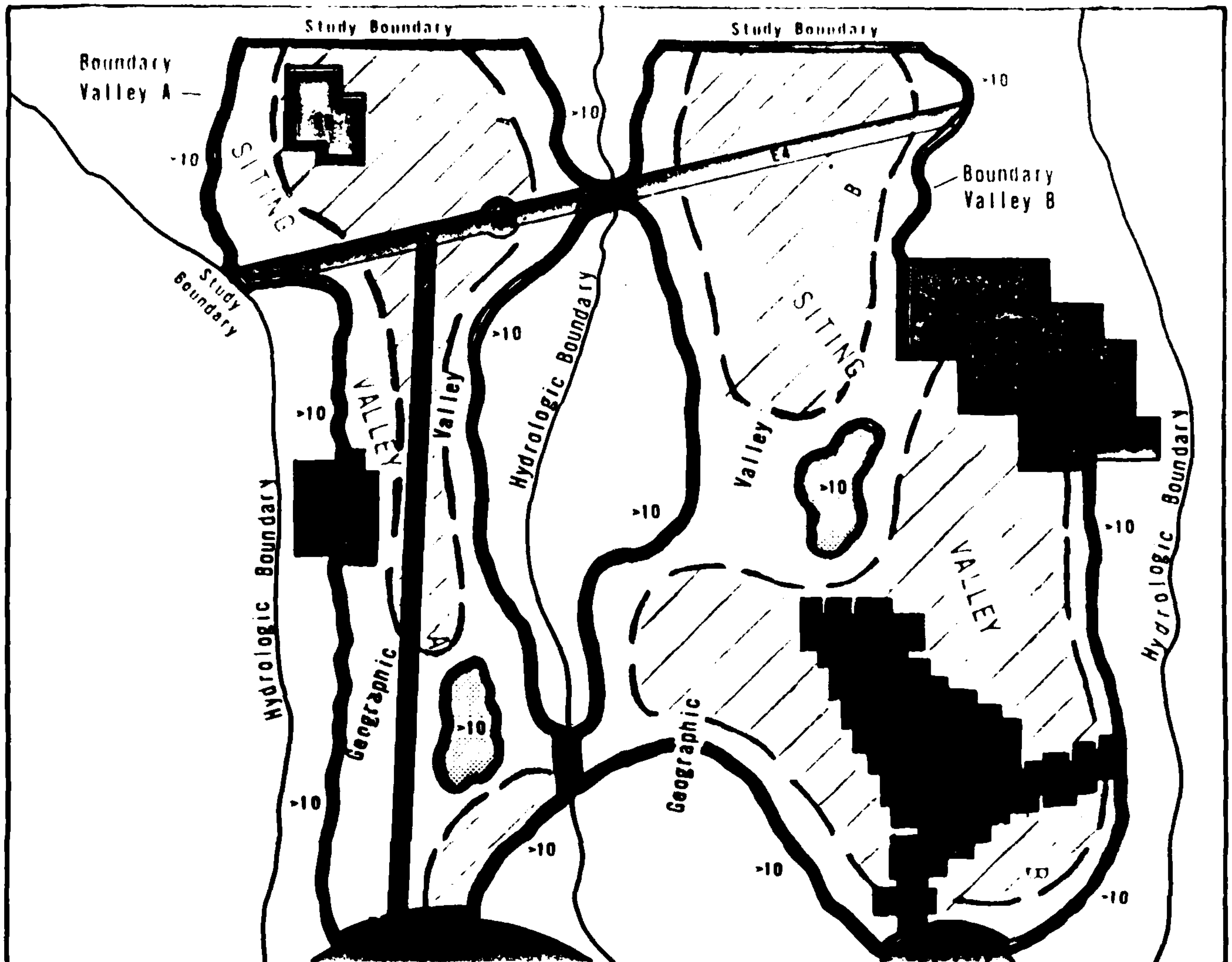
DATE

BY

DWG. NO. OR PAGE NO.	ITEM NO.	COMMENTS	ACTION BY REV. CONF.	ACTION BY PROJ. ENGR.
19	27	Sect 2.1.4.3, third line: Does "unknown depth" imply d < 500 ft? Clarify!	A	
20	28	Sect 2.1.4.4, third line on page 20: Does "unknown depths" imply d < 100 ft? Clarify!	A	
20	29	Sect 2.1.4.4 - 2.1.4.5: References to "symbols taken into account" is unclear. The amount and quality of data (represented by the symbols) were taken into account! Clarify!	A	
25	30	Table 9: (See Comment 16)	A	
27	31	Table 10: (See Comment 16)	↓	
29	32	Table 11: (See Comment 16)		
30	33	Table 12: (See Comment 16)		
30	34	Table 13: (See Comment 16)		
30/31	35	Sect 2.1.8: (See Comment 2 re ambiguity of percentage terms)	A	
40	36	Sect 2.2.4: Bring out the low probability of active faulting which would affect MX MAP.	AE Study	
40	37	Sect 2.2.5, line 9: Quantify "Moderate to high levels of seismicity".	A	
41	38	Ninth line from bottom of page: Should read "...Act of...".	A	
43	39	Sect 3.1: See Comment 2 re ambiguity of percentage terms.	A	
46	40	Table 17: Under DOD only - LBGR should be LBGR/YPG. Under combined DOD/BLM Gila Bend Group and YPG should include LBGR.	A	
App. B	41	Appendix B: What criterion caused majority of reduction? (See Comment No. 18)	DUPL	



EXPLANATION

Minimum distance from cities with population greater than 25,000: 18 nm (33 km)

Minimum distance from cities with population of 5,000 to 25,000: 3 nm (5.5 km)

Minimum distance from populated areas up to 5,000 and WSMR Extension boundaries: 2965 feet (905 m)

Minimum distance from traveled public highways and railroads: 1780 feet (545 m)

Excluded areas, national forests, national monuments, Indian reservations: Minimum distance from boundaries: 2965 feet (905 m) Small excluded areas less than 2 sq. nm total area have no minimum distance from boundary and are indicated only by the symbol

State land

Private land

Non-BLM, Non-DoD Federal land (e.g. ERDA)

SYMBOLS

Valley boundary

Siting valley boundary

Area with greater than ten percent topographic grade, within Valley.

>10 Greater than ten percent topographic grade.

Suitable area

RELATIONSHIPS OF VALLEYS AND SITING VALLEYS TO GEOGRAPHIC VALLEYS	
MX SITING INVESTIGATION DEPARTMENT OF THE AIR FORCE - SAMSO	FIGURE 1

FUGRO NATIONAL, INC.

TABLE 2

Valley Terminology

DoD Lands	BLM Lands
A Valley (designated by capitalized "V") is a sub-area of a DoD siting area. It is bound by one or both of the following: 1. A hydrologic drainage divide (most often the crest of an intervening mountain range); and/or a 2. DoD boundary or any other artificially established boundaries such as public highways, township and range lines or national monument borders.	A Valley (designated by capitalized "V") is a sub-area of a BLM siting area. It is bound by one or more of the following: 1. Areas of greater than ten percent topographic grade; 2. Large exclusion areas such as National Forests, Indian reservations or quantity-distance exclusion areas; 3. DoD boundary or any other (artifically) established boundaries such as public highways, township and range lines, latitude lines; and 4. A hydrologic drainage divide (most often at a low relief intervalley connection).

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LIST OF TABLES

LIST OF FIGURES

TURNER NATIONAL, INC.

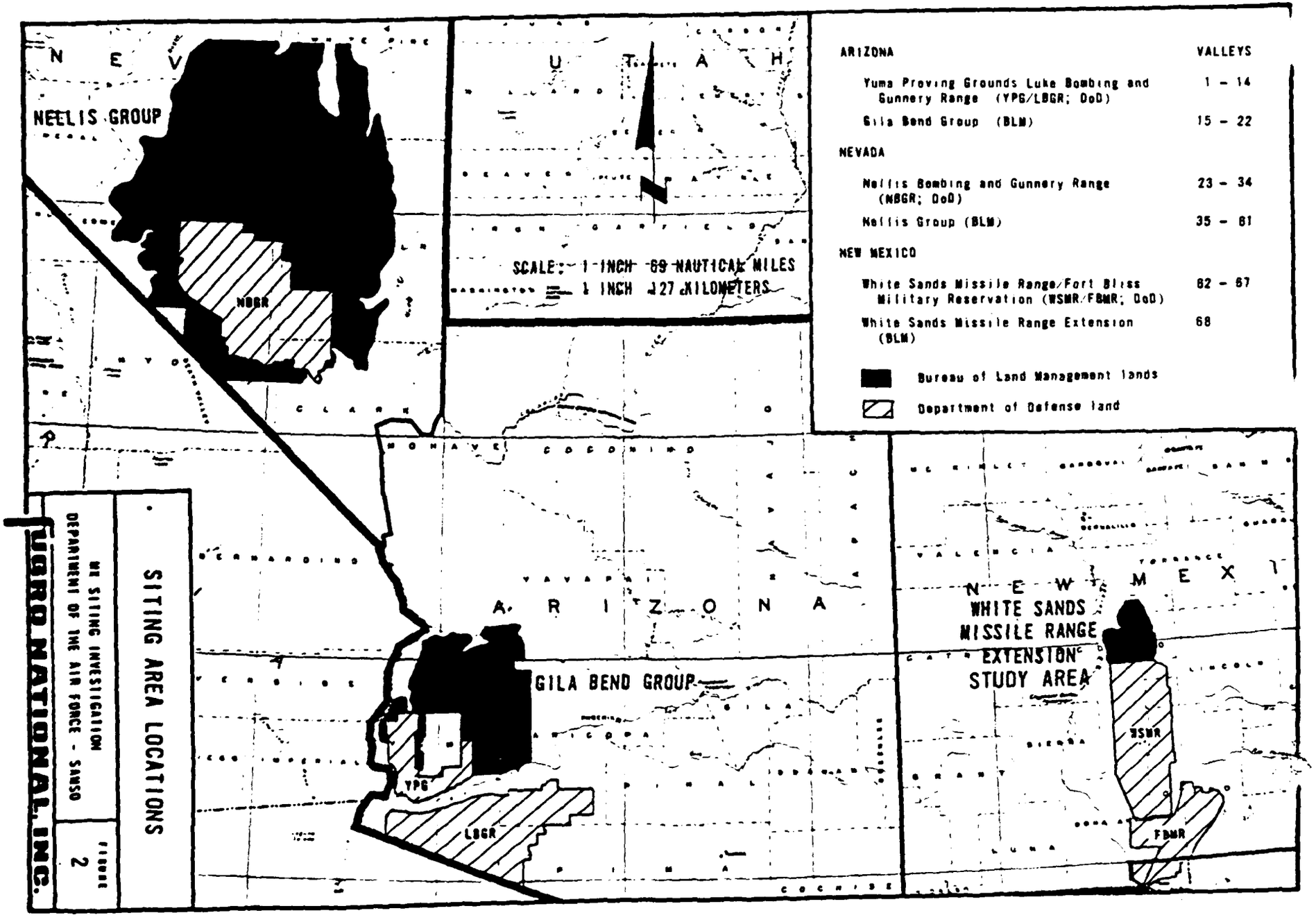
1.0 INTRODUCTION

1.1 BACKGROUND

This report presents evaluations and rankings of 68 Valleys included in three Department of Defense and three Bureau of Land Management siting areas (Figure 2) with respect to their relative suitability for siting of the MX land mobile advanced ICBM system. Conclusions and recomendations, formulated after evaluation of all available data, are also presented.

A premise of the MX siting study has been to begin with large candidate siting regions and, utilizing data gathered in an ever increasing degree of detail, eliminate areas based on screening or exclusion criteria. Some 26,000 square nautical miles (nm^2) of land made up the initial candidate siting regions (Figure 2) in New Mexico, (4462 nm^2), Arizona (7220 nm^2), and Nevada (14,098 nm^2). Data were gathered and analyzed, and after matching data with known or assumed topographic and cultural criteria defining unsuitable land, considerable siting area was determined.

The combined DoD and BLM ~~available~~ potential siting area totals 18,390 nm^2 and is made up of increments of land called Valleys which roughly correspond to geographic valleys between mountain ranges. SAMSO's programmed area reduction was from the original candidate siting regions to 12,000 to 14,000 nm^2 of suitable area for a Phase 1 field program. From this suitable area, a final selection of 4000 to 6000 nm^2 of system deployment area is to be made. This study delineates approximately 10,000 nm^2 of suit-


NEELLIS GROUP
NBGR
UTAH
SCALE: 1 INCH 69 NAUTICAL MILES
1 INCH 127 KILOMETERS
ARIZONA
VALLEYS
Yuma Proving Grounds Luke Bombing and Gunnery Range (YPG/LBGR; DoD) 1 - 14
Gila Bend Group (BLM) 15 - 22
NEVADA
Nellis Bombing and Gunnery Range (NBGR; DoD) 23 - 34
Nellis Group (BLM) 35 - 81
NEW MEXICO
White Sands Missile Range/Fort Bliss Military Reservation (WSMR/FBMR; DoD) 82 - 87
White Sands Missile Range Extension (BLM) 68
Bureau of Land Management lands
Department of Defense land
ARIZONA
GILA BEND GROUP
YPG
LBGR
NEW MEXICO
WHITE SANDS MISSILE RANGE EXTENSION STUDY AREA
WSMR
FBMR
SITING AREA LOCATIONS
MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO
FIGURE 2
UGRO NATIONAL, INC.

able area for Phase 1 field work from the 18,390 nm^2 of available area and also ranks the 68 Valleys comprising this area in order of preference for siting, based on areal, geotechnical, and cultural factors. The actual area reduction schedule is summarized on Table 3. Since the areal values in Table 3 are sums of many smaller numbers and even though the implied accuracy is not required, the number of significant figures has been retained.

TABLE 3

Study Area Reduction Schedule

Study Area (nm^2) \ As of Date	May 1974	June 1975	June 1976	September 1976
DoD	12,880	6,894	6,894	4,018
New Mexico	4,031	1,964	1,964	668
Arizona	4,320	2,913	2,913	2,132
Nevada	4,529	2,017	2,017	1,218
BLM	13,000	12,900	11,496	5,987
New Mexico	*	431	203	112
Arizona	*	2,900	2,251	1,801
Nevada	*	9,569	9,042	4,074
Total DoD + BLM	26,000	19,794	18,390	10,005

* BLM area had not been subdivided by siting area.

1.2 PURPOSE AND SCOPE

This study will consider all BLM and DoD Valley areas discussed in the Volume II Geotechnical Reports (Appendix A). The purposes of this study are to:

1. Delineate, based on established criteria, the boundaries of land suitable for siting of the MX system;
2. Further delineate, based on geologic and engineering judgement, a "smoothed" inner area which would be the most favorable area (suitable area) for Phase 1 field studies; and
3. Evaluate all areas Valley-by-Valley by applying existing data to selected matrix ranking factors, weighting each matrix score, and summing the scores in various ways for each Valley (Section 2.0);
4. Rank all of the BLM and DoD Valleys based on the matrix analysis according to their relative favorability for siting of the MX system considering areal, geotechnical, and cultural factors; and
5. Present an analysis of the ranking including conclusions and recommendations (Section 3.0).

The following ranking factors are categories considered in the matrix analysis (Column letters refer to Table 6):

1. Suitable Valley Area (Column A)
2. Suitable Contiguous Area (Column B)
3. Amount and Quality of Data from Data Summary Sheets:
   a. Ownership and Control (Column C)
   b. Geology and Soils Engineering (Column D)

c. Depth to Rock (Column E)

d. Depth to Water (Column F)

e. Surface Hydrology (Column G)

4. Favorability of Conditions Based on Existing Data

a. Ownership and Control (Column H)

b. Geology and Soils Engineering (Column I)

c. Depth to Rock (Column J)

d. Depth to Water (Column K)

e. Surface Hydrology (Column L)

5. Potential Impact to Existing BLM or DoD Activities

a. Military (Column M)

b. Non-Military (Column N)

6. Distance from Civilian or Military Support Facilities (Column O)

The above items are based primarily on regional data. The data categories (ranking factors) are compiled from specific data included in the siting and geotechnical reports prepared in the six siting areas and represent geotechnical and cultural elements which can be used to determine siting, deployment, vulnerability, and hardness. However, extensive site specific data will be required before fielding the MX system.

1.3 METHODS AND PROCEDURES

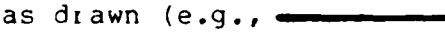
The ranking analysis was performed using the four-quad graphics, text, data summary sheets, and appendices from the DoD and BLM Volume II Geotechnical Reports. Two worksheets at a scale of 1:62,500, termed base and derivative worksheets, were produced for each of the 69 four-quad areas. The suitable siting area remaining after application of criteria defining unsuitable area was accurately delineated on the base worksheet. Unsuitable area criteria were developed following discussions with SAMSO and TRW personnel and represent the most current constraints to siting the MX land mobile missile system; these criteria are listed in Section 2.1.2. To construct the base worksheet, overlays from the four-quad graphics depicting ownership and cultural features (DoD; BLM), geology (DoD; BLM), hydrology (DoD; BLM), and topography (DoD) were superimposed and areas not excluded by established criteria were outlined. The borders of the base suitable area were delineated using coded line symbols representing the individual criteria upon which the boundary line was based. A description of the line symbols used is shown in Table 4.

A derivative worksheet was constructed from each base worksheet. This involved "smoothing" of the base suitable area boundaries based on geologic and engineering interpretation relative to which areas would be most favorable for Phase 1 field studies. The derivative suitable area in most cases varied less than five percent from the base suitable area. Principal changes occurred where a sinuous ten percent topographic grade line was

TABLE 4

Line Symbols for Boundaries of Suitable Area

Line Symbols	Line Description
	Ten percent grade.
	100-foot depth to water.
	100-foot depth to rock.
	National parks or monuments and Indian reservations (E5).
	Corridors 1780 feet wide on each side of all U. S. highways, state routes and railroads (E4).
	Minimum distance from inhabited areas (E1, E2, E3).
	Estimated 100-foot depth to water.

Where two line symbols meet, a perpendicular separation line was drawn (e.g., ).

smoothed to eliminate small valley re-entrants and other irregularities along the valley margin. Depth to rock, depth to water, and ownership and culturally controlled boundaries generally were not changed.

A comparison between the suitable area on the base and derivative worksheets for representative four-quad areas is shown in Table 5. All worksheets are on file and available at Fugro National, and are not included with this report.

To facilitate data compilation, Valleys were assigned numbers from one to 68 based on alphabetical groupings of the designated DoD and BLM Valleys in Arizona, Nevada, and New Mexico. These Valley numbers occur on the Valley Analysis Matrix (Table 6,

TABLE 5

Comparison of Suitable Areas on Base and Derivative Worksheets

Four-Quad Sheet (Arizona)	Area (nm^2) Base Worksheet	Derivative Worksheet	Percent Reduction
GB-5	408	406	0.5
GB-6	333	329	1.2
GB-9	193	184	4.7
GB-10	389	356	8.5

Section 2.0) and on all report graphics (Drawings 1, 2, and 3), and should not be mistaken for actual ranking values. In this numbering system, Valleys which cross the DoD/BLM boundary and are contiguous were considered to be separate Valleys in the matrix analysis.

Vekol Valley (Arizona, DoD) and Mohave Wash Valley (Arizona, BLM) were eliminated from ranking consideration since neither contained suitable area after applying the criteria defining unsuitable area. These Valleys were assigned matrix scores of zero for all subsequent ranking factors.

2.0 MATRIX ANALYSIS

2.1 RANKING FACTORS OF VALLEYS

2.1.1 GENERAL

As presented in Section 1.2 the factors, with their matrix column letter designations, considered in ranking of all Valleys are:

1. Suitable Valley area (Column A);
2. Amount of suitable contiguous area (Column B);
3. Amount and quality of data (Columns C-G);
4. Favorability of data (Columns H-L);
5. Potential impact (Columns M and N); and
6. Distance from civilian or military support facilities (Column O).

Each of the ranking factors is discussed in detail in following sections (2.1.2 through 2.1.7). Matrix scores from zero to ten have been assigned to each of the 15 categories (A through O) for each Valley and are presented in matrix form in Table 6 (Matrix Analysis). Factors have been appropriately weighted to yield the Final Score shown on Table 6.

Valleys are ranked in five ways based on ranking scores presented in the matrix analysis (Table 6). The combined Areal plus Geotechnical Score and the Final Score involve the use of weighting factors since not all categories in the matrix analysis are of equal importance. The ~~various~~ rankings ~~are listed below~~ (capital letters refer to column headings in Table 6) and listings of Valleys in order of numerical rank (W) for each of these ranking scores are included in Appendix D (including Wildlife Ranges) and Appendix E (excluding Wildlife Ranges):

TABLE 6 - MATRIX ANALYSIS

VALLEY NO.	NAME	RANKING FACTORS*														RANKING SCORES**				
		A	R	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	CASTLE DOME AZD	2	1	8	4	5	2	5	10	9	9	4	9	4	8	10	3	69	69	30.2	69.6
2	GILA BEND PLAIN AZD	2	1	7	4	5	2	5	10	9	6	8	10	4	10	10	1	67	61	30.0	69.0
3	SPINDLER/CHILDS AZD	8	7	6	4	5	2	5	10	8	7	4	9	4	8	10	15	68	58	57.8	75.8
4	INDIAN WASH AZD	1	1	8	5	10	5	5	10	8	1	4	7	4	8	10	2	65	62	21.8	61.8
5	KING AZD	2	1	4	4	6	5	5	10	7	7	4	6	4	8	10	3	66	58	26.1	66.3
6	LA POSA PLAIN AZD	1	2	6	4	3	3	5	10	10	6	10	10	4	8	10	3	51	66	31.6	51.6
7	LECHUGUILLA DESERT AZD	3	4	6	4	4	2	5	10	10	5	8	10	4	8	10	7	67	54	39.8	67.8
8	MOHAVE WASH AZD	1	1	6	4	10	8	5	10	8	1	2	9	10	8	10	2	64	64	22.2	63.2
9	MOHAWK/TULE AZD	10	6	6	4	3	2	4	10	9	7	6	9	4	8	10	16	64	58	61.5	79.5
10	PALOMAS PLAIN AZD	1	1	7	5	5	1	4	10	8	3	2	10	4	10	8	4	36	59	26.1	65.8
11	SAN CRISTOBAL AZD	5	6	6	4	5	2	5	10	8	7	6	9	4	6	8	11	64	58	47.1	66.7
12	SENTINEL PLAIN AZD	4	3	7	4	5	2	4	10	8	7	6	10	4	8	10	7	66	61	40.2	58.1
13	VEKOL AZD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.0	.0
14	YUMA DESERT AZD	2	1	6	4	6	2	3	10	9	7	8	10	4	10	10	3	69	60	30.6	50.6
15	BUTLER AZR	6	5	9	5	3	5	6	8	7	9	2	10	10	8	8	9	65	63	61.8	59.3
16	CACTUS PLAIN AZR	3	6	10	5	5	1	3	8	6	7	6	9	10	8	10	9	58	66	37.5	56.9
17	MARQUIAHALA PLAIN AZR	7	6	10	5	3	5	3	5	7	8	2	8	10	8	8	13	61	61	49.7	65.1
18	LA POSA PLAIN AZR	5	4	9	5	3	6	4	9	6	9	2	9	10	6	10	9	58	68	50.5	59.2
19	MC MILLEN AZR	4	6	10	5	2	5	6	9	9	8	2	9	10	8	8	10	64	61	46.1	59.5
20	MOHAVE WASH AZR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.0	.0
21	PALOMAS/HYDER AZR	6	5	10	5	3	1	4	7	8	9	2	9	10	8	8	11	61	63	66.5	63.9
22	RANEGRAS PLAIN AZR	7	10	10	5	5	1	4	6	7	9	2	8	10	6	8	17	69	60	58.7	74.5
23	BUCKBOARD MESA NVD	1	1	8	4	5	6	5	1	10	6	4	9	2	10	10	2	67	51	26.2	36.6
24	CACTUS FLAT NVD	4	5	9	4	2	5	6	5	8	6	2	7	2	10	10	9	60	56	30.8	53.5
25	EMIGRANT NVD	4	5	7	5	0	5	5	8	8	5	2	8	4	6	8	7	56	53	30.2	49.9
26	FRENCHMAN FLAT NVD	1	2	10	4	5	6	5	1	8	5	10	9	2	10	10	3	58	53	28.1	38.7
27	GOLD FLAT NVD	5	1	8	5	2	0	6	10	8	7	6	8	4	10	8	8	60	60	29.9	68.9
28	INDIAN SPRING NVD	2	2	9	5	0	1	6	10	7	5	10	6	2	2	10	6	58	55	28.5	65.6
29	KAWICH NVD	2	5	8	5	2	0	5	10	9	6	6	9	4	2	8	5	60	52	32.5	69.1
30	KAWICH MESA NVD	1	1	8	4	2	1	5	10	9	1	10	9	2	10	10	2	61	60	25.1	68.5
31	STONEWALL FLAT NVD	1	2	8	5	2	5	6	10	8	5	2	8	6	10	10	3	57	64	23.2	65.8
32	THREE LAKES NVD	2	1	8	5	0	1	6	10	8	5	4	8	4	2	10	3	54	58	25.1	62.7
33	TIKAHOO NVD	1	2	8	5	0	2	5	10	9	5	10	9	6	2	8	3	61	58	29.1	66.5
34	YUCCA FLAT NVD	4	0	10	6	10	10	6	1	8	6	10	7	2	10	10	4	63	53	33.5	64.1
35	AMARGOSA DESERT NVR	3	2	10	5	3	2	5	8	9	6	8	9	10	8	10	5	65	66	38.3	53.7
36	ANTELOPE NVR	1	2	8	5	3	4	3	9	8	9	4	10	10	8	6	3	66	61	28.1	66.3
37	BIG SMOKY NVR	5	3	10	5	3	5	5	8	8	8	2	10	10	8	8	8	66	64	39.9	58.3
38	CAVE NVR	1	3	8	4	2	2	2	9	6	7	8	5	10	8	10	4	54	65	26.7	66.5
39	CLAYTON-ALKALI SPRING NVR	2	5	10	5	3	3	5	9	9	7	4	10	10	8	8	7	66	65	37.5	56.9
40	COYOTE SPR/KANE SPR NVR	6	1	10	5	2	2	3	5	9	8	4	10	10	8	6	5	63	57	36.2	68.8
41	DELAMAR/PAHROC NVR	3	2	10	6	3	2	3	10	9	7	6	9	10	8	9	5	63	63	33.7	52.6
42	DRY LAKE/MILESHOP NVR	6	3	10	5	3	2	4	10	8	6	10	8	10	8	8	9	66	62	66.2	62.6
43	GARDEN/COAL NVR	6	2	8	5	3	4	4	10	8	8	10	7	10	8	6	8	69	62	62.7	61.9
44	HOT CREEK NVR	3	5	10	5	3	6	5	9	8	9	8	10	6	8	10	8	52	63	42.3	61.5
45	INDIAN SPRING NVR	1	1	10	6	2	1	4	10	9	9	10	9	10	8	10	6	68	68	33.6	56.8
46	JAKES NVR	2	1	10	5	3	2	3	10	6	8	10	5	10	8	8	3	62	66	26.6	66.8
47	LITTLE FISH LAKE NVR	1	0	10	5	2	4	5	7	8	8	2	10	6	8	8	1	64	59	22.3	58.5
48	LITTLE SMOKY NVR	6	3	8	5	3	6	4	10	8	8	6	10	6	8	8	9	66	60	63.6	62.6
49	MONITOR NVR	1	6	8	5	2	3	6	8	8	9	2	9	10	8	10	5	62	64	38.9	50.1
50	NEWARK NVR	1	6	8	6	3	3	3	9	7	9	6	8	10	8	6	5	61	61	30.3	48.5
51	PAMPALAGAT NVR	1	5	8	5	3	3	5	9	9	6	8	10	10	6	6	6	69	59	36.3	53.9
52	PENOYER NVR	3	5	8	5	3	5	6	9	10	9	6	10	10	8	6	8	58	61	42.3	60.5
53	RAILROAD NVR	5	6	8	5	3	6	5	8	9	9	6	10	8	6	6	11	69	56	68.9	68.9
54	RAILROAD/REVEILLE NVR	6	6	8	6	3	3	6	10	8	8	8	10	8	8	10	11	68	66	69.1	69.7
55	RALSTON NVR	5	5	10	6	3	6	3	10	8	9	10	9	10	8	10	10	58	68	67.9	64.3
56	SARCOBATUS FLAT NVR	1	2	10	6	2	3	6	7	8	9	2	10	10	8	8	3	62	63	26.9	66.3
57	STONE CABIN NVR	3	6	10	5	3	3	3	10	9	9	8	9	8	8	10	7	69	66	66.3	61.1
58	STONEWALL FLAT NVR	2	1	8	5	2	2	6	10	8	6	2	8	10	8	10	3	57	66	24.9	66.1
59	THREE LAKES NVR	1	1	8	5	2	5	2	1	10	10	6	10	10	6	10	2	68	55	28.1	39.9
60	TIKAHOO NVR	4	1	8	5	2	3	3	5	9	9	10	9	10	6	8	5	58	57	37.3	51.9
61	WHITE RIVER NVR	6	6	10	5	3	6	5	7	8	9	2	9	10	6	8	10	65	61	61.7	60.5
62	HUECO BOLSON NMD	1	3	9	5	10	10	3	10	6	3	6	1	8	8	10	6	62	65	22.1	62.8
63	JORNADA DEL MUERTO N NMD	2	1	10	5	8	8	3	6	8	5	2	10	8	8	8	3	61	68	25.7	61.5
64	JORNADA DEL MUERTO S NMD	1	0	9	6	1	7	3	8	7	6	2	10	6	8	10	1	68	61	20.2	58.3
65	TULAROSA BASIN N NMD	1	1	10	6	10	6	10	8	7	8	2	8	6	8	10	2	57	62	28.1	62.3
66	TULAROSA BASIN S NMD	6	2	10	6	10	6	10	9	7	10	6	9	6	8	10	8	68	65	62.1	61.3
67	TULAROSA BASIN E NMD	2	1	9	6	10	3	2	10	7	2	6	8	6	8	8	3	68	61	24.7	63.8
68	JORNADA DEL MUERTO NMR	2	1	10	8	2	1	2	5	7	7	2	8	8	8	10	3	53	61	28.8	59.8

WEIGHTING FACTORS

2.7 2.2 .1 .1 .1 .1 .1 1.0 1.0 .5 .5 .5 .5 .3 .5

*RANKING FACTORS

A = SUITABLE VALLEY AREA
R = SUITABLE CONTIGUOUS AREA
C = OWNERSHIP AND CONTROL (AMOUNT AND QUALITY)
D = GEOLOGY AND SOILS ENGINEERING (AMOUNT AND QUALITY)
E = DEPTH TO ROCK (AMOUNT AND QUALITY)
F = DEPTH TO WATER (AMOUNT AND QUALITY)
G = SURFACE HYDROLOGY (AMOUNT AND QUALITY)
H = OWNERSHIP AND CONTROL (FAVORABILITY)
I = GEOLOGY AND SOILS ENGINEERING (FAVORABILITY)
J = DEPTH TO ROCK (FAVORABILITY)
K = DEPTH TO WATER (FAVORABILITY)
L = SURFACE HYDROLOGY (FAVORABILITY)
M = POTENTIAL IMPACT (MILITARY)
N = POTENTIAL IMPACT (CIVILIAN)
O = DISTANCE TO SUPPORT FACILITIES (MILITARY AND CIVILIAN)

**RANKING SCORES

P = AREAL RANKING SCORE (A*R)
Q = GEOTECHNICAL RANKING SCORE (B*E*F*G*I*J*K*L)
R = CULTURAL RANKING SCORE (C*M*N*O)
S = AREAL + GEOTECHNICAL SCORE (P+Q WITH WEIGHTING)
T = FINAL SCORE (P+Q+R WITH WEIGHTING)

P. Areal Ranking Score (A + B)

Q. Geotechnical Ranking Score (D + E + F + G + I + J + K + L)

R. Cultural Ranking Score (C + H + M + N + O)

S. Areal plus Geotechnical Score (P + Q with weighting factors)

T. Final Score (P + Q + R with weighting factors)

The weighted Final Score (T) was determined using the following equation:

$$T = m_A (w_A) + m_B (w_B) + \ldots . m_O (w_O)$$

where m = unweighted matrix score (Table 6)

w = weighting factor (Table 6)

The weighted Areal plus Geotechnical Score (S) was determined in a similar manner with the exclusion of all cultural factors (C, H, M, N, and O).

The numerical ranking scores, including appropriate weighting factors, were determined by computer, allowing a degree of flexibility and versatility when considering various weighting factors (areal, geotechnical, and cultural). Rankings in Appendices D, E, F, and G are copies of computer output. An additional copy of Table 6 is included in Appendix D to allow continuous reference while reviewing the following sections.

Values used for weighting factors (Table 6) were determined through discussions with TRW and SAMSO personnel after performing several iterations using different sets of weighting factors. The values selected indicate the great importance placed on areal

considerations since siting feasibility is fundamentally dependent on whether or not sufficient suitable area is present to deploy the system. Favorability of ownership and surficial geotechnical and soils engineering data are considered important since these ranking factors directly affect the difficulty and cost of land acquisition and construction and maintenance. Other geotechnical factors such as depth to rock, depth to water, and flooding potential are less precisely known and after initial consideration, are of less direct importance in defining the suitable Valley area. Cultural factors such as distance to support facilities and potential impacts are also considered of secondary importance since both can conceivably be mitigated given the potentially large scope of the project. However, it should be remembered that the direct environmental impacts are not considered here and later considerations may require that the weighting factor applied to this category increase significantly. Amount and quality of data are considered the ranking factors least important since neither relate directly to siting considerations, but are principally indicators of the reliability of the cultural and geotechnical data used to derive the applicable matrix scores and to delineate the limits of the suitable area.

2.1.2 SUITABLE AREA

Suitable area or suitable Valley area (Figure 1) is hereafter the "smoothed" area (derivative) remaining after removing those parts of a Valley having:

1. Depth to rock less than 100 feet (including pediments);
2. Depth to water less than 100 feet;

3. Areas with greater than 10 percent topographic grade;
4. Cultural and quantity-distance exclusions:
   a. Minimum distance of 2965 feet from National Forest, Monument, Indian Reservation, and DoD boundaries;
   b. Minimum distance of 1965 feet from inhabited buildings;
   c. Corridors 1780 feet of each side of all traveled public highways and railroads;
   d. Minimum distance of 18 nm from cities with populations greater than 25,000;
   e. Minimum distance of 3 nm from cities with populations between 5000 and 25,000; and
   f. Minimum distance of 2965 feet from populated areas up to 5000.

These areas are shown at a scale of 1:1,000,000 in Drawings 1, 2, and 3. The actual suitable area values for the six siting areas are shown in Table 7. Suitable areas of individual Valleys are given in Appendix B, along with total Valley areas for comparison.

Suitable Valley areas represent reductions in size of the Valleys ranging from approximately 20 percent to 100 percent. This suitable Valley area was converted to a score of zero to ten by multiplying the suitable Valley area by a constant equal to ten times the reciprocal of the largest suitable Valley area (Mohawk-Tule Valley - No. 9) as shown in the following example for Castle Dome (Valley No. 1) in the Arizona Siting Region:

$$126 \text{ nm}^2 \text{ (Castle Dome)} \times 10 \times \frac{1}{521 \text{ nm}^2 \text{ (Mohawk/Tule)}} = 242 \text{ or } 2$$

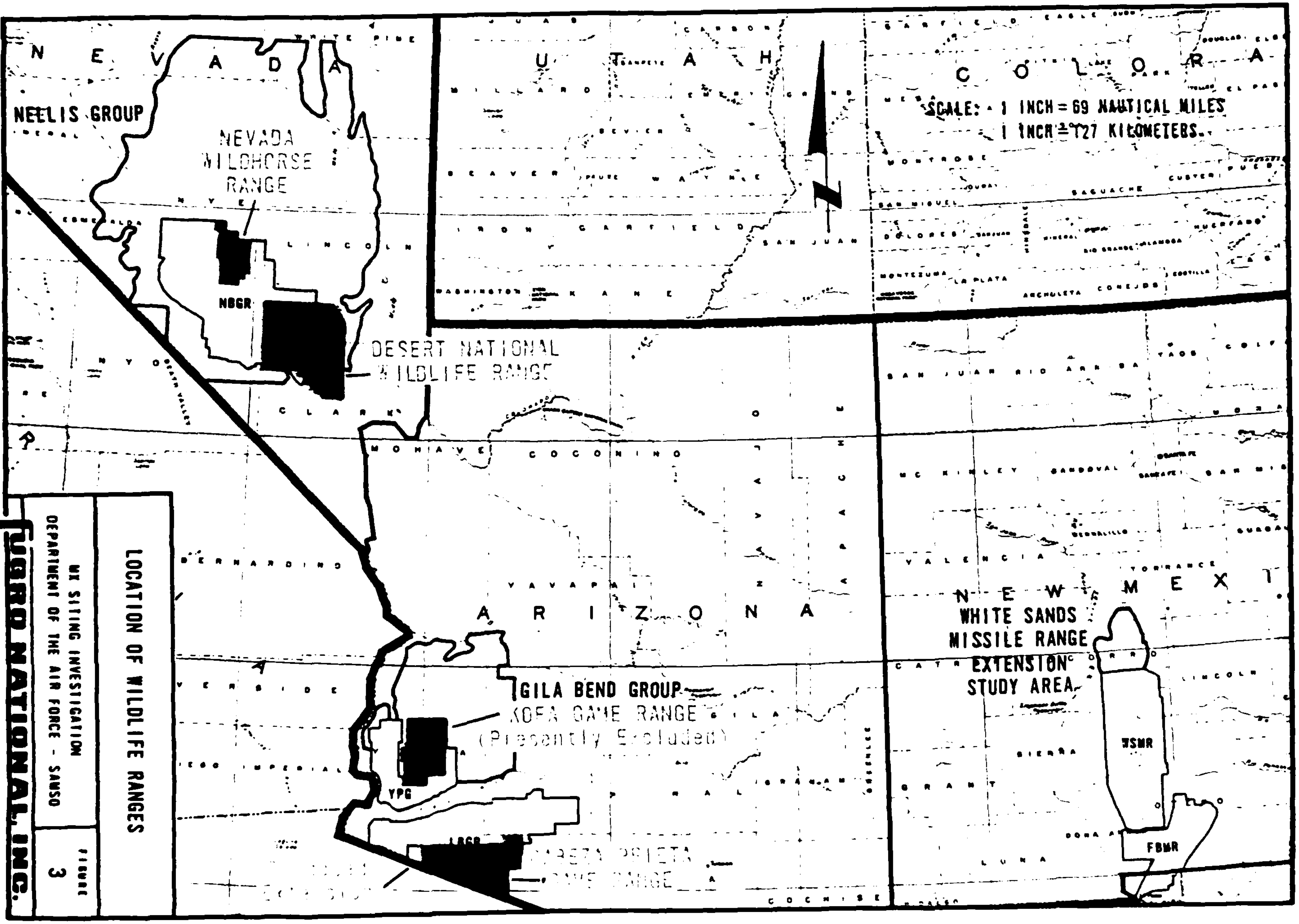
TABLE 7

Suitable Area (nm^2) in Siting Areas

	Arizona		Nevada		New Mexico		Total	
	a	b	a	b	a	b	a	b
DoD	2132	1612	1218	937	668	668	4018	3217
BLM	1801	1801	4074	3862	112	112	5987	5776
Total	3933	3413	5292	4799	780	780	10,005	8992

a. Area including wildlife ranges (Cabeza Prieta, Desert National Wildlife Range, Wild Horse Range, see Figure 3).

b. Area excluding wildlife ranges.



LOCATION OF WILDLIFE RANGES

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

FIGURE 3

FUGRO NATIONAL, INC.

Matrix scores for this ranking factor appear on Table 6 (Matrix Analysis) in Column A. Valleys receiving a score of zero in this column were also assigned a score of zero in all subsequent columns. The scores for Column A in the Matrix Analysis excluding Wildlife Ranges (Appendix E) were recomputed for the suitable area remaining after excluding Wildlife Areas.

