

INVENTORY OF POTENTIAL ASBESTOS SOURCES IN
THE NEW IDRIA-COALINGA STUDY REGION

FOR

THE ATLAS AND COALINGA SITES
FRESNO COUNTY, CALIFORNIA

REM II

PERFORMANCE OF REMEDIAL RESPONSE
ACTIVITIES AT UNCONTROLLED
HAZARDOUS WASTE SITES

U.S. EPA CONTRACT NO. 68-01-6939

CDM Federal Programs Corporation
CAMP DRESSER & McKEE INC.
ROY F. WESTON INC.
WOODWARD-CLYDE CONSULTANTS
CLEMENT ASSOCIATES, INC.
ICF INCORPORATED
C.C. JOHNSON & MALHOTRA, P.C.

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FRESNO COUNTY, CALIFORNIA

U.S. EPA CONTRACT NO.: 68-01-6939
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September 15, 1987

Prepared for:

U.S. Environmental Protection Agency

Prepared by:

Woodward-Clyde Consultants

CDM

environmental engineers, scientists,
planners, & management consultants

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September 15, 1987

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Project: REM II - EPA Contract No. 68-01-6939
Work Assignment No. 135-9L34 Atlas and Coalinga Sites

Document No.: 239-R11-RT-EYJK-1

Subject: Inventory of Potential Asbestos Sources in the New
Idria-Coalinga Study Area

Dear Ms. Lindsay and Ms. Dermer:

Enclosed are five copies of the above titled report prepared by Woodward
Clyde Consultants.

If you have any questions regarding this report, please contact Scott
Huntsman at our San Francisco office, or Tom Rogers at Woodward-Clyde's San
Francisco office, 553-3604.

Very truly yours,

CAMP DRESSER & MCKEE INC.


for: Michael C. Richards
Regional Manager

239.3:16

September 15, 1987

Mr. Michael C. Richards
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San Francisco, CA 94105

Project: REM II - EPA Contract No. 68-01-6939
Work Assignment No. 135-9L34 Atlas and Coalinga Sites

Document No.: 239-RII-RT-EYJX-1

Subject: Inventory of Potential Asbestos Sources in the New
Idria-Coalinga Study Area

Dear Mr. Richards:

Enclosed are five copies of the above titled report recently commissioned by EPA as part of the Atlas and Coalinga RI/FS.

This report was researched and written by Mr. Tom Rogers, a WCC geologist with our San Francisco (Fox Plaza) office. Any questions regarding this report should be directed to Mr. Rogers or me.

Sincerely,

WOODWARD-CLYDE CONSULTANTS



Scott R. Huntsman, Ph.D., P.E.
Site Manager

cc: U. Luscher
239.3:17



TABLE OF CONTENTS

	<u>Page</u>
I. <u>INTRODUCTION</u>	1
A. Definition of the Study Region	1
B. Data Sources and Compilation Methods	2
II. <u>GEOLOGIC ASSOCIATIONS AND OCCURRENCES OF ASBESTOS</u>	2
A. Chrysotile Asbestos Occurrences	3
B. Serpentinite Occurrences in Study Region	3
III. <u>OTHER MINERAL RESOURCES</u>	5
IV. <u>ASBESTOS MINING OPERATIONS</u>	5
A. Major Operations	5
B. Minor Operations/Occurrences	6
V. <u>OTHER MINING OPERATIONS</u>	7
VI. <u>SUMMARY AND CONCLUSIONS</u>	8
VII. REFERENCES	9

Appendix A: Tabulation of Producing Mines in the New Idria - Coalinga Region

Appendix B: Summary of Mining Claim and Transaction History at Asbestos Mines in Fresno County

Appendix C: Mining Claim Status in Vicinity of Asbestos Mines, San Benito and Fresno Counties

Appendix D: Memorandum - California Regional Water Quality Control Board, March 15, 1985

LIST OF FIGURES

<u>Figure</u>	<u>Title</u>
1	Map of Study Region
2	Location of Study Region, Serpentinite, and Asbestos Deposits in California
3	Distribution of Serpentinite and Mines in Study Region
4	Major Asbestos Mines in Fresno and San Benito Counties

INVENTORY OF POTENTIAL ASBESTOS SOURCES
IN THE NEW IDRIA - COALINGA STUDY REGION, CALIFORNIA

I. INTRODUCTION

The objective of this report is to generate a data base containing an inventory of naturally occurring asbestos locations and mining operations in the study region. This data base includes: (1) areas of naturally occurring rock types that commonly contain asbestos, and (2) mining operations of all types, with emphasis on asbestos operations.

The area of current concern is the drainage basin of Los Gatos Creek that contains two EPA Superfund Sites, plus downstream areas including Coalinga and the California Aqueduct. These superfund sites include inactive asbestos operations and associated tailing piles.

A. Definition of The Study Region

The study region for this report was defined on the basis of various geographic, geologic, and drainage boundaries. This region is generally centered on Coalinga and the drainage basin of eastward-flowing Los Gatos Creek, as shown in Figure 1. The area extends eastward to include the California Aqueduct and part of the San Joaquin Valley (to longitude 120°00'), northward to include the New Idria mine and New Idria serpentinite mass (containing numerous asbestos localities), westward to the San Andreas fault zone (beyond which serpentinite is very rare) and southward to the Parkfield/Cholame area to include an additional serpentinite mass and associated asbestos deposits at Table Mountain. This area includes much of western Fresno County, southern San Benito County, and parts of Monterey and Kings Counties, California (see Figure 1).

For orientation purposes, the study region location and the distribution of serpentinite and asbestos localities in California are shown in Figure 2.

B. Data Sources and Compilation Methods

Sources and types of data included various Federal, State, County and Private agencies and organizations (see references for details). The principal sources are as follows:

Federal: U.S. Bureau of Mines - "Mineral Industry Location System" (MILS)
computer printout of mine data.

U.S. Bureau of Land Management - "Clear Creek-Condon Peak Phase I
GEM Inventory, San Benito and Fresno
Counties, California"

- land ownership and mining claim data

U.S. Geological Survey - "Computerized Resource Information Bank" (CRIB)
Computer printout of geologic and mine data

State: California Division of Mine and Geology (CDMG) - various references
on mines and mineral deposits, including County Reports.

County: Assessor's and Recorder's offices for Counties of Fresno and San
Benito - land ownership and land transaction data, information on
active and recently inactive mining operations.

Private: Southern Pacific Land Co. - mineral survey data (1964).

Primary data sources (CDMG, Southern Pacific, County records) were compiled on a series of 1:62,500 and 1:24,000 scale topographic maps. Then computer printout and other sources (such as MILS) were compared with the primary compilation, and additional information was compiled.

II. GEOLOGIC ASSOCIATIONS AND OCCURRENCES OF ASBESTOS

The word "asbestos" is not a mineral name, rather it is a collective term. Asbestos is applied collectively to several minerals that are naturally fibrous, and have been used for various commercial purposes because of their

fibrous nature and their insulating properties. The asbestos mineral found in the New Idria - Coalinga region is chrysotile. Tremolite asbestos (amphibole asbestos) is also found in California (see Figure 2). Chrysotile is the most important asbestos mineral, and as of 1966 accounted for more than 90 percent of world production (Rice, 1966).

Chrysotile asbestos (sometimes referred to as white asbestos) is closely associated with a class of rocks called ultramafic rocks. Serpentinite is the only rock type in this class that contains chrysotile asbestos (Rice, 1966).

A. Chrysotile Asbestos Occurrences

Chrysotile occurs in two type of deposits. Most commonly, chrysotile appears as networks of thin veins within serpentinite. The veins are rarely more than 1/2 inch thick, and the chrysotile fibers are oriented perpendicular to the vein walls - thus the name "cross-fiber veins." Secondly, chrysotile is found along faults or shear planes/surfaces, when the fibers occur in mats or bundles parallel to the shear surfaces - hence the term "slip-fiber." When a serpentinite rock mass is subjected to high stress, faulting, heat, and hot fluids (associated with plate tectonic motion and deformation), the "cross-fiber" vein networks change into "slip-fiber" occurrences along shear surfaces (CMDG/F. Frederick, 1964). Both cross-fiber and slip-fiber occurrences may be observed in areas where such intense deformation has not progressed to total transformation of the "cross-fiber" occurrences. This is the case in the study region. The "slip-fiber" material in this study region has been referred to as "mountain leather," based on the flexible, white, thin flakes containing matted chrysotile fibers.