2.1.3 AMOUNT OF SUITABLE CONTIGUOUS AREA

Suitable contiguous area is the sum of the suitable area in Valleys which are adjacent and connected by areas of less than ten percent topographic grade to the Valley under consideration. Although the suitable Valley areas are not necessarily contiguous, the Valleys within which they occur are contiguous. Total areas for each Valley (by Valley number) and suitable contiguous Valley areas are tabulated in Appendix B. Matrix scores for suitable contiguous area were assigned in the same manner as for suitable Valley area by multiplying the suitable contiguous area by a constant equal to ten times the reciprocal of the suitable contiguous area of Ranegras Plain - No. 22 (the Valley with the most suitable contiguous area). These scores appear in Column B of Table 6 (Matrix Analysis). An example of such a calculation using Castle Dome, Arizona yields:

$$148\ nm^2\ \text{(Castle Dome)} \times 10 \times \frac{1}{1446\ nm\ \text{(Ranegras Plain)}} = 1.02 \text{ or } 1$$

The scores for Column B were also recomputed for Apendix E, when applicable.

2.1.4 AMOUNT AND QUALITY OF DATA

Matrix scores shown on Table 6 representing the amount and quality of data were derived from Data Summary Sheets. These scores are based on data for the entire Valley, but are considered to be valid for the suitable Valley areas. Scores from one to ten were assigned to each of the following Data Summary Sheet categories:

1. Ownership and Control;
2. Geology and Soils Engineering;
3. Depth to Rock;
4. Depth to Water; and
5. Surface Hydrology.

On the Data Summary Sheets an open circle (O) represents insufficient data, whereas half (◒) or full (●) circles represent estimated or known values derived from the available data, respectively. The value denoting the amount and quality of data was based on the percentage of full and half circles to the total number of circles (i.e., the total number of subcategories within each of the five major categories) according to the formula:

$$\text{Raw Score} = \frac{\text{Full Circles} + 1/2\ (\text{Half Circles})}{\text{Total Circles}} \times 10$$

The matrix scores in Columns C, D, E, and F were determined by assigning a score of one to ten, based on the rounded value of the raw score. Categories of data on the Data Summary Sheets differed slightly between DoD and BLM reports. All amount

and quality of data tabulations were done by comparing categories in the Volume II reports and only data categories which were common to both DoD and BLM reports were used in order to equate data and to arrive at a valid comparative assessment. No data categories meaningful to the ranking were dropped.

2.1.4.1 Ownership and Control

Sub-categories under Ownership and Control were taken from the Ownership and Cultural Features Data Sheets in Volume II DoD reports, and Ownership, Cultural Features, and Topography Data Sheets in Volume II BLM reports. Quality of data symbols representing area of Valley, area of siting Valley, ownership, cultural improvements (location, type, and use of roads , railroads, and utilities), and area and use of contiguous DoD/BLM or Co-Use land were compiled and considered in the matrix analysis (Table 6, Column C). Data regarding Valley topographic conditions (BLM Data Sheets), cultural and quantity distance exclusions (DoD Data Sheets), and military/governmental use areas (DoD Data Sheets) were not utilized primarily because the amount and quality of such data did not change from Valley to Valley, or because such data were not included in both DoD and BLM Data Summary Sheets.

2.1.4.2 Geology and Soils Engineering

Geology and Soils Engineering Data Summary Sheets from DoD and BLM reports were used to calculate amount and quality of data scores. Separate values were calculated for geology and for soils engineering which were averaged to yield the final matrix score

(Table 6, Column D). Geology Data Summary Sheet categories denoting conditions of exposed rock (lithology, location, and seismic velocity), pediment (location and extent), basin-fill deposits (type, thickness, seismic velocity, and lithology), and presence of capable or potentially capable faults (length, location, type, atitude, and minimum age of displacement) were considered. Amount and quality of data on Soils Engineering Data Summary Sheets is not depicted through the use of symbols similar to those on all other sheets. Data included on these sheets were evaluated based on a ratio of the number of categories which contained known values derived from the literature to the total number of categories. Categories considered included sieve analyses, Atterberg limits, dry density, permeability, shear strength, shrink-swell potential, compressibility, compression/shear wave velocities, water content, and presence of deleterious substances.

2.1.4.3 Depth to Rock

Data for this category were taken from the Geology Data Summary Sheets. Rock at depths of zero to 250 feet, 250 to 500 feet, and at unknown depths were considered in evaluating the amount and quality of data. A matrix score (Table 6, Column E) was calculated from these data categories, with an additional one point being assigned to Valleys for which at least one Defense Mapping Agency (DMA) gravity profile was available (BLM) or could be produced (DoD).

2.1.4.4 Depth to Water

Data symbols characterizing the depth to groundwater information

were compiled for increments of zero to 25 feet, 25 to 50 feet, 50 to 100 feet, greater than 100 feet, and for non-existent water or water at unknown depths in each Valley. The matrix scores for depth to water appear in Column F on Table 6.

2.1.4.5 Surface Hydrology

Existence of surface water and hydrologic characteristics of stream channels are of importance in evaluating surface hydrologic conditions. In terms of surface water, quality of data symbols representing existing playas (duration, extent, depth, source, and water quality) and existing rivers, streams, and springs (duration, flow rate, water quality) were tabulated. Pertinent hydrologic characteristics of stream channels including depth of incision, width, and gradient as well as channel bottom characteristics and channel spacing data symbols were tabulated. All of the symbols for these categories were considered, as well as the symbols for the preliminary flood susceptibility rating. The results of the tabulations for surface hydrology appear in Column G (Table 6).

2.1.5 FAVORABILITY OF DATA

The same categories considered in quality of data have been tabulated for favorability of data. Data for each were derived from the Volume II Geotechnical Reports, and supplemented by additional area calculations and geotechnical considerations within the suitable Valley areas delineated on derivative worksheets.

2.1.5.1 Ownership and Control

The amount of non-DoD and non-BLM controlled land in each Valley is variable, and large percentages of such land detract from the suitability of the area for siting. A maximum score in this category was assigned to Valleys with 100 percent DoD or BLM ownership or control, with lower rankings being given based on the percentage of non-DoD and non-BLM land. Land ownership data were taken from Volume II Data Summary Sheets and were calculated for the entire Valley area. Since the majority of private ownership is in the suitable areas, these figures are applicable. The ratio of the area of DoD and BLM land to the total suitable siting area was used to derive the matrix score (Table 6, Column H). An example computation using Castle Dome, Arizona is as follows:

$$\frac{126 \text{ nm}^2 \text{ (DoD Land)}}{126 \text{ nm}^2 \text{ (Suitable Area)}} \times 10 = 10$$

2.1.5.2 Geology and Soils Engineering

Ratings in this category (Table 6, Column I) were based on geology and soils engineering data incorporated into the Terrain Analysis and presented in the Volume II Geotechnical Reports. The purpose of these Terrain Analyses was to evaluate various geologic, hydrologic, and soils engineering characteristics of the basin-fill units present in each Valley. The final ratings were ordered qualitatively from very poor (least suitable) to good (most suitable). A very poor rating in the Terrain Analysis indicates a basin-fill unit with an irregular surface (great slope variations and relatively great depths of stream

incision) and unfavorable soils engineering properties (low California Bearing Ratio, non-cohesive soils) such as are found in sand dunes. Playas (favorable slope conditions, unfavorable soils engineering and drainage conditions) and old alluvial fan surfaces (unfavorable slopes, favorable soils engineering and drainage characteristics) received intermediate ratings (poor to fair). Intermediate and young alluvial fans were rated good due to good drainage characteristics, favorable soils conditions, and a lack of significant stream incision. Terrain Analysis ratings were assigned scaling factors according to Table 8.

For purposes of the matrix evaluation, the area of each basin-fill unit in the suitable Valley area was measured; these areas are tabulated in Appendix C. The areas of basin-fill deposits were then multiplied by the designated terrain analysis scaling factor and added to yield a scaled area for each Valley (Appendix C). To derive the matrix score for this ranking factor (Table 6, Column I), the ratio of scaled area to total area was used. Low ratios represent a high percentage of unfavorable basin-fill units, whereas high ratios (high scaled area) represent a predominance of favorable basin-fill material in the area. These ratios were converted to scores of one to ten by multiplying the ratios by ten and rounding to the nearest integer. An example of the computation using Castle Dome, Arizona is as follows:

$$\frac{8\ nm^2\ (0.5) + 93\ nm^2\ (1.0) + 25\ nm^2\ (0.75)}{126} = \frac{116\ \text{(scaled area)}}{126\ \text{(suitable area)}} \times 10 = 9.2 \text{ or } 9$$

TABLE 8

Terrain Analysis Scaling Factors

Basin-Fill Unit (Map Symbol)	Terrain Analysis Rating*	Terrain Analysis Scaling Factor
Undifferentiated (A_Q)	Fair	0.75
Stream Channel and Flood-plain Deposits (Al)	Poor	0.5
Terrace Deposits (A2)	Fair	0.75
Wind-Blown Deposits (A3)	Very Poor	0.25
Playa Deposits (A4)	Very Poor	0.25
Mantled Playa Deposits ($A4_m$)	Poor	0.5
Oldest Alluvial Fan Deposits ($A5_o$, $A5_t$)	Poor	0.5
Intermediate Alluvial Fan Deposits ($A5_i$, $A5_Q$)	Fair	0.75
Youngest Alluvial Fan Deposits ($A5_y$, $A5_Q$)	Good	1.0
Undifferentiated Alluvial Fan Deposits ($A5_u$)	Fair	0.75

* See Terrain Analysis Section of Volume II Geotechnical Reports for complete derivation of terrain analysis ratings.

2.1.5.3 Depth to Rock

Depth to rock (or thickness of basin fill) estimates were taken from data included in Volume II Geology Data Summary Sheets and applicable appendices. All pediment and shallow rock areas (rock less than 100 feet deep) were excluded in the delineation of suitable Valley area. It is assumed for purposes of this analysis that a Valley with a large percentage of known shallow rock occurrences (i.e. less than 250 feet) has a relatively shallow depth-to-rock profile. Conversely, relatively great depths to rock near basin margins indicate, in general, thick alluvium or a deep Valley profile. Matrix scores (Table 6, Column J) were computed as one-tenth of the percentage of deep rock. For example, a Valley in which 83 percent was underlain by rock at depths of greater than 250 feet received a score of 8. Scores were cross-checked with available DMA profiles and the generally favorable correlations indicate the validity of the basic assumption.

2.1.5.4 Depth to Water

Valleys were rated on the basis of depth to groundwater in portions of suitable Valley areas remaining after application of the 100-foot depth to groundwater criteria. Known or estimated depths were taken from the Volume II Groundwater Hydrology Data Summary Sheets. Where data did not exist in a particular Valley, regional groundwater conditions were used to extrapolate a probable depth to water. Matrix scores were assigned according to Table 9.

TABLE 9

Depth to Water

General Depth (feet)	Matrix Score
100-200	1
100-300	2 to 3
100-400	4 to 6
>400	7 to 10

Matrix scores for depth to water ratings appear in Column K on Table 6.

2.1.5.5 Surface Hydrology

Flooding potential is the primary concern related to surface hydrologic conditions that is not accounted for in the terrain analysis. Flooding potential was determined by using the relative percentages of stream channel and floodplain deposits (A1) and playa deposits (A4, $A4_m$) in the suitable Valley area. These basin-fill deposits represent the active parts of the hydrologic system, that is, sediment transport and deposition. The areas of these deposits (A1, A4, $A4_m$) have the greatest likelihood of experiencing flooding in the future. The total area covered by such deposits is shown in Appendix C. Scores equal 10 minus the ratio (x 10) of the area of these flood deposits (A1, A4, $A4_m$) to the total suitable Valley area. Valleys such as Cave or Jakes Valley (Nevada BLM) which do not contain large amounts of suitable area (75 and 106 nm^2 respectively) and of which half or more is either stream channel or playa deposits received low scores (< 5). Large Valleys lacking playas, such as Ranegras Plain (Arizona DoD), scored high

(9-10) since generally less than ten percent of the suitable area was covered by stream channel and floodplain deposits. An example computation for Castle Dome, Arizona is as follows:

$$10 - \frac{8 \text{ nm}^2 \text{ (Al deposits)} \times 10}{126 \text{ nm}^2 \text{ (suitable area)}} = 9.4 \text{ or } 9$$

Results of the analysis of surface hydrology appear in Column L on Table 6.

2.1.6 POTENTIAL IMPACT ON EXISTING BLM OR DOD ACTIVITIES

This ranking factor analyzes the potential impact of a land based MX system upon existing Valley activities. Two subcategories are considered: 1) present military use (Table 6, Column M), and 2) present non-military use (Table 6, Column N). Military activities are present to some degree in all DoD Valleys and in a limited number of BLM Valleys. Non-military use includes public recreation, wildlife protection areas, grazing land, and private agricultural and residential land. If the MX system can co-exist with present Valley activities with only slight modifications or adjustments, a rating of zero or low has been assigned. Impacts resulting in shifting military activities or in severe effects on the Valley's present use and purpose will result in a moderate to high rating. Table 10 defines impact ratings and shows the assigned score for each.

These scores will only reflect environmental conditions as they relate to established, officially designated land areas. The matrix analysis does not specifically address environmental factors since all such impacts to siting of an MX system in a Valley are not available. This analysis is concerned only with

TABLE 10

Potential Impact

Military	Non-Military
High (1 to 3) - Relocation of permanent testing facilities would be required. Decontamination of extensive areas required prior to field investigation and construction. Conditions present in greater than 75 percent of Valley.	High (1 to 3) - Area with conflicting public land use. These conditions present in greater than 75 percent of Valley.
Moderate (4 to 6) - MX system could co-exist with present activities. Decontamination restricted to target areas. Activities in 25 to 75 percent of Valley.	Moderate (4 to 6) - High short-term impact, but MX system could co-exist. Affects 25 to 75 percent of Valley.
Low (7 to 9) - Decontamination or moving present activities required in less than 25 percent of Valley. Low level of military activity.	Low (7 to 9) - Less than 25 percent of Valley affected by conflicting land use. Includes leased land.
None (10) - No military activity. Includes most BLM land.	None (10) - No impact presently known.

considerations for siting an MX system in a Valley and the gross or immediate impacts.

In the Matrix Analysis excluding Wildlife Ranges (Appendix E), the potential impact scores were re-evaluated. Although this alone tended to raise scores, the effect of the loss of suitable area with a higher weighting factor, over-shadowed potential impact, thereby resulting in a lower Final Score for Valleys which include Wildlife Ranges.

2.1.7 DISTANCE FROM CIVILIAN OR MILITARY SUPPORT FACILITIES

Facilities to support activities during investigation, construction, and operation of the MX system will be required and sites with such facilities both accessible and nearby will be more favorable than sites that are isolated and accessible only with difficulty. For this matrix score, existing civilian and military population centers were rated according to their support potential. A rating of one was assigned to facilities capable of lending support during field investigations. These facilities must contain at least one motel, one restaurant, and one service station. A rating of two was given to facilities capable of lending support during investigation, construction, and operation of the system. Such facilities must contain some construction-related businesses (sand and gravel operations, heavy equipment, ready-mix or concrete contractors, etc.) as well as support for personnel. The ratings of the various existing support facilities (Table 11) were derived from direct field experience of Fugro National personnel.

The distance factor was applied according to Table 12. All distances are straight-line measurements from support facilities to the approximate geographical center of the siting Valley. To determine the score in Column O (Table 6), distance factors were multiplied by the support facility rating factor, yielding values from one to ten for each Valley for each support facility as shown in the following example for Castle Dome, Arizona.

2 (facility rating) x 5 (distance factor) = 10

The highest value was chosen and entered in the matrix ranking. The uniformly high values for New Mexico and Arizona reflect the relative abundance of support facilities and the small area covered by siting Valleys. Remote Valleys and the lack of population centers generally makes this factor lower in Nevada, where ratings of six or below indicate very remote locations.

TABLE 11

Support Facility Ratings

Arizona	New Mexico
Parker (1)	Socorro (2)
Aguila (1)	Mountainaire (1)
Tacna-Wellton (1)	Carrizozo (1)
Yuma (2)	Las Cruces (2)
Ajo (2)	Alamogordo-Holloman AFB (1)
Gila Bend (1)	El Paso-Ft. Bliss (2)
Blythe, Ca. (2)	

Nevada

- Austin (1)
- Eureka (1)
- Tonopah (2)
- Mercury-Indian Springs (2)
- Ely (2)
- Caliente (1)
- Beatty (2)
- Goldfield (1)
- Las Vegas (2)

TABLE 12

Distance to Support Facility Factors

Distance (nautical miles)	Factor
0 - 25	5
25 - 50	4
50 - 75	3
75 - 100	2
> 100	1

2.1.8 RESULTS OF MATRIX ANALYSIS

It can readily be seen from the final scores (Table 4, Column T) that no Valley is completely favorable from all aspects. Weighting factors were selected to yield a total possible final score of 100, but the highest score attained was 79.5 (Mohawk-Tule Valley, No. 9). Sixty-three percent of final ranking scores clustered within ten points either side of the 50 percent mark, with an equal number of ranking scores above and below 50 percent (Table 13).

TABLE 13

Distribution of Final Scores (T)

Final Scores (T)	Number of Valleys	DoD/ BLM	Percentage of Valleys
<30	2	1/1	3
30-40	6	4/2	9
40-50	26	19/7	38
<50% >50%			
50-60	17	5/12	25
60-70	14	4/10	21
>70	3	2/3	4

The high degree of correlation between areal ranking scores (Table 6, Column P) and final scores (Column T) reflects the choice of weighting factors. High final scores generally reflect large amounts of suitable Valley area and suitable contiguous Valley area. Of the top twenty Valleys based on final score, 18 correlate directly with the highest areal ranking. Other ranking factors included in the matrix analysis became important in differentiating Valleys of roughly equivalent suitable Valley area and suitable contiguous area. Collectively, the Valleys of the Gila Bend Group (Arizona BLM) generally rank highest with more than 80 percent of the Valleys ranking above 50 percent (Table 9). The Nellis Group Valleys (Nevada BLM) also rank high with nearly 70 percent above 50 percent. Final scores for DoD Valleys in Arizona, Nevada, and New Mexico fall at or below 50 percent due to the relatively small amounts of suitable area.

Rankings in Table 6 do not reflect exclusions of existing wildlife ranges and proposed wilderness areas in Arizona (Cabeza Prieta) and Nevada (Desert National Wildlife Range and Wild Horse Range). If such areas are excluded, the Valley ranking changes significantly (Appendix E). Although nearly the same Valleys remained in the top twenty and distribution relative to 50 percent remained roughly the same, Arizona DoD Valleys moved down considerably in the ranking due to removal of the Cabeza Prieta. Suitable Valley area (Column A) and suitable contiguous areas (Column B) in Valleys peripheral to the wildlife ranges change, and conditions of ownership and control

TABLE 14

Distribution of Final Scores (T) in Each Siting Region

Final Score (T)	Number (%) of Valleys					
	Arizona		Nevada		New Mexico	
	DoD	BLM	DoD	BLM	DoD	BLM
<30	1(7)	1(18)	0	0	0	0
30-40	0	0	2(17)	2(7)	1(16)	1(100)
40-50	6(43)	0	9(75)	7(26)	4(67)	0
<50% / >50%						
50-60	4(29)	4(50)	1(8)	8(30)	0	0
60-70	1(7)	2(25)	0	10(37)	1(17)	0
>70	2(14)	1(13)	0	0	0	0
Total	14(100)	8(100)	12(100)	27(100)	6(100)	1(100)

(Column H) and potential impact (Column N) generally become more favorable in Valleys whose suitable area was reduced by exclusion of wildlife ranges. There is little or no effect in the remaining ranking factors and therefore no changes in these matrix scores were made.

Four additional iterations of the matrix analysis were run for the BLM Valleys and DoD Valleys as separate groups. The four iterations include (Appendix F and G):

1) DoD Valleys (including Wildlife Areas)
2) DoD Valleys (excluding Wildlife Areas)
3) BLM Valleys (including Wildlife Areas)
4) BLM Valleys (excluding Wildlife Areas).

The only major change represented by these iterations is the exclusion of suitable BLM land contiguous to suitable DoD land

and vice versa. The purpose is to consider BLM and DoD land separately and rank valleys only in relation to other BLM and DoD lands respectively. In nearly all cases elimination of contiguous suitable areas not controlled by the particular agency (DoD or BLM) did not significantly change the ranking. Only Cactus Flat (24), Emigrant (25), and Kawich (29) Valleys lost significant amounts of suitable contiguous area and dropped in the ranking. Thus, ranking scores in Appendices F and G do not differ greatly from those on other matrix and ranking iterations. These were run principally as a useful aid in visualizing the relative rankings in the event that either BLM or DoD land in any particular siting area became less desirable or became excluded at some point.

Additional columns were added to the tables of rankings (Appendix D, E, F, and G) to indicate suitable Valley area (Column U), suitable area excluding wildlife or wilderness areas (Column V) and numerical rank (Column W). These columns were provided to facilitate visualization and tabulation of total suitable Valley areas based on various composite groupings of Valleys and inclusion or omission of wildlife areas.

2.2 REGIONAL ANALYSIS

2.2.1 GENERAL

Several factors of importance to the siting, construction and maintenance of an MX system were not directly considered in the matrix analysis due to their regional significance and limited applicability to a Valley-by-Valley analysis. These geotechnical factors are mode and occurrence of caliche, distribution of sand dunes and playas, grain size distribution of the basin fill, relative levels of seismicity, and potential for surface rupture and related phenomena associated with faulting. These items are discussed here since they could not be readily incorporated into the matrix because of the general lack of Valley specific information or because the unpredictable nature of occurrence of these factors in the suitable areas did not allow Valley comparative analyses.

Environmental considerations are only superficially addressed in the matrix analysis since the data base for applicable environmental factors is insufficient at this time to allow for reasonable Valley analyses. Regional environmental considerations such as inclusions of Valleys into wilderness and other environmentally sensitive areas are addressed in Appendices E, F, and G, principally as reduced suitable area. Further discussions of the potential or probability for withdrawal of lands to wilderness or other protective stature are discussed in Section 2.2.6.

2.2.2 CALICHE, SAND DUNES, AND PLAYAS

Caliche is a cementing agent generally occurring near the surface in basin-fill deposits. The presence of caliche cannot be predicted with a high degree of confidence since it is a subsurface phenomena and can be directly observed only in drill holes, open excavations, stream cuts, or stripped areas where upper soil layers have been removed. Factors affecting the degree of caliche cementation and limit and extent of its occurrence in each basin-fill unit include: 1) the composition of rock types in the source area; 2) land surface morphology and runoff characteristics; and 3) a variety of environmental factors including temperature variations, amounts and intensity of rainfall, and wind.

A Valley-by-Valley comparison relating occurrence and degree of caliche cementation could not be accomplished at this time because of the geat number of variables that exist for predicting caliche occurrence and because of the relatively small data base noting specific examples. However, since caliche is an important consideration for both construction and nuclear weapons effects of a deployed MX system, some general statements can be made regarding caliche occurrence in all suitable siting areas. These are:

1. Caliche is present in diffuse or massive forms, or both, in all but the most geologically recent basin-fill deposits. It is most likely to be well-developed in the older (A5o) and intermediate (A5i) alluvial fan deposits, and stream terrace (A2) deposits. It will

be less prominent in the younger alluvial fans and bajadas (A5y). Caliche is not expected to be significant in recent deposits of stream channels (A1), sand dunes (A3), lake terraces (A2), or playas (A4).

2. The most likely areas for caliche occurrence are those deposits in the suitable Valley areas that are immediately adjacent to the mountain front or near large rock outcroppings. It should be noted that the 100-foot depth to rock exclusion criteria eliminated many of the basin-fill deposits having the highest likelihood of caliche occurence (i.e., pediment deposits-A6; older alluvial fans-A5o) and probably significantly decreased areas in the subsurface having a high likelihood of deeply buried older calichified basin fill (i.e., fanglomerates).

Valleys in the eastern portion of LBGR, all Valleys in the Gila Bend Group, and Valleys in WSMR have a higher likelihood for occurrence of well-developed caliche than Valleys in the remaining siting areas. This does not indicate a lack of caliche in these other areas, but rather indicates that the caliche present is probably less well-developed.

The presence of large areas covered by playas or sand dunes was considered in the matrix analysis under favorability of geologic conditions but was not considered an exclusion to siting. However, since this category was assigned a small weighting factor (1.0) in the matrix analysis, and since it is possible that

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these less favorable conditions could not be given appropriate consideration, the presence of playas or sand dunes merit further discussion.

Playas are common in the suitable Valley areas of NBGR and WSMR and are particularly significant in many Nellis Group Valleys (Drawings 1 and 3). Playas are small and rare in YPG/LBGR, Gila Bend Group Valleys and the White Sands Missile Range Extension area (Drawings 1 and 2). Table 15 lists the total amount of suitable Valley area and percent of the total suitable area that is covered by playa and sand deposits in each of the six siting areas. These data show that the total suitable area in general decreases only slightly in most siting areas if playas are considered unsuitable siting area. However, as much as a 15 percent decrease occurs in the NBGR siting area. The impact on a relative Valley ranking could be significant, particularly with regard to Stonewall Flat and Jakes Valley where playas compose greater than 25 percent of the total suitable Valley area. Sand dune areas have less total impact (Table 15). If sand dunes are to be considered unsuitable areas at some future time, three Valleys could be significantly affected. Tularosa Basin South (New Mexico DoD) and Mohawk-Tule Valley (Arizona DoD) each have more than 30 nm^2 of sand dunes and nearly 65 percent of Cactus Plain (Arizona DoD) is covered by sand dunes.

2.2.3 GRAIN-SIZE DISTRIBUTION

Grain size distribution of the basin fill is only indirectly considered in the matrix analysis. Significant accumulations of very coarse- or very fine-grained basin fill could affect

Table 15

Percent of Sand Dune and Playa Deposits

Siting Area	Suitable Area (nm^2)	Area Covered By (nm^2)		% Area Covered By	
		Playa	Sand Dunes	Playa	Sand Dunes
YPG/LBGR	2132	1	176	0	8
Gila Bend Group	1801	0	40	0	2
NBGR	1218	186	2	15	0
Nellis Group	4074	215	40	5	1
WSMR/FBMR	668	17	38	3	6
WSMR Extension	112	0	8	0	7

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construction and the hardness of the deployed system. Since accurate ratios of coarse- to fine-grained units could not be calculated for the basin fill in individual Valleys, only general statements can be made. Grain sizes of basin-fill deposits within the suitable portions of the Valleys will be highly variable depending upon a multitude of geologic, geomorphic, topographic and climatic conditions in individual Valleys. In most instances, the larger grain sizes occur near the mountain front as part of talus accumulations or the apex portions of alluvial fans. These deposits have been excluded or significantly decreased in the suitable Valley area by the 100-foot depth to rock contour. This contour was plotted approximately 1000 to 2500 feet basinward of the mountain front or rock/pediment occurrences. Large accumulations of fine-grained deposits are not common in the Arizona siting region but are quite numerous in the Nevada and New Mexico siting region due to the presence of significant playa deposits.

2.2.4 SURFACE FAULTING

Capable or potentially capable faults are those which may cause ground rupture and surface displacement. Although capable or potentially capable faults were not identified as excluding criteria for determining suitable area, they could become important when considering the vulnerability of a deployed system. Displacements of a few to tens of feet can occur along a capable fault. In addition, movement of small to large blocks in the vicinity of the fault can also occur,

causing differential movement, cracking and slumping of the ground surface jeopardizing the stability and the hardness of structures built upon or across such features. Numerous such faults occur within the Nellis Group siting area and NBGR. Fewer faults are present in YPG/LBGR and WSMR/FBMR and no significant occurences are known in the Gila Bend Group or White Sands Extension study area.

2.2.5 SEISMICITY

Seismicity and ground shaking are of lesser importance since the design specifications of the system more than likely will compensate for projected levels of seismicity. All siting areas lie close to potential sources of earthquakes. Low levels of seismicity (infrequent occurrences of earthquakes greater than M = 4.0 on the Richter Scale) characterize WSMR/FBMR, eastern LBGR, eastern NBGR, all of the Gila Bend Group and southern and eastern parts of the Nellis Group. Moderate to high levels of seismicity prevail in western YPG/LBGR, central NBGR, and central and northern portions of the Nellis Group. No significant zones of seismicity affect the White Sands Extension area.

2.2.6 PROPOSED WILDERNESS AREAS AND OTHER ENVIRONMENTALLY SENSITIVE AREAS

Both the Cabeza Prieta Game Range, Arizona, and the Desert National Wildlife area, Nevada, have had Final Environmental Statements submitted evaluating these areas for wilderness withdrawal. An extension of 79,000 acres to the Cabeza Prieta to the west is presently under consideration. If approved,

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this extension would also be included in the proposed Cabeza Prieta Wilderness area. Since these areas may contain minerals vital to the national interest, the President of the United States deferred action (as of June 1974) on granting wilderness status to these areas until an adequate mineral survey has been completed. If the Cabeza Prieta and Desert National Wildlife area are approved for incorporation into the National Wilderness Preservation System, it is likely that a joint-use status with an MX land mobile system would be difficult and probably impossible. An area that is environmentally sensitive, but which is not a proposed inclusion into the National Wilderness Preservation system is the Nevada Wild Horse Range. It is presently entirely within the NBGR on public land under Air Force control. The wild horses are protected by the Free-Roaming Horse and Burro Act f 1971, and probably could not co-exist with the MX system, particularly during construction phases. It is for these reasons that dual rankings (including and excluding areas within these proposed wilderness and environmentally sensitive areas) were performed in the matrix analysis. However, as of the date of this report, the Cabeza Prieta, Nevada Wild Horse Range, and the Desert National Wildlife Refuge are not recognized exclusions. Valleys potentailly affected by these areas and total suitable area are shown in Table 16.

TABLE 16

Vallevs Potentially Affected by Proposed
Wilderness and Environmentally Sensitive Areas

Environmentally Sensitive Area	Affected Valley	Suitable Area (nm^2)	Suitable Area (nm^2) Excluding Sensitive Areas
Cabeza Prieta* (Arizona)	3. Growler/Childs (DoD)	413	220
	7. Lechuguila (DoD)	172	140
	9. Mohawk/Tule (DoD)	521	271
	11. San Cristobal (DoD)	275	230
Desert National Wildlife Area (Nevada)	25. Emigrant (DoD)	191	135
	26. Frenchman Flat (DoD)	62	35
	33. Tikaboo (DoD)	70	29
	40. Coyote Spring/ Kane Spring (BLM)	276	209
	45. Indian Spring (BLM)	52	11
	59. Three Lakes (BLM)	19	0
	60. Tikaboo (BLM)	229	144
Nevada Wild Horse Range	24. Cactus Flat (DoD)	201	188
	27. Gold Flat (DoD)	108	132
	29. Kawich (DoD)	113	0

* The proposed extension would also affect a small portion of Yuma Desert (Valley No. 14).

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3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

Over 70 percent of all Arizona BLM, Arizona DoD, and Nevada BLM Valleys have final scores in the upper 50 percent of all Valleys (Matrix Analysis, Table 6). Nevada DoD and New Mexico BLM and DoD Valley Final Scores are predominantly in the lower 50 percent.

Seventy-four percent (7423 nm^2) of all suitable Valley area is in the upper 50 percent; of this total, 30 percent (2248 nm^2) is DoD land, most of which 76 percent (1715 nm^2) is in Arizona. Eighty-eight percent of this Arizona DoD land is present in LBGR.

If the proposed areas within the Cabeza Prieta and Desert National Wildlife Ranges are incorporated into the Wilderness Preservation system (Section 2.2.6, Table 12), then 29 percent (520 nm^2) of the suitable area in LBGR, five percent (212 nm^2) in the Nellis Group, and ten percent (124 nm^2) of the NBGR would be affected. Although the Nevada Wild Horse Range (Nevada DoD) is not eligible for wilderness status, the area has been informally designated as a protected range for the wild horses. This protective status could be incompatible with MX deployment schemes. Exclusion of the Wild Horse Range would result in a further 13 percent reduction (162 nm^2) of suitable area in NBGR.

Exclusion of Wildlife Ranges does not affect the Final Score ranking of any BLM Valleys (Appendix G). It does, however,

affect the ranking of individual DoD Valleys (Appendix F). However, none of the final scores change sufficiently to move a Valley from the upper 50 percent to the lower 50 percent.

When DoD Lands (Appendix F) and BLM Lands (Appendix G) are ranked separately, additional conclusions can be drawn. Arizona DoD Valleys within LBGR score highest in the ranking, with Final Scores in the upper 50 percent for all Valleys in the group. YPG and NBGR rank about evenly with scores ranging from the upper 25 percent to the lower 25 percent.

In the BLM rankings the Arizona BLM Valleys generally score higher than the Nevada BLM Valleys, with all Arizona Valleys except La Posa Plain (18) and Cactus Plain (16) ranking in the upper 50 percent on the Final Score rankings. Eleven Nevada Valley Final Scores fall in the upper 50 percent, 16 fall in the lower 50 percent.

Playa areas (see Drawings 1, 2, and 3) have not been excluded from the suitable area totals in this report. Suitable areas containing playas have, however, received lower scores because of the presence of playas. If playa or sand areas are excluded from consideration, suitable areas will be reduced accordingly.

Additional iterations of the Matrix Analysis using different sets of weighting factors have been produced, but are not included with this report. When weighting factors are changed, the rankings are, of course, changed accordingly. For example,

to place more emphasis on ownership in BLM areas, the weighting factor for Column H was increased from 1.0 to 3.0 and the weighting factors for Columns A and B were each reduced by 1.0. Using these weighting factors, the BLM Valleys in Arizona were effected the most with Harquahala Plain (17) dropping in numerical rank (w) from 6th to 40th, McMullen (19) dropping from 18th to 50th, Palomas/Hyder (21) from 9th to 25th and Ranegras Plain (22) from 3rd to 18th. BLM Valleys in Nevada were also effected, but not to this degree. Tikaboo Valley (60) dropped from 31st to 51st, Monitor (49) from 34th to 47th, Emigrant (25) from 35th to 51st, and Coyote Spring/Kane Spring (40) from 41st to 59th. Other Arizona and Nevada BLM Valleys had drops of smaller magnitude, while some had a slight increase in rank.

In general, the DoD Valleys rose in numerical rank, although Valleys such as Cactus Flat (24) and Yucca Flat (34) dropped significantly in numerical rank, due to conflicting non-BLM, non-DoD federal control of Valleys within NBGR.

3.2 RECOMMENDATIONS

The New Mexico siting region has less total suitable area (780 nm^2) than necessary for deployment of one wing (1500 nm^2, assumed). For this reason, it should be eliminated from present consideration as a viable siting area (region).

Suitable Valley areas presently included within the Cabeza Prieta Game Refuge, Desert National Wildlife Range and Nevada Wild Horse Range should be eliminated from present considerations for siting. The boundaries of these Wildlife Ranges are shown on Figure 3.

Valleys with considerable playa and sand dune deposits should be considered low priority suitable area and should be incorporated only if additional area is needed. Playa areas are indicated on Drawings 1, 2, and 3.

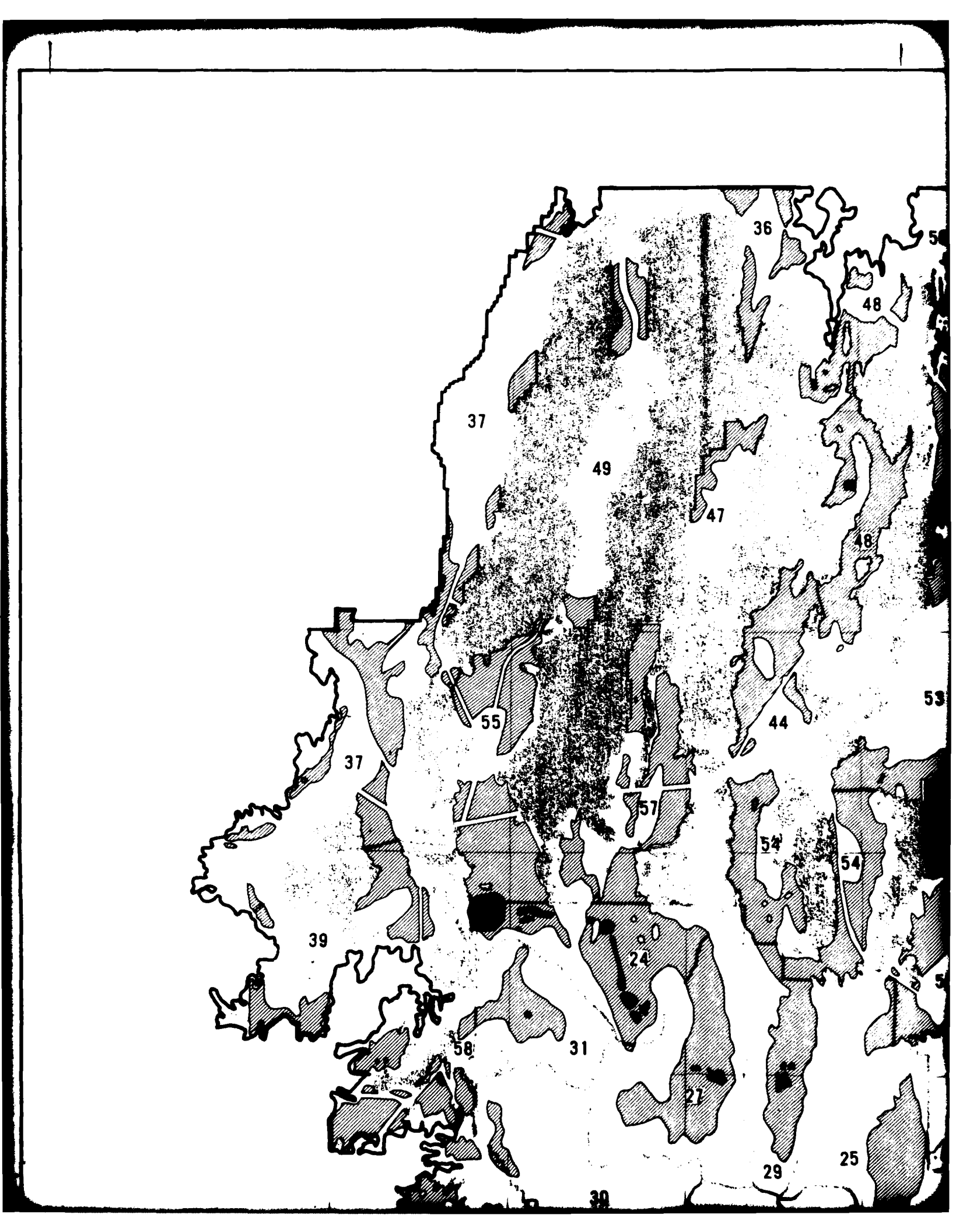
The Arizona and Nevada siting regions are recommended for Phase 1 and 2 studies. Table 17 summarizes the areas considering DoD Lands only, BLM Land only, and combined DoD/BLM Lands.

TABLE 17

Preferred Ranking of Siting Areas
for Phase 1 and 2 Geotechnical Studies

DoD Only	BLM Only	Combined DoD/BLM
LBGR (1)	Nellis Group (1)	Gila Bend Group and YPG (2)
NBGR (2)	Gila Bend Group (2)	Nellis Group and NBGR (3)

Individual core Valleys within each of these rankings should be selected with additional land added to make up the area for the necessary deployment scheme. Valleys which score in the upper ten percent are considered to be prime candidates for core Valleys.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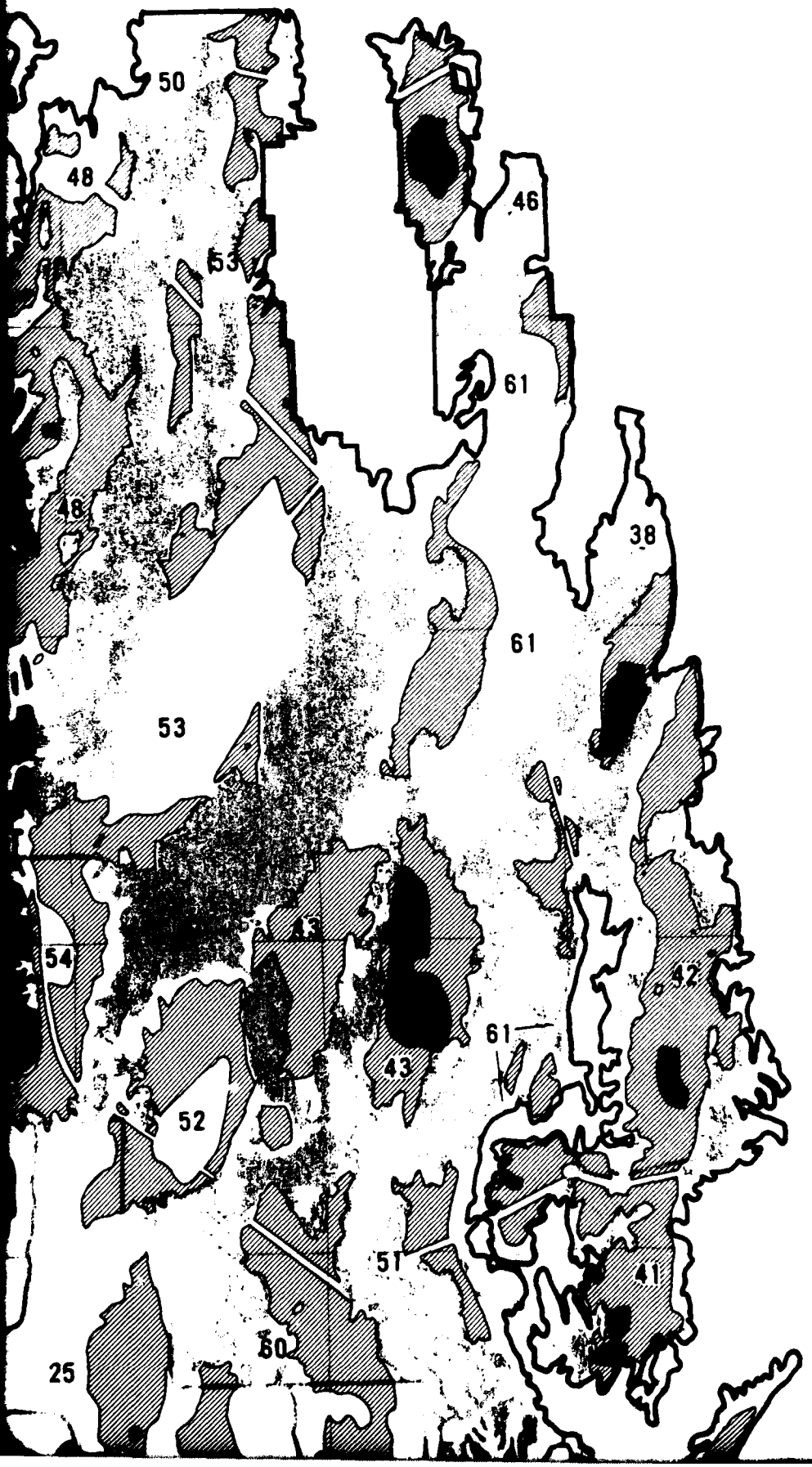


EXP

SUITAB

DoD VALLEYS

NUMBER	NAME	SUITABLE AREA
23	BUCKBOARD MESA	
24	CACTUS FLAT	
25	EMIGRANT	
26	FRENCHMAN FLAT	
27	GOLD FLAT	
28	INDIAN SPRINGS	
29	KAWICH	
30	PAHUTE MESA	
31	STONEWALL FLAT	
32	THREE LAKES	
33	TIKABOO	
34	YUCCA FLAT	

SUBTOTAL 1

FOUR-QUAD KE

	NG-1	NG-2	NG-3
	NG-6	NG-7	NG-8
NG-12	NG-13	NG-14	NG-15
NG-19	N-I	N-II	N-III

EXPLANATION

SUITABLE SITING AREA

DoD VALLEYS

NUMBER	NAME	SUITABLE AREA (km^2)
23	BUCKBOARD MESA	94
24	CACTUS FLAT	201
25	EMIGRANT	191
26	FRENCHMAN FLAT	62
27	GOLD FLAT	166
28	INDIAN SPRINGS	87
29	KAWICH	113
30	PAHUTE MESA	10
31	STONEWALL FLAT	56
32	THREE LAKES	117
33	TIKABOO	70
34	YUCCA FLAT	89
	SUBTOTAL	1218

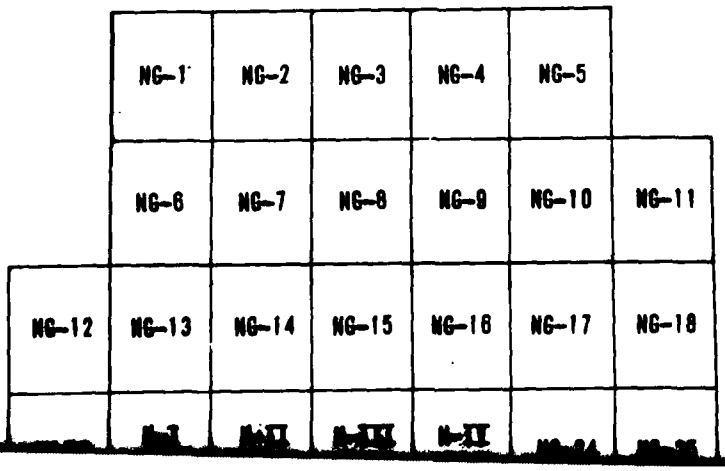
BLM VALLEYS

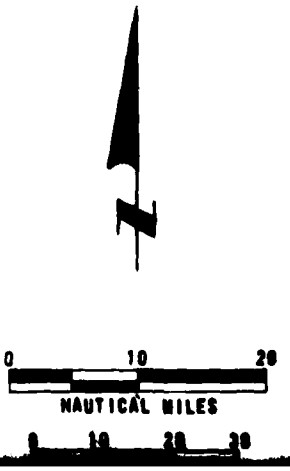
NUMBER	NAME	SUITABLE AREA (km^2)
35	AMARGOSA DESERT	137
36	ANTELOPE	55
37	BIG SMOKY	246
38	CAVE	75
39	CLAYTON-ALKALI SPRING	88
40	COYOTE SPRING-KANE SPRING	197
41	DELAMAR-PAHROC	176
42	DRY LAKE-MULESHOE	288
43	GARDEN-COAL	326
44	HOT CREEK	138
45	INDIAN SPRING	52
46	JAKES	100
47	LITTLE FISH LAKE	24
48	LITTLE SMOKY	310
49	MONITOR	50
50	NEWARK	59
51	PAHRANAGAT	73
52	PENOYER	157
53	RAILROAD	243
54	RAILROAD-REVEILLE	247
55	RALSTON	238
56	SARCOBATUS FLAT	70
57	STONE CABIN	171
58	STONEWALL FLAT	105
59	THREE LAKES	19
60	TIKABOO	229
61	WHITE RIVER	203
	SUBTOTAL	5292
	TOTAL	6510

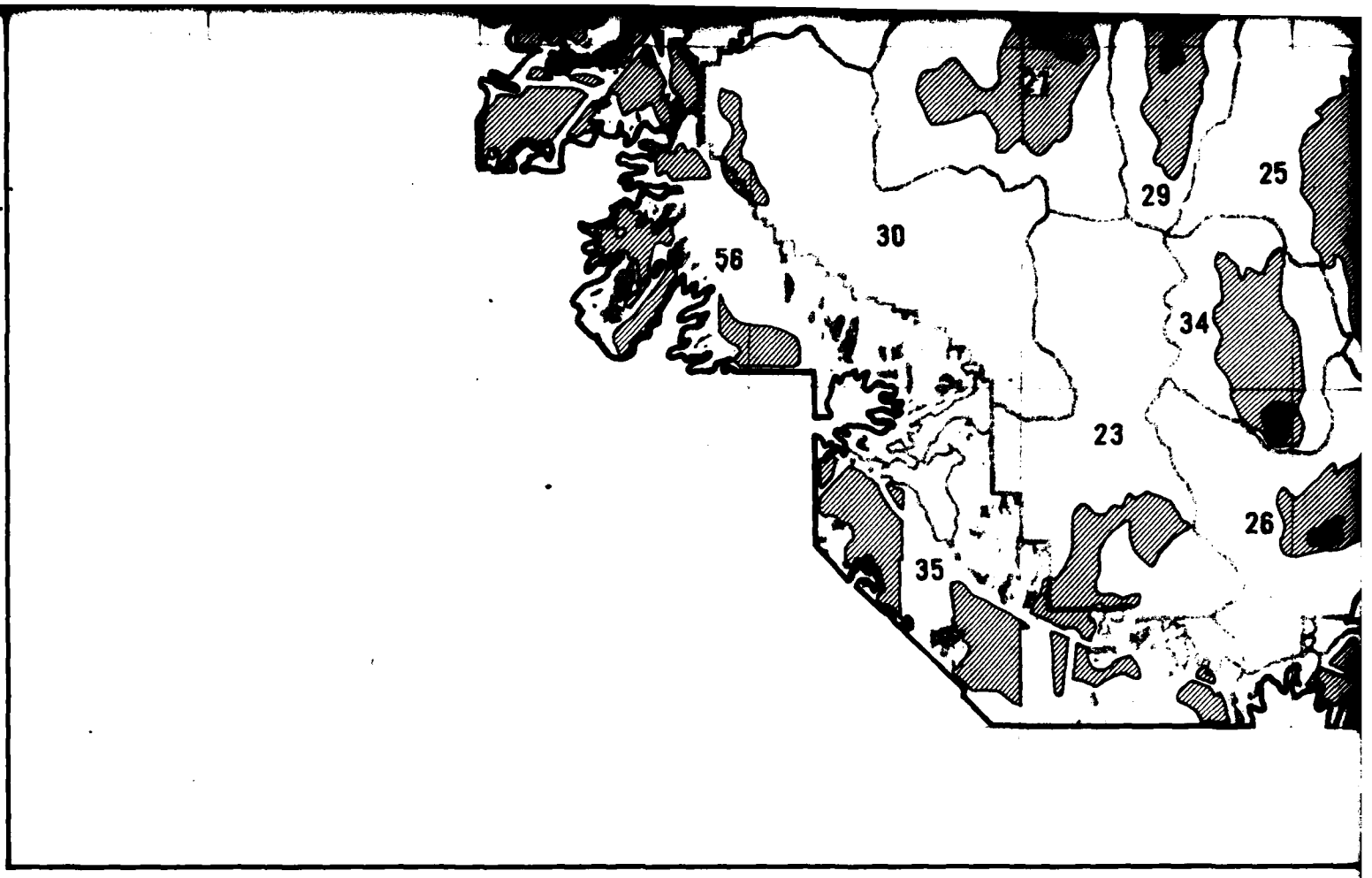
SYMBOLS

- Boundary of Siting Region.
- Boundary of Valley.
- Suitable Valley Area.
- Limit of Playa.

FOUR-QUAD KEY MAP







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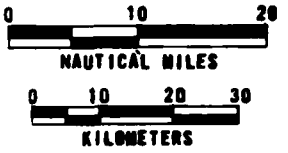
NG-12	NG-13	NG-14
NG-19	N-I NG-20	N-II NG-21
	N-I NG-26	N-II NG-27
		N-I NG-31

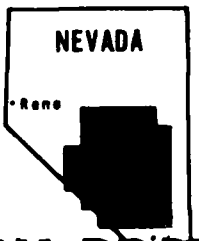
N-I DoD Four
NG-20 BLM Four

15

1

NG-12	NG-13	NG-14	NG-15	NG-16	NG-17	NG-18
NG-19	N-I NG-20	N-II NG-21	N-III NG-22	N-IV NG-23	NG-24	NG-25
	N-V NG-26	N-VI NG-27	N-VII	N-VIII NG-28	N-IX NG-29	NG-30
		N-X NG-31	N-XI NG-32	N-XII NG-33	N-XIII NG-34	NG-35





N-I DoD Four-quad graphics (1:62,500)
NG-20 BLM Four-quad graphics (1:62,500)

PRELIMINARY DRAFT

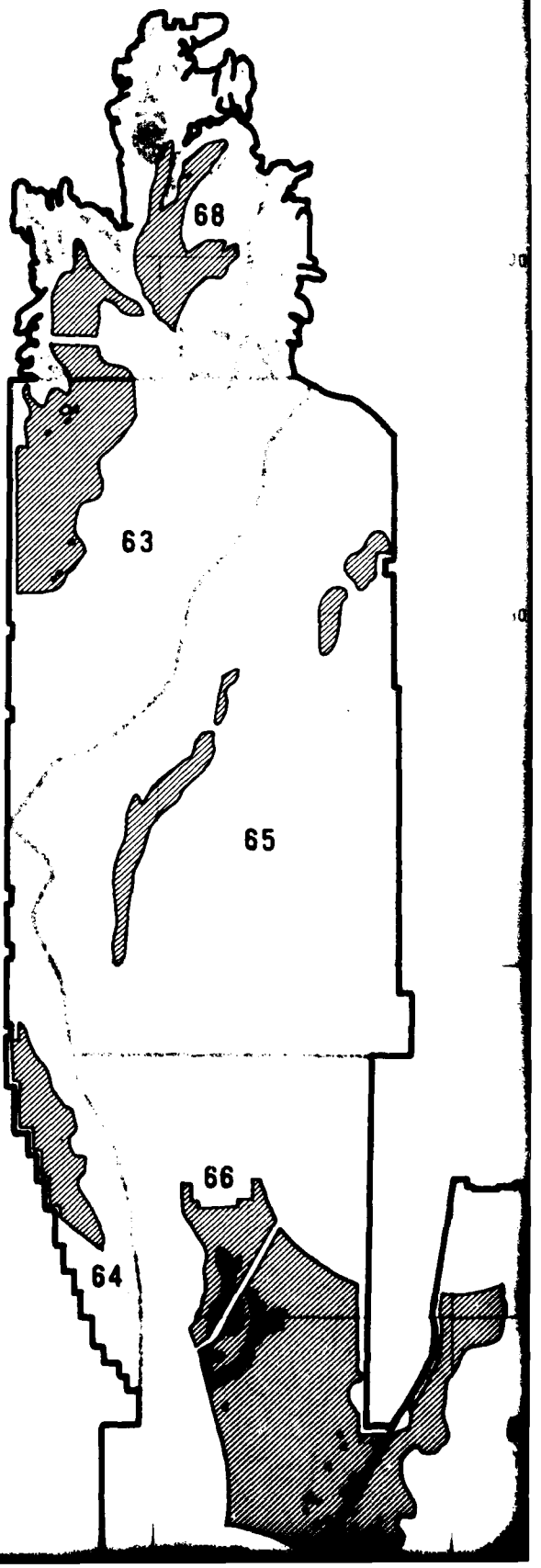
NEVADA SITING REGION

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

DRAWING: 2

FUGRO NATIONAL, INC.

16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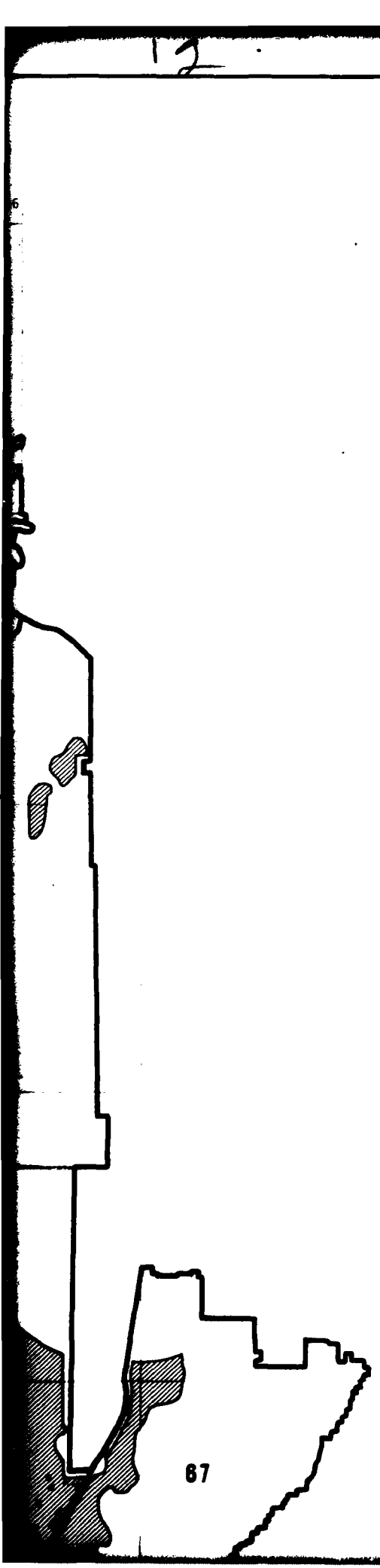

DoD

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BLM

NUMBE
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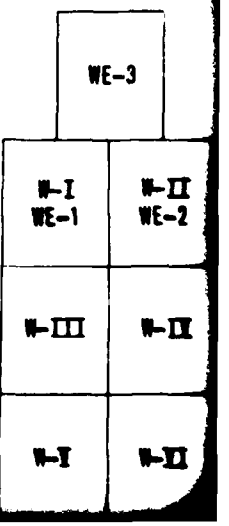
FOUR-QUAD



EXPLANATION

SUITABLE SITING AREA

DoD VALLEYS

NUMBER	NAME	SUITABLE AREA (nm^2)
62	HUECO BOLSON	7
63	JORNADA DEL MUERTO NORTH	124
64	JORNADA DEL MUERTO SOUTH	47
65	TULAROSA BASIN NORTH	58
66	TULAROSA BASIN SOUTH	332
67	TULAROSA BASIN EAST	100
	SUBTOTAL	668

BLM VALLEYS

NUMBER	NAME	SUITABLE AREA (nm^2)
68	JORNADA DEL MUERTO	112
	SUBTOTAL	112
	TOTAL	780

SYMBOLS

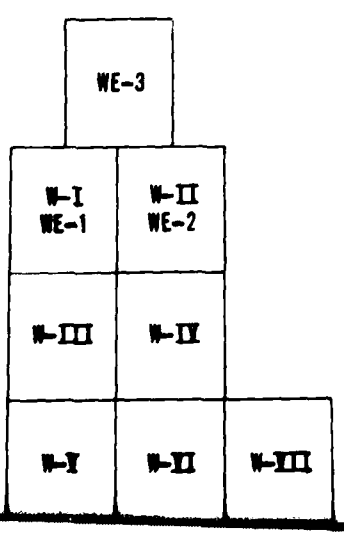
Boundary of Siting Region.

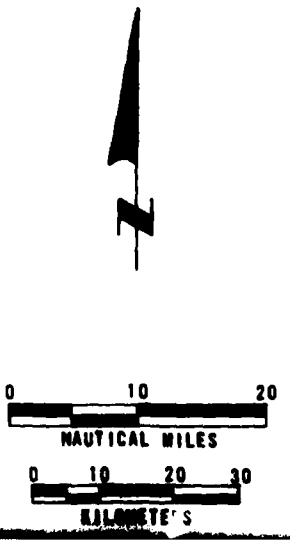
Boundary of Valley

Suitable Valley Area.

Limit of Playa.

FOUR-QUAD KEY MAP



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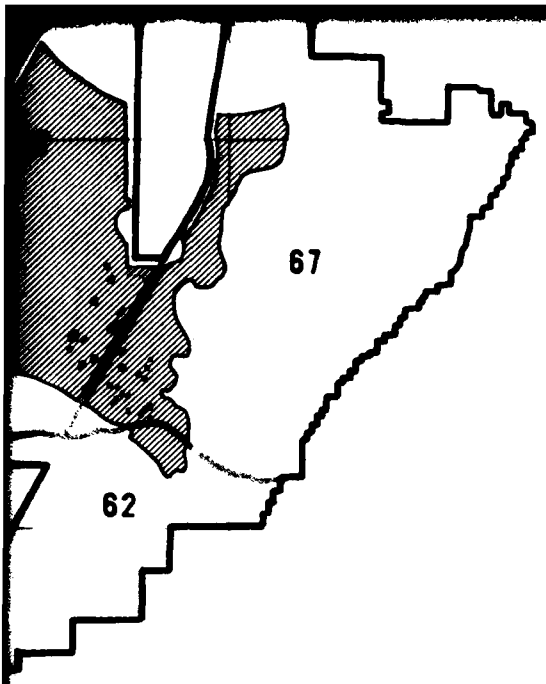
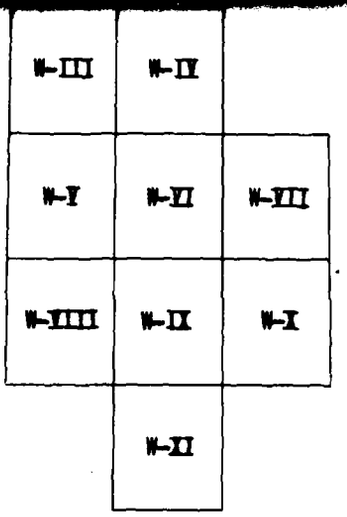
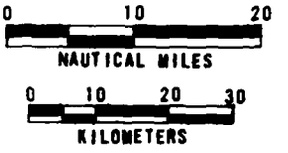


W-I WE-1	
W-III	
W-V	
W-VIII	

W-I DoD Four-quad
WE-1 BLM Four-quad

15





W-I DoD Four-quad graphics (1:62,500)

WE-1 BLM Four-quad graphics (1:62,500)

PRELIMINARY DRAFT

NEW MEXICO SITING REGION

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE SAMSO

DRAWING 3

FUGRO NATIONAL, INC.

6

APPENDIX A

LIST OF REPORTS

Fugro National, Inc., 1975a, Siting evaluation report: Cons. report for SAMSO, v. I, 55 p., appendices.

_____, 1975b, Geotechnical report, White Sands Missile Range/Fort Bliss Military Reservation: Cons. report for SAMSO, v. IIA, 113 p., data summary sheets, appendices and graphics volume.

_____, 1975c, Geotechnical report, Yuma Proving Grounds/ Luke-Williams Bombing and Gunnery Range: Cons. report for SAMSO, v. IIB, 122 p., data summary sheets, appendices and graphics volume.

_____, 1975d, Geotechnical report, Nellis Bombing and Gunnery Range: Cons. report for SAMSO, v. IIC, 125 p., data summary sheets, appendices and graphics volume.

_____, 1975e, Recommended geotechnical field investigation: Cons. report for SAMSO, v. III, 45 p.

_____, 1975f, Environmental assessment report: geotechnical field investigation: Cons. report for SAMSO, v. IV, 165 p., appendices.

_____, 1975g, Water rights and resources: Cons. report for SAMSO, 104 p., appendices.

_____, 1975h, Comparative environmental assessment of the three MX land mobile missile system concepts: Cons. report for SAMSO, 179 p., appendix.

_____, 1976a, Siting evaluation report: Cons. report for SAMSO, 63 p., appendix.

_____, 1976b, Geotechnical report, White Sands Missile Range Extension: Cons. report for SAMSO, v. IIA, 88 p., data summary sheets, appendices and graphics volume.

_____, 1976c, Geotechnical report, Gila Bend Group: Cons. report for SAMSO, v. IIB, 120 p., data summary sheets, appendices and graphics volume.

_____, 1976d, Geotechnical report, Nellis Group: Cons. report for SAMSO, v. IIC, 142 p., data summary sheets, appendices and graphics volume.

_____, 1976e, REcommended geotechnical field investigations: Cons. report for SAMSO, v. III, 79 p., appendix.

APPENDIX B

SUITABLE AREA AND SUITABLE CONTIGUOUS AREA

	VALLEY NUMBER	VALLEY AREA (nm^2)	SUITABLE AREA (nm^2)	% REDUCTION
ARIZONA DoD	1	327	126	61
	2	321	92	71
	3	603	413	32
	4	324	42	87
	5	184	106	42
	6	61	32	48
	7	330	172	48
	8	113	21	84
	9	853	521	39
	10	67	30	55
	11	353	275	22
	12	385	208	46
	13	71	0	100
	14	314	94	70
	SUBTOTAL	4326	2132	51
ARIZONA BLM	15	365	230	37
	16	237	131	45
	17	542	352	35
	18	349	236	32
	19	317	201	37
	20	71	0	100
	21	525	295	44
	22	494	356	28
	SUBTOTAL	2900	1801	38
	TOTAL	7226	3933	46

SUITABLE AREA

ARIZONA

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE SAMSO

APPENDIX B-1

UGRO NATIONAL, INC.

	VALLEY NUMBER	VALLEY AREA (nm^2)	SUITABLE AREA (nm^2)	% REDUCTION
NEVADA DOD	23	476	54	89
	24	371	201	46
	25	646	191	70
	26	399	62	84
	27	526	168	68
	28	271	87	68
	29	232	113	51
	30	499	10	98
	31	252	56	78
	32	336	117	65
	33	189	70	63
	34	232	89	62
	SUBTOTAL	4429	1218	72

	VALLEY NUMBER	VALLEY AREA (nm^2)	SUITABLE AREA (nm^2)	% REDUCTION
NEVADA BLM	35	424	137	68
	36	201	55	73
	37	1023	246	76
	38	129	75	42
	39	357	89	75
	40	276	197	29
	41	271	176	35
	42	475	289	39
	43	455	326	28
	44	278	138	50
	45	102	52	49
	46	214	106	50
	47	120	24	80
	48	561	310	45
	49	288	50	83
	50	184	50	73
	51	185	73	61
	52	271	157	42
	53	869	243	72
	54	418	247	41
	55	384	238	38
	56	339	70	79
	57	381	171	55
	58	246	105	57
	59	21	19	10
	60	345	229	34
	61	752	203	73
	SUBTOTAL	9569	4074	57
	TOTAL	13,998	5292	62

SUITABLE AREA
NEVADA

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX B-2

FUGRO NATIONAL, INC.

	VALLEY NUMBER	VALLEY AREA (nm^2)	SUITABLE AREA (nm^2)	% REDUCTION
NEW MEXICO DOD	62	326	7	98
	63	505	124	75
	64	180	47	74
	65	1340	58	96
	66	998	332	67
	67	682	100	85
	SUBTOTAL	4031	668	83
NEW MEXICO BLM	68	431	112	74
	TOTAL	4462	780	83

SUITABLE AREA
NEW MEXICO

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE SAMSO

APPENDIX
B-3

UGRO NATIONAL, INC.

	VALLEY NUMBER	CONTIGUOUS VALLEY NUMBER	SUITABLE CONTIGUOUS AREA (nm^2)	SUITABLE AREA PLUS SUITABLE CONTIGUOUS AREA (nm^2)
ARIZONA DOD	1	4,5	148	274
	2	12	208	300
	3	9,11,12	1004	1417
	4	1	126	168
	5	1,10	156	262
	6	8,18	357	389
	7	9,14	615	787
	8	6,20	32	53
	9	3,7,11	860	1381
	10	5,21	401	430
	11	3,9	934	1209
	12	2,3	505	712
	13			
	14	7	172	266
ARIZONA BLM	15	16,19,22	688	918
	16	15,18,22	822	953
	17	19,21,22	852	1204
	18	6,16,22	519	755
	19	15,17,22	938	1139
	20			
	21	10,17,22	738	1033
	22	15,16,17,18,19,21	1446	1802

SUITABLE CONTIGUOUS AREA

ARIZONA

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE SAMSO

APPENDIX B-4

	VALLEY NUMBER	CONTIGUOUS VALLEY NUMBER	SUITABLE CONTIGUOUS AREA (nm^2)	SUITABLE AREA PLUS SUITABLE CONTIGUOUS AREA (nm^2)
NEVADA DOD	23	35	137	191
	24	27,31,39,55,57	718	919
	25	52,54	404	595
	26	28,35,45	275	332
	27	24	201	383
	28	28,32,45	231	318
	29	53,54	490	603
	30	31,56	226	136
	31	24,30,58	316	372
	32	28,45,59	158	275
	33	60	229	299
	34			89

	VALLEY NUMBER	CONTIGUOUS VALLEY NUMBER	SUITABLE CONTIGUOUS AREA (nm^2)	SUITABLE AREA PLUS SUITABLE CONTIGUOUS AREA (nm^2)
NEVADA BLM	35	23,26,45,56	238	375
	36	48,49	360	415
	37	39,49,55	377	618
	38	42,61	492	567
	39	24,37,55,58	790	879
	40	51	73	270
	41	42	289	465
	42	41,61	379	668
	43	52,61	360	654
	44	48,54,57	728	866
	45	26,28,32,35	403	455
	46	61	203	309
	47			24
	48	36,44,50,53	486	597
	49	36,37,55	539	589
	50	48,53	553	603
	51	33,40,60,61	779	852
	52	25,43,54,60	730	887
	53	48,50,54,61	810	1053
	54	25,29,44,52,53	842	1089
	55	24,37,39,49,57	757	995
	56	30,35,58	252	307
	57	24,44,55	577	748
	58	31,39,56	215	320
	59	32	117	136
	60	33	70	299
	61	38,42,43,46,51	869	1072

SUITABLE CONTIGUOUS AREA

NEVADA

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE SAMSO

APPENDIX B-5

FUBRO NATIONAL, INC.

VALLEY NUMBER		CONTIGUOUS VALLEY NUMBER	SUITABLE CONTIGUOUS AREA (nm^2)	SUITABLE AREA PLUS SUITABLE CONTIGUOUS AREA (nm^2)
NEW MEXICO DOD	62	66,67	432	439
	63	65,68	170	294
	64			47
	65	63	124	182
	66	62,67	107	439
	67	62,66	339	439
NEW MEXICO BLM	68	63	124	236

SUITABLE CONTIGUOUS AREA
NEW MEXICO

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE SAMSO

APPENDIX
B-6

APPENDIX C

AREAS OF BASIN-FILL DEPOSITS IN EACH VALLEY

VALLEY NAME	VALLEY NO	AREA OF BASIN-FILL UNIT (nm^2)										SCALED AREA* (nm^2)	SUITABLE AREA (nm^2)
		A_Q	A_1	A_2	A_3	A_4	A_{4_m}	A_{5_Q}	$A_{5_{QT}}$	A_{5_T}	A_{5_U}		
ARIZONA DoD													
CASTLE DOME	1		8					93	25			116	126
GILA BEND PLAIN	2	6						40	46			79	92
GROWLER/CHILDS	3	263	35					109	6			328	413
INDIAN WASH	4		12					18	12			33	42
KING	5		43					20	43			74	106
LA POSA PLAIN	6							32				32	32
LECHUQUILA DESERT	7		6					149	17			165	172
MOHAVE WASH	8		2					17	2			19	21
MOHAWK/TULE	9	83	29		32	1		335	36		5	450	521
PALOMAS PLAIN	10								29			22	
SAN CRISTOBAL	11	127	19	1	3			108	3		14	227	275
SENTINEL PLAIN	12	127	5					47	29			166	208
VEKOL	13												0
YUMA DESERT	14	1			5			83	5			89	94
ARIZONA BLM													
BUTLER	15		3		2			2	215	2	6	170	230
CACTUS PLAIN	16		8		84			1	34	4		53	131
HARQUAHALA PLAIN	17		85						252	15		239	352
LA POSA PLAIN	18	8	19		83			25	101			139	236
McMULLEN	19	1	15					105	79	1		173	201
MOHAVE WASH	20												
PALOMAS/HYDER	21		19					78	182	15	1	233	295
RANEGRAS PLAIN	22	1	64		7				277	7		246	356

*SCALED AREA IS THE SUM OF THE PRODUCTS OF THE AREA OF EACH BASIN FILL UNIT TIMES THE RESPECTIVE SCALING FACTOR (TABLE 5, SECTION 2.5.2)

AREA OF BASIN-FILL UNITS
ARIZONA

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX C-1

FUGRO NATIONAL, INC.

VALLEY NAME	VALLEY NO.	AREA OF BASIN-FILL UNIT (nm^2)										SCALED AREA* (nm^2)	SUITABLE AREA (nm^2)
		A_Q	A_1	A_2	A_3	A_4	A_{4_M}	A_{5_Y}	A_{5_I}	A_{5_O}	A_{5_U}		
NEVADA DoD													
BUCKBOARD MESA	23		3					50	1			52	54
CACTUS FLAT	24		9	1		21	26	100	44			157	201
EMIGRANT	25		7			3	30	87	55	9		152	191
FRENCHMAN FLAT	26		5			6		42	9			52	62
GOLD FLAT	27		17	1		3	17	83	47			137	168
INDIAN SPRING	28		6		1	10	20	36	15			63	87
KAWICH	29		5	1		4	8	80	15			100	113
PAHUTE MESA	30		1					6	3			9	10
STONEWALL FLAT	31		6			1	7	34	8			47	56
THREE LAKES	32	1	10			11	7	76	11	1		95	117
TIKABOO	33		3			1	2	51	12	1		64	70
YUCCA FLAT	34		16		1	9		56	9			72	89

*SCALED AREA IS THE SUM OF THE PRODUCTS OF THE AREA OF EACH BASIN FILL UNIT TIMES THE RESPECTIVE SCALING FACTOR (TABLE 5, SECTION 2.5.2)

AREA OF BASIN-FILL UNITS
NEVADA DoD

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX C-2

FUGRO NATIONAL, INC.

VALLEY NAME	VALLEY NO.	AREA OF BASIN-FILL UNIT (nm^2)										SCALED AREA* (nm^2)	SUITABLE AREA (nm^2)
		A_Q	A_T	A_2	A_3	A_4	A_{4_M}	A_{5_Y}	A_{5_I}	A_{5_O}	A_{5_U}		
NEVADA BLM													
AMARGOSA DESERT	35		23	1	6			96	11			118	137
ANTELOPE	36	1	3					22	29			46	55
BIG SMOKY	37	1	10		7	2		114	109	2	1	206	246
CAVE	38	17	18	2	1	20		16	1			45	75
CLAYTON/ALKALI SPRING	39		4					41	43	1		76	89
COYOTE SPR./KANE SPR.	40	2	6	2				149	22	1	15	184	197
DELAMAR/PAHROC	41		19			6		135	14	1		157	176
DRY LAKE/MULESHOE	42	11	34	22		10	6	136	70			236	289
GARDEN/COAL	43	9	40	3		59	1	199	15			255	326
HOT CREEK	44	2	5	1				41	86	3		112	138
INDIAN SPRING	45		5					41	5	1		47	52
JAKES	46		23	12		25	4	31			11	68	106
LITTLE FISH LAKE	47		1						22	1		17	24
LITTLE SMOKY	48	22	15	19				58	42	35	119	234	310
MONITOR	49	3						12	35			40	50
NEWARK	50	9	4					5	32			37	50
PAHRANAGAT	51		2		1	1		45	24			64	73
PENOYER	52	1	3					133	20			150	157
RAILROAD	53	30	7	1	1			159	42	3		219	243
RAILROAD/REVEILLE	54	6	2	21	6	1		97	109	1	4	205	247
RALSTON	55	70	11	1		4		70	73	9		189	238
SARCOBATUS FLAT	56		1		11	1		42	13	1		57	70
STONE CABIN	57	8	17					134	11	1		157	171
STONEWALL FLAT	58	16	7		5		66	9	2			89	105
THREE LAKES	59							18	1			19	19
TIKABOO	60	10	9	1	2	9		160	35	3		203	229
WHITE RIVER	61	16	21	4				74	75	13		163	203

*SCALED AREA IS THE SUM OF THE PRODUCTS OF THE AREA OF EACH BASIN FILL UNIT TIMES THE RESPECTIVE SCALING FACTOR (TABLE 5, SECTION 2.5.2)

AREA OF BASIN-FILL UNITS
NEVADA BLM

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
C-3

FUGRO NATIONAL, INC.