B. Serpentinite Occurrences in Study Region

In the New Idria - Coalinga region, serpentinite occurs in two structural situations, primary and secondary. Primary occurrences consist of: (1) the large mostly sheared serpentinite mass (referred to as the New Idria serpentinite mass) that forms an elliptical shaped northwest-trending intrusive mass in the core of a large anticline between Coalinga and New

Idria; (2) smaller elongated serpentinite bodies that are fault slivers and blocks related to and located along and east of the San Andreas fault zone; and (3) a serpentinite body at Table Mountain (16 miles south of Coalinga). The distribution of these serpentinites is shown on Figure 3. These occurrences are the end result of a complex history of plate tectonic motions during the last 100 to 200 million years. Briefly, the serpentinite and other ultramafic rocks were originally part of the Pacific Ocean sea floor that was: (1) subducted (thrust under) the North American continent; (2) then, in part uplifted and intruded (in piercement fashion) through overlying sediments in the anticlinal core of the Diablo Range; and (3) deformed, sheared, and redistributed by right lateral movement along the San Andreas fault system.

A secondary occurrence of serpentinite (Big Blue Member of the Temblor Formation) is located north of Coalinga, along the Diablo Range mountain front bordering the San Joaquin Valley. Here a series of sedimentary rock formations of Tertiary age have been tilted eastward by the serpentinite intrusion, have been partly eroded, and now form a sequence of narrow linear outcrops along the mountain front. One formation (the Temblor Formation - Miocene age) contains an extensive layer of sediments containing abundant serpentinite debris, rich in chrysotile asbestos. This occurrence is the result of a large Miocene-age west-to-east landslide, from highlands to the west (containing outcrops of serpentinite) into the Miocene seaway in which the Temblor Formation sediments were deposited. The location of this chrysotile-rich layer and its proximity to the California Aqueduct are shown on Figure 3.

Those serpentinite bodies that are of interest in this study are those located either within the Los Gatos Creek drainage basin or in close proximity to the California Aqueduct (as the Big Blue Member). Other than the Big Blue Member, these bodies are: the southern part of the New Idria mass, a few small bodies east of the San Andreas fault zone, and the Table Mountain mass (see Figure 3).

III. OTHER MINERAL RESOURCES

Various other mineral resources occur within the study region; some of these are also associated with serpentinite and ultramafic rocks (e.g. mercury and chromite). Locations of mines or quarries for asbestos and these other resources are shown on Figure 3. Subsurface oil and gas resources are not considered in this report. Site specific information on these mining/quarrying operations is summarized in Appendix A.

Other mineral resources associated with ultramafic rocks found in the study region are chromite, mercury, and magnesium. Mercury deposits and mines are located mostly around the margins of the serpentinite masses, and mostly within the sedimentary rocks overlying or adjacent to the serpentinite (see Figure 3 and Appendix A). Chromite and magnesium occur both within and along the borders of serpentinite bodies.

Other mined mineral resources in the study region (not necessarily related with ultramafic rocks) include coal, sand and gravel, gypsum, mineral water, and minor copper, manganese, clay, gemstone, and crushed stone operations (see Figure 3 and Appendix A).

IV. ASBESTOS MINING OPERATIONS

The major asbestos operators in the study region have located mines within the New Idria - Coalinga serpentinite mass. Two of the largest mines (Atlas and Coalinga Asbestos Co.-Jensen pit) are near the head of the Los Gatos Creek drainage basin (easterly drainage toward Coalinga; see Figures 3 and 4). The Union Carbide Mine and Coalinga Asbestos Co. Mine-Christie pit are located in the adjacent San Benito River-northwest flowing-drainage basin (see Figure 4). The Superfund sites are in the Los Gatos Creek basin, and are: (1) Atlas mine, mill and tailings, and (2) Coalinga Asbestos mill and mill tailings. Locations of these operations on 1:24,000 scale topographic maps are shown on Figure 4.

A. Major Operations

Available site-specific data on these major asbestos operations are contained in Appendix A. Information regarding the mining claims and transaction history of most of these operations (those in Fresno County) is provided in Appendix B. Records of the U.S. Bureau of Land Management showing the status of mining claims in the vicinity of these major asbestos operations are shown in Appendix C.

Generally these operations started after a "mining claim rush" in 1959. Major corporate participants in this rush and the subsequent period to 1962 were Union Carbide, Coalinga Asbestos Co. (a joint venture of John-Manville Sales Corp. and Kern Co. Land Co.), Mike-Ron Corp. Inc., and California Minerals Corp. (Fresno County Records, 1987). In 1962, Atlas Minerals Divisions of Atlas Corporation acquired title to a large block of claims and began mill construction at its mining site (see Figure 4-site 41) (Rice, 1963). Mining operations continued at these large sites from the mid 1960's to the mid 1970's and beyond. Mining ceased at Atlas in 1980, and at Coalinga Asbestos in 1974. Operations at the Union Carbide mine (now operated by King City Asbestos Corp.) have continued in an intermittent fashion to present.

These major mines contain mostly slip-fiber chrysotile asbestos in the "mountain leather" form, which allows simplified and economical excavation and processing procedures. Locally (as in the Christie pit), rounded masses of hard, dark colored serpentinite having cross-fiber chrysotile vein networks are encountered within the pervasively sheared white "mountain leather" material (CDMG Mine Files, 1987).

B. Minor Operations/Occurrences

Several small mines in the region were active either before or just prior to the major operations. The earliest known mine was at the A & C Group of claims in Sec. 10, T18S, R11E, on the northwest edge of the New Idria serpentinite mass (see Figure 3 - Mine No. 12 - and Appendix A). During the period 1917 to 1920, a limited amount of cross-fiber chrysotile asbestos was produced by hand sorting from small workings (CDMG/F. Frederick files,

1959). Following this activity, the San Benito Asbestos Company (formed in 1925) continued the mining operation at the same site, and installed an air drying mill on site (California State Mining Bureau, 1926).

Later, in 1959, the potential for asbestos development was recognized in the area of the Alpine Mercury mine (Mine No. 19 - 2 miles east of the 1917-25 operations. Potential mining included both cross-fiber and slip-fiber types of chrysotile asbestos (CDMG/F. Frederick files, 1959). In addition, at this time, a pilot mining operation (by Basic Resources Corp.) was underway far to the southeast in S 1/2 Sec. 30, T18S, R3E (Mine No. 42). This site is immediately adjacent to what was later (in 1962) to become the major Atlas Asbestos Corp. mine. Ore from this pilot mining operation was hauled to a pilot mill site near Coalinga (Basic Resources Corp. Report, 1959, in CDMG/F. Frederick file).

Chrysotile asbestos occurrences are reported in the Table Mountain area (Mine No. 88). Although no production has been reported from this area, Southern Pacific Co. believes that promising potential (comparable to the New Idria operations) exists in parts of four square-mile-sections in T.23S, R.15E and T23S, R16E.

Regarding the chrysotile asbestos-rich Big Blue Member of the Temblor Formation, no mining has occurred along the outcrop of this stratigraphic unit.

V. OTHER MINING OPERATIONS

Site-specific data on these operations are provided in Appendix A. Those non-asbestos mines that occur within the Los Gatos Creek drainage basin include the following:

<u>Item No. (App. A)</u>	<u>Name</u>
48	Butler Estate Chromite Mine (largest chromite producer in Fresno County)
52	James-Corbett Chromite Mine
51	Archer Mercury Mine

These mines are near the large asbestos mines. They contain resources associated with the serpentinite, and thus may provide sources of asbestos in tailings.