VALLEY NAME	VALLEY NO.	AREA OF BASIN-FILL UNIT (nm^2)										SCALED AREA* (nm^2)	SUITABLE AREA (nm^2)
		A_Q	A_1	A_2	A_3	A_4	A_{4M}	A_{5_Q}	$A_{5_{QT}}$	A_{5_T}	A_{5_U}		
NEW MEXICO DoD													
HUECO BOLSON	62	1	6									4	7
JORNADA DEL MUERTO N.	63	124										93	124
JORNADA DEL MUERTO S.	64	47										35	47
TULAROSA BASIN N.	65	32	9					17				41	58
TULAROSA BASIN S.	66	266	1		31	16		18				225	332
TULAROSA BASIN E	67	68	24		7	1						66	100
NEW MEXICO BLM													
JORNADA DEL MUERTO N.	68	73	20		8			11				75	112

*SCALED AREA IS THE SUM OF THE PRODUCTS OF THE AREA OF EACH BASIN FILL UNIT TIMES THE RESPECTIVE SCALING FACTOR (TABLE 5, SECTION 2.5.2)

AREA OF BASIN-FILL UNITS
NEW MEXICO

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX C-4

APPENDIX D

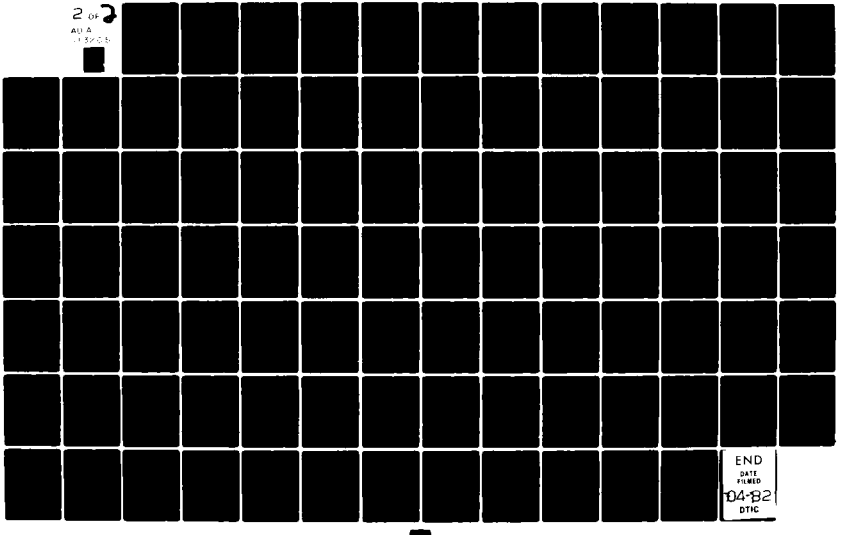
RANKING TABLES

(Including Wildlife Ranges)

TABLE 6 - MATRIX ANALYSIS

VALLEY NO.	NAME	RANKING FACTORS* A	B	C	D	E	F	G	H	I	J	K	L
1	CASTLE DOME AZD	2	1	8	4	5	2	5	10	9	9	6	9
2	GILA BEND PLAIN AZD	2	1	7	4	3	2	5	10	9	6	8	10
3	GROWLER/CHILDS AZD	8	7	6	4	3	2	5	10	8	7	6	9
4	INDIAN WASH AZD	1	1	8	5	10	5	5	10	8	1	4	7
5	KING AZD	2	1	6	4	6	5	5	10	7	7	6	6
6	LA POSA PLAIN AZD	1	2	6	4	3	3	5	10	10	6	10	10
7	LECHUGUILLA DESERT AZD	3	4	6	4	3	2	5	10	10	5	8	10
8	MOHAVE WASH AZD	1	1	6	4	10	4	5	10	9	1	2	9
9	MOHAWK/TULE AZD	10	6	6	4	3	2	4	10	9	7	6	9
10	PALOMAS PLAIN AZD	1	3	7	5	3	1	4	10	8	3	2	10
11	SAN CRISTOBAL AZD	5	6	6	4	3	2	5	10	8	7	6	9
12	SENTINEL PLAIN AZD	4	3	7	4	3	2	4	10	8	7	6	10
13	VEKOL AZD	0	0	0	0	0	0	0	0	0	0	0	0
14	YUMA DESERT AZD	2	1	6	4	6	2	3	10	9	7	8	10
15	BUTLER AZB	4	5	9	5	3	5	4	8	7	9	2	10
16	CACTUS PLAIN AZB	3	6	10	5	3	1	3	8	4	7	6	9
17	HARQUAHALA PLAIN AZB	7	6	10	5	3	5	3	5	7	8	2	8
18	LA POSA PLAIN AZB	5	4	9	5	3	0	4	9	6	9	2	9
19	MC MULLEN AZB	4	6	10	5	2	5	4	5	9	8	2	9
20	MOHAVE WASH AZB	0	0	0	0	0	0	0	0	0	0	0	0
21	PALOMAS/HYDER AZB	6	5	10	5	3	1	4	7	8	9	2	9
22	RANEGRAS PLAIN AZB	7	10	10	5	3	1	4	6	7	9	2	8
23	BUCKBOARD MESA NVD	1	1	8	4	3	6	5	1	10	6	4	9
24	CACTUS FLAT NVD	4	5	9	4	2	5	6	5	8	6	2	7
25	EMIGRANT NVD	4	3	7	3	0	5	5	8	8	5	2	8
26	FRENCHMAN FLAT NVD	1	2	10	4	5	6	5	1	8	3	10	9
27	GOLD FLAT NVD	3	1	8	3	2	0	6	10	8	7	6	8
28	INDIAN SPRING NVD	2	2	9	3	0	1	6	10	7	5	10	6
29	KAWICH NVD	2	3	8	3	2	0	5	10	9	6	6	9
30	PAHUTE MESA NVD	1	1	8	4	2	1	5	10	9	1	10	9
31	STONEWALL FLAT NVD	1	2	8	3	2	5	6	10	8	3	2	8
32	THREE LAKES NVD	2	1	8	3	0	1	6	10	8	5	4	8
33	TIKABOO NVD	1	2	8	3	0	2	5	10	9	5	10	9
34	YUCCA FLAT NVD	4	0	10	6	10	10	6	1	8	6	10	7
35	AMARGOSA DESERT NVB	3	2	10	5	3	2	3	8	9	6	8	9
36	ANTELOPE NVB	1	2	8	5	3	4	3	9	8	9	4	10
37	BIG SMOKY NVB	5	3	10	5	3	5	5	8	8	8	2	10
38	CAVE NVB	1	3	8	4	2	2	2	9	6	7	8	5
39	CLAYTON-ALKALI SPRING NVB	2	5	10	5	3	3	5	9	9	7	4	10
40	COYOTE SPR/KANE SPR NVB	4	1	10	5	2	2	3	5	9	8	4	10
41	DELAMAR/PAHROC NVB	3	2	10	4	3	2	3	10	9	7	6	9
42	DRY LAKE/MULESHOE NVB	6	3	10	5	3	2	4	10	8	6	10	8
43	GARDEN/COAL NVB	6	2	8	5	3	4	4	10	8	8	10	7
44	HOT CREEK NVB	3	5	10	5	3	4	5	9	8	9	8	10
45	INDIAN SPRING NVB	1	3	10	4	2	1	4	10	9	9	10	9
46	JAKES NVB	2	1	10	5	3	2	3	10	6	8	10	5
47	LITTLE FISH LAKE NVB	1	0	10	5	2	4	5	7	8	8	2	10
48	LITTLE SMOKY NVB	6	3	8	5	3	4	4	10	8	8	4	10
49	MONITOR NVB	1	4	8	5	2	3	4	8	8	9	2	9
50	NEWARK NVB	1	4	8	4	3	3	3	9	7	9	4	8
51	PAHRANAGAT NVB	1	5	8	5	3	3	5	9	9	6	8	10
52	PENOYER NVB	3	5	8	5	3	5	4	9	10	9	4	10
53	RAILROAD NVB	5	6	8	5	3	4	5	8	9	9	4	10
54	RAILROAD/REVEILLE NVB	5	6	8	4	3	3	4	10	8	8	8	10
55	RALSTON NVB	5	5	10	4	3	4	3	10	8	9	10	9
56	SARCOBATUS FLAT NVB	1	2	10	4	2	3	4	7	8	9	2	10
57	STONE CABIN NVB	3	4	10	5	3	3	3	10	9	9	8	9
58	STONEWALL FLAT NVB	2	1	8	5	2	2	4	10	8	6	2	8
59	THREE LAKES NVB	1	1	8	5	2	5	2	1	10	10	4	10

AD-A113 205 FUGRO NATIONAL INC LONG BEACH CA F/6 13/2
ANALYSIS OF SITING SUITABILITY, MX LAND MOBILE MISSILE SYSTEM, --ETC(U)
SEP 76 K L WILSON, J R MILLER, J W LAVIOLETTE F04701-74-D-0013
UNCLASSIFIED FN-TR-15 NL



2 OF 2
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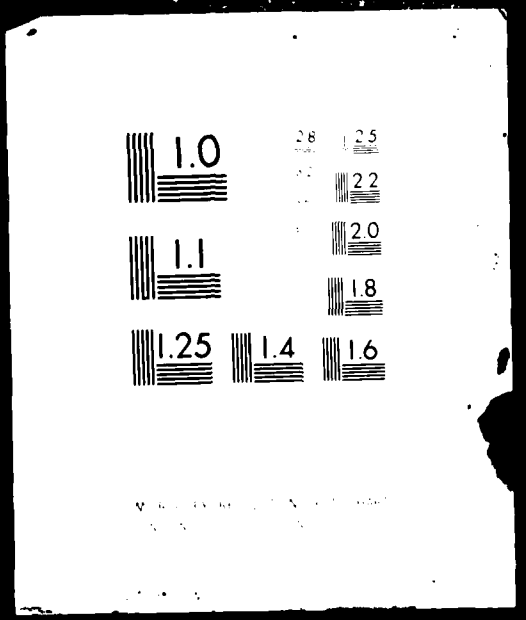

TABLE 6 -

		RANKIN F	G
		2	5
		2	5
		2	5
		5	5
		5	5
		3	5
		2	5
		4	5
		2	4
		1	4
		2	5
		2	4
		0	0
		2	3
		5	4
		1	3
		5	3
		0	4
		5	4
		0	0
		1	4
		1	4
		6	5
		5	6
		5	5
		6	5
		0	6
		1	6
		0	5
		1	5
		5	6
		1	6
		2	5
		10	6
		2	3
		4	3
		5	5
		2	2
		3	5
		2	3
		2	3
		2	4
		4	4
		4	5
		1	4
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		4	5
		4	4
		3	4
		3	3
		3	5
		5	4
		4	5
		3	4
		4	3
		3	4
		3	3
		2	4
		5	2

5	KING #2D	3	46	38	26.1	45.3	106	39	38
40	COYOTE SPR/KANE SPR NVB	5	43	37	34.2	48.0	276	39	26
60	TIKABOO NVB	5	50	37	37.3	51.9	229	38	26
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	201	37	34

TABLE 6 - MATRIX ANALYSIS

RANKING FACTORS*										RANKING SCORES**				
F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
2	5	10	9	9	6	9	4	8	10	3	49	40	30.2	49.6
2	5	10	9	6	8	10	4	10	10	3	47	41	30.0	49.9
2	5	10	8	7	6	9	4	4	10	15	44	34	57.4	75.4
5	5	10	8	1	4	7	6	8	10	2	45	42	21.4	41.4
5	5	10	7	7	6	6	4	8	10	3	46	38	26.1	45.3
3	5	10	10	6	10	10	6	8	10	3	51	40	31.6	51.4
2	5	10	10	5	8	10	4	4	10	7	47	34	39.8	57.8
4	5	10	9	1	2	9	10	8	10	2	44	44	22.2	43.2
2	4	10	9	7	6	9	4	4	10	16	44	34	61.5	79.5
1	4	10	8	3	2	10	4	10	8	4	36	39	26.1	45.0
2	5	10	8	7	6	9	4	6	8	11	44	34	47.1	64.7
2	4	10	8	7	6	10	6	8	10	7	44	41	38.2	58.1
0	0	0	0	0	0	0	0	0	0	0	0	0	.0	.0
2	3	10	9	7	8	10	4	10	10	3	49	40	30.6	50.4
5	4	8	7	9	2	10	10	8	8	9	45	43	41.0	59.3
1	3	8	4	7	6	9	10	8	10	9	38	46	37.5	56.9
5	3	5	7	8	2	8	10	8	8	13	41	41	49.7	65.1
0	4	9	6	9	2	9	10	6	10	9	38	44	39.5	59.2
5	4	5	9	8	2	9	10	8	8	10	44	41	44.1	59.5
0	0	0	0	0	0	0	0	0	0	0	0	0	.0	.0
1	4	7	8	9	2	9	10	8	8	11	41	43	46.5	63.9
1	4	6	7	9	2	8	10	6	8	17	39	40	58.7	74.5
6	5	1	10	6	4	9	2	10	10	2	47	31	26.2	36.6
5	6	5	8	6	2	7	2	10	10	9	40	36	39.0	53.5
5	5	8	8	5	2	8	4	6	8	7	36	33	34.2	49.9
6	5	1	8	3	10	9	2	10	10	3	50	33	28.1	38.7
0	6	10	8	7	6	8	4	10	8	4	40	40	29.9	48.9
1	6	10	7	5	10	6	2	2	10	4	38	33	28.3	45.4
0	5	10	9	6	6	9	4	2	8	5	40	32	32.5	49.1
1	5	10	9	1	10	9	2	10	10	2	41	40	25.1	44.5
5	6	10	8	3	2	8	6	10	10	3	37	44	23.2	43.8
1	6	10	8	5	4	8	4	2	10	3	35	34	25.1	42.7
2	5	10	9	5	10	9	6	2	8	3	43	34	29.1	46.3
10	6	1	8	6	10	7	2	10	10	4	63	33	33.5	44.1
2	3	8	9	6	8	9	10	8	10	5	45	46	34.3	53.7
4	3	9	8	9	4	10	10	8	6	3	46	41	28.1	46.3
5	5	8	8	8	2	10	10	8	8	8	46	44	39.9	58.3
2	2	9	6	7	8	5	10	8	10	4	36	45	26.3	46.5
3	5	9	9	7	4	10	10	8	8	7	46	45	37.5	56.9
2	3	5	9	8	4	10	10	6	6	5	43	37	34.2	48.0
2	3	10	9	7	6	9	10	8	5	5	43	43	33.7	52.6
2	4	10	8	6	10	8	10	8	4	9	46	42	44.2	62.6
4	4	10	8	8	10	7	10	8	6	8	49	42	42.7	61.9
4	5	9	8	9	8	10	6	8	10	8	52	43	42.3	61.5
1	4	10	9	9	10	9	10	8	10	4	48	48	33.4	54.8
2	3	10	6	8	10	5	10	8	8	3	42	46	26.4	46.8
4	5	7	8	8	2	10	6	8	8	1	44	39	22.3	38.5
4	4	10	8	8	4	10	6	8	8	9	46	40	43.4	62.4
3	4	8	8	9	2	9	10	8	10	5	42	44	30.9	50.1
3	3	9	7	9	4	8	10	8	6	5	41	41	30.3	48.5
3	5	9	9	6	8	10	10	6	6	6	49	39	36.3	53.9
5	4	9	10	9	4	10	10	8	6	8	50	41	42.3	60.5
4	5	8	9	9	4	10	8	6	6	11	49	36	48.9	64.9
3	4	10	8	8	8	10	8	8	10	11	48	44	49.1	69.7
4	3	10	8	9	10	9	10	8	10	10	50	48	47.9	69.3
3	4	7	8	9	2	10	10	8	8	3	42	43	26.9	44.3
3	3	10	9	9	8	9	8	8	10	7	49	46	40.3	61.1
2	4	10	8	6	2	8	10	8	10	3	37	46	24.9	46.1
5	2	1	10	10	4	10	10	6	10	2	48	35	28.3	39.9

47 LITTLE FISH LAKE NVB	1	0	10	5	2	4	5	7	8	8	2	1
48 LITTLE SMOKY NVB	6	3	8	5	3	4	4	10	8	8	4	10
49 MONITOR NVB	1	4	8	5	2	3	4	8	8	9	2	9
50 NEWARK NVB	1	4	8	4	3	3	3	9	7	9	4	8
51 PAHRANAGAT NVB	1	5	8	5	3	3	5	9	9	6	8	10
52 PENOYER NVB	3	5	8	5	3	5	4	9	10	9	4	10
53 RAILROAD NVB	5	6	8	5	3	4	5	8	9	9	4	10
54 RAILROAD/REVEILLE NVB	5	6	8	4	3	3	4	10	8	8	8	10
55 RALSTON NVB	5	5	10	4	3	4	3	10	8	9	10	9
56 SARCOBATUS FLAT NVB	1	2	10	4	2	3	4	7	8	9	2	10
57 STONE CABIN NVB	3	4	10	5	3	3	3	10	9	9	8	9
58 STONEWALL FLAT NVB	2	1	8	5	2	2	4	10	8	6	2	8
59 THREE LAKES NVB	1	1	8	5	2	5	2	1	10	10	4	10
60 TIKABOO NVB	4	1	8	5	2	3	3	5	9	9	10	9
61 WHITE RIVER NVB	4	6	10	5	3	4	5	7	8	9	2	9
62 HUECO BOLSON NMD	1	3	9	5	10	10	3	10	6	3	4	1
63 JORNADA DEL MUERTO N NMD	2	1	10	5	8	0	3	6	8	5	2	10
64 JORNADA DEL MUERTO S NMD	1	0	9	4	1	7	3	8	7	6	2	10
65 TULAROSA BASIN N NMD	1	1	10	6	10	6	10	8	7	8	2	8
66 TULAROSA BASIN S NMD	6	2	10	6	10	4	10	9	7	10	4	9
67 TULAROSA BASIN E NMD	2	1	9	6	10	3	2	10	7	2	6	8
68 JORNADA DEL MUERTO NMB	2	1	10	4	2	1	2	5	7	7	2	8
WEIGHTING FACTORS												
	2.7	2.2	.1	.1	.1	.1	.1	1.0	1.0	.5	.5	.5

*RANKING FACTORS

A = SUITABLE VALLEY AREA
B = SUITABLE CONTIGUOUS AREA
C = OWNERSHIP AND CONTROL (AMOUNT AND QUALITY)
D = GEOLOGY AND SOILS ENGINEERING (AMOUNT AND QUALITY)
E = DEPTH TO ROCK (AMOUNT AND QUALITY)
F = DEPTH TO WATER (AMOUNT AND QUALITY)
G = SURFACE HYDROLOGY (AMOUNT AND QUALITY)
H = OWNERSHIP AND CONTROL (FAVORABILITY)
I = GEOLOGY AND SOILS ENGINEERING (FAVORABILITY)
J = DEPTH TO ROCK (FAVORABILITY)
K = DEPTH TO WATER (FAVORABILITY)
L = SURFACE HYDROLOGY (FAVORABILITY)
M = POTENTIAL IMPACT (MILITARY)
N = POTENTIAL IMPACT (CIVILIAN)
O = DISTANCE TO SUPPORT FACILITIES (MILITARY AND CIVILIAN)

**RANKIN

P = AREAL RANKINI
Q = GEOTECHNICAL
R = CULTURAL RANI
S = AREAL + GEOTI
T = FINAL SCORE

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3	4	4	10	8	8	4	10	6	8	8	9	46	40	43.4	62.4
2	3	4	8	8	9	2	9	10	8	10	5	42	44	30.9	50.1
3	3	3	9	7	9	4	8	10	8	6	5	41	41	30.3	48.5
3	3	5	9	9	6	8	10	10	6	6	6	49	39	36.3	53.9
3	5	4	9	10	9	4	10	10	8	6	8	50	41	42.3	60.5
3	4	5	8	9	9	4	10	8	6	6	11	49	36	48.9	64.9
3	3	4	10	8	8	8	10	8	8	10	11	48	44	49.1	69.7
3	4	3	10	8	9	10	9	10	8	10	10	50	48	47.9	69.3
2	3	4	7	8	9	2	10	10	8	8	3	42	43	26.9	44.3
3	3	3	10	9	9	8	9	8	8	10	7	49	46	40.3	61.1
2	2	4	10	8	6	2	8	10	8	10	3	37	46	24.9	46.1
2	5	2	1	10	10	4	10	10	6	10	2	48	35	28.3	39.9
2	3	3	5	9	9	10	9	10	6	8	5	50	37	37.3	51.9
3	4	5	7	8	9	2	9	10	6	8	10	45	41	43.7	60.5
10	10	3	10	6	3	4	1	8	8	10	4	42	45	22.1	42.8
8	0	3	6	8	5	2	10	8	8	8	3	41	40	25.7	41.5
1	7	3	8	7	6	2	10	6	8	10	1	40	41	20.2	38.3
10	6	10	8	7	8	2	8	6	8	10	2	57	42	24.1	42.3
10	4	10	9	7	10	4	9	6	8	10	8	60	43	42.1	61.3
10	3	2	10	7	2	6	8	6	8	8	3	44	41	24.7	43.8
2	1	2	5	7	7	2	8	8	8	10	3	33	41	24.0	39.8

WEIGHTING FACTORS

.1	.1	.1	1.0	1.0	.5	.5	.5	.3	.3	.5

**RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = AREAL + GEOTECHNICAL SCORE (P+Q WITH WEIGHTING)
T = FINAL SCORE (P+Q+R WITH WEIGHTING)

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)

D CIVILIAN)

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MATRIX ANALYSIS - TABLE 6
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
D-1

UGRO NATIONAL, INC.

RANKING BASED ON AREAL FACTORS (P)

VALLEY NO.	NAME	P	Q	RANKING SCORES* R	S	T	U	
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356	
9	MOHAWK/TULE AZD	16	44	34	61.5	79.5	521	3
3	GROWLER/CHILDS AZD	15	44	34	57.4	75.4	413	2
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352	
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295	
53	RATLROAD NVB	11	49	36	48.9	64.9	243	
54	RAILROAD/REVEILLE NVB	11	48	44	49.1	69.7	247	
11	SAN CRISTOBAL AZD	11	44	34	47.1	64.7	275	2
19	MC MULLEN AZB	10	44	41	44.1	59.5	201	
55	PALSTON NVB	10	50	48	47.9	69.3	238	
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203	
15	BUTLER AZB	9	45	43	41.0	59.3	230	
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	201	1
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131	
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289	
18	LA POSA PLAIN AZB	9	38	44	39.5	59.2	236	
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310	
37	PIG SMOKY NVB	8	46	44	39.9	58.3	246	
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326	
44	HOT CREEK NVB	8	52	43	42.3	61.5	138	
52	PENOYER NVB	8	50	41	42.3	60.5	157	
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332	
39	CLAYTON-ALKALI SPRING NVB	7	46	45	37.5	56.9	89	
25	EMIGRANT NVD	7	36	33	34.2	49.9	191	1
7	LECHUGUILLA DESERT AZD	7	47	34	39.8	57.8	172	1
12	SENTINEL PLAIN AZD	7	44	41	38.2	58.1	208	
57	STONE CABIN NVB	7	49	46	40.3	61.1	171	
51	PAHRANAGAT NVB	6	49	39	36.3	53.9	73	
35	AMARGOSA DESERT NVB	5	45	46	34.3	53.7	137	
40	COYOTE SPR/KANE SPR NVB	5	43	37	34.2	48.0	276	3
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176	
29	KAWICH NVD	5	40	32	32.5	49.1	113	
49	MONITOR NVB	5	42	44	30.9	50.1	50	
50	NEWARK NVB	5	41	41	30.3	48.5	50	
60	TIKABOO NVB	5	50	37	37.3	51.9	229	1
38	CAVE NVB	4	36	45	26.3	46.5	75	
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	1
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7	
28	INDIAN SPRING NVD	4	38	33	28.3	45.4	87	
45	INDIAN SPRING NVB	4	48	48	33.4	54.8	52	
10	PALOMAS PLAIN AZD	4	36	39	26.1	45.0	30	
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89	
36	ANTELOPE NVB	3	46	41	28.1	46.3	55	
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
26	FRENCHMAN FLAT NVD	3	50	33	28.1	38.7	62	1
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
46	JAKES NVB	3	42	46	26.4	46.8	106	
64	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
68	JORNADA DEL MUERTO NMB	3	33	41	24.0	39.8	112	
5	KING AZD	3	46	38	26.1	45.3	106	
6	LA POSA PLAIN AZD	3	51	40	31.6	51.4	32	
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70	
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105	
31	STONEWALL FLAT NVD	3	37	44	23.2	43.8	56	
32	THREE LAKES NVD	3	35	34	25.1	42.7	117	
33	TIKABOO NVD	3	43	34	29.1	46.3	70	
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	

FACTORS (P)

RANKING SCORES*					
R	S	T	U	V	W
40	58.7	74.5	356		1
34	61.5	79.5	521	271	2
34	57.4	75.4	413	220	3
41	49.7	65.1	352		4
43	46.5	63.9	295		5
36	48.9	64.9	243		6
44	49.1	69.7	247		7
34	47.1	64.7	275	230	8
41	44.1	59.5	201		9
48	47.9	69.3	238		10
41	43.7	60.5	203		11
43	41.0	59.3	230		12
36	39.0	53.5	201	188	13
46	37.5	56.9	131		14
42	44.2	62.6	289		15
44	39.5	59.2	236		16
40	43.4	62.4	310		17
44	39.9	58.3	246		18
42	42.7	61.9	326		19
43	42.3	61.5	138		20
41	42.3	60.5	157		21
43	42.1	61.3	332		22
45	37.5	56.9	89		23
33	34.2	49.9	191	135	24
34	39.8	57.8	172	140	25
41	38.2	58.1	208		26
46	40.3	61.1	171		27
39	36.3	53.9	73		28
46	34.3	53.7	137		29
37	34.2	48.0	276	209	30
43	33.7	52.6	176		31
32	32.5	49.1	113	0	32
44	30.9	50.1	50		33
41	30.3	48.5	50		34
37	37.3	51.9	229	144	35
45	26.3	46.5	75		36
40	29.9	48.9	168	132	37
45	22.1	42.8	7		38
33	28.3	45.4	87		39
48	33.4	54.8	52	11	40
39	26.1	45.0	30		41
33	33.5	44.1	89		42
41	28.1	46.3	55		43
40	30.2	49.6	126		44
33	28.1	38.7	62	35	45
41	30.0	49.9	92		46
46	26.4	46.8	106		47
40	25.7	41.5	124		48
41	24.0	39.8	112		49
38	26.1	45.3	106		50
40	31.6	51.4	32		51
43	26.9	44.3	70		52
46	24.9	46.1	105		53
44	23.2	43.8	56		54
34	25.1	42.7	117		55
34	29.1	46.3	70	29	56
41	24.7	43.8	100		57

55	TIKABOO NVD	3	43	34	29.1	46.3
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8
14	YUMA DESERT AZD	3	49	40	30.6	50.4
23	BUCKBOARD MESA NVD	2	47	31	26.2	36.6
4	INDIAN WASH AZD	2	45	42	21.4	41.4
8	MOHAVE WASH AZD	2	44	44	22.2	43.2
30	PAHUTE MESA NVD	2	41	40	25.1	44.5
59	THREE LAKES NVB	2	48	35	28.5	39.9
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5
20	MOHAVE WASH AZB	0	0	0	.0	.0
13	VEKOL AZD	0	0	0	.0	.0

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

3

3	44	41	24.7	43.8	100	57
3	49	40	30.6	50.4	94	58
2	47	31	26.2	36.6	54	59
2	45	42	21.4	41.4	42	60
2	44	44	22.2	43.2	21	61
2	41	40	25.1	44.5	10	62
2	48	35	28.3	39.9	19	63
2	57	42	24.1	42.3	58	64
1	40	41	20.2	38.3	47	65
1	44	39	22.3	38.5	24	66
0	0	0	.0	.0	0	67
0	0	0	.0	.0	0	68

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J+K+L)

(P+Q WITH WEIGHTING FACTORS)

R WILDERNESS AREAS

RANKING BASED ON COLUMN P
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
D-2

FUGRO NATIONAL, INC.

RANKING BASED ON GEOTECHNICAL FACTORS (Q)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89	
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332	
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58	
44	HOT CREEK NVB	8	52	43	42.3	61.5	138	
6	LA POSA PLAIN AZD	3	51	40	31.6	51.4	32	
26	FRENCHMAN FLAT NVD	5	50	33	28.1	38.7	62	35
52	PENOYER NVB	8	50	41	42.3	60.5	157	
55	RALSTON NVB	10	50	48	47.9	69.3	238	
60	TIKABOO NVB	5	50	37	37.3	51.9	229	144
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326	
51	PAHRANAGAT NVB	6	49	39	36.3	53.9	73	
53	RAILROAD NVB	11	49	36	48.9	64.9	243	
57	STONE CABIN NVB	7	49	46	40.3	61.1	171	
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	
45	INDIAN SPRING NVB	4	48	48	33.4	54.8	52	11
54	RAILROAD/REVEILLE NVB	11	48	44	49.1	69.7	247	
59	THREE LAKES NVB	2	48	35	28.3	39.9	19	
23	BUCKBOARD MESA NVD	2	47	31	26.2	36.6	54	
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
7	LECHUGUILLA DESERT AZD	7	47	34	39.8	57.8	172	140
36	ANTELOPE NVB	3	46	41	28.1	46.3	55	
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246	
39	CLAYTON-ALKALI SPRING NVB	7	46	45	37.5	56.9	89	
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289	
5	KING AZD	3	46	38	26.1	45.3	106	
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310	
35	AMARGOSA DESERT NVB	5	45	46	34.3	53.7	137	
15	BUTLER AZB	9	45	43	41.0	59.3	230	
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42	
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203	
3	GROWLER/CHILDS AZD	15	44	34	57.4	75.4	413	220
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24	
19	MC MULLEN AZB	10	44	41	44.1	59.5	201	
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21	
9	MOHAWK/TULE AZD	16	44	34	61.5	79.5	521	271
11	SAN CRISTOBAL AZD	11	44	34	47.1	64.7	275	230
12	SENTINEL PLAIN AZD	7	44	41	38.2	58.1	208	
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
40	COYOTE SPR/KANE SPR NVB	5	43	37	34.2	48.0	276	209
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176	
33	TIKABOO NVD	3	43	34	29.1	46.3	70	29
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7	
46	JAKES NVB	3	42	46	26.4	46.8	106	
49	MONITOR NVB	5	42	44	30.9	50.1	50	
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70	
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352	
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
50	NEWARK NVB	5	41	41	30.3	48.5	50	
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10	
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295	
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	201	188
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	132
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47	
29	KAWICH NVD	5	40	32	32.5	49.1	113	0
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356	
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131	
28	INDIAN SPRING NVD	4	38	33	28.3	45.4	87	

ECHNICAL FACTORS (Q)

Q	RANKING SCORES* R	S	T	U	V	W
3	33	33.5	44.1	89		1
0	43	42.1	61.3	332		2
7	42	24.1	42.3	58		3
2	43	42.3	61.5	138		4
1	40	31.6	51.4	32		5
0	33	28.1	38.7	62	35	6
0	41	42.3	60.5	157		7
0	48	47.9	69.3	238		8
0	37	37.3	51.9	229	144	9
9	40	30.2	49.6	126		10
9	42	42.7	61.9	326		11
9	39	36.3	53.9	73		12
9	36	48.9	64.9	243		13
9	46	40.3	61.1	171		14
9	40	30.6	50.4	94		15
8	48	33.4	54.8	52	11	16
8	44	49.1	69.7	247		17
8	35	28.3	39.9	19		18
7	31	26.2	36.6	54		19
7	41	30.0	49.9	92		20
7	34	39.8	57.8	172	140	21
6	41	28.1	46.3	55		22
6	44	39.9	58.3	246		23
6	45	37.5	56.9	89		24
6	42	44.2	62.6	289		25
6	38	26.1	45.3	106		26
6	40	43.4	62.4	310		27
5	46	34.3	53.7	137		28
5	43	41.0	59.3	230		29
5	42	21.4	41.4	42		30
5	41	43.7	60.5	203		31
4	34	57.4	75.4	413	220	32
4	39	22.3	38.5	24		33
4	41	44.1	59.5	201		34
4	44	22.2	43.2	21		35
4	34	61.5	79.5	521	271	36
4	34	47.1	64.7	275	230	37
4	41	38.2	58.1	208		38
4	41	24.7	43.8	100		39
3	37	34.2	48.0	276	209	40
3	43	33.7	52.6	176		41
3	34	29.1	46.3	70	29	42
2	45	22.1	42.8	7		43
2	46	26.4	46.8	106		44
2	44	30.9	50.1	50		45
2	43	26.9	44.3	70		46
1	41	49.7	65.1	352		47
1	40	25.7	41.5	124		48
1	41	30.3	48.5	50		49
1	40	25.1	44.5	10		50
1	43	46.5	63.9	295		51
0	36	39.0	53.5	201	188	52
0	40	29.9	48.9	168	132	53
0	41	20.2	38.3	47		54
0	32	32.5	49.1	113	0	55

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	49.7	65.1	
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	
50	NEWARK NVB	5	41	41	30.3	48.5	
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	2
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	2
27	GOLD FLAT NVD	4	40	40	29.9	48.9	
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	
29	KAWICH NVD	5	40	32	32.5	49.1	1
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	3
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	1
28	INDIAN SPRING NVD	4	38	33	28.3	45.4	
18	LA POSA PLAIN AZB	9	38	44	39.5	59.2	2
31	STONEWALL FLAT NVD	3	37	44	23.2	43.8	
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	1
38	CAVE NVB	4	36	45	26.3	46.5	
25	EMIGRANT NVD	7	36	33	34.2	49.9	1
10	PALOMAS PLAIN AZD	4	36	39	26.1	45.0	
32	THREE LAKES NVD	3	35	34	25.1	42.7	1
68	JORNADA DEL MUERTO NMB	3	33	41	24.0	39.8	1
20	MOHAVE WASH AZB	0	0	0	.0	.0	
13	VEKOL AZD	0	0	0	.0	.0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

3

42	43	26.9	44.3	70		46
41	41	49.7	65.1	352		47
41	40	25.7	41.5	124		48
41	41	30.3	48.5	50		49
41	40	25.1	44.5	10		50
41	43	46.5	63.9	295		51
40	36	39.0	53.5	201	188	52
40	40	29.9	48.9	168	132	53
40	41	20.2	38.3	47		54
40	32	32.5	49.1	113	0	55
39	40	58.7	74.5	356		56
38	46	37.5	56.9	131		57
38	33	28.3	45.4	87		58
38	44	39.5	59.2	236		59
37	44	23.2	43.8	56		60
37	46	24.9	46.1	105		61
36	45	26.3	46.5	75		62
36	33	34.2	49.9	191	135	63
36	39	26.1	45.0	30		64
35	34	25.1	42.7	117		65
33	41	24.0	39.8	112		66
0	0	.0	.0	0		67
0	0	.0	.0	0		68

DRAFT

SEP 3 1976

TH WEIGHTING FACTORS)

RNESS AREAS

RANKING BASED ON COLUMN Q
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
D-3

UGRO NATIONAL, INC.

RANKING BASED ON CULTURAL FACTORS (R)

VALLEY NO.	NAME	P	Q	RANKING SCORES* R	S	T	U
45	INDIAN SPRING NVB	4	48	48	33.4	54.8	52
55	RALSTON NVB	10	50	48	47.9	69.3	238
35	AMARGOSA DESERT NVB	5	45	46	34.3	53.7	137
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131
46	JAKES NVB	3	42	46	26.4	46.8	106
57	STONE CABIN NVB	7	49	46	40.3	61.1	171
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105
38	CAVE NVB	4	36	45	26.3	46.5	75
39	CLAYTON-ALKALI SPRING NVB	7	46	45	37.5	56.9	89
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246
18	LA POSA PLAIN AZB	9	38	44	39.5	59.2	236
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21
49	MONITOR NVB	5	42	44	30.9	50.1	50
54	RAILROAD/REVEILLE NVB	11	48	44	49.1	69.7	247
31	STONEWALL FLAT NVD	3	37	44	23.2	43.8	56
15	BUTLER AZB	9	45	43	41.0	59.3	230
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176
44	HOT CREEK NVB	8	52	43	42.3	61.5	138
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58
36	ANTELOPE NVB	3	46	41	28.1	46.3	55
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47
68	JORNADA DEL MUERTO NMB	3	33	41	24.0	39.8	112
19	MC MULLEN AZB	10	44	41	44.1	59.5	201
50	NEWARK NVB	5	41	41	30.3	48.5	50
52	PENOYER NVB	8	50	41	42.3	60.5	157
12	SENTINEL PLAIN AZD	7	44	41	38.2	58.1	208
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124
6	LA POSA PLAIN AZD	3	51	40	31.6	51.4	32
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24
51	PAHRANAGAT NVB	6	49	39	36.3	53.9	73
10	PALOMAS PLAIN AZD	4	36	39	26.1	45.0	30
5	KING AZD	3	46	38	26.1	45.3	106
40	COYOTE SPR/KANE SPR NVB	5	43	37	34.2	48.0	276
60	TIKABOO NVB	5	50	37	37.3	51.9	229
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	201
53	RAILROAD NVB	11	49	36	48.9	64.9	243
59	THREE LAKES NVB	2	48	35	28.3	39.9	19
3	GROWLER/CHILDS AZD	15	44	34	57.4	75.4	413
7	LECHUGUILLA DESERT AZD	7	47	34	39.8	57.8	172
9	MOHAWK/TULE AZD	16	44	34	61.5	79.5	521
11	SAN CRISTOBAL AZD	11	44	34	47.1	64.7	275
32	THREE LAKES NVD	3	35	34	25.1	42.7	117

CULTURAL FACTORS (R)

	RANKING SCORES*					
Q	R	S	T	U	V	W
48	48	33.4	54.8	52	11	1
50	48	47.9	69.3	238		2
45	46	34.3	53.7	137		3
38	46	37.5	56.9	131		4
42	46	26.4	46.8	106		5
49	46	40.3	61.1	171		6
37	46	24.9	46.1	105		7
36	45	26.3	46.5	75		8
46	45	37.5	56.9	89		9
42	45	22.1	42.8	7		10
46	44	39.9	58.3	246		11
38	44	39.5	59.2	236		12
44	44	22.2	43.2	21		13
42	44	30.9	50.1	50		14
48	44	49.1	69.7	247		15
37	44	23.2	43.8	56		16
45	43	41.0	59.3	230		17
43	43	33.7	52.6	176		18
52	43	42.3	61.5	138		19
41	43	46.5	63.9	295		20
42	43	26.9	44.3	70		21
60	43	42.1	61.3	332		22
46	42	44.2	62.6	289		23
49	42	42.7	61.9	326		24
45	42	21.4	41.4	42		25
57	42	24.1	42.3	58		26
46	41	28.1	46.3	55		27
47	41	30.0	49.9	92		28
41	41	49.7	65.1	352		29
40	41	20.2	38.3	47		30
33	41	24.0	39.8	112		31
44	41	44.1	59.5	201		32
41	41	30.3	48.5	50		33
50	41	42.3	60.5	157		34
44	41	38.2	58.1	208		35
44	41	24.7	43.8	100		36
45	41	43.7	60.5	203		37
49	40	30.2	49.6	126		38
40	40	29.9	48.9	168	132	39
41	40	25.7	41.5	124		40
51	40	31.6	51.4	32		41
46	40	43.4	62.4	310		42
41	40	25.1	44.5	10		43
39	40	58.7	74.5	356		44
49	40	30.6	50.4	94		45
44	39	22.3	38.5	24		46
49	39	36.3	53.9	73		47
36	39	26.1	45.0	30		48
46	38	26.1	45.3	106		49
43	37	34.2	48.0	276	209	50
50	37	37.3	51.9	229	144	51
40	36	39.0	53.5	201	188	52
49	36	48.9	64.9	243		53
48	35	28.3	39.9	19		54
[illegible]	[illegible]	[illegible]	[illegible]	413	220	55

5	KING AZD	3	46	38	26.1	45.3	106
40	COYOTE SPR/KANE SPR NVB	5	43	37	34.2	48.0	276
60	TIKABOO NVB	5	50	37	37.3	51.9	229
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	201
53	RAILROAD NVB	11	49	36	48.9	64.9	243
59	THREE LAKES NVB	2	48	35	28.3	39.9	19
3	GROWLER/CHILDS AZD	15	44	34	57.4	75.4	413
7	LECHUGUILLA DESERT AZD	7	47	34	39.8	57.8	172
9	MOHAWK/TULE AZD	16	44	34	61.5	79.5	521
11	SAN CRISTOBAL AZD	11	44	34	47.1	64.7	275
32	THREE LAKES NVD	3	35	34	25.1	42.7	117
33	TIKABOO NVD	3	43	34	29.1	46.3	70
25	EMIGRANT NVD	7	36	33	34.2	49.9	191
26	FRENCHMAN FLAT NVD	3	50	33	28.1	38.7	62
28	INDIAN SPRING NVD	4	38	33	28.3	45.4	87
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89
29	KAWICH NVD	5	40	32	32.5	49.1	113
23	BUCKBOARD MESA NVD	2	47	31	26.2	36.6	54
20	MOHAVE WASH AZB	0	0	0	.0	.0	0
13	VEKOL AZD	0	0	0	.0	.0	0

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

39	26.1	45.0	30		48
38	26.1	45.3	106		49
37	34.2	48.0	276	209	50
37	37.3	51.9	229	144	51
36	39.0	53.5	201	188	52
36	48.9	64.9	243		53
35	28.3	39.9	19		54
34	57.4	75.4	413	220	55
34	39.8	57.8	172	140	56
34	61.5	79.5	521	271	57
34	47.1	64.7	275	230	58
34	25.1	42.7	117		59
34	29.1	46.3	70	29	60
33	34.2	49.9	191	135	61
33	28.1	38.7	62	35	62
33	28.3	45.4	87		63
33	33.5	44.1	89		64
32	32.5	49.1	113	0	65
31	26.2	36.6	54		66
0	.0	.0	0		67
0	.0	.0	0		68

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SEP 3 1976

WEIGHTING FACTORS)

ESS AREAS

RANKING BASED ON COLUMN R
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
D-4

UGRO NATIONAL, INC.