VI. SUMMARY AND CONCLUSIONS

The Superfund sites are within two of the major chrysotile asbestos mining operations located within the southern part of the New Idria serpentinite intrusive mass. The Atlas Site includes the mine and mill plus tailings of the former Atlas Asbestos Co. operations. The Coalinga Site includes the mill and mill tailings of the former Coalinga Asbestos Co. operation. The Coalinga Asbestos mines are located upstream and on both sides of the Los Gatos Creek-Cantua Creek drainage divide. A small part of the Atlas tailings are north of this drainage divide, but most tailings are to the south.

Chrysotile asbestos (white asbestos) is the only asbestos mineral found in this region. Chrysotile occurs as both "cross-fiber" material in vein networks within hard serpentinite rock, and as "slip-fiber" material concentrated along and parallel to shear surfaces within soft, sheared, "mountain leather"-type rock. Within the southern part of the New Idria serpentinite mass, soft "slip-fiber" material constitutes most of the mass; locally, rounded blocks of hard residual serpentinite (containing cross-fiber chrysotile vein networks) are found "floating" within a matrix of soft, sheared "slip-fiber" material (as in the Christie pit of the former Coalinga Asbestos Mine). The large commercial chrysotile asbestos operations are located where soft "slip-fiber" material is predominant.

In the study region, 94 mines have been inventoried (see Appendix A and Figure 3). Six of these are major asbestos mines that operated mostly from the mid-1960's to 1980. The Union Carbide (Joe 5-7) mine is still operating on an intermittent basis; the operator is King City Asbestos Corp. Inc. The available site-specific data on mine locations/descriptions in the region are provided in Appendix A. Data on claim/transaction history and mining claim activity for the major asbestos operations are contained in Appendices B and C.

Within the Los Gatos Creek drainage area, the Atlas and Coalinga mines and mill tailings represent approximately 90 percent of the mine tailings. The only other identified tailings are at the Jensen Pit. However, the total of these mine tailings represents only about 200 acres, or 1/3 sq mi, compared to approximately 6 sq mi of natural slopes in the New Idria serpentinite mass. A similar observation has been made by the California Regional Water Quality Control Board in 1985 (see copy of Memorandum in Appendix D). The relative percentages of contributions to stream runoff and air-entrained asbestos will, in addition to relative areas, depend also on the relative asbestos contents and relative erodibility of the respective materials.

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APPENDIX A

TABULATION OF PRODUCING MINES IN THE
NEW IDRIA - COALINGA STUDY REGION

Compiled From: Hart (1966), Logan, Braun and Vernon (1951), Jennings (1953),
Averill (1947), CDMG/F. Frederick files (various dates),
Southern Pacific Land Co. (1964), U.S. Bureau of Mines (1987)

Appendix A

TABULATION OF PRODUCING MINES IN THE NEW IDRIA-COALINDA REGION
(Page 1 of 8)

Map No. (on Fig. 3)	Mine Name(s)	Location Sec. Twp. Rge./County	Commodity	Est. Amount of Production/Dates	Type of Workings Tailings/Buildings	Est. Surface Area Above Workings	Remarks/ References
1	Firefly (Montarey, Fireflex, Mascovlch)	20, 21 - 17S-10E San Benito	Coal; listed also as a uranium deposit-1978	? Operating in 1945 (coal)	Adit, drifts, raise- total 1187'	400' x 460"	Opened in 1870. Coal bed 6' thick. Averill (1947); USBM (1987)
2	Vallecitos Clay Mine	W 1/2 1S-17S-11E San Benito	Clay-bentonite	---	---	---	USBM (1987)
3	San Benito Coal Mine	14(?) - 17S-11E San Benito	Coal (sub-bituminous)	Small-ca 1906	---	---	Averill (1947)
4	Simpson (Waltby No. 3)	26, 27 - 17S-11E 34, 35 San Benito	Magnesium	Large - 1917-26	---	288 acres	Averill (1978); USBM (1987)
5	North Star	36-17S-11E San Benito	Mercury	---	---	---	USBM (1987)
6	Ashurst Ranch Pit	SW 1/4 18-17S-12E San Benito	Clay	---	---	---	USBM (1987)
7	New Idria Group	29, 32, -17S-12E 33 San Benito	Mercury	1853 to 1966-568,092 flasks (\$55 million)	Town of New Idria, dumps, roads, build- ings, shafts, etc.	0.8 sq. mile at surface (more than 20 linear miles of workings in subsurface)	Produced 1853 to 1972. Eckel and Meyers (1946); Averill (1947); CMC Mine files (1987); USBM (1987)
New Idria Group includes the New Idria, Ranchito, Molina, and San Carlos mines.							
NOTE: A 1982 plan to rework New Idria tailings for gold was stopped by court order in September 1982.							
8	Wonder	NE 1/4 31-17S-12E San Benito	Mercury	Discovered-1906 Some-1942	Total 400' of workings	50' x 250' (1947)	Eckel and Meyers (1946); Averill
9	Spanish	NE 1/4 31-17S-12E San Benito	---	---	---	---	USBM (1987)
10	Unnamed gravel pit	SW 1/4 11-17S-14E Fresno	Sand and gravel	---	---	---	USBM (1987)
11	Unnamed gravel pit	SE 1/4 25-17S-14E Fresno	Sand and gravel	---	---	---	USBM (1987)
12	AAC Group	10-18S-11E San Benito	Asbestos	Small-1917-20	Ore hand-sorted from shallow workings	---	CMC files-Consulting reports of F. Frederick (1959)

Appendix A

TABLE OF PRODUCING MINES IN THE NEW IDRIA-ADRIANICA REGION
(Page 2 of 8)

Map No. (on Fig. 3)	Mine Name(s)	Location Sec. Twp. Rge/County	Commodity	Est. Amount of Production/Dates	Type of Workings Tailings/Buildings	Est. Surface Area Above Workings	Remarks/ References
13	San Benito Asbestos Co.	15-18S-11E San Benito	Asbestos	7-prior to 1926	---	---	USBM (1987)
14	Aurora (Morning Star)	NE 1/4 5-18S-12E San Benito Co.	Chromium Mercury	Discovered 1853 Some-1943, 44 Most-1933 to 40 Last production 1945	Surface benches, 5 adits, 4 shafts, 1600' total subsurface workings	300' x 350'	Averill (1947); Eckel and Meyers (1946); USBM (1987); CDNG Mine files (1987)
15	Clear Creek	2,11,12-18S,11E San Benito Co.	Mercury	---	---	---	Eckel and Meyers (1946); USBM (1987)
16	Tirado and Shear	12-18S-11E San Benito Co.	Mercury	Discovered 1925	Open cuts	---	Eckel and Meyers (1946); USBM (1987)
17	Red Rock	11-18S-11E San Benito Co.	Mercury	---	---	---	Eckel and Meyers (1946); USBM (1987)
18	Andy Johnson	18-18S-12E San Benito Co.	Mercury	Discovered pre-1880	Open cuts plus 1500' subsurface workings	---	Eckel and Meyers (1946); USBM (1987)
19	Alpine	13-18S-11E San Benito Co.	Mercury Asbestos, Chromite(?)	Discovered 1941	Shallow open cuts, and 100' subsurface workings	---	Eckel and Meyers (1946); USBM (1987)
20	Tirado	18-18S,12E San Benito Co.	Mercury	Discovered 1914	Open cuts	---	Eckel and Meyers (1946); USBM (1987)
21	Fourth of July	SE 1/4 18-18S-12E San Benito Co.	Mercury	---	---	---	Eckel and Meyers (1946); USBM (1987)
22	Hines	17-18S-12E San Benito Co.	Chromium	---	---	---	USBM (1987) Walker and Griggs (1953)
23	Harrison	17-18S-12E San Benito Co.	Chromium	---	---	---	USBM (1987) Walker and Griggs (1953)
24	Elma Queen	16-18S-12E San Benito Co.	Chromium	---	---	---	USBM (1987) Walker and Griggs (1953)
25	Valdez Bros.	16-18S-12E San Benito Co.	Chromium	---	---	---	USBM (1987) Walker and Griggs (1953)
26	Tirado Chrome	15-18S-12E San Benito Co.	Chromium	---	---	---	USBM (1987) Walker and Griggs (1953)

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Appendix A

TABLE OF PRODUCING MINES IN THE NEW IDRIA-COALINGA REGION
(Page 3 of 8)

Map No. (on Fig. 3)	Mine Name(s)	Location Sec. Twp. Rge/County	Commodity	Est. Amount of Production/Dates	Type of Workings Tailings/Buildings	Est. Surface Area Above Workings	Remarks/ References
27	Picacho	19-20-18S-12E San Benito Co.	Mercury	Discovered pre-1871	Open cuts, plus 1000' subsurface workings	---	Eckel and Meyers (1946); USBM (1987)
28	Bobcat and Anchor	20-18S-12E San Benito Co.	Chromium Iron	Discovered 1954	Surface trench; ore body 3.8 m long x 1.2 m wide	---	USBM (1987)
29	Trinity	20-18S-12E San Benito Co.	Chromium	---	---	---	USBM (1987) Walker and Griggs (1953)
30	Sawmill Creek	21-18S-12E San Benito Co.	Chromium	3100 + tons (1954-57)	---	---	CDMG Mine Files (1987)
31	Silmas Asbestos (St. Thomas)	NE 1/4 25-18S-12E San Benito Co.	Asbestos	Operating in 1945	---	---	Averill (1947); USBM (1987)
32	Breen	NE 1/4 36-18S-11E NW 1/4 31-18S-12E San Benito Co.	Mercury	---	300' of subsurface workings	---	Eckel and Meyers (1946) USBM (1987)
33	New Tirado (Santa Margarita)	SE 1/4 31-18S-12E San Benito Co.	Mercury	Discovered 1938(?)	100' of subsurface workings	---	Eckel and Meyers (1946) USBM (1987)
34	Florence Meek	SE 1/4 32-18S-12E San Benito Co.	Mercury	Discovered in 1904	900' of subsurface workings	220' x 100'	Eckel and Meyers (1946) USBM (1987)
35	Asbestos Ridge	SW 1/4 26-18S-12E San Benito Co.	Asbestos Chromium	---	---	---	Property owned by King City Asbestos Corp. Inc. USBM (1987)
36	Union Carbide (Joe 5-7)	NW 1/4 25-18S-12E San Benito Co.	Asbestos	Production 1963 to Present (Intermittent); 1963-83 by Union Carbide; 1984, 85 by Calidria Corp.*; 1986, 87 by King City Asbestos Corp.	Open pit mining-quarry face 1350' long at base (1983); benches 40' wide, 20' high. Ore tracked to mill at King City	2000' x 2000' as shown on topographic map	Exploration began 1958, claim "rush" in 1959. CDMG Mine Files (1987); San Benito Co. Assessor Files (1987); USBM (1987)
37	Gem Mine (Dallas Mining Co.)	NE 1/4 25-18S-12E San Benito Co.	Gemstones (benitoite)	Shutdown in 1912	Open cut, 40' adit, 25' shaft, 60' crosscut	---	Averill (1947); USBM (1987)
38	Anita (Rita, Chilquita, Santa Rita)	SW 1/4 17-18S-13E Fresno Co.	Mercury	Discovered in 1910, last production in 1942	1500' of subsurface workings	---	Eckel and Meyers (1946); USBM (1987); Logan, Brown, and Vernon (1951)

* Calidria Corp. was a wholly-owned subsidiary of Union Carbide.

Appendix A

TABULATION OF PRODUCING MINES IN THE NEW IDRIA-COALINGA REGION
(Page 4 of 8)

Map No. (on Fig. 3)	Mine Name(s)	Location Sec., Twp., Rge./County	Commodity	Est. Amount of Production/Dates	Type of Workings Tailings/Buildings	Est. Surface Area Above Workings	Remarks/ References
39	Del Mexico (Mexican)	SW 1/4 22-18S-13E Fresno Co.	Mercury	Discovered in 1860, inter- mittently active to 1958	Open cuts and 1800' of of subsurface workings	---	Eckel and Meyers (1946); USBM (1987); Southern Pacific Land Co. (1964)
40	Coalinga Asbestos Co.	27, 34-18S-13E 1-19S-13E Fresno Co.	Asbestos	Production 1964-74, Amount of production unavailable. Johns-Manville bankrupt in 1974	Open pits: Two pits: Jensen Pit in SE 1/2 Sec 34, and newer Christie Pit in S 1/2 Sec 27. Mill facili- ties and tailings site: In Sec 1-17 19S, R13E leased from Southern Pacific Co.	Jensen Pit: 1000' x 1000'; Christie Pit: 2000' x 2100'; Mill/Tailings: 500' x 1200'	During "asbestos rush" of 1959, two major participants (Kern County Land Co. and Johns- Manville Sales Corp.) together formed Coalinga Asbestos Co. CDMG Mine Files (1987)
41	Atlas Asbestos Co.	32, 31, 30-18S-13E 25-18S-12E Fresno Co.	Asbestos	Production 1963-80 Amount of production un- available. Atlas Asbestos Co. bankrupt in 1980	Open pits: Two pits: Rover pit in NE 1/4 Sec 31, and Santa Cruz pit in NE 1/4 Sec 31 and NW 1/4 Sec 32 Tailings and mill: located east, south, and northwest of Santa Cruz pit. Mill in Sec 32. Processed asbestos trucked to warehouse in Coalinga or beyond	Tailings: 1500' x 4300' Rover pit: 800' x 1000'; Santa Cruz pit: 1000' x 1600. Separate tailings area in Sec 30, T18S-13S and Sec 25, T18S- 12E	Started by Atlas Metals Div. of Atlas Corp.-Sold in 1968 (loss of \$1 million +) to Atlas Asbestos Co. CDMG Mines Files (1987)
42	Basic Resources Corp.	S 1/2 30-18S-13E Fresno Co.	Asbestos	Pilot mining operation in 1959	Surface ripping (bull- dozer); processing (screening) of ore at mining site; truck to pilot millsite in Coalinga	---	CDMG files - Consulting reports of F. Frederick (1959)
43	"Section 28 Mine"	S 1/2 28-18S-13E Fresno Co.	Asbestos	Operations probably by Union Carbide (as major claim holder in area) As above	---	---	Fresno County Records office documents (see Appendix A)
43A	"Section 29 Mine"	NW 1/4 29-18S-13E Fresno Co.	Asbestos	As above	---	---	As above
44	Todd Industries	SE 1/4 25-18S-13E Fresno Co.	Asbestos	---	---	---	USBM (1987)
45	Big Ridge (Jeanne/Condon Peak)	N 1/2 36-18S-12E Fresno Co.	Chromium	90 tons in 1917, 1268 tons in 1956-57	Line of pits along crest of a ridge	---	USBM (1987); Walker and Briggs (1953); CDMG Mine Files (1987)

Appendix A

TABULATION OF PRODUCING MINES IN THE NEW IDRIA-COALINGA REGION
(Page 5 of 8)