RANKING BASED ON AREAL AND GEOTECHNICAL FACTORS

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U
9	MOHAWK/TULE AZD	16	44	34	61.5	79.5	521
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356
3	GROWLER/CHILDS AZD	15	44	34	57.4	75.4	413
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352
54	RAILROAD/REVEILLE NVB	11	48	44	49.1	69.7	247
53	RAILROAD NVB	11	49	36	48.9	64.9	243
55	RALSTON NVB	10	50	48	47.9	69.3	238
11	SAN CRISTOBAL AZD	11	44	34	47.1	64.7	275
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289
19	MC MULLEN AZB	10	44	41	44.1	59.5	201
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326
44	HOT CREEK NVB	8	52	43	42.3	61.5	138
52	PENOYER NVB	8	50	41	42.3	60.5	157
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332
15	BUTLER AZB	9	45	43	41.0	59.3	230
57	STONE CABIN NVB	7	49	46	40.3	61.1	171
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246
7	LECHUGUILLA DESERT AZD	7	47	34	39.8	57.8	172
18	LA POSA PLAIN AZB	9	38	44	39.5	59.2	236
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	201
12	SENTINEL PLAIN AZD	7	44	41	38.2	58.1	208
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131
39	CLAYTON-ALKALI SPRING NVB	7	46	45	37.5	56.9	89
60	TIKABOO NVB	5	50	37	37.3	51.9	229
51	PAHRANAGAT NVB	6	49	39	36.3	53.9	73
35	AMARGOSA DESERT NVB	5	45	46	34.3	53.7	137
40	COYOTE SPR/KANE SPR NVB	5	43	37	34.2	48.0	276
25	EMIGRANT NVD	7	36	33	34.2	49.9	191
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89
45	INDIAN SPRING NVB	4	48	48	33.4	54.8	52
29	KAWICH NVD	5	40	32	32.5	49.1	113
6	LA POSA PLAIN AZD	3	51	40	31.6	51.4	32
49	MONITOR NVB	5	42	44	30.9	50.1	50
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94
50	NEWARK NVB	5	41	41	30.3	48.5	50
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168
33	TIKABOO NVD	3	43	34	29.1	46.3	70
28	INDIAN SPRING NVD	4	38	33	28.3	45.4	87
59	THREE LAKES NVB	2	48	35	28.3	39.9	19
36	ANTELOPE NVB	3	46	41	28.1	46.3	55
26	FRENCHMAN FLAT NVD	3	50	33	28.1	38.7	62
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70
46	JAKES NVB	3	42	46	26.4	46.8	106
38	CAVE NVB	4	36	45	26.3	46.5	75
23	BUCKBOARD MESA NVD	2	47	31	26.2	36.6	54
5	KING AZD	3	46	38	26.1	45.3	106
10	PALOMAS PLAIN AZD	4	36	39	26.1	45.0	30
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10
32	THREE LAKES NVD	3	35	34	25.1	42.7	117
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100
65	TULAROSA BASIN N NMD	[illegible]					

D ON AREAL AND GEOTECHNICAL FACTORS (S)

		RANKING SCORES*					
P	Q	R	S	T	U	V	W
16	44	34	61.5	79.5	521	271	1
17	39	40	58.7	74.5	356		2
15	44	34	57.4	75.4	413	220	3
13	41	41	49.7	65.1	352		4
11	48	44	49.1	69.7	247		5
11	49	36	48.9	64.9	243		6
10	50	48	47.9	69.3	238		7
11	44	34	47.1	64.7	275	230	8
11	41	43	46.5	63.9	295		9
9	46	42	44.2	62.6	289		10
10	44	41	44.1	59.5	201		11
10	45	41	43.7	60.5	203		12
9	46	40	43.4	62.4	310		13
8	49	42	42.7	61.9	326		14
8	52	43	42.3	61.5	138		15
8	50	41	42.3	60.5	157		16
8	60	43	42.1	61.3	332		17
9	45	43	41.0	59.3	230		18
7	49	46	40.3	61.1	171		19
8	46	44	39.9	58.3	246		20
7	47	34	39.8	57.8	172	140	21
9	38	44	39.5	59.2	236		22
9	40	36	39.0	53.5	201	188	23
7	44	41	38.2	58.1	208		24
9	38	46	37.5	56.9	131		25
7	46	45	37.5	56.9	89		26
5	50	37	37.3	51.9	229	144	27
6	49	39	36.3	53.9	73		28
5	45	46	34.3	53.7	137		29
5	43	37	34.2	48.0	276	209	30
7	36	33	34.2	49.9	191	135	31
5	43	43	33.7	52.6	176		32
4	63	33	33.5	44.1	89		33
4	48	48	33.4	54.8	52	11	34
5	40	32	32.5	49.1	115	0	35
3	51	40	31.6	51.4	32		36
5	42	44	30.9	50.1	50		37
3	49	40	30.6	50.4	94		38
5	41	41	30.3	48.5	50		39
3	49	40	30.2	49.6	126		40
3	47	41	30.0	49.9	92		41
4	40	40	29.9	48.9	168	132	42
3	43	34	29.1	46.3	70	29	43
4	38	33	28.3	45.4	87		44
2	48	35	28.3	39.9	19		45
3	46	41	28.1	46.3	55		46
3	50	33	28.1	38.7	62	35	47
3	42	43	26.9	44.3	70		48
3	42	46	26.4	46.8	106		49
4	36	45	26.3	46.5	75		50
2	47	31	26.2	36.6	54		51
3	46	38	26.1	45.3	106		52
4	36	39	26.1	45.0	30		53
3	41	40	25.7	41.5	124		54
2	41	40	25.1	44.5	10		55
3	35	34	25.1	42.7	117		56
3	37	46	24.9	46.1	105		57

1	CASTLE DOME AZD	3	49	40	30.2	49.6	126
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168
33	TIKABOO NVD	3	43	34	29.1	46.3	70
28	INDIAN SPRING NVD	4	38	33	28.3	45.4	87
59	THREE LAKES NVB	2	48	35	28.3	39.9	19
36	ANTELOPE NVB	3	46	41	28.1	46.3	55
26	FRENCHMAN FLAT NVD	3	50	33	28.1	38.7	62
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70
46	JAKES NVB	3	42	46	26.4	46.8	106
38	CAVE NVB	4	36	45	26.3	46.5	75
23	BUCKBOARD MESA NVD	2	47	31	26.2	36.6	54
5	KING AZD	3	46	38	26.1	45.3	106
10	PALOMAS PLAIN AZD	4	36	39	26.1	45.0	30
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10
32	THREE LAKES NVD	3	35	34	25.1	42.7	117
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58
68	JORNADA DEL MUERTO NMB	3	33	41	24.0	39.8	112
31	STONEWALL FLAT NVD	3	37	44	23.2	43.8	56
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47
20	MOHAVE WASH AZB	0	0	0	.0	.0	0
13	VEKOL AZD	0	0	0	.0	.0	0

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

[illegible]	35	28.3	39.9	19		45
46	41	28.1	46.3	55		46
50	33	28.1	38.7	62	35	47
42	43	26.9	44.3	70		48
42	46	26.4	46.8	106		49
36	45	26.3	46.5	75		50
47	31	26.2	36.6	54		51
46	38	26.1	45.3	106		52
36	39	26.1	45.0	30		53
41	40	25.7	41.5	124		54
41	40	25.1	44.5	10		55
35	34	25.1	42.7	117		56
37	46	24.9	46.1	105		57
44	41	24.7	43.8	100		58
57	42	24.1	42.3	58		59
33	41	24.0	39.8	112		60
37	44	23.2	43.8	56		61
44	39	22.3	38.5	24		62
44	44	22.2	43.2	21		63
42	45	22.1	42.8	7		64
45	42	21.4	41.4	42		65
40	41	20.2	38.3	47		66
0	0	.0	.0	0		67
0	0	.0	.0	0		68

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TH WEIGHTING FACTORS)

ERNESS AREAS

RANKING BASED ON COLUMN S
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
D-5

UGRO NATIONAL, INC.

APPENDIX E

RANKING TABLES

(Excluding Wildlife Ranges)

APPENDIX E - MATRIX ANALYSIS
EXCLUDING WILDLIFE RANGES

NO.	VALLEY NAME	RANKING FACTORS*											
		A	B	C	D	E	F	G	H	I	J	K	L
1	CASTLE DOME AZD	2	1	8	4	5	2	5	10	9	9	6	9
2	GILA BEND PLAIN AZD	2	1	7	4	3	2	5	10	9	6	8	10
3	GROWLER/CHILDS AZD	4	5	6	4	3	2	5	10	8	7	6	9
4	INDIAN WASH AZD	1	1	8	5	10	5	5	10	8	1	4	7
5	KING AZD	2	1	6	4	6	5	5	10	7	7	6	6
6	LA POSA PLAIN AZD	1	2	6	4	3	3	5	10	10	6	10	10
7	LECHUGUILLA DESERT AZD	3	4	6	4	3	2	5	10	10	5	8	10
8	MOHAVE WASH AZD	1	1	6	4	10	4	5	10	9	1	2	9
9	MOHAWK/TULE AZD	5	4	6	4	3	2	4	10	9	7	6	9
10	PALOMAS PLAIN AZD	1	3	7	5	3	1	4	10	8	3	2	10
11	SAN CRISTOBAL AZD	4	3	6	4	3	2	5	10	8	7	6	9
12	SENTINEL PLAIN AZD	4	2	7	4	3	2	4	10	8	7	6	10
13	VEKOL AZD	0	0	0	0	0	0	0	0	0	0	0	0
14	YUMA DESERT AZD	2	1	6	4	6	2	3	10	9	7	8	10
15	BUTLER AZB	4	5	9	5	3	5	4	8	7	9	2	10
16	CACTUS PLAIN AZB	3	6	10	5	3	1	3	8	4	7	6	9
17	HARQUAHALA PLAIN AZB	7	6	10	5	3	5	3	5	7	8	2	8
18	LA POSA PLAIN AZB	5	4	9	5	3	0	4	9	6	9	2	9
19	MC MULLEN AZB	4	6	10	5	2	5	4	5	9	8	2	9
20	MOHAVE WASH AZB	0	0	0	0	0	0	0	0	0	0	0	0
21	PALOMAS/HYDER AZB	6	5	10	5	3	1	4	7	8	9	2	9
22	RANEGRAS PLAIN AZB	7	10	10	5	3	1	4	6	7	9	2	8
23	BUCKBOARD MESA NVD	1	1	8	4	3	6	5	1	10	6	4	9
24	CACTUS FLAT NVD	4	5	9	4	2	5	6	5	8	6	2	7
25	EMIGRANT NVD	3	3	7	3	0	5	5	8	8	5	2	8
26	FRENCHMAN FLAT NVD	1	2	10	4	5	6	5	1	8	3	10	9
27	GOLD FLAT NVD	3	1	8	3	2	0	6	10	8	7	6	8
28	INDIAN SPRING NVD	2	1	9	3	0	1	6	10	7	5	10	6
29	KAWICH NVD	0	0	0	0	0	0	0	0	0	0	0	0
30	PAHUTE MESA NVD	1	1	8	4	2	1	5	10	9	1	10	9
31	STONEWALL FLAT NVD	1	2	8	3	2	5	6	10	8	3	2	8
32	THREE LAKES NVD	2	1	8	3	0	1	6	10	8	5	4	8
33	TIKABOO NVD	1	1	8	3	0	2	5	10	9	5	10	9
34	YUCCA FLAT NVD	4	0	10	6	10	10	6	1	8	6	10	7
35	AMARGOSA DESERT NVB	3	1	10	5	3	2	3	8	9	6	8	9
36	ANTELOPE NVB	1	2	8	5	3	4	3	9	8	9	4	10
37	BIG SMOKY NVB	5	3	10	5	3	5	5	8	8	8	2	10
38	CAVE NVB	1	3	8	4	2	2	2	9	6	7	8	5
39	CLAYTON-ALKALI SPRING NVB	2	5	10	5	3	3	5	9	9	7	4	10
40	COYOTE SPR/KANE SPR NVB	4	1	10	5	2	2	3	5	9	8	4	10
41	DELAMAR/PAHROC NVB	3	2	10	4	3	2	3	10	9	7	6	9
42	DRY LAKE/MULESHOE NVB	6	3	10	5	3	2	4	10	8	6	10	8
43	GARDEN/COAL NVB	6	2	8	5	3	4	4	10	8	8	10	7
44	HOT CREEK NVB	3	5	10	5	3	4	5	9	8	9	8	10
45	INDIAN SPRING NVB	1	4	10	4	2	1	4	10	9	9	10	9
46	JAKES NVB	2	1	10	5	3	2	3	10	6	8	10	5
47	LITTLE FISH LAKE NVB	1	0	10	5	2	4	5	7	8	8	2	10
48	LITTLE SMOKY NVB	6	3	8	5	3	4	4	10	8	8	4	10
49	MONITOR NVB	1	4	8	5	2	3	4	8	8	9	2	9
50	NEWARK NVB	1	4	8	4	3	3	3	9	7	9	4	8
51	PAHRANAGAT NVB	1	4	8	5	3	3	5	9	9	6	8	10
52	PENOYER NVB	3	6	8	5	3	5	4	9	10	9	4	10
53	RAILROAD NVB	5	6	8	5	3	4	5	8	9	9	4	10
54	RAILROAD/REVEILLE NVB	5	5	8	4	3	3	4	10	8	8	8	10
55	RALSTON NVB	5	5	10	4	3	4	3	10	8	9	10	9
56	SARCOBATUS FLAT NVB	1	2	10	4	2	3	4	7	8	9	2	10
57	STONE CABIN NVB	3	4	10	5	3	3	3	10	9	9	8	9
58	STONEWALL FLAT NVB	2	1	8	5	2	2	4	10	8	6	2	8
59	THREE LAKES NVB	1	1	8	5	2	2	4	10	8	6	2	8

MATRIX ANALYSIS
ILDLIFE RANGES

FACTORS*								RANKING SCORES**				
H	I	J	K	L	M	N	O	P	Q	R	S	T
10	9	9	6	9	4	8	10	3	49	40	30.2	49.6
10	9	6	8	10	4	10	10	3	47	41	30.0	49.9
10	8	7	6	9	4	10	10	9	44	40	42.2	62.0
10	8	1	4	7	6	8	10	2	45	42	21.4	41.4
10	7	7	6	6	4	8	10	3	46	38	26.1	45.3
10	10	6	10	10	6	8	10	3	51	40	31.6	51.4
10	10	5	8	10	4	10	10	7	47	40	39.8	59.6
10	9	1	2	9	10	8	10	2	44	44	22.2	43.2
10	9	7	6	9	4	10	10	9	44	40	43.6	63.4
10	8	3	2	10	4	10	8	4	36	39	26.1	45.0
10	8	7	6	9	4	10	8	7	44	38	37.8	56.6
10	8	7	6	10	6	8	10	6	44	41	36.0	55.9
0	0	0	0	0	0	0	0	0	0	0	.0	.0
10	9	7	8	10	4	10	10	3	49	40	30.6	50.4
8	7	9	2	10	10	8	8	9	45	43	41.0	59.3
8	4	7	6	9	10	8	10	9	38	46	37.5	56.9
5	7	8	2	8	10	8	8	13	41	41	49.7	65.1
9	6	9	2	9	10	6	10	9	38	44	39.5	59.2
5	9	8	2	9	10	8	8	10	44	41	44.1	59.5
0	0	0	0	0	0	0	0	0	0	0	.0	.0
7	8	9	2	9	10	8	8	11	41	43	46.5	63.9
6	7	9	2	8	10	6	8	17	39	40	58.7	74.5
1	10	6	4	9	2	10	10	2	47	31	26.2	36.6
5	8	6	2	7	2	10	10	9	40	36	39.0	53.5
8	8	5	2	8	4	10	8	6	36	37	31.5	48.4
1	8	3	10	9	2	10	10	3	50	33	28.1	38.7
10	8	7	6	8	4	10	8	4	40	40	29.9	48.9
10	7	5	10	6	2	2	10	3	38	33	26.1	43.2
0	0	0	0	0	0	0	0	0	0	0	.0	.0
10	9	1	10	9	2	10	10	2	41	40	25.1	44.5
10	8	3	2	8	6	10	10	3	37	44	23.2	43.8
10	8	5	4	8	4	2	10	3	35	34	25.1	42.7
10	9	5	10	9	6	10	8	2	43	42	26.9	46.5
1	8	6	10	7	2	10	10	4	63	33	33.5	44.1
8	9	6	8	9	10	8	10	4	45	46	32.1	51.5
9	8	9	4	10	10	8	6	3	46	41	28.1	46.3
8	8	8	2	10	10	8	8	8	46	44	39.9	58.3
9	6	7	8	5	10	8	10	4	36	45	26.3	46.5
9	9	7	4	10	10	8	8	7	46	45	37.5	56.9
5	9	8	4	10	10	10	6	5	43	41	34.2	49.2
10	9	7	6	9	10	8	5	5	43	43	33.7	52.6
10	8	6	10	8	10	8	4	9	46	42	44.2	62.6
10	8	8	10	7	10	8	6	8	49	42	42.7	61.9
9	8	9	8	10	6	8	10	8	52	43	42.3	61.5
10	9	9	10	9	10	10	10	5	48	50	35.6	57.6
10	6	8	10	5	10	8	8	3	42	46	26.4	46.8
7	8	8	2	10	6	8	8	1	44	39	22.3	38.5
10	8	8	4	10	6	8	8	9	46	40	43.4	62.4
8	8	9	2	9	10	8	10	5	42	44	30.9	50.1
9	7	9	4	8	10	8	6	5	41	41	30.3	48.5
9	9	6	8	10	10	6	6	5	49	39	34.1	51.7
9	10	9	4	10	10	8	6	9	50	41	44.5	62.7
8	9	9	4	10	8	6	6	11	49	36	48.9	64.9
10	8	8	8	10	8	8	10	10	48	44	46.9	67.5
10	8	9	10	9	10	8	10	10	50	48	47.9	69.3
7	8	9	2	10	10	8	8	3	42	43	26.9	44.3
10	9	9	8	9	8	8	10	7	49	46	40.3	61.1
10	8	6	2	8	10	8	10	3	37	46	24.9	46.1
1	10	10	4	10	10	6	10	2	48	35	28.3	39.9

53	RAILROAD NVB	5	6	8	5	3	4	5	8	9	9	4	10
54	RAILROAD/REVEILLE NVB	5	5	8	4	3	3	4	10	8	8	8	10
55	RALSTON NVB	5	5	10	4	3	4	3	10	8	9	10	9
56	SARCOBATUS FLAT NVB	1	2	10	4	2	3	4	7	8	9	2	10
57	STONE CABIN NVB	3	4	10	5	3	3	3	10	9	9	8	9
58	STONEWALL FLAT NVB	2	1	8	5	2	2	4	10	8	6	2	8
59	THREE LAKES NVB	1	1	8	5	2	5	2	1	10	10	4	10
60	TIKABOO NVB	3	1	8	5	2	3	3	5	9	9	10	9
61	WHITE RIVER NVB	4	6	10	5	3	4	5	7	8	9	2	9
62	HUECO BOLSON NMD	1	3	9	5	10	10	3	10	6	3	4	1
63	JORNADA DEL MUERTO N NMD	2	1	10	5	8	0	3	6	8	5	2	10
64	JORNADA DEL MUERTO S NMD	1	0	9	4	1	7	3	8	7	6	2	10
65	TULAROSA BASIN N NMD	1	1	10	6	10	6	10	8	7	8	2	8
66	TULAROSA BASIN S NMD	6	2	10	6	10	4	10	9	7	10	4	9
67	TULAROSA BASIN E NMD	2	1	9	6	10	3	2	10	7	2	6	8
68	JORNADA DEL MUERTO NMB	2	1	10	4	2	1	2	5	7	7	2	8
	WEIGHTING FACTORS	2.7	2.2	.1	.1	.1	.1	.1	1.0	1.0	.5	.5	.5

*RANKING FACTORS

A = SUITABLE VALLEY AREA
B = SUITABLE CONTIGUOUS AREA
C = OWNERSHIP AND CONTROL (AMOUNT AND QUALITY)
D = GEOLOGY AND SOILS ENGINEERING (AMOUNT AND QUALITY)
E = DEPTH TO ROCK (AMOUNT AND QUALITY)
F = DEPTH TO WATER (AMOUNT AND QUALITY)
G = SURFACE HYDROLOGY (AMOUNT AND QUALITY)
H = OWNERSHIP AND CONTROL (FAVORABILITY)
I = GEOLOGY AND SOILS ENGINEERING (FAVORABILITY)
J = DEPTH TO ROCK (FAVORABILITY)
K = DEPTH TO WATER (FAVORABILITY)
L = SURFACE HYDROLOGY (FAVORABILITY)
M = POTENTIAL IMPACT (MILITARY)
N = POTENTIAL IMPACT (CIVILIAN)
O = DISTANCE TO SUPPORT FACILITIES (MILITARY AND CIVILIAN)

**RANKING

P = AREAL RANKING
Q = GEOTECHNICAL
R = CULTURAL RANK
S = AREAL + GEOTE
T = FINAL SCORE

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4	7	8	9	2	10	10	8	8	3	42	43	26.9	44.3	
3	10	9	9	8	9	8	8	10	7	49	46	40.3	61.1	
4	10	8	6	2	8	10	8	10	3	37	46	24.9	46.1	
2	1	10	10	4	10	10	6	10	2	48	35	28.3	39.9	
3	5	9	9	10	9	10	10	8	4	50	41	34.6	50.4	
5	7	8	9	2	9	10	6	8	10	45	41	43.7	60.5	
3	10	6	3	4	1	8	8	10	4	42	45	22.1	42.8	
3	6	8	5	2	10	8	8	8	3	41	40	25.7	41.5	
3	8	7	6	2	10	6	8	10	1	40	41	20.2	38.3	
10	8	7	8	2	8	6	8	10	2	57	42	24.1	42.3	
10	9	7	10	4	9	6	8	10	8	60	43	42.1	61.3	
2	10	7	2	6	8	6	8	8	3	44	41	24.7	43.8	
2	5	7	7	2	8	8	8	10	3	33	41	24.0	39.8	

IGHTING FACTORS

.1	.1	1.0	1.0	.5	.5	.5	.3	.3	.5

**RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = AREAL + GEOTECHNICAL SCORE (P+Q WITH WEIGHTING)
T = FINAL SCORE (P+Q+R WITH WEIGHTING)

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MATRIX ANALYSIS
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
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FUGRO NATIONAL, INC.

RANKING BASED ON AREAL FACTORS (P)

VALLEY NO.	NAME	P	Q	RANKING SCORES* R	S	T	U
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295
53	RAILROAD NVB	11	49	36	48.9	64.9	243
19	MC MULLEN AZB	10	44	41	44.1	59.5	201
54	RAILROAD/REVEILLE NVB	10	48	44	46.9	67.5	247
55	RALSTON NVB	10	50	48	47.9	69.3	238
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203
15	BUTLER AZB	9	45	43	41.0	59.3	230
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	201
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289
3	GROWLER/CHILDS AZD	9	44	40	42.2	62.0	413
18	LA POSA PLAIN AZB	9	38	44	39.5	59.2	236
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310
9	MOHAWK/TULE AZD	9	44	40	43.6	63.4	521
52	PENOYER NVB	9	50	41	44.5	62.7	157
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326
44	HOT CREEK NVB	8	52	43	42.3	61.5	138
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332
39	CLAYTON-ALKALI SPRING NVB	7	46	45	37.5	56.9	89
7	LECHUGUILLA DESERT AZD	7	47	40	39.8	59.6	172
11	SAN CRISTOBAL AZD	7	44	38	37.8	56.6	275
57	STONE CABIN NVB	7	49	46	40.3	61.1	171
25	EMIGRANT NVD	6	36	37	31.5	48.4	191
12	SENTINEL PLAIN AZD	6	44	41	36.0	55.9	208
40	COYOTE SPR/KANE SPR NVB	5	43	41	34.2	49.2	276
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176
45	INDIAN SPRING NVB	5	48	50	35.6	57.6	52
49	MONITOR NVB	5	42	44	30.9	50.1	50
50	NEWARK NVB	5	41	41	30.3	48.5	50
51	PAHRANAGAT NVB	5	49	39	34.1	51.7	73
35	AMARGOSA DESERT NVB	4	45	46	32.1	51.5	137
38	CAVE NVB	4	36	45	26.3	46.5	75
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7
10	PALOMAS PLAIN AZD	4	36	39	26.1	45.0	30
60	TIKABOO NVB	4	50	41	34.6	50.4	229
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89
36	ANTELOPE NVB	3	46	41	28.1	46.3	55
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126
26	FRENCHMAN FLAT NVD	3	50	33	28.1	38.7	62
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87
46	JAKES NVB	3	42	46	26.4	46.8	106
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124
68	JORNADA DEL MUERTO NMB	3	33	41	24.0	39.8	112
5	KING AZD	3	46	38	26.1	45.3	106
6	LA POSA PLAIN AZD	3	51	40	31.6	51.4	32
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105
31	STONEWALL FLAT NVD	3	37	44	23.2	43.8	56
32	THREE LAKES NVD	3	35	34	25.1	42.7	117
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94
23	BUCKBOARD MESA NVD	2	47	31	26.2	36.6	54
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42
[illegible]	[illegible]	2	44	44	22.2	43.2	21

REAL FACTORS (P)

		RANKING SCORES*				
Q	R	S	T	U	V	W
39	40	58.7	74.5	356		1
41	41	49.7	65.1	352		2
41	43	46.5	63.9	295		3
49	36	48.9	64.9	243		4
44	41	44.1	59.5	201		5
48	44	46.9	67.5	247		6
50	48	47.9	69.3	238		7
45	41	43.7	60.5	203		8
45	43	41.0	59.3	230		9
40	36	39.0	53.5	201	188	10
38	46	37.5	56.9	131		11
46	42	44.2	62.6	289		12
44	40	42.2	62.0	413	220	13
38	44	39.5	59.2	236		14
46	40	43.4	62.4	310		15
44	40	43.6	63.4	521	271	16
50	41	44.5	62.7	157		17
46	44	39.9	58.3	246		18
49	42	42.7	61.9	326		19
52	43	42.3	61.5	138		20
60	43	42.1	61.3	332		21
46	45	37.5	56.9	89		22
47	40	39.8	59.6	172	140	23
44	38	37.8	56.6	275	230	24
49	46	40.3	61.1	171		25
36	37	31.5	48.4	191	135	26
44	41	36.0	55.9	208		27
43	41	34.2	49.2	276	209	28
43	43	33.7	52.6	176		29
48	50	35.6	57.6	52	11	30
42	44	30.9	50.1	50		31
41	41	30.3	48.5	50		32
49	39	34.1	51.7	73		33
45	46	32.1	51.5	137		34
36	45	26.3	46.5	75		35
40	40	29.9	48.9	168	132	36
42	45	22.1	42.8	7		37
36	39	26.1	45.0	30		38
50	41	34.6	50.4	229	144	39
63	33	33.5	44.1	89		40
46	41	28.1	46.3	55		41
49	40	30.2	49.6	126		42
50	33	28.1	38.7	62	35	43
47	41	30.0	49.9	92		44
38	33	26.1	43.2	87		45
42	46	26.4	46.8	106		46
41	40	25.7	41.5	124		47
33	41	24.0	39.8	112		48
46	38	26.1	45.3	106		49
51	40	31.6	51.4	32		50
42	43	26.9	44.3	70		51
37	46	24.9	46.1	105		52
37	44	23.2	43.8	56		53
35	34	25.1	42.7	117		54
44	41	24.7	43.8	100		55
49	40	30.6	50.4	94		56
37	31	26.2	36.6	54		57

56	SARCOBATUS FLAT NVR	3	42	43	26.9	46.3	70
58	STONEWALL FLAT NVR	3	37	46	24.9	46.1	105
31	STONEWALL FLAT NVD	3	37	44	23.2	43.8	56
32	THREE LAKES NVD	3	35	34	25.1	42.7	117
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94
23	BUCKBOARD MESA NVD	2	47	31	26.2	36.6	54
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10
59	THREE LAKES NVB	2	48	35	28.3	39.9	19
33	TIKABOO NVD	2	43	42	26.9	46.5	70
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24
29	KAWICH NVD	0	0	0	.0	.0	113
20	MOHAVE WASH AZB	0	0	0	.0	.0	0
13	VEKOL AZD	0	0	0	.0	.0	0

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

3	31.6	51.4	52		50
3	26.9	44.3	70		51
6	24.9	46.1	105		52
4	23.2	43.8	56		53
4	25.1	42.7	117		54
1	24.7	43.8	100		55
0	30.6	50.4	94		56
1	26.2	36.6	54		57
2	21.4	41.4	42		58
4	22.2	43.2	21		59
0	25.1	44.5	10		60
5	28.3	39.9	19		61
2	26.9	46.5	70	29	62
2	24.1	42.3	58		63
1	20.2	38.3	47		64
39	22.3	38.5	24		65
0	.0	.0	113	0	66
0	.0	.0	0		67
0	.0	.0	0		68

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GHTING FACTORS)

AREAS

RANKING BASED ON CLUUMN P
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
E-2

UGRO NATIONAL, INC.

RANKING BASED ON GEOTECHNICAL FACTORS (Q)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89	
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332	
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58	
44	HOT CREEK NVB	8	52	43	42.3	61.5	138	
6	LA POSA PLAIN AZD	3	51	40	31.6	51.4	32	
26	FRENCHMAN FLAT NVD	3	50	33	28.1	38.7	62	
52	PENOYER NVB	9	50	41	44.5	62.7	157	
55	RALSTON NVB	10	50	48	47.9	69.3	238	
60	TIKABOO NVB	4	50	41	34.6	50.4	229	1
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326	
51	PAHRANAGAT NVB	5	49	39	34.1	51.7	73	
53	RAILROAD NVB	11	49	36	48.9	64.9	243	
57	STONE CABIN NVB	7	49	46	40.3	61.1	171	
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	
45	INDIAN SPRING NVB	5	48	50	35.6	57.6	52	
54	RAILROAD/REVEILLE NVB	10	48	44	46.9	67.5	247	
59	THREE LAKES NVB	2	48	35	28.3	39.9	19	
23	BUCKBOARD MESA NVD	2	47	31	26.2	36.6	54	
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
7	LECHUGUILLA DESERT AZD	7	47	40	39.8	59.6	172	1
36	ANTELOPE NVB	3	46	41	28.1	46.3	55	
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246	
39	CLAYTON-ALKALI SPRING NVB	7	46	45	37.5	56.9	89	
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289	
5	KING AZD	3	46	38	26.1	45.3	106	
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310	
35	AMARGOSA DESERT NVB	4	45	46	32.1	51.5	137	
15	BUTLER AZB	9	45	43	41.0	59.3	230	
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42	
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203	
3	GROWLER/CHILDS AZD	9	44	40	42.2	62.0	413	2
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24	
19	MC MULLEN AZB	10	44	41	44.1	59.5	201	
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21	
9	MOHAWK/TULE AZD	9	44	40	43.6	63.4	521	2
11	SAN CRISTOBAL AZD	7	44	38	37.8	56.6	275	2
12	SENTINEL PLAIN AZD	6	44	41	36.0	55.9	208	
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
40	COYOTE SPR/KANE SPR NVB	5	43	41	34.2	49.2	276	2
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176	
33	TIKABOO NVD	2	43	42	26.9	46.5	70	
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7	
46	JAKES NVB	3	42	46	26.4	46.8	106	
49	MONITOR NVB	5	42	44	30.9	50.1	50	
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70	
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352	
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
50	NEWARK NVB	5	41	41	30.3	48.5	50	
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10	
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295	
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	201	1
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	1
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47	
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356	
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131	
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

ICAL FACTORS (Q)

RANKING SCORES*					
R	S	T	U	V	W
33	33.5	44.1	89		1
43	42.1	61.3	332		2
42	24.1	42.3	58		3
43	42.3	61.5	138		4
40	31.6	51.4	32		5
33	28.1	38.7	62	35	6
41	44.5	62.7	157		7
48	47.9	69.3	238		8
41	34.6	50.4	229	144	9
40	30.2	49.6	126		10
42	42.7	61.9	326		11
39	34.1	51.7	73		12
36	48.9	64.9	243		13
46	40.3	61.1	171		14
40	30.6	50.4	94		15
50	35.6	57.6	52	11	16
44	46.9	67.5	247		17
35	28.3	39.9	19		18
31	26.2	36.6	54		19
41	30.0	49.9	92		20
40	39.8	59.6	172	140	21
41	28.1	46.3	55		22
44	39.9	58.3	246		23
45	37.5	56.9	89		24
42	44.2	62.6	289		25
38	26.1	45.3	106		26
40	43.4	62.4	310		27
46	32.1	51.5	137		28
43	41.0	59.3	230		29
42	21.4	41.4	42		30
41	43.7	60.5	203		31
40	42.2	62.0	413	220	32
39	22.3	38.5	24		33
41	44.1	59.5	201		34
44	22.2	43.2	21		35
40	43.6	63.4	521	271	36
38	37.8	56.6	275	230	37
41	36.0	55.9	208		38
41	24.7	43.8	100		39
41	34.2	49.2	276	209	40
43	33.7	52.6	176		41
42	26.9	46.5	70	29	42
45	22.1	42.8	7		43
46	26.4	46.8	106		44
44	30.9	50.1	50		45
43	26.9	44.3	70		46
41	49.7	65.1	352		47
40	25.7	41.5	124		48
41	30.3	48.5	50		49
40	25.1	44.5	10		50
43	46.5	63.9	295		51
36	39.0	53.5	201	188	52
40	29.9	48.9	168	132	53
41	20.2	38.3	47		54
40	58.7	74.5	356		55

63	JORNADA DEL MUERTO N NMD	5	41	40	25.7	41.5	1
50	NEWARK NVB	5	41	41	30.3	48.5	5
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	1
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	29
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	20
27	GOLD FLAT NVD	4	40	40	29.9	48.9	16
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	35
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	13
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87
18	LA POSA PLAIN AZB	9	38	44	39.5	59.2	236
31	STONEWALL FLAT NVD	3	37	44	23.2	43.8	56
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105
38	CAVE NVB	4	36	45	26.3	46.5	75
25	EMIGRANT NVD	6	36	37	31.5	48.4	191
10	PALOMAS PLAIN AZD	4	36	39	26.1	45.0	30
32	THREE LAKES NVD	3	35	34	25.1	42.7	117
68	JORNADA DEL MUERTO NMB	3	33	41	24.0	39.8	112
29	KAWICH NVD	0	0	0	.0	.0	113
20	MOHAVE WASH AZB	0	0	0	.0	.0	0
13	VEKOL AZD	0	0	0	.0	.0	0

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

41	49.7	65.1	352		47
40	25.7	41.5	124		48
41	30.3	48.5	50		49
40	25.1	44.5	10		50
43	46.5	63.9	295		51
36	39.0	53.5	201	188	52
40	29.9	48.9	168	132	53
41	20.2	38.3	47		54
40	58.7	74.5	356		55
46	37.5	56.9	131		56
33	26.1	43.2	87		57
44	39.5	59.2	236		58
44	23.2	43.8	56		59
46	24.9	46.1	105		60
45	26.3	46.5	75		61
37	31.5	48.4	191	135	62
39	26.1	45.0	30		63
34	25.1	42.7	117		64
41	24.0	39.8	112		65
0	.0	.0	113	0	66
0	.0	.0	0		67
0	.0	.0	0		68

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WEIGHTING FACTORS)

SS AREAS

RANKING BASED ON COLUMN Q
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
E-3

FUGRO NATIONAL, INC.

RANKING BASED ON CULTURAL FACTORS (R)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
45	INDIAN SPRING NVB	5	48	50	35.6	57.6	52	11
55	RALSTON NVB	10	50	48	47.9	69.3	238	
35	AMARGOSA DESERT NVB	4	45	46	32.1	51.5	137	
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131	
46	JAKES NVB	3	42	46	26.4	46.8	106	
57	STONE CABIN NVB	7	49	46	40.3	61.1	171	
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105	
38	CAVE NVB	4	36	45	26.3	46.5	75	
39	CLAYTON-ALKALI SPRING NVB	7	46	45	37.5	56.9	89	
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7	
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246	
18	LA POSA PLAIN AZB	9	38	44	39.5	59.2	236	
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21	
49	MONITOR NVB	5	42	44	30.9	50.1	50	
54	RAILROAD/REVEILLE NVB	10	48	44	46.9	67.5	247	
31	STONEWALL FLAT NVD	3	37	44	23.2	43.8	56	
15	BUTLER AZB	9	45	43	41.0	59.3	230	
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176	
44	HOT CREEK NVB	8	52	43	42.3	61.5	138	
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295	
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70	
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332	
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289	
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326	
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42	
33	TIKABOO NVD	2	43	42	26.9	46.5	70	29
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58	
36	ANTELOPE NVB	3	46	41	28.1	46.3	55	
40	COYOTE SPR/KANE SPR NVB	5	43	41	34.2	49.2	276	20
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352	
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47	
68	JORNADA DEL MUERTO NMB	3	33	41	24.0	39.8	112	
19	MC MULLEN AZB	10	44	41	44.1	59.5	201	
50	NEWARK NVB	5	41	41	30.3	48.5	50	
52	PENOYER NVB	9	50	41	44.5	62.7	157	
12	SENTINEL PLAIN AZD	6	44	41	36.0	55.9	208	
60	TIKABOO NVB	4	50	41	34.6	50.4	229	144
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203	
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	132
3	GROWLER/CHILDS AZD	9	44	40	42.2	62.0	413	220
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
6	LA POSA PLAIN AZD	3	51	40	31.6	51.4	32	
7	LECHUGUILLA DESERT AZD	7	47	40	39.8	59.6	172	140
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310	
9	MOHAWK/TULE AZD	9	44	40	43.6	63.4	521	271
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10	
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356	
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24	
51	PAHRANAGAT NVB	5	49	39	34.1	51.7	73	
10	PALOMAS PLAIN AZD	4	36	39	26.1	45.0	30	
5	KING AZD	3	46	38	26.1	45.3	106	
11	SAN CRISTOBAL AZD	7	44	38	37.8	56.6	275	230
25	EMIGRANT NVD	6	36	37	31.5	48.4	191	135
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	201	1

FACTORS (R)

RANKING SCORES*					
R	S	T	U	V	W
50	35.6	57.6	52	11	1
48	47.9	69.3	238		2
46	32.1	51.5	137		3
46	37.5	56.9	131		4
46	26.4	46.8	106		5
46	40.3	61.1	171		6
46	24.9	46.1	105		7
45	26.3	46.5	75		8
45	37.5	56.9	89		9
45	22.1	42.8	7		10
44	39.9	58.3	246		11
44	39.5	59.2	236		12
44	22.2	43.2	21		13
44	30.9	50.1	50		14
44	46.9	67.5	247		15
44	23.2	43.8	56		16
43	41.0	59.3	230		17
43	33.7	52.6	176		18
43	42.3	61.5	138		19
43	46.5	63.9	295		20
43	26.9	44.3	70		21
43	42.1	61.3	332		22
42	44.2	62.6	289		23
42	42.7	61.9	326		24
42	21.4	41.4	42		25
42	26.9	46.5	70	29	26
42	24.1	42.3	58		27
41	28.1	46.3	55		28
41	34.2	49.2	276	209	29
41	30.0	49.9	92		30
41	49.7	65.1	352		31
41	20.2	38.3	47		32
41	24.0	39.8	112		33
41	44.1	59.5	201		34
41	30.3	48.5	50		35
41	44.5	62.7	157		36
41	36.0	55.9	208		37
41	34.6	50.4	229	144	38
41	24.7	43.8	100		39
41	43.7	60.5	203		40
40	30.2	49.6	126		41
40	29.9	48.9	168	132	42
40	42.2	62.0	413	220	43
40	25.7	41.5	124		44
40	31.6	51.4	32		45
40	39.8	59.6	172	140	46
40	43.4	62.4	310		47
40	43.6	63.4	521	271	48
40	25.1	44.5	10		49
40	58.7	74.5	356		50
40	30.6	50.4	94		51
39	22.3	38.5	24		52
39	34.1	51.7	73		53
39	26.1	45.0	30		54
38	26.1	45.3	106		55
38	37.8	56.6	276	230	56
37	31.5	48.4	191	135	57

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24
51	PAHRANAGAT NVB	5	49	39	34.1	51.7	73
10	PALOMAS PLAIN AZD	4	36	39	26.1	45.0	30
5	KING AZD	3	46	38	26.1	45.3	106
11	SAN CRISTOBAL AZD	7	44	38	37.8	56.6	275
25	EMIGRANT NVD	6	36	37	31.5	48.4	191
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	201
53	RAILROAD NVB	11	49	36	48.9	64.9	243
59	THREE LAKES NVB	2	48	35	28.3	39.9	19
32	THREE LAKES NVD	3	35	34	25.1	42.7	117
26	FRENCHMAN FLAT NVD	3	50	33	28.1	38.7	62
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89
23	BUCKBOARD MESA NVD	2	47	31	26.2	36.6	54
29	KAWICH NVD	0	0	0	.0	.0	113
20	MOHAVE WASH AZB	0	0	0	.0	.0	0
13	VEKOL AZD	0	0	0	.0	.0	0

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

	25.7	41.5	124		44
40	31.6	51.4	32		45
40	39.8	59.6	172	140	46
40	43.4	62.4	310		47
40	43.6	63.4	521	271	48
40	25.1	44.5	10		49
40	58.7	74.5	356		50
40	30.6	50.4	94		51
39	22.3	38.5	24		52
39	34.1	51.7	73		53
39	26.1	45.0	30		54
38	26.1	45.3	106		55
38	37.8	56.6	275	230	56
37	31.5	48.4	191	135	57
36	39.0	53.5	201	188	58
36	48.9	64.9	243		59
35	28.3	39.9	19		60
34	25.1	42.7	117		61
33	28.1	38.7	62	35	62
33	26.1	43.2	87		63
33	33.5	44.1	89		64
31	26.2	36.6	54		65
0	.0	.0	113	0	66
0	.0	.0	0		67
0	.0	.0	0		68

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GHTING FACTORS)

ARFAS

RANKING BASED ON COLUMN R
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

E-4

FUGRO NATIONAL, INC.

RANKING BASED ON AREAL AND GEOTECHNICAL FACTORS (S)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356	
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352	
53	RAILROAD NVB	11	49	36	48.9	64.9	243	
55	RALSTON NVB	10	50	48	47.9	69.3	238	
54	RAILROAD/REVEILLE NVB	10	48	44	46.9	67.5	247	
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295	
52	PENOYER NVB	9	50	41	44.5	62.7	157	
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289	
19	MC MULLEN AZB	10	44	41	44.1	59.5	201	
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203	
9	MOHAWK/TULE AZD	9	44	40	43.6	63.4	521	271
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310	
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326	
44	HOT CREEK NVB	8	52	43	42.3	61.5	138	
3	GROWLER/CHILDS AZD	9	44	40	42.2	62.0	413	220
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332	
15	BUTLER AZB	9	45	43	41.0	59.3	230	
57	STONE CABIN NVB	7	49	46	40.3	61.1	171	
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246	
7	LECHUGUILLA DESERT AZD	7	47	40	39.8	59.6	172	140
18	LA POSA PLAIN AZB	9	38	44	39.5	59.2	236	
24	CACTUS FLAT NVD	9	40	36	39.0	53.5	201	188
11	SAN CRISTOBAL AZD	7	44	38	37.8	56.6	275	230
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131	
39	CLAYTON-ALKALI SPRING NVB	7	46	45	37.5	56.9	89	
12	SENTINEL PLAIN AZD	6	44	41	36.0	55.9	208	
45	INDIAN SPRING NVB	5	48	50	35.6	57.6	52	11
60	TIKABOO NVB	4	50	41	34.6	50.4	229	144
40	COYOTE SPR/KANE SPR NVB	5	43	41	34.2	49.2	276	209
51	PAHRANAGAT NVB	5	49	39	34.1	51.7	73	
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176	
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89	
35	AMARGOSA DESERT NVB	4	45	46	32.1	51.5	137	
6	LA POSA PLAIN AZD	3	51	40	31.6	51.4	32	
25	EMIGRANT NVD	6	36	37	31.5	48.4	191	135
49	MONITOR NVB	5	42	44	30.9	50.1	50	
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	
50	NEWARK NVB	5	41	41	30.3	48.5	50	
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	132
59	THREE LAKES NVB	2	48	35	28.3	39.9	19	
36	ANTELOPE NVB	3	46	41	28.1	46.3	55	
26	FRENCHMAN FLAT NVD	3	50	33	28.1	38.7	62	35
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70	
33	TIKABOO NVD	2	43	42	26.9	46.5	70	29
46	JAKES NVB	3	42	46	26.4	46.8	106	
38	CAVE NVB	4	36	45	26.3	46.5	75	
23	BUCKBOARD MESA NVD	2	47	31	26.2	36.6	54	
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87	
5	KING AZD	3	46	38	26.1	45.3	106	
10	PALOMAS PLAIN AZD	4	36	39	26.1	45.0	30	
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10	
32	THREE LAKES NVD	3	35	34	25.1	42.7	117	
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105	
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58	

ON AREAL AND GEOTECHNICAL FACTORS (S)

		RANKING SCORES*					
P	Q	R	S	T	U	V	W
17	39	40	58.7	74.5	356		1
13	41	41	49.7	65.1	352		2
11	49	36	48.9	64.9	243		3
10	50	48	47.9	69.3	238		4
10	48	44	46.9	67.5	247		5
11	41	43	46.5	63.9	295		6
9	50	41	44.5	62.7	157		7
9	46	42	44.2	62.6	289		8
10	44	41	44.1	59.5	201		9
10	45	41	43.7	60.5	203		10
9	44	40	43.6	63.4	521	271	11
9	46	40	43.4	62.4	310		12
8	49	42	42.7	61.9	326		13
8	52	43	42.3	61.5	138		14
9	44	40	42.2	62.0	413	220	15
8	60	43	42.1	61.3	332		16
9	45	43	41.0	59.3	230		17
7	49	46	40.3	61.1	171		18
8	46	44	39.9	58.3	246		19
7	47	40	39.8	59.6	172	140	20
9	38	44	39.5	59.2	236		21
9	40	36	39.0	53.5	201	188	22
7	44	38	37.8	56.6	275	230	23
9	38	46	37.5	56.9	131		24
7	46	45	37.5	56.9	89		25
6	44	41	36.0	55.9	208		26
5	48	50	35.6	57.6	52	11.	27
4	50	41	34.6	50.4	229	144	28
5	43	41	34.2	49.2	276	209	29
5	49	39	34.1	51.7	73		30
5	43	43	33.7	52.6	176		31
4	63	33	33.5	44.1	89		32
4	45	46	32.1	51.5	137		33
3	51	40	31.6	51.4	32		34
6	36	37	31.5	48.4	191	135	35
5	42	44	30.9	50.1	50		36
3	49	40	30.6	50.4	94		37
5	41	41	30.3	48.5	50		38
3	49	40	30.2	49.6	126		39
3	47	41	30.0	49.9	92		40
8	40	40	29.9	48.9	168	132	41
[illegible]	48	35	28.3	39.9	19		42
[illegible]	46	41	28.1	46.3	55		43
[illegible]	50	33	28.1	38.7	62	35	44
[illegible]	42	43	26.9	44.3	70		45
[illegible]	43	42	26.9	46.5	70	29	46
[illegible]	42	46	26.4	46.8	106		47
[illegible]	36	45	26.3	46.5	75		48
[illegible]	47	31	26.2	36.6	54		49
[illegible]	38	33	26.1	43.2	87		50
[illegible]	46	38	26.1	45.3	106		51
[illegible]	36	39	26.1	45.0	30		52
[illegible]	41	40	25.7	41.5	124		53
[illegible]	41	40	25.1	44.5	10		54
[illegible]	35	34	25.1	42.7	117		55
[illegible]	37	46	24.9	46.1	105		56

38	CAVE NVR	4	36	45	26.3	46.5	75
23	BUCKBOARD MESA NVD	2	47	31	26.2	36.6	54
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87
5	KING AZD	3	46	38	26.1	45.3	106
10	PALOMAS PLAIN AZD	4	36	39	26.1	45.0	30
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10
32	THREE LAKES NVD	3	35	34	25.1	42.7	117
58	STONEWALL FLAT NVR	3	37	46	24.9	46.1	105
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58
68	JORNADA DEL MUERTO NMB	3	33	41	24.0	39.8	112
31	STONEWALL FLAT NVD	3	37	44	23.2	43.8	56
47	LITTLE FISH LAKE NVR	1	44	39	22.3	38.5	24
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47
29	KAWICH NVD	0	0	0	.0	.0	113
20	MOHAVE WASH AZB	0	0	0	.0	.0	0
13	VEKOL AZD	0	0	0	.0	.0	0

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

26.9	46.5	70	29	46
26.4	46.8	106		47
26.3	46.5	75		48
26.2	36.6	54		49
26.1	43.2	87		50
26.1	45.3	106		51
26.1	45.0	30		52
25.7	41.5	124		53
25.1	44.5	10		54
25.1	42.7	117		55
24.9	46.1	105		56
24.7	43.8	100		57
24.1	42.3	58		58
24.0	39.8	112		59
23.2	43.8	56		60
22.3	38.5	24		61
22.2	43.2	21		62
22.1	42.8	7		63
21.4	41.4	42		64
20.2	38.3	47		65
.0	.0	113	0	66
.0	.0	0		67
.0	.0	0		68

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TING FACTORS)

EAS

RANKING BASED ON COLUMN S
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
E-5

FUGRO NATIONAL, INC.

APPENDIX F

MATRIX ANALYSIS AND RANKING TABLES

FOR DoD LANDS

APPENDIX F - MATRIX ANALYSIS - DOD VALLEY
INCLUDING WILDLIFE RANGES

VALLEY NO.	NAME	RANKING FACTORS* A	B	C	D	E	F	G	H	I	J	K	L	
1	CASTLE DOME AZD	2	1	8	4	5	2	5	10	9	9	6	9	
2	GILA BEND PLAIN AZD	2	1	7	4	3	2	5	10	9	6	8	10	
3	GROWLER/CHILDS AZD	8	7	6	4	3	2	5	10	8	7	6	9	
4	INDIAN WASH AZD	1	1	8	5	10	5	5	10	8	1	4	7	
5	KING AZD	2	1	6	4	6	5	5	10	7	7	6	6	
6	LA POSA PLAIN AZD	1	1	6	4	3	3	5	10	10	6	10	10	
7	LECHUGUILLA DESERT AZD	3	4	6	4	3	2	5	10	10	5	8	10	
8	MOHAVE WASH AZD	1	1	6	4	10	4	5	10	9	1	2	9	1
9	MOHAWK/TULE AZD	10	6	6	4	3	2	4	10	9	7	6	9	
10	PALOMAS PLAIN AZD	1	1	7	5	3	1	4	10	8	3	2	10	
11	SAN CRISTOBAL AZD	5	6	6	4	3	2	5	10	8	7	6	9	
12	SENTINEL PLAIN AZD	4	3	7	4	3	2	4	10	8	7	6	10	
13	VEKOL AZD	0	0	0	0	0	0	0	0	0	0	0	0	
14	YUMA DESERT AZD	2	1	6	4	6	2	3	10	9	7	8	10	
23	BUCKBOARD MESA NVD	1	0	8	4	3	6	5	1	10	6	4	9	
24	CACTUS FLAT NVD	4	2	9	4	2	5	6	5	8	6	2	7	
25	EMIGRANT NVD	4	0	7	3	0	5	5	8	8	5	2	8	
26	FRENCHMAN FLAT NVD	1	1	10	4	5	6	5	1	8	3	10	9	
27	GOLD FLAT NVD	3	1	8	3	2	0	6	10	8	7	6	8	
28	INDIAN SPRING NVD	2	1	9	3	0	1	6	10	7	5	10	6	
29	KAWICH NVD	2	0	8	3	2	0	5	10	9	6	6	9	
30	PAHUTE MESA NVD	1	1	6	4	2	1	5	10	9	1	10	9	
31	STONEWALL FLAT NVD	1	1	8	3	2	5	6	10	8	3	2	8	
32	THREE LAKES NVD	2	1	8	3	0	1	6	10	8	5	4	8	
33	TIKABOO NVD	1	2	8	3	0	2	5	10	9	5	10	9	
34	YUCCA FLAT NVD	4	0	10	6	10	10	6	1	8	6	10	7	
62	HUECO BOLSON NMD	1	3	9	5	10	10	3	10	6	3	4	1	
63	JORNADA DEL MUERTO N NMD	2	1	10	5	8	0	3	6	8	5	2	10	
64	JORNADA DEL MUERTO S NMD	1	0	9	4	1	7	3	8	7	6	2	10	
65	TULAROSA BASIN N NMD	1	1	10	6	10	6	10	8	7	8	2	8	
66	TULAROSA BASIN S NMD	6	2	10	6	10	4	10	9	7	10	4	9	
67	TULAROSA BASIN E NMD	2	1	9	6	10	3	2	10	7	2	6	8	
	WEIGHTING FACTORS	2.7	2.2	.1	.1	.1	.1	.1	1.0	1.0	.5	.5	.5	.3

*RANKING FACTORS

A = SUITABLE VALLEY AREA
B = SUITABLE CONTIGUOUS AREA
C = OWNERSHIP AND CONTROL (AMOUNT AND QUALITY)
D = GEOLOGY AND SOILS ENGINEERING (AMOUNT AND QUALITY)
E = DEPTH TO ROCK (AMOUNT AND QUALITY)
F = DEPTH TO WATER (AMOUNT AND QUALITY)
G = SURFACE HYDROLOGY (AMOUNT AND QUALITY)
H = OWNERSHIP AND CONTROL (FAVORABILITY)
I = GEOLOGY AND SOILS ENGINEERING (FAVORABILITY)
J = DEPTH TO ROCK (FAVORABILITY)
K = DEPTH TO WATER (FAVORABILITY)
L = SURFACE HYDROLOGY (FAVORABILITY)
M = POTENTIAL IMPACT (MILITARY)
N = POTENTIAL IMPACT (CIVILIAN)
O = DISTANCE TO SUPPORT FACILITIES (MILITARY AND CIVILIAN)

**RANKING S

P = AREAL RANKING S
Q = GEOTECHNICAL RA
R = CULTURAL RANKIN
S = AREAL + GEOTECH
T = FINAL SCORE (P+

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F - MATRIX ANALYSIS - DOD VALLEYS
INCLUDING WILDLIFE RANGES

RANKING FACTORS*											RANKING SCORES**			
E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
5	2	5	10	9	9	6	9	4	8	10	3	49	40	30.2	49.6
3	2	5	10	9	6	8	10	4	10	10	3	47	41	30.0	49.9
3	2	5	10	8	7	6	9	4	4	10	15	44	34	57.4	75.4
10	5	5	10	8	1	4	7	6	8	10	2	45	42	21.4	41.4
6	5	5	10	7	7	6	6	4	8	10	3	46	38	26.1	45.3
3	3	5	10	10	6	10	10	6	8	10	2	51	40	29.4	49.2
3	2	5	10	10	5	8	10	4	4	10	7	47	34	39.8	57.8
10	4	5	10	9	1	2	9	10	8	10	2	44	44	22.2	43.2
3	2	4	10	9	7	6	9	4	4	10	16	44	34	61.5	79.5
3	1	4	10	8	3	2	10	4	10	8	2	36	39	21.7	40.6
3	2	5	10	8	7	6	9	4	6	8	11	44	34	47.1	64.7
3	2	4	10	8	7	6	10	6	8	10	7	44	41	38.2	58.1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	.0	.0
6	2	3	10	9	7	8	10	4	10	10	3	49	40	30.6	50.4
3	6	5	1	10	6	4	9	2	10	10	1	47	31	24.0	34.4
2	5	6	5	8	6	2	7	2	10	10	6	40	36	32.4	46.9
0	5	5	8	8	5	2	8	4	6	8	4	36	33	27.6	43.3
5	6	5	1	8	3	10	9	2	10	10	2	50	33	25.9	36.5
2	0	6	10	8	7	6	8	4	10	8	4	40	40	29.9	48.9
0	1	6	10	7	5	10	6	2	2	10	3	38	33	26.1	43.2
2	0	5	10	9	6	6	9	4	2	8	2	40	32	25.9	42.5
2	1	5	10	9	1	10	9	2	10	10	2	41	40	25.1	44.5
2	5	6	10	8	3	2	8	6	10	10	2	37	44	21.0	41.6
0	1	6	10	8	5	4	8	4	2	10	3	35	34	25.1	42.7
0	2	5	10	9	5	10	9	6	2	8	3	43	34	29.1	46.3
10	10	6	1	8	6	10	7	2	10	10	4	63	33	33.5	44.1
10	10	3	10	6	3	4	1	8	8	10	4	42	45	22.1	42.8
8	0	3	6	8	5	2	10	8	8	8	3	41	40	25.7	41.5
1	7	3	8	7	6	2	10	6	8	10	1	40	41	20.2	38.3
10	6	10	8	7	8	2	8	6	8	10	2	57	42	24.1	42.3
10	4	10	9	7	10	4	9	6	8	10	8	60	43	42.1	61.3
10	3	2	10	7	2	6	8	6	8	8	3	44	41	24.7	43.8
WEIGHTING FACTORS															
.1	.1	.1	1.0	1.0	.5	.5	.5	.3	.3	.5					

**RANKING SCORES

P = AREAL RANKING SCORE (A+B)
O = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = AREAL + GEOTECHNICAL SCORE (P+Q WITH WEIGHTING)
T = FINAL SCORE (P+Q+R WITH WEIGHTING)

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MATRIX ANALYSIS DoD VALLEYS (INCLUDING WILDLIFE RANGES)	
MX SITING INVESTIGATION DEPARTMENT OF THE AIR FORCE - SAMSO	APPENDIX F-1
UGRO NATIONAL, INC.	

RANKING BASED ON AREAL FACTORS (P)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	
9	MOHAWK/TULE AZD	16	44	34	61.5	79.5	521	
3	GROWLER/CHILDS AZD	15	44	34	57.4	75.4	413	
11	SAN CRISTOBAL AZD	11	44	34	47.1	64.7	275	
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332	
7	LECHUGUILLA DESERT AZD	7	47	34	39.8	57.8	172	1
12	SENTINEL PLAIN AZD	7	44	41	38.2	58.1	208	
24	CACTUS FLAT NVD	6	40	36	32.4	46.9	201	1
25	EMIGRANT NVD	4	36	33	27.6	43.3	191	1
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	1
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7	
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89	
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87	
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
5	KING AZD	3	46	38	26.1	45.3	106	
32	THREE LAKES NVD	3	35	34	25.1	42.7	117	
33	TIKABOO NVD	3	43	34	29.1	46.3	70	
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	
26	FRENCHMAN FLAT NVD	2	50	33	25.9	36.5	62	
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42	
29	KAWICH NVD	2	40	32	25.9	42.5	113	
6	LA POSA PLAIN AZD	2	51	40	29.4	49.2	32	
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21	
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10	
10	PALOMAS PLAIN AZD	2	36	39	21.7	40.6	30	
31	STONEWALL FLAT NVD	2	37	44	21.0	41.6	56	
65	TULAROSA BASIN W NMD	2	57	42	24.1	42.3	58	
23	BUCKBOARD MESA NVD	1	47	31	24.0	34.4	54	
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47	
13	VEKOL AZD	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

AREAL FACTORS (P)

Q	R	RANKING SCORES* S	T	U	V	W
44	34	61.5	79.5	521	271	1
44	34	57.4	75.4	413	220	2
44	34	47.1	64.7	275	230	3
60	43	42.1	61.3	332		4
47	34	39.8	57.8	172	140	5
44	41	38.2	58.1	208		6
40	36	32.4	46.9	201	188	7
36	33	27.6	43.3	191	135	8
40	40	29.9	48.9	168	132	9
42	45	22.1	42.8	7		10
63	33	33.5	44.1	89		11
49	40	30.2	49.6	126		12
47	41	30.0	49.9	92		13
38	33	26.1	43.2	87		14
41	40	25.7	41.5	124		15
46	38	26.1	45.3	106		16
35	34	25.1	42.7	117		17
43	34	29.1	46.3	70	29	18
44	41	24.7	43.8	100		19
49	40	30.6	50.4	94		20
50	33	25.9	36.5	62	35	21
45	42	21.4	41.4	42		22
40	32	25.9	42.5	113	0	23
51	40	29.4	49.2	32		24
44	44	22.2	43.2	21		25
41	40	25.1	44.5	10		26
36	39	21.7	40.6	30		27
37	44	21.0	41.6	56		28
57	42	24.1	42.3	58		29
47	31	24.0	34.4	54		30
40	41	20.2	38.3	47		31
0	0	.0	.0	0		32

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WITH WEIGHTING FACTORS)

FERNESS AREAS

DoD RANKING BASED ON COLUMN P
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
F-2

FUGRO NATIONAL, INC.

RANKING BASED ON GEOTECHNICAL FACTORS (Q)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89	
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332	
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58	
6	LA POSA PLAIN AZD	2	51	40	29.4	49.2	32	
26	FRENCHMAN FLAT NVD	2	50	33	25.9	36.5	62	35
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	
23	BUCKBOARD MESA NVD	1	47	31	24.0	34.4	54	
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
7	LECHUGUILLA DESERT AZD	7	47	34	39.8	57.8	172	140
5	KING AZD	3	46	38	26.1	45.3	106	
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42	
3	GROWLER/CHILDS AZD	15	44	34	57.4	75.4	413	220
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21	
9	MOHAWK/TULE AZD	16	44	34	61.5	79.5	521	271
11	SAN CRISTOBAL AZD	11	44	34	47.1	64.7	275	230
12	SENTINEL PLAIN AZD	7	44	41	38.2	58.1	208	
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
33	TIKABOO NVD	3	43	34	29.1	46.3	70	29
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7	
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10	
24	CACTUS FLAT NVD	6	40	36	32.4	46.9	201	188
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	132
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47	
29	KAWICH NVD	2	40	32	25.9	42.5	113	0
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87	
31	STONEWALL FLAT NVD	2	37	44	21.0	41.6	56	
25	EMIGRANT NVD	4	36	33	27.6	43.3	191	135
10	PALOMAS PLAIN AZD	2	36	39	21.7	40.6	30	
32	THREE LAKES NVD	3	35	34	25.1	42.7	117	
13	YEKOL AZD	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

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CHNICAL FACTORS (Q)

EIGHTING FACTORS)

S AREAS

RANKING SCORES

R	S	T	U	V	W
33	33.5	44.1	89		1
43	42.1	61.3	332		2
42	24.1	42.3	58		3
40	29.4	49.2	32		4
33	25.9	36.5	62	35	5
40	30.2	49.6	126		6
40	30.6	50.4	94		7
31	24.0	34.4	54		8
41	30.0	49.9	92		9
34	39.8	57.8	172	140	10
38	26.1	45.3	106		11
42	21.4	41.4	42		12
34	57.4	75.4	413	220	13
44	22.2	43.2	21		14
34	61.5	79.5	521	271	15
34	47.1	64.7	275	230	16
41	38.2	58.1	208		17
41	24.7	43.8	100		18
34	29.1	46.3	70	29	19
45	22.1	42.8	7		20
40	25.7	41.5	124		21
40	25.1	44.5	10		22
36	32.4	46.9	201	188	23
40	29.9	48.9	168	132	24
41	20.2	38.3	47		25
32	25.9	42.5	113	0	26
33	26.1	43.2	87		27
44	21.0	41.6	56		28
33	27.6	43.3	191	135	29
39	21.7	40.6	30		30
34	25.1	42.7	117		31
0	.0	.0	0		32

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DoD RANKING BASED ON COLUMN Q
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
F-3

FUGRO NATIONAL, INC.

RANKING BASED ON CULTURAL FACTORS (R)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
62	MESQUITE BOLSON NMD	4	42	45	22.1	42.8	7	
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21	
31	STONEWALL FLAT NVD	2	37	44	21.0	41.6	56	
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332	
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42	
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58	
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47	
12	SENTINEL PLAIN AZD	7	44	41	38.2	58.1	208	
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	132
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
6	LA POSA PLAIN AZD	2	51	40	29.4	49.2	32	
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10	
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	
10	PALOMAS PLAIN AZD	2	36	39	21.7	40.6	30	
5	KING AZD	3	46	38	26.1	45.3	106	
24	CACTUS FLAT NVD	6	40	36	32.4	46.9	201	188
3	GROWLER/CHILDS AZD	15	44	34	57.4	75.4	413	220
7	LECHUGUILLA DESERT AZD	7	47	34	39.8	57.8	172	140
9	MOHAWK/TULE AZD	16	44	34	61.5	79.5	521	271
11	SAN CRISTOBAL AZD	11	44	34	47.1	64.7	275	230
32	THREE LAKES NVD	3	35	34	25.1	42.7	117	
33	TIKABOO NVD	3	43	34	29.1	46.3	70	29
25	EMIGRANT NVD	4	36	33	27.6	43.3	191	135
26	FRENCHMAN FLAT NVD	2	50	33	25.9	36.5	62	35
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87	
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89	
29	KAWICH NVD	2	40	32	25.9	42.5	113	0
23	HUCKABOARD MESA NVD	1	47	31	24.0	34.4	54	
13	VEKOL AZD	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

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CULTURAL FACTORS (R)

	RANKING SCORES*					
Q	R	S	T	U	V	W
42	45	22.1	42.8	7		1
44	44	22.2	43.2	21		2
37	44	21.0	41.6	56		3
60	43	42.1	61.3	332		4
45	42	21.4	41.4	42		5
57	42	24.1	42.3	58		6
47	41	30.0	49.9	92		7
40	41	20.2	38.3	47		8
44	41	38.2	58.1	208		9
44	41	24.7	43.8	100		10
49	40	30.2	49.6	126		11
40	40	29.9	48.9	168	132	12
41	40	25.7	41.5	124		13
51	40	29.4	49.2	32		14
41	40	25.1	44.5	10		15
49	40	30.6	50.4	94		16
36	39	21.7	40.6	30		17
46	38	26.1	45.3	106		18
40	36	32.4	46.9	201	188	19
44	34	57.4	75.4	413	220	20
47	34	39.8	57.8	172	140	21
44	34	61.5	79.5	521	271	22
44	34	47.1	64.7	275	230	23
35	34	25.1	42.7	117		24
43	34	29.1	46.3	70	29	25
36	33	27.6	43.3	191	135	26
50	33	25.9	36.5	62	35	27
38	33	26.1	43.2	87		28
63	33	33.5	44.1	89		29
40	32	25.9	42.5	113	0	30
47	31	24.0	34.4	54		31
0	0	.0	.0	0		32

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WITH WEIGHTING FACTORS)

DERNESS AREAS

DoD RANKING BASED ON COLUMN R
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
F-4

UGRO NATIONAL, INC.

RANKING BASED ON AREAL AND GEOTECHNICAL FACTORS (S)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
9	MOHAWK/TULE AZD	16	44	34	61.5	79.5	521	271
3	GROWLER/CHILDS AZD	15	44	34	57.4	75.4	413	220
11	SAN CRISTOBAL AZD	11	44	34	47.1	64.7	275	230
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332	
7	LECHUGUILLA DESERT AZD	7	47	34	39.8	57.8	172	140
12	SENTINEL PLAIN AZD	7	44	41	38.2	58.1	208	
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89	
24	CACTUS FLAT NVD	6	40	36	32.4	46.9	201	188
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	132
6	LA POSA PLAIN AZD	2	51	40	29.4	49.2	32	
33	TIKABOO NVD	3	43	34	29.1	46.3	70	29
25	EMIGRANT NVD	4	36	33	27.6	43.3	191	135
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87	
5	KING AZD	3	46	38	26.1	45.3	106	
26	FRENCHMAN FLAT NVD	2	50	33	25.9	36.5	62	35
29	KAWICH NVD	2	40	32	25.9	42.5	113	0
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
30	RAHUTE MESA NVD	2	41	40	25.1	44.5	10	
32	THREE LAKES NVD	3	35	34	25.1	42.7	117	
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58	
23	BUCKBOARD MESA NVD	1	47	31	24.0	34.4	54	
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21	
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7	
10	PALOMAS PLAIN AZD	2	36	39	21.7	40.6	30	
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42	
31	STONEWALL FLAT NVD	2	37	44	21.0	41.6	56	
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47	
13	YEKOL AZD	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

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ND GEOTECHNICAL FACTORS (S)

RANKING SCORES*					
R	S	T	U	V	W
34	61.5	79.5	521	271	1
34	57.4	75.4	413	220	2
34	47.1	64.7	275	230	3
43	42.1	61.3	332		4
38	39.8	57.8	172	140	5
41	38.2	58.1	208		6
33	33.5	44.1	89		7
36	32.4	46.9	201	188	8
40	30.6	50.4	94		9
40	30.2	49.6	126		10
41	30.0	49.9	92		11
40	29.9	48.9	168	132	12
40	29.4	49.2	32		13
34	29.1	46.3	70	29	14
33	27.6	43.3	191	135	15
33	26.1	43.2	87		16
38	26.1	45.3	106		17
33	25.9	36.5	62	35	18
32	25.9	42.5	113	0	19
40	25.7	41.5	124		20
40	25.1	44.5	10		21
34	25.1	42.7	117		22
41	24.7	43.8	100		23
42	24.1	42.3	58		24
31	24.0	34.4	54		25
44	22.2	43.2	21		26
45	22.1	42.8	7		27
39	21.7	40.6	30		28
42	21.4	41.4	42		29
44	21.0	41.6	56		30
41	20.2	38.3	47		31
0	.0	.0	0		32

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EIGHTING FACTORS)

S AREAS

DoD RANKING BASED ON COLUMN S
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
F-5

UGRO NATIONAL, INC.

RANKING BASED ON FINAL SCORE (T)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V	W
9	MOHAWK/TULE AZD	16	44	34	61.5	79.5	521	271	
3	GROWLER/CHILDS AZD	15	44	34	57.4	75.4	413	220	
11	SAN CRISTOBAL AZD	11	44	34	47.1	64.7	275	230	
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332		
12	SENTINEL PLAIN AZD	7	44	41	38.2	58.1	208		
7	LECHUGUILLA DESERT AZD	7	47	34	39.8	57.8	172	140	
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94		
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92		
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126		
6	LA POSA PLAIN AZD	2	51	40	29.4	49.2	32		
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	132	
24	CACTUS FLAT NVD	6	40	36	32.4	46.9	201	188	
33	TIKABOO NVD	3	45	34	29.1	46.3	70	29	
5	KING AZD	3	46	38	26.1	45.3	106		
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10		
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89		
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100		
25	EMIGRANT NVD	4	36	33	27.6	43.3	191	135	
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87		
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21		
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7		
32	THREE LAKES NVD	3	35	34	25.1	42.7	117		
29	KAWICH NVD	2	40	32	25.9	42.5	113	0	
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58		
31	STONEWALL FLAT NVD	2	37	40	21.0	41.6	56		
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124		
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42		
10	PALOMAS PLAIN AZD	2	36	39	21.7	40.6	30		
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47		
26	FRENCHMAN FLAT NVD	2	50	33	25.9	36.5	62	35	
23	BUCKBOARD MESA NVD	1	47	31	24.0	34.4	54		
13	VEKOL AZD	0	0	0	.0	.0	0		

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

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AL SCORE (T)

	RANKING SCORES*					
U	R	S	T	U	V	W
44	34	61.5	79.5	521	271	1
44	34	57.4	75.4	413	220	2
44	34	47.1	64.7	275	230	3
60	43	42.1	61.3	332		4
44	41	38.2	58.1	208		5
47	34	39.8	57.8	172	140	6
49	40	30.6	50.4	94		7
47	41	30.0	49.9	92		8
49	40	30.2	49.6	126		9
51	40	29.4	49.2	32		10
10	40	29.9	48.9	168	132	11
0	36	32.4	46.9	201	188	12
3	34	29.1	46.3	70	29	13
6	38	26.1	45.3	106		14
1	40	25.1	44.5	10		15
3	33	33.5	44.1	89		16
4	41	24.7	43.8	100		17
6	33	27.6	43.3	191	135	18
8	33	26.1	43.2	87		19
4	44	22.2	43.2	21		20
2	45	22.1	42.8	7		21
5	34	25.1	42.7	117		22
0	32	25.9	42.5	113	0	23
7	42	24.1	42.3	58		24
7	40	21.0	41.6	56		25
1	40	25.7	41.5	124		26
3	42	21.4	41.4	42		27
3	39	21.7	40.6	30		28
3	41	20.2	38.3	47		29
	33	25.9	36.5	62	35	30
	31	24.0	34.4	54		31
	0	.0	.0	0		32

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WEIGHTING FACTORS)

ESS AREAS

DoD RANKING BASED ON COLUMN T
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
F-6

FUGRO NATIONAL, INC.

APPENDIX F - MATRIX ANALYSIS - DOD VALLE
EXCLUDING WILDLIFE RANGES

VALLEY NO.	NAME	RANKING FACTORS* A	B	C	D	E	F	G	H	I	J	K	L
1	CASTLE DOME AZD	2	1	8	4	5	2	5	10	9	9	6	9
2	GILA BEND PLAIN AZD	2	1	7	4	3	2	5	10	9	6	8	10
3	GROWLER/CHILDS AZD	4	5	6	4	3	2	5	10	8	7	6	9
4	INDIAN WASH AZD	1	1	8	5	10	5	5	10	8	1	4	7
5	KING AZD	2	1	6	4	6	5	5	10	7	7	6	6
6	LA POSA PLAIN AZD	1	1	6	4	3	3	5	10	10	6	10	10
7	LECHUGUILLA DESERT AZD	3	4	6	4	3	2	5	10	10	5	8	10
8	MOHAVE WASH AZD	1	1	6	4	10	4	5	10	9	1	2	9
9	MOHAWK/TULE AZD	5	4	6	4	3	2	4	10	9	7	6	9
10	PALOMAS PLAIN AZD	1	1	7	5	3	1	4	10	8	3	2	10
11	SAN CRISTOBAL AZD	4	3	6	4	3	2	5	10	8	7	6	9
12	SENTINEL PLAIN AZD	4	2	7	4	3	2	4	10	8	7	6	10
13	VEKOL AZD	0	0	0	0	0	0	0	0	0	0	0	0
14	YUMA DESERT AZD	2	1	6	4	6	2	3	10	9	7	8	10
23	BUCKBOARD MESA NVD	1	0	8	4	3	6	5	1	10	6	4	9
24	CACTUS FLAT NVD	4	2	9	4	2	5	6	5	8	6	2	7
25	EMIGRANT NVD	3	0	7	3	0	5	5	8	8	5	2	8
26	FRENCHMAN FLAT NVD	1	1	10	4	5	6	5	1	8	3	10	9
27	GOLD FLAT NVD	3	1	8	3	2	0	6	10	8	7	6	8
28	INDIAN SPRING NVD	2	1	9	3	0	1	6	10	7	5	10	6
29	KAWICH NVD	0	0	0	0	0	0	0	0	0	0	0	0
30	PAHUTE MESA NVD	1	1	8	4	2	1	5	10	9	1	10	9
31	STONEWALL FLAT NVD	1	1	8	3	2	5	5	10	8	3	2	8
32	THREE LAKES NVD	2	1	8	3	0	1	6	10	8	5	4	8
33	TIKAROO NVD	1	0	8	3	0	2	5	10	9	5	10	9
34	YUCCA FLAT NVD	4	0	10	6	10	10	6	1	8	6	10	7
62	HUECO BOLSON NMD	1	3	9	5	10	10	3	10	6	3	4	1
63	JORNADA DEL MUERTO N NMD	2	1	10	5	8	0	3	6	8	5	2	10
64	JORNADA DEL MUERTO S NMD	1	0	9	4	1	7	3	8	7	6	2	10
65	TULAROSA BASIN N NMD	1	1	10	6	10	6	10	8	7	8	2	8
66	TULAROSA BASIN S NMD	6	2	10	6	10	4	10	9	7	10	4	9
67	TULAROSA BASIN E NMD	2	1	9	6	10	3	2	10	7	2	6	8
	WEIGHTING FACTORS	2.7	2.2	.1	.1	.1	.1	.1	1.0	1.0	.5	.5	.5

*RANKING FACTORS

A = SUITABLE VALLEY AREA
B = SUITABLE CONTIGUOUS AREA
C = OWNERSHIP AND CONTROL (AMOUNT AND QUALITY)
D = GEOLOGY AND SOILS ENGINEERING (AMOUNT AND QUALITY)
E = DEPTH TO ROCK (AMOUNT AND QUALITY)
F = DEPTH TO WATER (AMOUNT AND QUALITY)
G = SURFACE HYDROLOGY (AMOUNT AND QUALITY)
H = OWNERSHIP AND CONTROL (FAVORABILITY)
I = GEOLOGY AND SOILS ENGINEERING (FAVORABILITY)
J = DEPTH TO ROCK (FAVORABILITY)
K = DEPTH TO WATER (FAVORABILITY)
L = SURFACE HYDROLOGY (FAVORABILITY)
M = POTENTIAL IMPACT (MILITARY)
N = POTENTIAL IMPACT (CIVILIAN)
O = DISTANCE TO SUPPORT FACILITIES (MILITARY AND CIVILIAN)

**RANKING

P = AREAL RANKING
Q = GEOTECHNICAL R
R = CULTURAL RANKI
S = AREAL + GEOTEC
T = FINAL SCORE (P

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F - MATRIX ANALYSIS - DOD VALLEYS
EXCLUDING WILDLIFE RANGES

RANKING FACTORS*											RANKING SCORES**				
E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
5	2	5	10	9	9	6	9	4	8	10	3	49	40	30.2	49.6
3	2	5	10	9	6	8	10	4	10	10	3	47	41	30.0	49.9
3	2	5	10	8	7	6	9	4	10	10	9	44	40	42.2	62.0
0	5	5	10	8	1	4	7	6	8	10	2	45	42	21.4	41.4
6	5	5	10	7	7	6	6	4	8	10	3	46	38	26.1	45.3
3	3	5	10	10	6	10	10	6	8	10	2	51	40	29.4	49.2
3	2	5	10	10	5	8	10	4	10	10	7	47	40	39.8	59.6
0	4	5	10	9	1	2	9	10	8	10	2	44	44	22.2	43.2
3	2	4	10	9	7	6	9	4	10	10	9	44	40	43.6	63.4
3	1	4	10	8	3	2	10	4	10	8	2	36	39	21.7	40.6
3	2	5	10	8	7	6	9	4	10	8	7	44	38	37.8	56.6
3	2	4	10	8	7	6	10	6	8	10	6	44	41	36.0	55.9
0	0	0	0	0	0	0	0	0	0	0	0	0	0	.0	.0
6	2	3	10	9	7	8	10	4	10	10	3	49	40	30.6	50.4
3	6	5	1	10	6	4	9	2	10	10	1	47	31	24.0	34.4
2	5	6	5	8	6	2	7	2	10	10	6	40	36	32.4	46.9
0	5	5	8	8	5	2	8	4	10	8	3	36	37	24.9	41.8
5	6	5	1	8	3	10	9	2	10	10	2	50	33	25.9	36.5
2	0	6	10	8	7	6	8	4	10	8	4	40	40	29.9	48.9
0	1	6	10	7	5	10	6	2	2	10	3	38	33	26.1	43.2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	.0	.0
2	1	5	10	9	1	10	9	2	10	10	2	41	40	25.1	44.5
2	5	6	10	8	3	2	8	6	10	10	2	37	44	21.0	41.6
0	1	6	10	8	5	4	8	4	2	10	3	35	34	25.1	42.7
0	2	5	10	9	5	10	9	6	10	8	1	43	42	24.7	44.3
0	10	6	1	8	6	10	7	2	10	10	4	63	33	33.5	44.1
0	10	3	10	6	3	4	1	8	8	10	4	42	45	22.1	42.8
8	0	3	6	8	5	2	10	8	8	8	3	41	40	25.7	41.5
1	7	3	8	7	6	2	10	6	8	10	1	40	41	20.2	38.3
0	6	10	8	7	8	2	8	6	8	10	2	57	42	24.1	42.3
0	4	10	9	7	10	4	9	6	8	10	8	60	43	42.1	61.3
0	3	2	10	7	2	6	8	6	8	8	3	44	41	24.7	43.8
WEIGHTING FACTORS															
1	.1	.1	1.0	1.0	.5	.5	.5	.3	.3	.5					

**RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = AREAL + GEOTECHNICAL SCORE (P+Q WITH WEIGHTING)
T = FINAL SCORE (P+Q+R WITH WEIGHTING)

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MATRIX ANALYSIS DoD VALLEYS (EXCLUDING WILDLIFE RANGES)	
MX SITING INVESTIGATION DEPARTMENT OF THE AIR FORCE - SAMSO	APPENDIX F-7
UGRO NATIONAL, INC.	