Map No. (on Fig. 3)	Mine Name(s)	Location Sec. Twp. Rge/County	Commodity	Est. Amount of Production/Dates	Type of Workings Tailings/Buildings	Est. Surface Area Above Workings	Remarks/ References
46	Rhodes/Byles/Griffith	S 1/2 35-18S-12E Fresno Co.	Chromium	---	---	---	USBM (1987); Walker and Griggs (1953)
47	Tromby No. 1 and 2	C36-18S-12E Fresno Co.	Chromium	---	---	---	USBM (1987); Walker and Griggs (1953)
48	Butler Estate (Mistake; Koski; James/Thickston)	SW 1/4 34-18S-13E Fresno Co.	Chromium	Active ca 1900 to 1958. 202 carloads ore (\$350,000) shipped Sept 1956-May 1958. Largest producer of chromite in Fresno Co. 1953-58 production 23,000 long tons. Still active in 1976	Deep open pit. Three mills that processed ore are on White Creek (Holman and Chambers/ Russell) and San Benito River (James). After 1952, all ore was trucked to Coalinga. In 1976, a mill for concentrating chromite was being built inside former asbestos mill (Coalinga Asbestos Co.) in Sec 1-19S-13E	850' x 550', 250' deep	Associated mercury (0.3%) Matthews (1961); Southern Pacific Land Co. 1964). COMG Mine Files (1987)
49	Unnamed gravel pit	E 1/2 1-18S-14E Fresno Co.	Sand and gravel	---	---	---	USBM 1987
50	White Creek Magnesite Mine	E 1/2 5-19S-13E Fresno Co.	Magnesium	---	---	---	USBM (1987)
51	Archer	NE 1/4 3-19S-13E Fresno Co.	Mercury	Discovered 1904; worked until 1942, again in late 1940's	Several open cuts, two adits, several drifts	---	Logan, Braun, Vernon (1951) USBM (1987)
52	James-Corbett (James- Corbett-Byles; Corbett- Byles)	NE 1/4 3-19S, 13E Fresno Co.	Chromium Iron	Discovered 1910. In 1945-55, shipped 11 tons lump ore, and 530 tons concentrates	Large bench cut 75 m long, 25 m deep - pro- bable ore body is 10 m x 10 m x 5 m	---	COMG Mine Files (1987); USBM (1987)
53	Railroad	NW 1/4 1-19S-13E Fresno Co.	Chromium	60 tons shipped, 1955-56	Two open cuts: 105' x 50' and 120' x 70'	---	Southern Pacific Land Co. (1964); USBM (1987); Symons and Davis (1958)
54	Unnamed gravel pit	NE 1/4 1-19S-13E Fresno Co.	Sand and gravel	---	---	---	USBM (1987)
55	Unnamed gravel pit	SW 1/4 12-19S-15E Fresno Co.	Sand and gravel	---	---	---	USBM (1987)
56	Unnamed gravel pit	NE 1/4 13-19S-15E Fresno Co.	Sand and gravel	---	---	---	USBM (1987)

Appendix A

TABULATION OF PRODUCING MINES IN THE NEW IDRIA-COALINDA REGION
(Page 6 of 8)

Map No. (on Fig. 3)	Mine Name(s)	Location Sec. Twp. Rge/County	Commodity	Est. Amount of Production/Dates	Type of Workings Tailings/Buildings	Est. Surface Area Above Workings	Remarks/ References
57	Unnamed gravel pit	SW 1/4 19-19S-16E Fresno Co.	Sand and gravel	---	---	---	USBM (1987)
58	Unnamed mine	10-19S-10E San Benito Co.	Copper	---	---	---	USBM (1987)
59	Esde	N 1/2 14-19S-9E Monterey Co.	Sand and gravel	Operated intermittently in early/mid 1960's	Used by State for road base and aggregate	---	Hart (1966)
60	Wylar (San Lorenzo Creek)	SE 1/4 15-19S-9E Monterey Co.	Bituminous sandstone	Two quarries, some production 1890-1895	Used as natural asphalt concrete for road paving	---	Hart (1966)
61	Hee Ranch Chromite	SW 1/4 9-20S-11E Monterey Co.	Chromium	Small production; massive chromite boulders	Placer deposit	---	Hart (1966)
62	Hee Ranch Stone	S 1/2 9,14, 16- 20S-11E Monterey Co.	Crushed and broken stone	Intermittently active for many years	Three small pits. Used as source of road base	---	Hart (1966)
63	Mother Green's Ball Mtn. Mineral Spring	24-20S-12E Fresno Co.	Mineral water	Planned to bottle water in 1948	---	---	Logan, Braun, Vernon (1951)
64	Del Monte (Drabble)	26-20S-12E Fresno Co.	Coal	Worked in 1896	Several adits	---	Logan, Braun, Vernon (1951)
65	Coalinga Mineral Springs (Fresno Hot Springs)	SE 1/4 34-20S-13E Fresno Co.	Mineral water	Water used since late 1800's. Best known resort/spa in Fresno Co.	15 springs above hotel	---	Logan, Braun, Vernon (1951)
66	Unnamed mine	NE 1/4 22-20S-14E Fresno Co.	Gypsum	Worked about 1900	---	---	Southern Pacific Land Co. (1964); USBM (1987)
67	California Coal Mine	NE 1/4 22-20S-14E 3 miles NW of Coalinga Fresno Co.	Coal	Active in 1880-96 and 1940; 1892 monthly production of 300 tons	One 400' incline, two adits (one 1370' long)	---	Lignite seems to 2' thick; Logan, Braun, Vernon (1951) Southern Pacific Land Co. (1964)
68	San Joaquin Valley Coal Mine	NW 1/4 26-20S-14E Fresno Co.	Coal	Active 1880-96, 1890 daily production was 15 tons. Most extensive of Fresno Co. coal mines	Three adits (300', 400', 1700'); one 300' incline to 200' depth	---	Main bed 4' thick (average) Logan, Braun, Vernon (1951) Southern Pacific Land Co. (1964)
69	Eureka	NW 1/4 26-20S-14E Fresno, Co.	Gypsum	Operated 1896	---	---	Southern Pacific Land Co. (1964); USBM (1987)

Appendix A

TABULATION OF PRODUCING MINES IN THE NEW IDRIA-COALINGA REGION
(Page 7 of 8)

Map No. (on Fig. 3)	Mine Name(s)	Location Sec. Twp. Rge./County	Commodity	Est. Amount of Production/Dates	Type of Workings/ Tailings/Buildings	Est. Surface Area Above Workings	Remarks/ References
70	Coalinga	SW 1/4 35-20S-14E NE 1/4 2-21S-14E Fresno Co.	Gypsum	Production 1957-58, supplied 50 ton/yr mill	Surface stripping (6" - 24" overburden) to 6" - 24" local lenses of gypsite	---	Southern Pacific Land Co. (1964); USBM (1987)
71	Owl Folcom Pit and Mill	20-20S-13E Fresno Co.	Sand and gravel	---	---	---	USBM (1987)
72	Coalinga Pit (operated by Granite Const. Co.)	SE 1/4 29-20S-13E Fresno Co.	Sand and gravel	---	---	---	USBM (1987)
73	Coalinga Mine	C21-20S-13E Fresno Co.	Gypsum	Operated 1892-97	---	---	VerPlanck (1952); USBM (1987)
74	Unnamed gravel pit	NE 1/4 2-20S-13E Fresno Co.	Sand and gravel	---	---	---	USBM (1987)
75	Sunrise and Sunset	C24-21S-14E Fresno Co.	Manganese	Produced 33 tons in 1917	---	---	Trask (1950); USBM (1987)
76	Montford Marl	24-21S-14E Fresno Co.	Limestone	Line produced in the 1880's	Limestone bed 12' wide, extends across 40 acres	---	Logan, Braun, Vernon (1951); USBM (1987)
77	Unnamed gravel pit	SW 1/4 9-21S-13E Fresno Co.	Sand and gravel	---	---	---	USBM (1987)
78	Jacallitos	33-21S-13E Fresno Co.	Sand and gravel	---	---	---	USBM (1987)
79	Zapato Creek	SW 1/4 27-21S-16E Fresno Co.	Sand and gravel Aggregate from terrace deposits	---	Thompson & Thompson Construction Co.	---	USBM (1987)
80	Webb and Mingus	C 20-21S-17E Fresno Co.	Clay-Fullers Earth	Production? pre-1930	---	---	USBM (1987)
81	Unnamed gravel pit	E 1/2 21-21S-17E Fresno Co.	Sand and gravel	---	---	---	USBM (1987)
82	Stone Canyon Jasper	167-22S-13E Monterey Co.	Jasper	Collecting locality for lapidary material	---	---	Hart (1966)
83	Big Sandy	SW 1/4 17-22S-13E Monterey Co.	Sand and gravel	---	Small pits developed for local use	---	Sandstone of Santa Margarita Formation (Hart, 1966)