RANKING BASED ON AREAL FACTORS (P)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
3	GROWLER/CHILDS AZD	9	48	40	42.2	62.0	413	220
9	MOHAWK/TULE AZD	9	48	40	43.6	63.4	521	271
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332	
7	LECHUGUILLA DESERT AZD	7	47	40	39.8	59.6	172	140
11	SAN CRISTOBAL AZD	7	44	38	37.8	56.6	275	230
24	CACTUS FLAT NVD	6	40	36	32.4	46.9	201	188
12	SENTINEL PLAIN AZD	6	44	41	36.0	55.9	208	
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	132
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7	
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89	
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
25	EMIGRANT NVD	3	36	37	24.9	41.8	191	135
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87	
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
5	KING AZD	3	46	36	26.1	45.3	106	
32	THREE LAKES NVD	3	35	34	25.1	42.7	117	
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	
26	FRENCHMAN FLAT NVD	2	50	33	25.9	36.5	62	35
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42	
6	LA POSA PLAIN AZD	2	51	40	29.4	49.2	32	
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21	
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10	
10	PALOMAS PLAIN AZD	2	36	39	21.7	40.6	30	
31	STONEWALL FLAT NVD	2	37	44	21.0	41.6	56	
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58	
23	BUCKBOARD MESA NVD	1	47	31	24.0	34.4	54	
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47	
33	TIKABOO NVD	1	43	42	24.7	44.3	70	29
29	KAWICH NVD	0	0	0	.0	.0	113	0
13	VEKOL AZD	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
* = NUMERICAL RANK

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FACTORS (P)

PANKING SCORES* R	S	T	U	V	W
40	42.2	62.0	413	220	1
40	43.6	63.4	521	271	2
43	42.1	61.3	332		3
40	39.8	59.6	172	140	4
38	37.8	56.6	275	230	5
36	32.4	46.9	201	188	6
41	36.0	55.9	208		7
40	29.9	48.9	168	132	8
45	22.1	42.8	7		9
33	33.5	44.1	89		10
40	30.2	49.6	126		11
37	24.9	41.8	191	135	12
41	30.0	49.9	92		13
33	26.1	43.2	87		14
40	25.7	41.5	124		15
36	26.1	45.3	106		16
34	25.1	42.7	117		17
41	24.7	43.8	100		18
40	30.6	50.4	94		19
33	25.9	36.5	62	35	20
42	21.4	41.4	42		21
40	29.4	49.2	32		22
44	22.2	43.2	21		23
40	25.1	44.5	10		24
39	21.7	40.6	30		25
44	21.0	41.6	56		26
42	24.1	42.3	58		27
31	24.0	34.4	54		28
41	20.2	38.3	47		29
42	24.7	44.3	70	29	30
0	.0	.0	113	0	31
0	.0	.0	0		32

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EIGHTING FACTORS)

S AREAS

DoD RANKING BASED ON COLUMN P
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
F-8

FUGRO NATIONAL, INC.

RANKING BASED ON GEOTECHNICAL FACTORS (Q)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58
6	LA POSA PLAIN AZD	2	51	40	29.4	49.2	32
26	FRENCHMAN FLAT NVD	2	50	33	25.9	36.5	62
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94
23	BUCKBOARD MESA NVD	1	47	31	24.0	34.4	54
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92
7	LECHUGUILLA DESERT AZD	7	47	40	39.8	59.6	172
5	KING AZD	3	46	38	26.1	45.3	106
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42
3	GROWLER/CHILDS AZD	9	44	40	42.2	62.0	413
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21
9	MOHAWK/TULE AZD	9	44	40	43.6	63.4	521
11	SAN CRISTOBAL AZD	7	44	38	37.8	56.6	275
12	SENTINEL PLAIN AZD	6	44	41	36.0	55.9	208
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100
33	TIKABOO NVD	1	43	42	24.7	44.3	70
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124
30	RAHUTE MESA NVD	2	41	40	25.1	44.5	10
24	CACTUS FLAT NVD	6	40	36	32.4	46.9	201
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87
31	STONEWALL FLAT NVD	2	37	44	21.0	41.6	56
25	EMIGRANT NVD	3	36	37	24.9	41.8	191
10	PALOMAS PLAIN AZD	2	36	39	21.7	40.6	30
32	THREE LAKES NVD	1	35	34	25.1	42.7	117
20	KAWICH NVD	0	0	0	.0	.0	113
13	VEKOL AZD	0	0	0	.0	.0	0

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

TECHNICAL FACTORS (Q)

Q	RANKING SCORES* R	S	T	U	V	W
63	33	33.5	44.1	89		1
60	43	42.1	61.3	332		2
57	42	24.1	42.3	58		3
51	40	29.4	49.2	32		4
50	33	25.9	36.5	62	35	5
49	40	30.2	49.6	126		6
49	40	30.6	50.4	94		7
47	31	24.0	34.4	54		8
47	41	30.0	49.9	92		9
47	40	39.8	59.6	172	140	10
46	38	26.1	45.3	106		11
45	42	21.4	41.4	42		12
44	40	42.2	62.0	413	220	13
44	44	22.2	43.2	21		14
44	40	43.6	63.4	521	271	15
44	38	37.8	56.6	275	230	16
44	41	36.0	55.9	208		17
44	41	24.7	43.8	100		18
43	42	24.7	44.3	70	29	19
42	45	22.1	42.8	7		20
41	40	25.7	41.5	124		21
41	40	25.1	44.5	10		22
40	36	32.4	46.9	201	188	23
40	40	29.9	48.9	168	132	24
40	41	20.2	38.3	47		25
38	33	26.1	43.2	87		26
37	44	21.0	41.6	56		27
36	37	24.9	41.8	191	135	28
36	39	21.7	40.6	30		29
35	34	25.1	42.7	117		30
0	0	.0	.0	113	0	31
0	0	.0	.0	0		32

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TH WEIGHTING FACTORS)

RNESS AREAS

DoD RANKING BASED ON COLUMN Q
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
F-9

FUGRO NATIONAL, INC.

RANKING BASED ON CULTURAL FACTORS (R)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7	
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21	
31	STONEWALL FLAT NVD	2	37	44	21.0	41.6	56	
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332	
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42	
33	TIKABOO NVD	1	43	42	24.7	44.3	70	29
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58	
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47	
12	SENTINEL PLAIN AZD	6	44	41	36.0	55.9	208	
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	132
3	GROWLER/CHILDS AZD	9	44	40	42.2	62.	413	220
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
6	LA POSA PLAIN AZD	2	51	40	29.4	49.2	32	
7	LECHUGUILLA DESERT AZD	7	47	40	39.8	59.6	172	140
9	MOHAWK/TULE AZD	9	44	40	43.6	63.4	521	271
30	PAHUTE MESA NVD	2	C	40	25.1	44.5	10	
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	
10	PALOMAS PLAIN AZD	2	36	39	21.7	40.6	30	
5	KING AZD	3	46	38	26.1	45.3	106	
11	SAN CRISTOBAL AZD	7	44	38	37.8	56.6	275	230
25	EMIGRANT NVD	3	36	37	24.9	41.8	191	135
24	CACTUS FLAT NVD	6	40	36	32.4	46.9	201	188
32	THREE LAKES NVD	3	35	34	25.1	42.7	117	
26	FRENCHMAN FLAT NVD	2	50	33	25.9	36.5	62	35
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87	
34	YUCCA FLAT NVD	4	43	33	33.5	44.1	89	
23	BUCKBOARD MESA NVD	1	47	31	24.0	34.4	54	
29	KAWICH NVD	0	0	0	.0	.0	113	0
13	VEKOL AZD	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

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L TURAL FACTORS (R)

C	RANKING SCORES* R	S	T	U	V	W
42	45	22.1	42.8	7		1
44	44	22.2	43.2	21		2
37	44	21.0	41.6	56		3
60	43	42.1	61.3	332		4
45	42	21.4	41.4	42		5
43	42	24.7	44.3	70	29	6
57	42	24.1	42.3	56		7
47	41	30.0	49.9	92		8
40	41	20.2	38.3	47		9
44	41	36.0	55.9	208		10
44	41	24.7	43.8	100		11
49	40	30.2	49.6	126		12
40	40	29.9	48.9	168	132	13
44	40	42.2	62.0	413	220	14
41	40	25.7	41.5	124		15
51	40	29.4	49.2	32		16
47	40	39.8	59.6	172	140	17
44	40	43.6	63.4	521	271	18
41	40	25.1	44.5	10		19
49	40	30.6	50.4	94		20
36	39	21.7	40.6	30		21
46	38	26.1	45.3	106		22
44	38	37.8	56.6	275	230	23
36	37	24.9	41.8	191	135	24
40	36	32.4	46.9	201	188	25
35	34	25.1	42.7	117		26
30	33	25.9	36.5	62	35	27
38	33	26.1	43.2	87		28
33	33	33.5	44.1	89		29
37	31	24.0	34.4	54		30
0	0	.0	.0	113	0	31
0	0	.0	.0	0		32

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WEIGHTING FACTORS)

ESS AREAS

DoD RANKING BASED ON COLUMN R
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
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FUGRO NATIONAL, INC.

RANKING BASED ON AREAL AND GEOTECHNICAL FACTORS (S

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	
9	MOHAWK/TULE AZD	9	44	40	43.6	63.4	521	27
3	GROWLER/CHILDS AZD	9	44	40	42.2	62.0	413	22
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	332	
7	LECHUGUILLA DESERT AZD	7	47	40	39.8	59.6	172	14
11	SAN CRISTOBAL AZD	7	44	38	37.8	56.6	275	23
12	SENTINEL PLAIN AZD	6	44	41	36.0	55.9	208	
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89	
24	CACTUS FLAT NVD	6	40	36	32.4	46.9	201	18
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	13
6	LA POSA PLAIN AZD	2	51	40	29.4	49.2	32	
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87	
5	KING AZD	3	46	38	26.1	45.3	106	
26	FRENCHMAN FLAT NVD	2	50	33	25.9	36.5	62	3
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10	
32	THREE LAKES NVD	3	35	34	25.1	42.7	117	
25	EMIGRANT NVD	3	36	37	24.9	41.8	191	13
33	TIKABOO NVD	1	43	42	24.7	44.3	70	2
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58	
23	BUCKBOARD MESA NVD	1	47	31	24.0	34.4	54	
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21	
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7	
10	PALOMAS PLAIN AZD	2	36	39	21.7	40.6	30	
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42	
31	STONEWALL FLAT NVD	2	37	44	21.0	41.6	56	
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47	
29	KAWICH NVD	0	0	0	.0	.0	113	
13	VEKOL AZD	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

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AND GEOTECHNICAL FACTORS (S)

RANKING SCORES* R	S	T	U	V	W
40	43.6	63.4	521	271	1
40	42.2	62.0	413	220	2
43	42.1	61.3	332		3
40	39.8	59.6	172	140	4
38	37.8	56.6	275	230	5
41	36.0	55.9	208		6
33	33.5	44.1	89		7
36	32.4	46.9	201	188	8
40	30.6	50.4	94		9
40	30.2	49.6	126		10
41	30.0	49.9	92		11
40	29.9	48.9	168	132	12
40	29.4	49.2	32		13
33	26.1	43.2	87		14
38	26.1	45.3	106		15
33	25.9	36.5	62	35	16
40	25.7	41.5	124		17
40	25.1	44.5	10		18
34	25.1	42.7	117		19
37	24.9	41.8	191	135	20
42	24.7	44.3	70	29	21
41	24.7	43.8	100		22
42	24.1	42.3	58		23
31	24.0	34.4	54		24
44	22.2	43.2	21		25
45	22.1	42.8	7		26
39	21.7	40.6	30		27
42	21.4	41.4	42		28
44	21.0	41.6	56		29
41	20.2	38.3	47		30
0	.0	.0	113	0	31
0	.0	.0	0		32

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EIGHTING FACTORS)

S AREAS

DoD RANKING BASED ON COLUMN S
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
F-11

UGRO NATIONAL, INC.

RANKING BASED ON FINAL SCORE (T)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
9	MOHAVE/TULE AZD	9	44	40	43.6	63.4	521	271
3	GROWLER/CHILDS AZD	9	44	40	42.2	62.0	413	220
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3	342	
7	LECHUGUILLA DESERT AZD	7	47	40	39.8	59.6	172	140
11	SAN CRISTOBAL AZD	7	44	38	37.8	56.6	275	230
12	SENTINEL PLAIN AZD	6	44	41	36.0	55.9	208	
14	YUMA DESERT AZD	3	49	40	30.6	50.4	94	
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9	92	
1	CASTLE DOME AZD	3	49	40	30.2	49.6	126	
6	LA POSA PLAIN AZD	2	51	40	29.4	49.2	32	
27	GOLD FLAT NVD	4	40	40	29.9	48.9	168	132
24	CACTUS FLAT NVD	6	40	36	32.4	46.9	201	188
5	KING AZD	3	46	38	26.1	45.3	106	
30	PAHUTE MESA NVD	2	41	40	25.1	44.5	10	
33	TIKABOO NVD	1	43	42	24.7	44.3	70	29
34	YUCCA FLAT NVD	4	63	33	33.5	44.1	89	
67	TULAROSA BASIN E NMD	3	44	41	24.7	43.8	100	
28	INDIAN SPRING NVD	3	38	33	26.1	43.2	87	
8	MOHAVE WASH AZD	2	44	44	22.2	43.2	21	
62	HUECO BOLSON NMD	4	42	45	22.1	42.8	7	
32	THREE LAKES NVD	3	35	34	25.1	42.7	117	
65	TULAROSA BASIN N NMD	2	57	42	24.1	42.3	58	
25	EMIGRANT NVD	3	36	37	24.9	41.8	191	135
31	STONEWALL FLAT NVD	2	57	44	21.0	41.6	56	
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	41.5	124	
4	INDIAN WASH AZD	2	45	42	21.4	41.4	42	
10	PALOMAS PLAIN AZD	2	36	39	21.7	40.6	30	
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	38.3	47	
26	FRENCHMAN FLAT NVD	2	50	33	25.9	36.5	62	35
23	BUCKBOARD MESA NVD	1	47	31	24.0	34.4	54	
29	KAWICH NVD	0	0	0	.0	.0	113	0
13	VEKOL AZD	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

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SCORE (T)

RANKING SCORES* R	S	T	U	V	W
40	43.6	63.4	521	271	1
40	42.2	62.0	413	220	2
43	42.1	61.3	352		3
40	39.8	59.6	172	140	4
38	37.8	56.6	275	230	5
41	36.0	55.9	208		6
40	30.6	50.4	94		7
41	30.0	49.9	92		8
40	30.2	49.6	126		9
40	29.4	49.2	32		10
40	29.9	48.9	168	132	11
36	32.4	46.9	201	188	12
38	26.1	45.3	106		13
40	25.1	44.5	10		14
42	24.7	44.3	70	29	15
33	33.5	44.1	89		16
41	24.7	43.8	100		17
33	26.1	43.2	87		18
44	22.2	43.2	21		19
45	22.1	42.8	7		20
34	25.1	42.7	117		21
42	24.1	42.3	58		22
37	24.9	41.8	191	135	23
44	21.0	41.6	56		24
40	25.7	41.5	124		25
42	21.4	41.4	42		26
39	21.7	40.6	30		27
41	20.2	38.3	47		28
33	25.9	36.5	62	35	29
31	24.0	34.4	54		30
0	.0	.0	113	0	31
0	.0	.0	0		32

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EIGHTING FACTORS)

AREAS

DoD RANKING BASED ON COLUMN T
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
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FUGRO NATIONAL, INC.

APPENDIX G

MATRIX ANALYSIS AND RANKING TABLES

FOR BLM LANDS

APPENDIX G - MATRIX ANALYSIS - BLM VALLEYS
INCLUDING WILDLIFE RANGES

VALLEY NO.	NAME	RANKING FACTORS* A	B	C	D	E	F	G	H	I	J	K	L	M
15	BUTLER AZR	4	5	9	5	3	5	4	8	7	9	2	10	10
16	CACTUS PLAIN AZR	3	6	10	5	3	1	3	8	4	7	6	9	10
17	HARQUAHALA PLAIN AZR	7	6	10	5	3	5	3	5	7	8	2	8	10
18	LA POSA PLAIN AZR	5	3	9	5	3	0	4	9	6	9	2	9	10
19	MC MULLEN AZR	4	6	10	5	2	5	4	5	9	8	2	9	10
20	MOHAVE WASH AZR	0	0	0	0	0	0	0	0	0	0	0	0	0
21	PALOMAS/HYDER AZR	6	5	10	5	3	1	4	7	8	9	2	9	10
22	RANEGRAS PLAIN AZR	7	10	10	5	3	1	4	6	7	9	2	8	10
35	AMARGOSA DESERT NVB	3	1	10	5	3	2	3	8	9	6	8	9	10
36	ANTELOPE NVB	1	2	8	5	3	4	3	9	8	9	4	10	10
37	BIG SMOKY NVB	5	3	10	5	3	5	5	8	8	8	2	10	10
38	CAVE NVB	1	3	8	4	2	2	2	9	6	7	8	5	10
39	CLAYTON-ALKALI SPRING NVB	2	4	10	5	3	3	5	9	9	7	4	10	10
40	COYOTE SPR/KANE SPR NVB	4	1	10	5	2	2	3	5	9	8	4	10	10
41	DELAMAR/DAHROC NVB	3	2	10	4	3	2	3	10	9	7	6	9	10
42	DRY LAKE/MULESHOE NVB	6	3	10	5	3	2	4	10	8	6	10	8	10
43	GARDEN/COAL NVB	6	2	8	5	3	4	4	10	8	8	10	7	10
44	HOT CREEK NVB	3	5	10	5	3	4	5	9	8	9	8	10	6
45	INDIAN SPRING NVB	1	1	10	4	2	1	4	10	9	9	10	9	10
46	LAKES NVB	2	1	10	5	3	2	3	10	6	8	10	5	10
47	LITTLE FISH LAKE NVB	1	0	10	5	2	4	5	7	8	8	2	10	6
48	LITTLE SMOKY NVB	6	3	8	5	3	4	4	10	8	8	4	10	6
49	MONITOR NVB	1	4	8	5	2	3	4	8	8	9	2	9	10
50	NEWARK NVB	1	4	8	4	3	3	3	9	7	9	4	8	10
51	PAHRANAGAT NVB	1	4	8	5	3	3	5	9	9	6	8	10	10
52	PENOYER NVB	3	6	8	5	3	5	4	9	10	9	4	10	10
53	RAILROAD NVB	5	6	8	5	3	4	5	8	9	9	4	10	8
54	RAILROAD/REVETILLE NVB	5	4	8	4	3	3	4	10	8	8	8	10	8
55	RALSTON NVB	5	4	10	4	3	4	3	10	8	9	10	9	10
56	SARCOBATUS FLAT NVB	1	2	10	4	2	3	4	7	8	9	2	10	10
57	STONE CABIN NVB	3	3	10	5	3	3	3	10	9	9	8	9	8
58	STONEWALL FLAT NVB	2	1	8	5	2	2	4	10	8	6	2	8	10
59	THREE LAKES NVB	1	0	8	5	2	5	2	1	10	10	4	10	10
60	TIKABOO NVB	4	0	8	5	2	3	3	5	9	9	10	9	10
61	WHITE RIVER NVB	4	6	10	5	3	4	5	7	8	9	2	9	10
68	JORNADA DEL MUERTO NMB	2	0	10	4	2	1	2	5	7	7	2	8	8
	WEIGHTING FACTORS	2.7	2.2	.1	.1	.1	.1	.1	1.0	1.0	.5	.5	.5	.3

*RANKING FACTORS

A = SUITABLE VALLEY AREA
B = SUITABLE CONTIGUOUS AREA
C = OWNERSHIP AND CONTROL (AMOUNT AND QUALITY)
D = GEOLOGY AND SOILS ENGINEERING (AMOUNT AND QUALITY)
E = DEPTH TO ROCK (AMOUNT AND QUALITY)
F = DEPTH TO WATER (AMOUNT AND QUALITY)
G = SURFACE HYDROLOGY (AMOUNT AND QUALITY)
H = OWNERSHIP AND CONTROL (FAVORABILITY)
I = GEOLOGY AND SOILS ENGINEERING (FAVORABILITY)
J = DEPTH TO ROCK (FAVORABILITY)
K = DEPTH TO WATER (FAVORABILITY)
L = SURFACE HYDROLOGY (FAVORABILITY)
M = POTENTIAL IMPACT (MILITARY)
N = POTENTIAL IMPACT (CIVILIAN)
O = DISTANCE TO SUPPORT FACILITIES (MILITARY AND CIVILIAN)

**RANKING SC

P = AREAL RANKING SC
Q = GEOTECHNICAL RAN
R = CULTURAL RANKING
S = AREAL + GEOTECHN
T = FINAL SCORE (P+Q

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G - MATRIX ANALYSIS - BLM VALLEYS
INCLUDING WILDLIFE RANGES

RANKING FACTORS*											RANKING SCORES**				
E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
3	5	4	8	7	9	2	10	10	8	8	9	45	43	41.0	59.3
3	1	3	8	4	7	6	9	10	8	10	9	38	46	37.5	56.9
3	5	3	5	7	8	2	8	10	8	8	13	41	41	49.7	65.1
3	0	4	9	6	9	2	9	10	6	10	8	38	44	37.3	57.0
2	5	4	5	9	8	2	9	10	8	8	10	44	41	44.1	59.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	.0	.0
3	1	4	7	8	9	2	9	10	8	8	11	41	43	46.5	63.9
3	1	4	6	7	9	2	8	10	6	8	17	39	40	58.7	74.5
3	2	3	8	9	6	8	9	10	8	10	4	45	46	32.1	51.5
3	4	3	9	8	9	4	10	10	8	6	3	46	41	28.1	46.3
3	5	5	8	8	8	2	10	10	8	8	8	46	44	39.9	58.3
2	2	2	0	6	7	8	5	10	8	10	4	36	45	26.3	46.5
3	3	5	9	9	7	4	10	10	8	8	6	46	45	35.3	54.7
2	2	3	5	9	8	4	10	10	6	6	5	43	37	34.2	48.0
3	2	3	10	9	7	6	9	10	8	5	5	43	43	33.7	52.6
3	2	4	10	8	6	10	8	10	8	4	9	46	42	44.2	62.6
3	4	4	10	8	8	10	7	10	8	6	8	49	42	42.7	61.9
3	4	5	9	8	9	8	10	6	8	10	8	52	43	42.3	61.5
2	1	4	10	9	9	10	9	10	8	10	2	48	48	29.0	50.4
3	2	3	10	6	8	10	5	10	8	8	3	42	46	26.4	46.8
2	4	5	7	8	8	2	10	6	8	8	1	44	39	22.3	38.5
3	4	4	10	8	8	4	10	6	8	8	9	46	40	43.4	62.4
2	3	4	8	8	9	2	9	10	8	10	5	42	44	30.9	50.1
3	3	3	9	7	9	4	8	10	8	6	5	41	41	30.3	48.5
3	3	5	9	9	6	8	10	10	6	6	5	49	39	34.1	51.7
3	5	4	9	10	9	4	10	10	8	6	9	50	41	44.5	62.7
3	4	5	8	9	9	4	10	8	6	6	11	49	36	48.9	64.9
3	3	4	10	8	8	8	10	8	8	10	9	48	44	44.7	65.3
3	4	3	10	8	9	10	9	10	8	10	9	50	48	45.7	67.1
2	3	4	7	8	9	2	10	10	8	8	3	42	43	26.9	44.3
3	3	3	10	9	9	8	9	8	8	10	6	49	46	38.1	58.9
2	2	4	10	8	6	2	8	10	8	10	3	37	46	24.9	46.1
2	5	2	1	10	10	4	10	10	6	10	1	48	35	26.1	37.7
2	3	3	5	9	9	10	9	10	6	8	4	50	37	35.1	49.7
3	4	5	7	8	9	2	9	10	6	8	10	45	41	43.7	60.5
2	1	2	5	7	7	2	8	8	8	10	2	33	41	21.8	37.6
WEIGHTING FACTORS															
.1	.1	.1	1.0	1.0	.5	.5	.5	.3	.3	.5					

**RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = AREAL + GEOTECHNICAL SCORE (P+Q WITH WEIGHTING)
T = FINAL SCORE (P+Q+R WITH WEIGHTING)

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MATRIX ANALYSIS BLM VALLEYS (INCLUDING WILDLIFE RANGES)	
MX SITING INVESTIGATION DEPARTMENT OF THE AIR FORCE - SAMSO	APPENDIX G-1
UGRO NATIONAL, INC.	

RANKING BASED ON AREAL FACTORS (P)

VALLEY NO.	VALLEY NAME	P	Q	R	S	T	U	V
22	RANEGRAS PLAIN AZB	17	39	40	58.7	79.5	356	
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352	
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295	
53	RAILROAD NVB	11	49	36	48.9	64.9	243	
19	MC MULLEN AZB	10	44	41	44.1	59.5	201	
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203	
15	BUTLER AZB	9	45	43	41.0	59.3	230	
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131	
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289	
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310	
52	PENOYER NVB	9	50	41	44.5	62.7	157	
54	RAILROAD/REVEILLE NVB	9	48	44	44.7	65.3	247	
55	RALSTON NVB	9	50	48	45.7	67.1	238	
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246	
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326	
44	HOT CREEK NVB	8	52	43	42.3	61.5	138	
18	LA POSA PLAIN AZB	8	38	44	37.3	57.0	236	
39	CLAYTON-ALKALI SPRING NVB	6	46	45	35.3	54.7	89	
57	STONE CABIN NVB	6	49	46	38.1	58.9	171	
40	COYOTE SPR/KANE SPR NVB	5	43	37	34.2	48.0	276	209
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176	
49	MONITOR NVB	5	42	44	30.9	50.1	50	
50	NEWARK NVB	5	41	41	30.3	48.5	50	
51	PAHRANAGAT NVB	5	49	39	34.1	51.7	73	
35	AMARGOSA DESERT NVB	4	45	46	32.1	51.5	137	
38	CAVE NVB	4	36	45	26.3	46.5	75	
60	TIKABOO NVB	4	50	37	35.1	49.7	229	144
36	ANTELOPE NVB	3	46	41	28.1	46.3	55	
46	JAKES NVB	3	42	46	26.4	46.8	106	
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70	
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105	
45	INDIAN SPRING NVB	2	48	48	29.0	50.4	52	11
68	JORNADA DEL MUERTO NMB	2	33	41	21.8	37.6	112	
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24	
59	THREE LAKES NVB	1	43	35	26.1	37.7	19	
20	MOHAVE WASH AZB	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

CTORS (P)

RANKING SCORES*					
R	S	T	U	V	W
40	58.7	74.5	356		1
41	49.7	65.1	352		2
43	46.5	63.9	295		3
36	48.9	64.9	243		4
41	44.1	59.5	201		5
41	43.7	60.5	203		6
43	41.0	59.3	230		7
46	37.5	56.9	131		8
42	44.2	62.6	289		9
40	43.4	62.4	310		10
41	44.5	62.7	157		11
44	44.7	65.3	247		12
48	45.7	67.1	238		13
44	39.9	58.3	246		14
42	42.7	61.9	326		15
43	42.3	61.5	138		16
44	37.3	57.0	236		17
45	35.3	54.7	89		18
46	38.1	58.9	171		19
37	34.2	48.0	276	209	20
43	33.7	52.6	176		21
44	30.9	50.1	50		22
41	30.3	48.5	50		23
39	34.1	51.7	73		24
46	32.1	51.5	137		25
45	26.3	46.5	75		26
37	35.1	49.7	229	144	27
41	28.1	46.3	55		28
46	26.4	46.8	106		29
43	26.9	44.3	70		30
46	24.9	46.1	105		31
48	29.0	50.4	52	11	32
41	21.8	37.6	112		33
39	22.3	38.5	24		34
35	26.1	37.7	19		35
0	.0	.0	0		36

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GHTING FACTORS)

AREAS

BLM RANKING BASED ON COLUMN P
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
G-2

UGRO NATIONAL, INC.

RANKING BASED ON GEOTECHNICAL FACTORS (Q)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
44	HOT CREEK NVB	8	52	43	42.3	61.5	138	
52	PENOYER NVB	9	50	41	44.5	62.7	157	
55	RALSTON NVB	9	50	48	45.7	67.1	238	
60	TIKAROO NVB	4	50	37	35.1	49.7	229	14
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326	
51	PAHRANAGAT NVB	5	49	39	34.1	51.7	73	
53	RAILROAD NVB	11	49	36	48.9	64.9	243	
57	STONE CABIN NVB	6	49	46	38.1	58.9	171	
45	INDIAN SPRING NVB	2	48	48	29.0	50.4	52	1
54	RAILROAD/REVEILLE NVB	9	48	44	44.7	65.3	247	
59	THREE LAKES NVB	1	48	35	26.1	37.7	19	
36	ANTELOPE NVB	3	46	41	28.1	46.3	55	
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246	
39	CLAYTON-ALKALI SPRING NVB	6	46	45	35.3	54.7	89	
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289	
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310	
35	AMARGOSA DESERT NVB	4	45	46	32.1	51.5	137	
15	BUTLER AZB	9	45	43	41.0	59.3	230	
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203	
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24	
19	MC MULLEN AZB	10	44	41	44.1	59.5	201	
40	COYOTE SPR/KANE SPR NVB	5	43	37	34.2	48.0	276	20
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176	
46	JAKES NVB	3	42	46	26.4	46.8	106	
49	MONITOR NVB	5	42	44	30.9	50.1	50	
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70	
17	PARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352	
50	NEWARK NVB	5	41	41	30.3	48.5	50	
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295	
22	PANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356	
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131	
18	LA POSA PLAIN AZB	8	38	44	37.3	57.0	236	
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105	
38	CAVE NVB	4	36	45	26.3	46.5	75	
28	JORNADA DEL MUERTO NMB	2	33	41	21.8	37.6	112	
20	MOHAVE WASH AZB	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
# = NUMERICAL RANK

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ASED ON GEOTECHNICAL FACTORS (Q)

P	Q	RANKING SCORES* R	S	T	U	V	W
8	52	43	42.3	61.5	138		1
9	50	41	44.5	62.7	157		2
9	50	48	45.7	67.1	238		3
4	50	37	35.1	49.7	229	144	4
8	49	42	42.7	61.9	326		5
5	49	39	34.1	51.7	73		6
11	49	36	48.9	64.9	243		7
6	49	46	38.1	58.9	171		8
2	48	48	29.0	50.4	52	11	9
9	48	44	44.7	65.3	247		10
1	48	35	26.1	37.7	19		11
3	46	41	28.1	46.3	55		12
8	46	44	39.9	58.3	246		13
6	46	45	35.3	54.7	89		14
9	46	42	44.2	62.6	289		15
9	46	40	43.4	62.4	310		16
4	45	46	32.1	51.5	137		17
9	45	43	41.0	59.3	230		18
10	45	41	43.7	60.5	203		19
1	44	39	22.3	38.5	24		20
10	44	41	44.1	59.5	201		21
5	43	37	34.2	48.0	276	209	22
5	43	43	33.7	52.6	176		23
4	42	46	26.4	46.8	106		24
5	42	44	30.9	50.1	50		25
3	42	43	26.9	44.3	70		26
13	41	41	49.7	65.1	352		27
5	41	41	30.3	48.5	50		28
11	41	43	46.5	63.9	295		29
17	39	40	58.7	74.5	356		30
9	38	46	37.5	56.9	131		31
8	38	44	37.3	57.0	236		32
3	37	46	24.9	46.1	105		33
4	36	45	26.3	46.5	75		34
2	33	41	21.8	37.6	112		35
0	0	0	.0	.0	0		36

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+I+J+K+L)

RE (P+Q WITH WEIGHTING FACTORS)
S)

E OR WILDERNESS AREAS

BLM RANKING BASED ON COLUMN Q
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
G-3

FUGRO NATIONAL, INC.

RANKING BASED ON CULTURAL FACTORS (R)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
45	TIOTAN SPRING NVB	2	48	48	29.0	50.4	52	11
55	RALSTON NVB	9	50	48	45.7	67.1	238	
35	AMARGOSA DESERT NVB	4	45	46	32.1	51.5	137	
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131	
46	JAKES NVB	3	42	46	26.4	46.8	106	
57	STONE CABIN NVB	6	49	46	38.1	58.9	171	
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105	
38	CAVE NVB	4	36	45	26.3	46.5	75	
39	CLAYTON-ALKALI SPRING NVB	6	46	45	35.3	54.7	89	
37	BIG SMOKY NVB	8	46	44	39.9	58.5	246	
18	LA POSA PLAIN AZB	8	38	44	37.3	57.0	236	
49	MONITOR NVB	5	42	44	30.9	50.1	50	
54	RAILROAD/REVEILLE NVB	9	48	44	44.7	65.3	247	
15	BUTLER AZB	9	45	43	41.0	59.3	230	
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176	
44	HOT CREEK NVB	8	52	43	42.3	61.5	138	
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295	
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70	
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289	
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326	
36	ANTELOPE NVB	3	46	41	28.1	46.3	55	
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352	
68	JORNADA DEL MUERTO NMB	2	33	41	21.8	37.6	112	
19	MC MULLEN AZB	10	44	41	44.1	59.5	201	
50	NEWARK NVB	5	41	41	30.3	48.5	50	
52	PENOYER NVB	9	50	41	44.5	62.7	157	
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203	
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310	
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356	
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24	
51	PAHRANAGAT NVB	5	49	39	34.1	51.7	73	
40	COYOTE SPR/KANE SPR NVB	5	43	37	34.2	48.0	276	209
60	TIKABOO NVB	4	50	37	35.1	49.7	229	144
53	RAILROAD NVB	11	49	36	48.9	64.9	243	
59	THREE LAKES NVB	1	48	35	26.1	37.7	19	
20	MOHAVE WASH AZB	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
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T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

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FACTORS (R)

RANKING SCORES* R	S	T	U	V	W
48	29.0	50.4	52	11	1
48	45.7	67.1	238		2
46	32.1	51.5	137		3
46	37.5	56.9	131		4
46	26.4	46.8	106		5
46	38.1	58.9	171		6
46	24.9	46.1	105		7
45	26.3	46.5	75		8
45	35.3	54.7	89		9
44	39.9	58.3	246		10
44	37.3	57.0	236		11
44	30.9	50.1	50		12
44	44.7	65.3	247		13
43	41.0	59.3	230		14
43	33.7	52.6	176		15
43	42.3	61.5	138		16
43	46.5	63.9	295		17
43	26.9	44.3	70		18
42	44.2	62.6	289		19
42	42.7	61.9	326		20
41	28.1	46.3	55		21
41	49.7	65.1	352		22
41	21.8	37.6	112		23
41	44.1	59.5	201		24
41	30.3	48.5	50		25
41	44.5	62.7	157		26
41	43.7	60.5	203		27
40	43.4	62.4	310		28
40	58.7	74.5	356		29
39	22.3	38.5	24		30
39	34.1	51.7	73		31
37	34.2	48.0	276	209	32
37	35.1	49.7	229	144	33
36	48.9	64.9	243		34
35	26.1	37.7	19		35
0	.0	.0	0		36

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GHTING FACTORS)

AREAS

BLM RANKING BASED ON COLUMN R
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
G-4

FUGRO NATIONAL, INC.

RANKING BASED ON AREAL AND GEOTECHNICAL FACTORS (S)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
22	RANEGRAS PLAIN AZR	17	39	40	58.7	74.5	356	
17	HARQUAHALA PLAIN AZR	13	41	41	49.7	65.1	352	
53	RATLROAD NVR	11	49	36	48.9	64.9	243	
21	PALOMAS/HYDER AZR	11	41	43	46.5	63.9	295	
55	RALSTON NVR	9	50	48	45.7	67.1	238	
54	RAILROAD/REVETILLE NVR	9	48	44	44.7	65.3	247	
52	PENOYER NVR	9	50	41	44.5	62.7	157	
42	DRY LAKE/HULESHOE NVR	9	46	42	44.2	62.6	289	
19	MC MULLEN AZR	10	44	41	44.1	59.5	201	
61	WHITE RIVER NVR	10	45	41	43.7	60.5	203	
48	LITTLE SMOKY NVR	9	46	40	43.4	62.4	310	
43	GARDEN/COAL NVR	8	49	42	42.7	61.9	326	
44	HOT CREEK NVR	8	52	43	42.3	61.5	138	
15	BUTLER AZR	9	45	43	41.0	59.3	230	
37	BIG SMOKY NVR	8	46	44	39.9	58.3	246	
57	STONE CABIN NVR	6	49	46	38.1	58.9	171	
16	CACTUS PLAIN AZR	9	38	46	37.5	56.9	131	
18	LA POSA PLAIN AZR	8	38	44	37.3	57.0	236	
39	CLAYTON-ALKALI SPRING NVR	6	46	45	35.3	54.7	89	
60	TIKABOO NVR	4	50	37	35.1	49.7	229	144
40	COYOTE SPR/KANE SPR NVR	5	43	37	34.2	48.0	276	209
51	PAHRANAGAT NVR	5	49	39	34.1	51.7	73	
41	DELAMAR/PAHROC NVR	5	43	43	33.7	52.6	176	
35	AMARGOSA DESERT NVR	4	45	46	32.1	51.5	137	
49	MONITOR NVR	5	42	44	30.9	50.1	50	
50	NEWARK NVR	5	41	41	30.3	48.5	50	
45	INDIAN SPRING NVR	2	48	48	29.0	50.4	52	1
36	ANTELOPE NVR	3	46	41	28.1	46.3	55	
56	SARCOBATUS FLAT NVR	3	42	43	26.9	44.3	70	
46	JAKES NVR	3	42	46	26.4	46.8	106	
38	CAVE NVR	4	36	45	26.3	46.5	75	
59	THREE LAKES NVR	1	48	35	26.1	37.7	19	
58	STONEWALL FLAT NVR	3	37	46	24.9	46.1	105	
47	LITTLE FISH LAKE NVR	1	44	39	22.3	38.5	24	
68	JORNADA DEL MUERTO NMR	2	33	41	21.8	37.6	112	
20	MOHAVE WASH AZR	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

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2

EOTECHNICAL FACTORS (S)

RANKING SCORES* S	T	U	V	W
58.7	74.5	356		1
49.7	65.1	352		2
48.9	64.9	243		3
46.5	63.9	295		4
45.7	67.1	238		5
44.7	65.3	247		6
44.5	62.7	157		7
44.2	62.6	289		8
44.1	59.5	201		9
43.7	60.5	203		10
43.4	62.4	310		11
42.7	61.9	326		12
42.3	61.5	138		13
41.0	59.3	230		14
39.9	58.3	246		15
38.1	58.9	171		16
37.5	56.9	131		17
37.3	57.0	236		18
35.3	54.7	89		19
35.1	49.7	229	144	20
34.2	48.0	276	209	21
34.1	51.7	73		22
33.7	52.6	176		23
32.1	51.5	137		24
30.9	50.1	50		25
30.3	48.5	50		26
29.0	50.4	52	11	27
28.1	46.3	55		28
26.9	44.3	70		29
26.4	46.8	106		30
26.3	46.5	75		31
26.1	37.7	19		32
24.9	46.1	105		33
22.3	38.5	24		34
21.8	37.6	112		35
.0	.0	0		36

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TING FACTORS)

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BLM RANKING BASED ON COLUMN S
(~~INCLUDING WILDLIFE RANGES~~)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
G-5

FUGRO NATIONAL, INC.