Appendix A

TABULATION OF PRODUCING MINES IN THE NEW IDRIA-COALINGA REGION
(Page 8 of 8)

Map No. (on Fig. 3)	Mine Name(s)	Location Sec., Twp., Rge./County	Commodity	Est. Amount of Production/Dates	Type of Workings Tailings/Buildings	Est. Surface Area Above Workings	Remarks/ References
84	Stone Canyon Coal	14-22S-13E Monterey Co.	Coal	Discovered 1870. Substantial but intermittent production to 1935	---	---	Hart (1966)
85	Petriguin (Pitts; Cholame- Parkfield; Parkfield; Franciscan)	NE 1/4 2-23S-14E W 1/2 1-23S-14E Monterey Co.	Mercury	Discovered 1873. Largest mercury mine in Monterey Co. Produced 1798 flasks mercury	Glory hole and 1000' ± subsurface workings. SE extension in Sec 1 called Gillette Mine	310' x 360'	Bailey (1942); Hart (1966); USBM (1987)
86	Poppy/GMD	E 1/2 2-23S-14E Monterey Co.	Mercury	Poppy: 3 flasks-1932 GMD: 7 flasks-1937-40	Small open cuts and pits, several adits	---	Bailey (1942); Hart (1966); USBM (1987)
87	White (Table Mtn)	NE 1/4 30-23S-16E Monterey Co.	Mercury	Developed 1916, produced 3 flasks. Reopened in 1940's	Three short adits, several drifts	100' x 100'	Bailey (1942); Hart (1966); USBM (1987)
88	Table Mtn. Asbestos	30-23S-16E Monterey Co./ Kings Co.	Asbestos	No production to March 1963	Asbestos associated with Table Mtn. ser- pentine, as in New Idria serpentine mass	S.P. Land Co. Mineral Survey reports promi- sing potential In Sec. 25-23S- 15E, and Sec. 19, 29, 33-23S-16E	Hart (1966); Southern Pacific Land Co. (1964)
89	Kings (Table Mtn.; Fredama)	SW 1/4 20-23S-16E Kings Co.	Mercury	First production 1902. Pro- duced 1041 flasks 1905-1945	Shaft, two adits, numerous pits. NE extension into Sec. 19-23S-16E	---	Bailey (1942); Jennings (1953); USBM (1987)
90	Little Kings	NE 1/4 29-23S-16E Kings Co.	Mercury	Produced 800 flasks in 1958-62	Adit and incline, drifts	---	Southern Pacific Land Co. (1964); USBM (1987)
91	Dawson	NW 1/4 28-23S-16E Kings Co.	Mercury	First production 1918. Pro- duced 1076 flasks 1918-42	Glory hole (50' x 150' x 50' deep) and several 100' sub-sur- face workings	---	Southern Pacific Land Co. (1964); Bailey (1942); USBM (1987)
92	Arenal Canyon (Canyon)	NE 1/4 22-23S-16E Kings Co.	Mercury	Small production 1937-39	---	---	Jennings (1953); USBM (1987)
93	Unnamed gravel pit	SE 1/4 7-23S-16E Kings Co.	Sand and gravel	---	---	---	USBM (1987)
94	Turkey Flat	S 1/2 32-23S-15E Monterey Co.	Sand and gravel	Production probably before 1960	Pit-50' x 100' x 12- 14' deep. Apparently used as fill or sub- base	---	Hart (1966)

APPENDIX B

SUMMARY OF MINING CLAIM AND TRANSACTION HISTORY
AT ASBESTOS MINES IN FRESNO COUNTY

Compiled From: Records available at Fresno County Recorder's Office, in
documents called "Land Index"

239-RI1-RT-EYJX

APPENDIX B
SUMMARY OF MINING CLAIM AND TRANSACTION HISTORY
AT MAJOR ASBESTOS MINES IN FRESNO COUNTY

1.0 ATLAS MINE - Sec. 30, 31, 32, T18S, R13E

1.1 Section 31

- First claim recorded 5/24/56 (in SE and SW 1/4) by Toth, Wilder, Frame, and Pimlott.
- 10/59 --> 12/60: Intense claim activity, mostly by Mike-Ron Corp. Inc., Union Carbide, California Minerals Corp.
- 1/2/68: Quitclaim (parts of entire section) California Mineral Corp. to Atlas Asbestos Co. (first mention of Atlas Asbestos).

Last entry:

- 4/23/81: Quitclaim (parts of entire section) Vinnell Mining & Mineral Corp. and California Minerals Corp. ---> Fish, Davies, Siemon, Szabury, Adams et al.

Other corporate entities involved in transactions between 10/61 and 1/69 are : Universal Oil & Mining Corp., Mineral Materials Corp., Delta Corp., United Minerals Inc.

1.2 Section 32

- First claim 5/24/56 (in NE 1/4) by Toth, Wilder, Frame, & Pimlott
- 10/59 --> 7/62: Intense claim activity, mostly by Mike-Ron Corp., Inc., Union Carbide, Hidden Spondor Mining Co., Sandoval et al.

- 7/8/63: Quitclaim to Atlas Corp. (in NW 1/4) from various individuals and corporations (first mention of Atlas Corp.)

Last entry:

- 10/7/85: U.S. Placer Inc. - new claims in NE 1/4

Other corporate entities involved in transactions between 7/62 and 4/77 are: Transnational Enterprises, Delta Corp., California Minerals Corp., Mineral Materials Co., Vinnell Mining & Mineral Corp., United Minerals Inc., Wheeler Properties, Standard Oil Co. of California.

1.3 Section 30

- Same kind of history as in Section 31 and 32

Last entry:

- 7/11/85: Union Carbide and Calidria assign claims in parts of NE and NW 1/4 (and parts of entire section) to King City Asbestos Corp. Inc.

2.0 COALINGA ASBESTOS MINE - Sections 27, 34, T18S, R13E - Section 1, T19S, R13E

2.1 Christie Pit - S 1/2 Section 27, T18S, R13E

- First claim 6/16/59 (in SW 1/4) by Hoopers, Green, Pfister, and Stenovich
- 6/59 --> 3/61: Intense claim activity, mostly by Kern Co. Land Co. and Reim
- 8/74: Coalinga Asbestos quitclaimed whole section (except USA part) to Christie Estate

Last entry:

- 3/8/74: Bettencourt assigns to Martin all but 1/2 mineral rights (rerecording of 1977 entry)

Other corporate entities involved in transactions between 1/69 and 1/75 are: Delta Corp., United Minerals Inc., Coalinga Asbestos.

2.2 Jensen Pit - Section 34, T18S, R13E

- First claim 6/22/56 (parts of entire section) by Koski
- 7/58 --> 8/66: Intense claim activity, mostly by Coalinga Asbestos Co., Reim, Mike-Ron Corp. Inc., Longshore, Kern Co. Land Co., Foster, Sandovel

Last entry:

- 4/9/86: New claims by U.S. Placer Inc. in NE and SE 1/4

Other corporate entities involved in transactions between 4/65 and 8/73 are: Central California Mineral Co., Delta Corp., United Minerals, Inc., Carpenter Drilling Co., Koski.

2.3 Mill Site - Section 1, T19S, R13E

- Section 1 is an SP owned section
- Only one entry in Recorder's Office "Land Index"
12/29/65: SP Land Co., grants all mineral rights (on entire section) to Bravo Oil Co.

3.0 SECTION 28 MINE (probably a Union Carbide operation) - SE 1/4 Section 28, T18S, R13E

- First claim 9/1/56 (in S 1/2) by Darrough
- 11/19/59: First claim by Union Carbide
- 7/59 --> 6/61: Intense claim activity, mostly by Mike-Ron Corp. Inc., Union Carbide, Koski

Last entry:

- 9/9/85: New claims by U.S. Placer Inc. (in SE and SW 1/4)

Other corporate entities involved in transactions between 1/64 and 3/77 are: U.S. Asbestos Corp., Todd Industries Inc., United Equities Inc., Delta Corp., United Minerals Inc., Atlas Asbestos Co., Vinnell Mining and Mineral Co.

4.0 SECTION 29 MINE (Union Carbide operation) - NW 1/4 Section 29, T18S, R13E

- First claim 5/26/56 (in SE 1/4) by Szalbary, Cloud, Rush, Greenheck, and Carleton
- 3/12/59: First Claim by Union Carbide (in NW 1/4)
- 10/59 --> 9/66: Intense claim activity, mostly by Union Carbide, Mike-Ron Corp. Inc., Johnson, Darrough
- 7/11/85: Union Carbide and Calidria assigned mineral rights to King City Asbestos Corp. Inc. (parts of NW 1/4 and entire section)

Last entry:

- 10/7/85: New claims by U.S. Placer Inc. (in SE and SW 1/4)

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Other corporate entities involved in transactions between 11/67 and 7/85 are: Mineral Materials Co., California Minerals Corp., Atlas Asbestos Co., Delta Corp.

APPENDIX C

MINING CLAIM STATUS IN VICINITY OF ASBESTOS MINES,
SAN BENITO AND FRESNO COUNTIES

From: U.S. Bureau of Land Management "Geographic Index" of Mining Claims
in California, Report Date: April 8, 1987

18 S	12 E	20 NW	REPORT DATE: APR 8 1982	UNITED STATES DEPARTMENT OF THE INTERIOR	C-3	PMAL NO. 2513
STATE: CALIFORNIA	MON TUE WED THU FRI SAT SUN	PERIOD: MOUNT DIABLO	LEGAL DESCRIPTION: CO BLM SERIAL CASE	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD COUNTY LOCATION LATEST
10 S	12 E	20 NW	69 1 111451 LD	JAE 0121	EADE JOHN	111331 480.261 5/04/1982 1986
			111452 LD	JAE 0122	EADE JOHN	111331 480.262 5/04/1982 1986
			111453 LD	JAE 0123	EADE JOHN	111331 480.263 5/04/1982 1986
			111454 LD	JAE 0124	EADE JOHN	111331 480.264 5/04/1982 1986
22 NE			114293 LD	GREEN FIRE	EADE JOHN	114293 341.195 5/29/1983 1986
23 NE			21372 LD	P40 NO 9	KCAC INC	21372 254.408 10/19/1959 1986
			21373 LD	P40 NO 12		21372 254.408 10/19/1959 1986
			21374 LD	P40 NO 13		21372 254.408 10/19/1959 1986
			21375 LD	P40 NO 14		21372 254.408 10/19/1959 1986
			21376 LD	P40 NO 15		21372 254.408 10/19/1959 1986
			21377 LD	MULE NO 1		21372 254.408 10/19/1959 1986
			21378 LD	BRUSHY NO 1		21372 254.408 10/19/1959 1986
			21379 LD	BRUSHY NO 2		21372 254.408 10/19/1959 1986
			21380 LD	BRUSHY NO 3		21372 254.408 10/19/1959 1986
			21381 LD	BRUSHY NO 4		21372 254.408 10/19/1959 1986
			21382 LD	BRUSHY NO 5		21372 254.408 10/19/1959 1986
			21383 LD	BRUSHY NO 6		21372 254.408 10/19/1959 1986
			21384 LD	BRUSHY NO 7		21372 254.408 10/19/1959 1986
			21385 LD	BRUSHY NO 8		21372 254.408 10/19/1959 1986
			21386 LD	BRUSHY NO 9		21372 254.408 10/19/1959 1986
			21387 LD	BRUSHY NO 10		21372 254.408 10/19/1959 1986
			21388 LD	BRUSHY NO 11		21372 254.408 10/19/1959 1986
			21389 LD	BRUSHY NO 12		21372 254.408 10/19/1959 1986
			21390 LD	BRUSHY NO 13		21372 254.408 10/19/1959 1986
			21391 LD	BRUSHY NO 14		21372 254.408 10/19/1959 1986
			21392 LD	BRUSHY NO 15		21372 254.408 10/19/1959 1986
			21393 LD	BRUSHY NO 16		21372 254.408 10/19/1959 1986
			21394 LD	BRUSHY NO 17		21372 254.408 10/19/1959 1986
			21395 LD	BRUSHY NO 18		21372 254.408 10/19/1959 1986
			21396 LD	BRUSHY NO 19		21372 254.408 10/19/1959 1986
			21397 LD	BRUSHY NO 20		21372 254.408 10/19/1959 1986
			21398 LD	BRUSHY NO 21		21372 254.408 10/19/1959 1986
			21399 LD	BRUSHY NO 22		21372 254.408 10/19/1959 1986
			21400 LD	BRUSHY NO 23		21372 254.408 10/19/1959 1986
			21401 LD	BRUSHY NO 24		21372 254.408 10/19/1959 1986
			21402 LD	BRUSHY NO 25		21372 254.408 10/19/1959 1986
			21403 LD	BRUSHY NO 26		21372 254.408 10/19/1959 1986
			21404 LD	BRUSHY NO 27		21372 254.408 10/19/1959 1986
			21405 LD	BRUSHY NO 28		21372 254.408 10/19/1959 1986
			21406 LD	BRUSHY NO 29		21372 254.408 10/19/1959 1986
			21407 LD	BRUSHY NO 30		21372 254.408 10/19/1959 1986
			21408 LD	BRUSHY NO 31		21372 254.408 10/19/1959 1986
			21409 LD	BRUSHY NO 32		21372 254.408 10/19/1959 1986
			21410 LD	BRUSHY NO 33		21372 254.408 10/19/1959 1986
			21411 LD	BRUSHY NO 34		21372 254.408 10/19/1959 1986
			21412 LD	BRUSHY NO 35		21372 254.408 10/19/1959 1986
			21413 LD	BRUSHY NO 36		21372 254.408 10/19/1959 1986
			21414 LD	BRUSHY NO 37		21372 254.408 10/19/1959 1986
			21415 LD	BRUSHY NO 38		21372 254.408 10/19/1959 1986
			21416 LD	BRUSHY NO 39		21372 254.408 10/19/1959 1986
			21417 LD	BRUSHY NO 40		21372 254.408 10/19/1959 1986
			21418 LD	BRUSHY NO 41		21372 254.408 10/19/1959 1986
			21419 LD	BRUSHY NO 42		21372 254.408 10/19/1959 1986
			21420 LD	BRUSHY NO 43		21372 254.408 10/19/1959 1986
			21421 LD	BRUSHY NO 44		21372 254.408 10/19/1959 1986
			21422 LD	BRUSHY NO 45		21372 254.408 10/19/1959 1986
			21423 LD	BRUSHY NO 46		21372 254.408 10/19/1959 1986
			21424 LD	BRUSHY NO 47		21372 254.408 10/19/1959 1986
			21425 LD	BRUSHY NO 48		21372 254.408 10/19/1959 1986
			21426 LD	BRUSHY NO 49		21372 254.408 10/19/1959 1986
			21427 LD	BRUSHY NO 50		21372 254.408 10/19/1959 1986
			21428 LD	BRUSHY NO 51		21372 254.408 10/19/1959 1986
			21429 LD	BRUSHY NO 52		21372 254.408 10/19/1959 1986
			21430 LD	BRUSHY NO 53		21372 254.408 10/19/1959 1986
			21431 LD	BRUSHY NO 54		21372 254.408 10/19/1959 1986
			21432 LD	BRUSHY NO 55		21372 254.408 10/19/1959 1986
			21433 LD	BRUSHY NO 56		21372 254.408 10/19/1959 1986
			21434 LD	BRUSHY NO 57		21372 254.408 10/19/1959 1986
			21435 LD	BRUSHY NO 58		21372 254.408 10/19/1959 1986
			21436 LD	BRUSHY NO 59		21372 254.408 10/19/1959 1986
			21437 LD	BRUSHY NO 60		21372 254.408 10/19/1959 1986
			21438 LD	BRUSHY NO 61		21372 254.408 10/19/1959 1986
			21439 LD	BRUSHY NO 62		21372 254.408 10/19/1959 1986
			21440 LD	BRUSHY NO 63		21372 254.408 10/19/1959 1986
			21441 LD	BRUSHY NO 64		21372 254.408 10/19/1959 1986
			21442 LD	BRUSHY NO 65		21372 254.408 10/19/1959 1986
			21443 LD	BRUSHY NO 66		21372 254.408 10/19/1959 1986
			21444 LD	BRUSHY NO 67		21372 254.408 10/19/1959 1986
			21445 LD	BRUSHY NO 68		21372 254.408 10/19/1959 1986
			21446 LD	BRUSHY NO 69		21372 254.408 10/19/1959 1986
			21447 LD	BRUSHY NO 70		21372 254.408 10/19/1959 1986
			21448 LD	BRUSHY NO 71		21372 254.408 10/19/1959 1986
			21449 LD	BRUSHY NO 72		21372 254.408 10/19/1959 1986
			21450 LD	BRUSHY NO 73		21372 254.408 10/19/1959 1986
			21451 LD	BRUSHY NO 74		21372 254.408 10/19/1959 1986
			21452 LD	BRUSHY NO 75		21372 254.408 10/19/1959 1986
			21453 LD	BRUSHY NO 76		21372 254.408 10/19/1959 1986
			21454 LD	BRUSHY NO 77		21372 254.408 10/19/1959 1986
			21455 LD	BRUSHY NO 78		21372 254.408 10/19/1959 1986
			21456 LD	BRUSHY NO 79		21372 254.408 10/19/1959 1986
			21457 LD	BRUSHY NO 80		21372 254.408 10/19/1959 1986
			21458 LD	BRUSHY NO 81		21372 254.408 10/19/1959 1986
			21459 LD	BRUSHY NO 82		21372 254.408 10/19/1959 1986
			21460 LD	BRUSHY NO 83		21372 254.408 10/19/1959 1986
			21461 LD	BRUSHY NO 84		21372 254.408 10/19/1959 1986
			21462 LD	BRUSHY NO 85		21372 254.408 10/19/1959 1986
			21463 LD	BRUSHY NO 86		21372 254.408 10/19/1959 1986
			21464 LD	BRUSHY NO 87		21372 254.408 10/19/1959 1986
			21465 LD	BRUSHY NO 88		21372 254.408 10/19/1959 1986
			21466 LD	BRUSHY NO 89		21372 254.408 10/19/1959 1986
			21467 LD	BRUSHY NO 90		21372 254.408 10/19/1959 1986
			21468 LD	BRUSHY NO 91		21372 254.408 10/19/1959 1986
			21469 LD	BRUSHY NO 92		21372 254.408 10/19/1959 1986
			21470 LD	BRUSHY NO 93		21372 254.408 10/19/1959 1986
			21471 LD	BRUSHY NO 94		21372 254.408 10/19/1959 1986
			21472 LD	BRUSHY NO 95		21372 254.408 10/19/1959 1986
			21473 LD	BRUSHY NO 96		21372 254.408 10/19/1959 1986
			21474 LD	BRUSHY NO 97		21372 254.408 10/19/1959 1986
			21475 LD	BRUSHY NO 98		21372 254.408 10/19/1959 1986
			21476 LD	BRUSHY NO 99		21372 254.408 10/19/1959 1986
			21477 LD	BRUSHY NO 100		21372 254.408 10/19/1959 1986