RANKING BASED ON FINAL SCORE (T)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	
22	PANAMINT PLAIN AZR	17	39	40	58.7	74.5	356	
55	RALSTON NVR	9	50	48	45.7	67.1	238	
54	RAILROAD/REVEILLE NVR	9	48	44	44.7	65.3	247	
17	PANAMINT PLAIN AZR	13	41	41	49.7	65.1	352	
53	RAILROAD NVR	11	49	36	48.9	64.9	243	
21	PALOMAS/HYDER AZR	11	41	43	46.5	63.9	295	
52	PENOYER NVR	9	50	41	44.5	62.7	157	
42	DRY LAKE/MULESHOE NVR	9	46	42	44.2	62.6	289	
48	LITTLE SMOKY NVR	9	46	40	43.4	62.4	310	
43	GARDEN/COAL NVR	8	49	42	42.7	61.9	326	
44	HOT CREEK NVR	8	52	43	42.3	61.5	136	
61	WHITE RIVER NVR	10	45	41	43.7	60.5	203	
19	MC MULLEN AZR	10	44	41	44.1	59.5	201	
15	BUTLER AZR	9	45	43	41.0	59.3	230	
57	STONE CABIN NVR	6	49	46	38.1	58.9	171	
37	BIG SMOKY NVR	8	46	44	39.9	58.3	246	
18	LA POSA PLAIN AZR	8	38	44	37.3	57.0	236	
16	CACTUS PLAIN AZR	9	38	46	37.5	56.9	131	
39	CLAYTON-ALKALI SPRING NVR	6	46	45	35.3	54.7	89	
41	DELAMAR/PAHROC NVR	5	43	43	33.7	52.6	176	
51	FAHRANAGAT NVR	5	49	39	34.1	51.7	73	
35	AMARGOSA DESERT NVR	4	45	46	32.1	51.5	137	
45	INDIAN SPRING NVR	2	48	48	29.0	50.4	52	
49	MONITOR NVR	5	42	44	30.9	50.1	50	
60	TIKABOO NVR	4	50	37	35.1	49.7	229	1
50	NEWARK NVR	5	41	41	30.3	48.5	50	
40	COYOTE SPR/KANE SPR NVR	5	43	37	34.2	48.0	276	2
46	LAKES NVR	3	42	46	26.4	46.8	106	
38	CAVE NVR	4	36	45	26.3	46.5	75	
36	ANTELOPE NVR	3	46	41	28.1	46.3	55	
58	STONEWALL FLAT NVR	3	37	46	24.9	46.1	105	
56	SARCOBATUS FLAT NVR	3	42	43	26.9	44.3	70	
47	LITTLE FISH LAKE NVR	1	44	39	22.3	38.5	24	
59	THREE LAKES NVR	1	48	35	26.1	37.7	19	
68	JORNADA DEL MUERTO NMR	2	33	41	21.8	37.6	112	
20	MOHAVE WASH AZR	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+M+N+O+U)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

FINAL SCORE (T)

RANKING SCORES*						
Q	R	S	T	U	V	W
39	40	58.7	74.5	356		1
50	48	45.7	67.1	238		2
48	44	44.7	65.3	247		3
41	41	49.7	65.1	352		4
49	36	48.9	64.9	243		5
41	43	46.5	63.9	295		6
50	41	44.5	62.7	157		7
46	42	44.2	62.6	289		8
46	40	43.4	62.4	310		9
49	42	42.7	61.9	326		10
52	43	42.3	61.5	136		11
45	41	43.7	60.5	203		12
44	41	44.1	59.5	201		13
45	43	41.0	59.3	230		14
49	46	38.1	58.9	171		15
46	44	39.9	58.3	246		16
38	44	37.3	57.0	236		17
38	46	37.5	56.9	131		18
46	45	35.3	54.7	89		19
43	43	33.7	52.6	176		20
49	39	34.1	51.7	73		21
45	46	32.1	51.5	137		22
48	48	29.0	50.4	52	11	23
42	44	30.9	50.1	50		24
50	37	35.1	49.7	229	144	25
41	41	30.3	48.5	50		26
43	37	34.2	48.0	276	209	27
42	36	26.4	46.8	106		28
36	45	26.3	46.5	75		29
46	41	28.1	46.3	55		30
37	46	24.9	46.1	105		31
42	43	26.9	44.3	70		32
44	39	22.3	38.5	24		33
48	35	26.1	37.7	19		34
33	41	21.8	37.6	112		35
0	0	.0	.0	0		36

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WITH WEIGHTING FACTORS)

DERNESS AREAS

BLM RANKING BASED ON COLUMN T
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
G-6

UBRO NATIONAL, INC.

APPENDIX G - MATRIX ANALYSIS - BLM VALLEYS
EXCLUDING WILDLIFE RANGES

VALLEY NO.	NAME	RANKING FACTORS* A	B	C	D	E	F	G	H	I	J	K	L	M
15	BUTLER AZB	4	5	9	5	3	5	4	8	7	9	2	10	10
16	CACTUS PLAIN AZB	3	6	10	5	3	1	3	8	4	7	6	9	10
17	HARQUAHALA PLAIN AZB	7	6	10	5	3	5	3	5	7	8	2	8	10
18	LA POSA PLAIN AZB	5	3	9	5	3	0	4	9	6	9	2	9	10
19	MC MULLEN AZB	4	6	10	5	2	5	4	5	9	8	2	9	10
20	MOHAVE WASH AZB	0	0	0	0	0	0	0	0	0	0	0	0	0
21	PALOMAS/HYDER AZB	6	5	10	5	3	1	4	7	8	9	2	9	10
22	RANEGRAS PLAIN AZB	7	10	10	5	3	1	4	6	7	9	2	8	10
35	AMARGOSA DESERT NVB	3	1	10	5	3	2	3	8	9	6	8	9	10
36	ANTELOPE NVB	1	2	8	5	3	4	3	9	8	9	4	10	10
37	BIG SMOKY NVB	5	3	10	5	3	5	5	8	8	8	2	10	10
38	CAVE NVB	1	3	8	4	2	2	2	9	6	7	8	5	10
39	CLAYTON-ALKALI SPRING NVB	2	4	10	5	3	3	5	9	9	7	4	10	10
40	COYOTE SPR/KANE SPR NVB	4	1	10	5	2	2	3	5	9	8	4	10	10
41	DELAMAR/PAHROC NVB	3	2	10	4	3	2	3	10	9	7	6	9	10
42	DRY LAKE/MULESHOE NVB	6	3	10	5	3	2	4	10	8	6	10	8	10
43	GARDEN/COAL NVB	6	2	8	5	3	4	4	10	8	8	10	7	10
44	HOT CREEK NVB	3	5	10	5	3	4	5	9	8	9	8	10	6
45	INDIAN SPRING NVB	1	1	10	4	2	1	4	10	9	9	10	9	10
46	JAKES NVB	2	1	10	5	3	2	3	10	6	8	10	5	10
47	LITTLE FISH LAKE NVB	1	0	10	5	2	4	5	7	8	8	2	10	6
48	LITTLE SMOKY NVB	6	3	8	5	3	4	4	10	8	8	4	10	6
49	MONITOR NVB	1	4	8	5	2	3	4	8	8	9	2	9	10
50	NEWARK NVB	1	4	8	4	3	3	3	9	7	9	4	8	10
51	PAHRANAGAT NVB	1	4	8	5	3	3	5	9	9	6	8	10	10
52	PENOYER NVB	3	6	8	5	3	5	4	9	10	9	4	10	10
53	RAILROAD NVB	5	6	8	5	3	4	5	8	9	9	4	10	8
54	RAILROAD/REVEILLE NVB	5	4	8	4	3	3	4	10	8	8	8	10	8
55	RALSTON NVB	5	4	10	4	3	4	3	10	8	9	10	9	10
56	SARCOBATUS FLAT NVB	1	2	10	4	2	3	4	7	8	9	2	10	10
57	STONE CABIN NVB	3	3	10	5	3	3	3	10	9	9	8	9	8
58	STONEWALL FLAT NVB	2	1	8	5	2	2	4	10	8	6	2	8	10
59	THREE LAKES NVB	1	0	8	5	2	5	2	1	10	10	4	10	10
60	TIKABOO NVB	3	0	8	5	2	3	3	5	9	9	10	9	10
61	WHITE RIVER NVB	4	6	10	5	3	4	5	7	8	9	2	9	10
68	JORNADA DEL MUERTO NMB	2	0	10	4	2	1	2	5	7	7	2	8	8
	WEIGHTING FACTORS	2.7	2.2	.1	.1	.1	.1	.1	1.0	1.0	.5	.5	.5	.3

*RANKING FACTORS

A = SUITABLE VALLEY AREA
B = SUITABLE CONTIGUOUS AREA
C = OWNERSHIP AND CONTROL (AMOUNT AND QUALITY)
D = GEOLOGY AND SOILS ENGINEERING (AMOUNT AND QUALITY)
E = DEPTH TO ROCK (AMOUNT AND QUALITY)
F = DEPTH TO WATER (AMOUNT AND QUALITY)
G = SURFACE HYDROLOGY (AMOUNT AND QUALITY)
H = OWNERSHIP AND CONTROL (FAVORABILITY)
I = GEOLOGY AND SOILS ENGINEERING (FAVORABILITY)
J = DEPTH TO ROCK (FAVORABILITY)
K = DEPTH TO WATER (FAVORABILITY)
L = SURFACE HYDROLOGY (FAVORABILITY)
M = POTENTIAL IMPACT (MILITARY)
N = POTENTIAL IMPACT (CIVILIAN)
O = DISTANCE TO SUPPORT FACILITIES (MILITARY AND CIVILIAN)

**RANKING SCO

P = AREAL RANKING SCO
Q = GEOTECHNICAL RANK
R = CULTURAL RANKING
S = AREAL + GEOTECHNIC
T = FINAL SCORE (P+Q+

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ANALYSIS - BLM VALLEYS
LDLIFE RANGES

FACTORS*								RANKING SCORES**				
H	I	J	K	L	M	N	O	P	Q	R	S	T
8	7	9	2	10	10	8	8	9	45	43	41.0	59.3
8	4	7	6	9	10	8	10	9	38	46	37.5	56.9
5	7	8	2	8	10	8	8	13	41	41	49.7	65.1
9	6	9	2	9	10	6	10	8	38	44	37.3	57.0
5	9	8	2	9	10	8	8	10	44	41	44.1	59.5
0	0	0	0	0	0	0	0	0	0	0	.0	.0
7	8	9	2	9	10	8	8	11	41	43	46.5	63.9
6	7	9	2	8	10	6	8	17	39	40	58.7	74.5
8	9	6	8	9	10	8	10	4	45	46	32.1	51.5
9	8	9	4	10	10	8	6	3	46	41	28.1	46.3
8	8	8	2	10	10	8	8	8	46	44	39.9	58.3
9	6	7	8	5	10	8	10	4	36	45	26.3	46.5
9	9	7	4	10	10	8	8	6	46	45	35.3	54.7
5	9	8	4	10	10	10	6	5	43	41	34.2	49.2
10	9	7	6	9	10	8	5	5	43	43	33.7	52.6
10	8	6	10	8	10	8	4	9	46	42	44.2	62.6
10	8	8	10	7	10	8	6	8	49	42	42.7	61.9
9	8	9	8	10	6	8	10	8	52	43	42.3	61.5
10	9	9	10	9	10	10	10	2	48	50	29.0	51.0
10	6	8	10	5	10	8	8	3	42	46	26.4	46.8
7	8	8	2	10	6	8	8	1	44	39	22.3	38.5
10	8	8	4	10	6	8	8	9	46	40	43.4	62.4
8	8	9	2	9	10	8	10	5	42	44	30.9	50.1
9	7	9	4	8	10	8	6	5	41	41	30.3	48.5
9	9	6	8	10	10	6	6	5	49	39	34.1	51.7
9	10	9	4	10	10	8	6	9	50	41	44.5	62.7
8	9	9	4	10	8	6	6	11	49	36	48.9	64.9
10	8	8	8	10	8	8	10	9	48	44	44.7	65.3
10	8	9	10	9	10	8	10	9	50	48	45.7	67.1
7	8	9	2	10	10	8	8	3	42	43	26.9	44.3
10	9	9	8	9	8	8	10	6	49	46	38.1	58.9
10	8	6	2	8	10	8	10	3	37	46	24.9	46.1
1	10	10	4	10	10	6	10	1	48	35	26.1	37.7
5	9	9	10	9	10	10	8	3	50	41	32.4	48.2
7	8	9	2	9	10	6	8	10	45	41	43.7	60.5
5	7	7	2	8	8	8	10	2	33	41	21.8	37.6

FACTORS

.0	1.0	.5	.5	.5	.3	.3	.5

**RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = AREAL + GEOTECHNICAL SCORE (P+Q WITH WEIGHTING)
T = FINAL SCORE (P+Q+R WITH WEIGHTING)

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MATRIX ANALYSIS BLM VALLEYS
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
G-7

UGRO NATIONAL, INC.

RANKING BASED ON AREAL FACTORS (P)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356	
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352	
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295	
53	RAILROAD NVB	11	49	36	48.9	64.9	243	
19	MC MULLEN AZB	10	44	41	44.1	59.5	201	
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203	
15	BUTLER AZB	9	45	43	41.0	59.3	230	
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131	
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289	
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310	
52	PENOYER NVB	9	50	41	44.5	62.7	157	
54	RAILROAD/REVETLIF NVB	9	48	44	44.7	65.3	247	
55	RALSTON NVB	9	50	48	45.7	67.1	238	
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246	
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326	
44	HOT CREEK NVB	8	52	43	42.3	61.5	138	
18	LA POSA PLAIN AZB	8	38	44	37.3	57.0	236	
39	CLAYTON-ALKALI SPRING NVB	6	46	45	35.3	54.7	89	
57	STONE CABIN NVB	6	49	46	38.1	58.9	171	
40	COYOTE SPR/KANE SPR NVB	5	43	41	34.2	49.2	276	209
41	DELAMAR/PAHROC NVB	5	43	43	34.7	52.6	176	
49	MONITOR NVB	5	42	44	30.9	50.1	50	
50	NEWARK NVB	5	41	41	30.3	48.5	50	
51	PAHRANAGAT NVB	5	49	39	34.1	51.7	73	
35	AMARGOSA DESERT NVB	4	45	46	32.1	51.5	137	
38	CAVE NVB	4	36	45	26.3	46.5	75	
36	ANTELOPE NVB	3	46	41	28.1	46.3	55	
46	JAKES NVB	3	42	46	26.4	46.8	106	
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70	
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105	
60	TIKABOO NVB	3	50	41	32.4	48.2	229	144
45	INDIAN SPRING NVB	2	48	50	29.0	51.0	52	11
68	JORNADA DEL MUERTO NMB	2	33	41	21.8	37.6	112	
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24	
59	THREE LAKES NVB	1	48	35	26.1	37.7	19	
20	MOHAVE WASH AZB	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
# = NUMERICAL RANK

L FACTORS (P)

Q	RANKING SCORES* R	S	T	U	V	W
39	40	58.7	74.5	356		1
41	41	49.7	65.1	352		2
41	43	46.5	63.9	295		3
39	36	48.9	64.9	243		4
44	41	44.1	59.5	201		5
45	41	43.7	60.5	203		6
45	43	41.0	59.3	230		7
38	46	37.5	56.9	131		8
46	42	44.2	62.6	289		9
46	40	43.4	62.4	310		10
50	41	44.5	62.7	157		11
48	44	44.7	65.3	247		12
50	48	45.7	67.1	238		13
46	44	39.9	58.3	246		14
49	42	42.7	61.9	326		15
52	43	42.3	61.5	138		16
38	44	37.3	57.0	236		17
46	45	35.3	54.7	89		18
49	46	38.1	58.9	171		19
43	41	34.2	49.2	276	209	20
43	43	33.7	52.6	176		21
42	44	30.9	50.1	50		22
41	41	30.3	48.5	50		23
49	39	34.1	51.7	73		24
45	46	32.1	51.5	137		25
36	45	26.3	46.5	75		26
46	41	28.1	46.3	55		27
42	46	26.4	46.8	106		28
42	43	26.9	44.3	70		29
37	46	24.9	46.1	105		30
50	41	32.4	48.2	229	144	31
48	50	29.0	51.0	52	11	32
33	41	21.8	37.6	112		33
44	39	22.3	38.5	24		34
48	35	26.1	37.7	19		35
0	0	.0	.0	0		36

TH WEIGHTING FACTORS)

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BLM RANKING BASED ON COLUMN P
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
G-8

FUGRO NATIONAL, INC.

RANKING BASED ON GEOTECHNICAL FACTORS (Q)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V	X
44	HOT CREEK NVB	8	52	43	42.3	61.5	138		
52	PENOYER NVB	9	50	41	44.5	62.7	157		
55	RALSTON NVB	9	50	48	45.7	67.1	238		
60	TIKABOO NVB	3	50	41	32.4	48.2	229	144	
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326		
51	PAHRANAGAT NVB	5	49	39	34.1	51.7	73		
53	RAILROAD NVB	11	49	36	48.9	64.9	243		
57	STONE CABIN NVB	6	49	46	38.1	58.9	171		
45	INDIAN SPRING NVB	2	48	50	29.0	51.0	52	11	
54	RAILROAD/REVEILLE NVB	9	48	44	44.7	65.3	247		1
59	THREE LAKES NVB	1	48	35	26.1	37.7	19		1
36	ANTELOPE NVB	3	46	41	28.1	46.3	55		1
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246		1
39	CLAYTON-ALKALI SPRING NVB	6	46	45	35.3	54.7	89		1
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289		1
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310		1
35	AMARGOSA DESERT NVB	4	45	46	32.1	51.5	137		1
15	BUTLER AZB	9	45	43	41.0	59.3	230		1
61	WHITE RIVER NVB	10	45	41	43.7	60.5	205		1
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24		2
19	MC MULLEN AZB	10	44	41	44.1	59.5	201		2
40	COYOTE SPR/KANE SPR NVB	5	43	41	34.2	49.2	276	209	2
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176		2
46	JAKES NVB	3	42	46	26.4	46.8	106		2
49	MONITOR NVB	5	42	44	30.9	50.1	50		2
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70		2
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352		2
50	NEWARK NVB	5	41	41	30.3	48.5	50		2
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295		2
22	PANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356		3
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131		3
18	LA POSA PLAIN AZB	8	38	44	37.3	57.0	236		3
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105		3
38	CAVE NVB	4	36	45	26.3	46.5	75		3
58	JORNADA DEL MUERTO NMB	2	33	41	21.8	37.6	112		3
20	MOHAVE WASH AZB	0	0	0	.0	.0	0		3

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
X = NUMERICAL RANK

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NICAL FACTORS (Q)

RANKING SCORES* R	S	T	U	V	W
43	42.3	61.5	138		1
41	44.5	62.7	157		2
48	45.7	67.1	238		3
41	32.4	48.2	229	144	4
42	42.7	61.9	326		5
39	34.1	51.7	73		6
36	48.9	64.9	243		7
46	38.1	58.9	171		8
50	29.0	51.0	52	11	9
44	44.7	65.3	247		10
35	26.1	37.7	19		11
41	28.1	46.3	55		12
44	39.9	58.3	246		13
45	35.3	54.7	89		14
42	44.2	62.6	289		15
40	43.4	62.4	310		16
46	32.1	51.5	137		17
43	41.0	59.3	230		18
41	43.7	60.5	203		19
39	22.3	38.5	24		20
41	44.1	59.5	201		21
41	34.2	49.2	276	209	22
43	33.7	52.6	176		23
46	26.4	46.8	106		24
44	30.9	50.1	50		25
43	26.9	44.5	70		26
41	49.7	65.1	352		27
41	30.5	48.5	50		28
43	46.5	63.9	295		29
40	58.7	74.5	356		30
46	37.5	56.9	131		31
44	37.3	57.0	236		32
46	24.9	46.1	105		33
45	26.3	46.5	75		34
41	21.8	37.6	112		35
0	.0	.0	0		36

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AREAS

BLM RANKING BASED ON COLUMN Q
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
G-9

FUGRO NATIONAL, INC.

RANKING BASED ON CULTURAL FACTORS (R)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
45	INDIAN SPRING NVB	2	48	50	29.0	51.0	52	11
55	RALSTON NVB	9	50	48	45.7	67.1	238	
35	AMARGOSA DESERT NVB	4	45	46	32.1	51.5	137	
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131	
46	JAKES NVB	3	42	46	26.4	46.8	106	
57	STONE CABIN NVB	6	49	46	38.1	58.9	171	
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105	
38	CAVE NVB	4	36	45	26.3	46.5	75	
39	CLAYTON-ALKALI SPRING NVB	6	46	45	35.3	54.7	89	
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246	
18	LA POSA PLAIN AZB	8	38	44	37.3	57.0	236	
49	MONITOR NVB	5	42	44	30.9	50.1	50	
54	RAILROAD/REVEILLE NVB	9	48	44	44.7	65.3	247	
15	BUTLER AZB	9	45	43	41.0	59.3	230	
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6	176	
44	HOT CREEK NVB	8	52	43	42.3	61.5	138	
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295	
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70	
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6	289	
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326	
36	ANTELOPE NVB	3	46	41	28.1	46.3	55	
40	COYOTE SPR/KANE SPR NVB	5	43	41	34.2	49.2	276	209
17	MARQUARALA PLAIN AZB	13	41	41	49.7	65.1	352	
68	JORNADA DEL MUERTO NMB	2	33	41	21.8	37.6	112	
19	MC MULLEN AZB	10	44	41	44.1	59.5	201	
50	NEWARK NVB	5	41	41	30.3	48.5	50	
52	PENOYER NVB	9	50	41	44.5	62.7	157	
60	TIKABOO NVB	3	50	41	32.4	48.2	229	144
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203	
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310	
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356	
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24	
51	PAHRANAGAT NVB	5	49	39	34.1	51.7	73	
53	RATLROAD NVB	11	49	36	48.9	64.9	243	
59	THREE LAKES NVB	1	48	35	26.1	37.7	19	
20	MOHAVE WASH AZB	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

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TURAL FACTORS (R)

Q	RANKING SCORES* R	S	T	U	V	W
48	50	29.0	51.0	52	11	1
50	48	45.7	67.1	238		2
45	46	32.1	51.5	137		3
38	46	37.5	56.9	131		4
42	46	26.4	46.8	106		5
49	46	38.1	58.9	171		6
37	46	24.9	46.1	105		7
36	45	26.3	46.5	75		8
46	45	35.3	54.7	89		9
46	44	39.9	58.3	246		10
38	44	37.3	57.0	236		11
42	44	30.9	50.1	50		12
48	44	44.7	65.3	247		13
45	43	41.0	59.3	230		14
43	43	33.7	52.6	176		15
52	43	42.3	61.5	138		16
41	43	46.5	63.9	295		17
42	43	26.9	44.3	70		18
46	42	44.2	62.6	289		19
49	42	42.7	61.9	326		20
46	41	28.1	46.3	55		21
43	41	34.2	49.2	276	209	22
41	41	49.7	65.1	352		23
33	41	21.8	37.6	112		24
44	41	44.1	59.5	201		25
41	41	30.3	48.5	50		26
50	41	44.5	62.7	157		27
50	41	32.4	48.2	229	144	28
45	41	43.7	60.5	203		29
46	40	43.4	62.4	310		30
39	40	58.7	74.5	356		31
44	39	22.3	38.5	24		32
49	39	34.1	51.7	73		33
49	36	48.9	64.9	243		34
48	35	26.1	37.7	19		35
0	0	.0	.0	0		36

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TH WEIGHTING FACTORS)

RNESS AREAS

BLM RANKING BASED ON COLUMN R
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
G-10

FUGRO NATIONAL, INC.

RANKING BASED ON AREAL AND GEOTECHNICAL FACTORS (S)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5	356	
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1	352	
53	RATLROAD NVB	11	49	36	48.9	64.9	243	
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9	295	
55	RALSTON NVB	9	50	48	45.7	67.1	238	
54	RAILROAD/REVEILLE NVB	9	48	44	44.7	65.3	247	
52	RENOYER NVB	9	50	41	44.5	62.7	157	
42	DRY LAKE/HULESHOE NVB	9	46	42	44.2	62.6	289	
19	MC MULLEN AZB	10	44	41	44.1	59.5	201	
61	WHITE RIVER NVB	10	45	41	43.7	60.5	203	
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4	310	
43	GARDEN/COAL NVB	8	49	42	42.7	61.9	326	
44	HOT CREEK NVB	8	52	43	42.3	61.5	138	
15	BUTLER AZB	9	45	43	41.0	59.3	230	
37	BIG SMOKY NVB	8	46	44	39.9	58.3	246	
57	STONE CABIN NVB	6	49	46	38.1	58.9	171	
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9	131	
18	LA POSA PLAIN AZB	8	38	44	37.3	57.0	236	
39	CLAYTON-ALKALI SPRING NVB	6	46	45	35.3	54.7	89	
40	COYOTE SPR/KANE SPR NVB	5	43	41	34.2	49.2	276	209
51	PAHRANAGAT NVB	5	49	39	34.1	51.7	73	
41	DELAMAR/PAHRUC NVB	5	43	43	33.7	52.6	176	
60	TIKABOO NVB	3	50	41	32.4	48.2	229	144
35	AMARGOSA DESERT NVB	4	45	46	32.1	51.5	137	
49	MONITOR NVB	5	42	44	30.9	50.1	50	
50	NEWARK NVB	5	41	41	30.3	48.5	50	
45	INDIAN SPRING NVB	2	48	50	29.0	51.0	52	11
36	ANTELOPE NVB	3	46	41	28.1	46.3	55	
56	SARCOBATUS FLAT NVB	3	42	43	26.9	44.3	70	
46	JAKES NVB	3	42	46	26.4	46.8	106	
38	CAVE NVB	4	36	45	26.3	46.5	75	
59	THREE LAKES NVB	1	48	35	26.1	37.7	19	
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1	105	
47	LITTLE FISH LAKE NVB	1	44	39	22.3	38.5	24	
68	JORNADA DEL MUERTO NMB	2	33	41	21.8	37.6	112	
20	MOHAVE WASH AZB	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
* = NUMERICAL RANK

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AREAL AND GEOTECHNICAL FACTORS (S)

RANKING SCORES*						
Q	R	S	T	U	V	W
39	40	58.7	74.5	356		1
41	41	49.7	65.1	352		2
49	36	48.9	64.9	243		3
41	43	46.5	63.9	295		4
50	48	45.7	67.1	238		5
48	44	44.7	65.3	247		6
50	41	44.5	62.7	157		7
46	42	44.2	62.6	289		8
44	41	44.1	59.5	201		9
45	41	43.7	60.5	203		10
46	40	43.4	62.4	310		11
49	42	42.7	61.9	326		12
52	43	42.3	61.5	138		13
45	43	41.0	59.3	230		14
46	44	39.9	58.3	246		15
49	46	38.1	58.9	171		16
38	46	37.5	56.9	131		17
38	44	37.3	57.0	236		18
46	45	35.3	54.7	89		19
43	41	34.2	49.2	276	209	20
49	39	34.1	51.7	73		21
43	43	33.7	52.6	176		22
50	41	32.4	48.2	229	144	23
45	46	32.1	51.5	137		24
42	44	30.9	50.1	50		25
41	41	30.3	48.5	50		26
48	50	29.0	51.0	52	11	27
46	41	28.1	46.3	55		28
42	43	26.9	44.3	70		29
42	46	26.4	46.8	106		30
36	45	26.3	46.5	75		31
48	35	26.1	37.7	19		32
37	46	24.9	46.1	105		33
44	39	22.3	38.5	24		34
33	41	21.8	37.6	112		35
0	0	.0	.0	0		36

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WITH WEIGHTING FACTORS)

DERNESS AREAS

BLM RANKING BASED ON COLUMN S
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
G-11

FUGRO NATIONAL, INC.

RANKING BASED ON FINAL SCORE (T)

VALLEY NO.	NAME	RANKING SCORES* P	Q	R	S	T	U	V
22	RANEGRAS PLAIN AZR	17	39	40	58.7	74.5	356	
35	RALSTON NVR	9	50	48	45.7	67.1	238	
54	RAILROAD/REVEILLE NVR	9	48	44	44.7	65.3	247	
17	RARQUAHALA PLAIN AZR	13	41	41	49.7	65.1	352	
53	RAILROAD NVR	11	49	36	48.9	64.9	243	
21	RALOMAS/HYDER AZR	11	41	43	46.5	63.9	295	
52	RENOYER NVR	9	50	41	44.5	62.7	157	
42	DRY LAKE/MULESHOE NVR	9	46	42	44.2	62.6	289	
48	LITTLE SMOKY NVR	9	46	40	43.4	62.4	310	
43	GARDEN/COAL NVR	8	49	42	42.7	61.9	326	
44	HOT CREEK NVR	8	52	43	42.3	61.5	138	
61	WHITE RIVER NVR	10	45	41	43.7	60.5	203	
19	MC MULLEN AZR	10	44	41	44.1	59.5	201	
15	BUTLER AZR	9	45	43	41.0	59.3	230	
57	STONE CABIN NVR	6	49	46	38.1	58.9	171	
37	BIG SMOKY NVR	8	46	44	39.9	58.3	246	
18	LA POSA PLAIN AZR	8	38	44	37.3	57.0	236	
16	CACTUS PLAIN AZR	9	38	46	37.5	56.9	131	
39	CLAYTON-ALKALI SPRING NVR	6	46	45	35.3	54.7	89	
41	DELAMAR/PAHROC NVR	5	43	43	33.7	52.6	176	
51	PAHRANAGAT NVR	5	49	39	34.1	51.7	73	
35	AMARGOSA DESERT NVR	4	45	46	32.1	51.5	137	
45	INDIAN SPRING NVR	2	48	50	29.0	51.0	52	11
49	MONITOR NVR	5	42	44	30.9	50.1	50	
40	COYOTE SPR/KANE SPR NVR	5	43	41	34.2	49.2	276	209
50	NEWARK NVR	5	41	41	30.3	48.5	50	
60	TIKABOO NVR	3	50	41	32.4	48.2	229	144
46	JAKES NVR	3	42	46	26.4	46.8	106	
38	CAVE NVR	4	36	45	26.3	46.5	75	
36	ANTELOPE NVR	3	46	41	28.1	46.3	55	
58	STONEWALL FLAT NVR	3	37	46	24.9	46.1	105	
56	SARCOBATUS FLAT NVR	3	42	43	26.9	44.3	70	
47	LITTLE FISH LAKE NVR	1	44	39	22.3	38.5	24	
59	THREE LAKES NVR	1	48	35	26.1	37.7	19	
28	JORNADA DEL MUERTO NMR	2	33	41	21.8	37.6	112	
20	MOHAVE WASH AZR	0	0	0	.0	.0	0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACTORS)
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

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SCORE (T)

RANKING SCORES*

R	S	T	U	V	W
40	58.7	74.5	356		1
48	45.7	67.1	238		2
44	44.7	65.3	247		3
41	49.7	65.1	352		4
36	48.9	64.9	243		5
43	46.5	63.9	295		6
41	44.5	62.7	157		7
42	44.2	62.6	289		8
40	43.4	62.4	310		9
42	42.7	61.9	326		10
43	42.3	61.5	138		11
41	43.7	60.5	203		12
41	44.1	59.5	201		13
43	41.0	59.3	230		14
46	38.1	58.9	171		15
44	39.9	58.3	246		16
44	37.3	57.0	236		17
46	37.5	56.9	131		18
45	35.3	54.7	89		19
43	33.7	52.6	176		20
39	34.1	51.7	73		21
46	32.1	51.5	137		22
50	29.0	51.0	52	11	23
44	30.9	50.1	50		24
41	34.2	49.2	276	209	25
41	30.3	48.5	50		26
41	32.4	48.2	229	144	27
46	26.4	46.8	106		28
45	26.3	46.5	75		29
41	28.1	46.3	55		30
46	24.9	46.1	105		31
43	26.9	44.3	70		32
39	22.3	38.5	24		33
35	26.1	37.7	19		34
41	21.8	37.6	112		35
0	.0	.0	0		36

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WEIGHTING FACTORS)

SS AREAS

BLM RANKING BASED ON COLUMN T
(EXCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
G-12

FUGRO NATIONAL, INC.

RANKING BASED ON FINAL SCORE (T)

VALLEY NO.	NAME	P	Q	R	RANKING SCORE S	T
9	MOHAWK/TULE AZD	16	44	34	61.5	79.5
3	GROWLER/CHILDS AZD	15	44	34	57.4	75.4
22	RANEGRAS PLAIN AZB	17	39	40	58.7	74.5
54	RAILROAD/REVFILLE NVB	11	48	44	49.1	69.7
55	RALSTON NVB	10	50	48	47.9	69.3
17	HARQUAHALA PLAIN AZB	13	41	41	49.7	65.1
53	RAILROAD NVB	11	49	36	48.9	64.9
11	SAN CRISTOBAL AZD	11	44	34	47.1	64.7
21	PALOMAS/HYDER AZB	11	41	43	46.5	63.9
42	DRY LAKE/MULESHOE NVB	9	46	42	44.2	62.6
48	LITTLE SMOKY NVB	9	46	40	43.4	62.4
43	GARDEN/COAL NVB	8	49	42	42.7	61.9
44	HOT CREEK NVB	8	52	43	42.3	61.5
66	TULAROSA BASIN S NMD	8	60	43	42.1	61.3
57	STONE CABIN NVB	7	49	46	40.3	61.1
52	PENOYER NVB	8	50	41	42.3	60.5
61	WHITE RIVER NVB	10	45	41	43.7	60.
19	MC MULLEN AZB	10	44	41	44.1	59.5
15	BUTLER AZB	9	45	43	41.0	59.3
18	LA POSA PLAIN AZB	9	38	44	39.5	59.2
37	BIG SMOKY NVB	8	46	44	39.9	58.3
12	SENTINEL PLAIN AZD	7	44	41	38.2	58.1
7	LECHUGUILLA DESERT AZD	7	47	34	39.8	57.8
16	CACTUS PLAIN AZB	9	38	46	37.5	56.9
39	CLAYTON-ALKALI SPRING NVB	7	46	45	37.5	56.9
45	INDIAN SPRING NVB	4	48	48	33.4	54.8
51	PAHRANAGAT NVB	6	49	39	36.3	53.9
35	AMARGOSA DESERT NVB	5	45	46	34.3	53.7
24	CACTUS FLAT NVD	9	40	36	39.0	53.5
41	DELAMAR/PAHROC NVB	5	43	43	33.7	52.6
60	TIKABOO NVB	5	50	37	37.3	51.9
6	LA POSA PLAIN AZD	3	51	40	31.6	51.4
14	YUMA DESERT AZD	3	49	40	30.6	50.4
49	MONITOR NVB	5	42	44	30.9	50.1
25	EMIGRANT NVD	7	36	33	34.2	49.9
2	GILA BEND PLAIN AZD	3	47	41	30.0	49.9
1	CASTLE DOME AZD	3	49	40	30.2	49.6
29	KAWICH NVD	5	40	32	32.5	49.1
27	GOLD FLAT NVD	4	40	40	29.9	48.9
50	NEWARK NVB	5	41	41	30.3	48.5
40	COYOTE SPR/KANE SPR NVB	5	43	37	34.2	48.0
46	JAKES NVB	3	42	46	26.4	46.8
38	CAVE NVB	4	36	45	26.3	46.5
36	ANTELOPE NVB	3	46	41	28.1	46.3
33	TIKABOO NVD	3	43	34	29.1	46.3
58	STONEWALL FLAT NVB	3	37	46	24.9	46.1
28	INDIAN SPRING NVD	4	38	33	28.3	45.4
5	KING AZD	3	46	38	26.1	45.3
10	PALOMAS PLAIN AZD	4	36	39	26.1	45.0
30	PAHUTE MESA NVD	2	41	40	25.1	44.5
56	SARCOBATUS FLAT NVB					

FINAL SCORE (T)

	RANKING SCORES*					
Q	R	S	T	U	V	W
44	34	61.5	79.5	521	271	1
44	34	57.4	75.4	413	220	2
39	40	58.7	74.5	356		3
48	44	49.1	69.7	247		4
50	48	47.9	69.3	238		5
41	41	49.7	65.1	352		6
49	36	48.9	64.9	243		7
44	34	47.1	64.7	275	230	8
41	43	46.5	63.9	295		9
46	42	44.2	62.6	289		10
46	40	43.4	62.4	310		11
49	42	42.7	61.9	326		12
52	43	42.3	61.5	138		13
60	43	42.1	61.3	332		14
49	46	40.3	61.1	171		15
50	41	42.3	60.5	157		16
45	41	43.7	60.5	203		17
44	41	44.1	59.5	201		18
45	43	41.0	59.3	230		19
38	44	39.5	59.2	236		20
46	44	39.9	58.3	246		21
44	41	38.2	58.1	208		22
47	34	39.8	57.8	172	140	23
38	46	37.5	56.9	131		24
46	45	37.5	56.9	89		25
48	48	33.4	54.8	52	11	26
49	39	36.3	53.9	73		27
45	46	34.3	53.7	137		28
40	36	39.0	53.5	201	188	29
43	43	33.7	52.6	176		30
50	37	37.3	51.9	229	144	31
51	40	31.6	51.4	32		32
49	40	30.6	50.4	94		33
42	44	30.9	50.1	50		34
36	33	34.2	49.9	191	135	35
47	41	30.0	49.9	92		36
49	40	30.2	49.6	126		37
40	32	32.5	49.1	113	0	38
40	40	29.9	48.9	168	132	39
41	41	30.3	48.5	50		40
43	37	34.2	48.0	276	209	41
42	46	26.4	46.8	106		42
36	45	26.3	46.5	75		43
46	41	28.1	46.3	55		44
43	34	29.1	46.3	70	29	45
37	46	24.9	46.1	105		46
38	33	28.3	45.4	87		47
46	38	26.1	45.3	106		48
36	39	26.1	45.0	30		49

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	GOLD FLAT NVD	4	40	40	29.9	
50	NEWARK NVB	5	41	41	30.3	4
40	COYOTE SPR/KANE SPR NVB	5	43	37	34.2	4
46	JAKES NVB	3	42	46	26.4	4
38	CAVE NVB	4	36	45	26.3	4
36	ANTELOPE NVB	3	46	41	28.1	4
33	TIKABOO NVD	3	43	34	29.1	4
58	STONEWALL FLAT NVB	3	37	46	24.9	4
28	INDIAN SPRING NVD	4	38	33	28.3	4
5	KING AZD	3	46	38	26.1	4
10	PALOMAS PLAIN AZD	4	36	39	26.1	4
30	PAHUTE MESA NVD	2	41	40	25.1	4
56	SARCOBATUS FLAT NVB	3	42	43	26.9	4
34	YUCCA FLAT NVD	4	63	33	33.5	4
31	STONEWALL FLAT NVD	3	37	44	23.2	4
67	TULAROSA BASIN E NMD	3	44	41	24.7	4
8	MOHAVE WASH AZD	2	44	44	22.2	4
62	HUECO BOLSON NMD	4	42	45	22.1	4
32	THREE LAKES NVD	3	35	34	25.1	4
65	TULAROSA BASIN N NMD	2	57	42	24.1	4
63	JORNADA DEL MUERTO N NMD	3	41	40	25.7	4
4	INDIAN WASH AZD	2	45	42	21.4	4
59	THREE LAKES NVB	2	48	35	28.3	3
68	JORNADA DEL MUERTO NMB	3	33	41	24.0	3
26	FRENCHMAN FLAT NVD	3	50	33	28.1	3
47	LITTLE FISH LAKE NVB	1	44	39	22.3	3
64	JORNADA DEL MUERTO S NMD	1	40	41	20.2	3
23	BUCKBOARD MESA NVD	2	47	31	26.2	3
20	MOHAVE WASH AZB	0	0	0	.0	
13	VEKOL AZD	0	0	0	.0	

*RANKING SCORES

P = AREAL RANKING SCORE (A+B)
Q = GEOTECHNICAL RANKING SCORE (D+E+F+G+I+J+K+L)
R = CULTURAL RANKING SCORE (C+H+M+N+O)
S = COMBINED AREAL AND GEOTECHNICAL SCORE (P+Q WITH WEIGHTING FACT
T = FINAL SCORE (P+Q+R WEIGHTING FACTORS)
U = SUITABLE VALLEY AREA
V = SUITABLE AREA (U) EXCLUDING WILDLIFE OR WILDERNESS AREAS
W = NUMERICAL RANK

3	49	40	30.2	49.6	126		37
5	40	32	32.5	49.1	113	0	38
4	40	40	29.9	48.9	168	132	39
5	41	41	30.3	48.5	50		40
5	43	37	34.2	48.0	276	209	41
3	42	46	26.4	46.8	106		42
4	36	45	26.3	46.5	75		43
3	46	41	28.1	46.3	55		44
3	43	34	29.1	46.3	70	29	45
3	37	46	24.9	46.1	105		46
4	38	33	28.3	45.4	87		47
3	46	38	26.1	45.3	106		48
4	36	39	26.1	45.0	30		49
2	41	40	25.1	44.5	10		50
3	42	43	26.9	44.3	70		51
4	63	33	33.5	44.1	89		52
3	37	44	23.2	43.8	56		53
3	44	41	24.7	43.8	100		54
2	44	44	22.2	43.2	21		55
4	42	45	22.1	42.8	7		56
3	35	34	25.1	42.7	117		57
2	57	42	24.1	42.3	58		58
3	41	40	25.7	41.5	124		59
2	45	42	21.4	41.4	42		60
2	48	35	28.3	39.9	19		61
3	33	41	24.0	39.8	112		62
3	50	33	28.1	38.7	62	35	63
1	44	39	22.3	38.5	24		64
1	40	41	20.2	38.3	47		65
2	47	31	26.2	36.6	54		66
0	0	0	.0	.0	0		67
0	0	0	.0	.0	0		68

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SEP 3 1976

+J+K+L)

(P+Q WITH WEIGHTING FACTORS)

NR WILDERNESS AREAS

RANKING BASED ON COLUMN T
(INCLUDING WILDLIFE RANGES)

MX SITING INVESTIGATION
DEPARTMENT OF THE AIR FORCE - SAMSO

APPENDIX
D-6

FUGRO NATIONAL, INC.