DISCLOSURE: ALL INFORMATION RECEIVED IN THIS OFFICE MAY NOT YET BE LISTED ON THIS REPORT. NAMES AND ADDRESSES ARE ENTERED AS THEY APPEAR ON THE LOCATION NOTICE OR ARE APPROPRIATE TO THE LIMITED SPACE THEREOF. THEY MAY NOT BE IN THE CORRECT SEQUENCE. A BEWARE LATEST RECORDED YEAR IN THIS REPORT DOES NOT CONSTITUTE AN ENDORSED CLAIM.

18 S 12 E 25 NW		E-3		UNITED STATES DEPARTMENT OF THE INTERIOR		BUREAU OF LAND MANAGEMENT		PMA NO. 2445	
REPORT DATE: APR 8, 1987		MON: 17082991		STATE: CALIFORNIA		PERIOD: FROM DIABLO		GEOGRAPHIC INDEX	
LEGAL DESCRIPTION	LED BLK	SERIAL	CASE	CLATH NAME/NUMBER	CLAIMANT(S)	LEAD FILE	COUNTY	LOCATION	LATEST
TOWNSHIP	RANGE	SECTION	CITY	DIST	NO.	TYPE		DATE	ASSGT-YR
18 S	12 E	25 NW	19	1	27408 LD	JOE 011	27372	254,256	9/21/1959 1966
			19	1	27409 LD	JOE 012	27372	254,258	9/21/1959 1966
			19	1	27410 LD	JOE 013	27372	255,474	11/06/1959 1966
			19	1	27411 LD	JOE 015	27372	254,264	9/21/1959 1966
			19	1	27412 LD	JOE 016	27372	254,266	9/21/1959 1966
			19	1	27413 LD	JOE 021	27372	264,02	2/16/1961 1966
			19	1	27414 LD	VIRADON NO 4	27372	225,155	7/18/1956 1966
			19	1	27415 LD	JIM 017	2	252,107	7/14/1956 1966
			19	1	27416 LD	JIM 018	27372	252,108	7/14/1956 1966
			19	1	27417 LD	JIM 021	27372	252,111	7/17/1956 1966
			19	1	27418 LD	JIM 022	27372	252,113	7/17/1956 1966
			19	1	27419 LD	TED NO 1	27372	253,489	9/05/1959 1966
			19	1	27420 LD	TED NO 7	27372	253,501	9/04/1959 1966
			19	1	27421 LD	TED NO 8	27372	253,503	9/04/1959 1966
			19	1	27422 LD	DICK NO 3	27372	391,009	7/11/1974 1966
			19	1	27423 LD	DICK NO 4	27372	391,011	7/11/1974 1966
			19	1	27424 LD	DICK NO 5	27372	391,013	7/11/1974 1966
			19	1	27425 LD	DICK NO 6	27372	391,015	7/11/1974 1966
			19	1	27426 LD	DICK NO 7	27372	391,017	7/11/1974 1966
			19	1	27427 LD	DICK NO 8	27372	391,019	7/11/1974 1966
			19	1	27428 LD	DICK NO 9	27372	391,021	7/11/1974 1966
			19	1	27432 LD	JOE	27372	254,45	9/17/1959 1966
			19	1	27433 LD	JIM NO 9	27372	255,195	10/27/1959 1966

DISCLOSURE: ALL INFORMATION RECEIVED IN THIS OFFICE MAY NOT YET BE LISTED ON THIS REPORT. NAMES AND ADDRESSES ARE ENTERED AS THEY APPEAR ON THE LAND OWNERS' RECORDS OR ARE ASSIGNED TO A LIMITED SPACE THEREON. THEY MAY NOT APPEAR IN THE EXACTED SEQUENCE. A CLEAR LATEST ASSIGNMENT YEAR IN THIS REPORT DOES NOT CONSTITUTE AN ABANDONED CLAIM.

18 S 12 E 25 SE

F-3

PAGE NO. 2516

REPORT DATE: APR 8 1987 MON: LTB2991 UNCLD STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

MERIDIAN: MOUNT DIABLO

GEOGRAPHIC INDEX

LEGAL DESCRIPTION - CSD BLM SERIAL CASE	CLATH NAME/NUMBER	CLAIMANT(S)	LEAD FILE NO.	COUNTY	LOCATION DATE	LATEST ASSESS.
18 S 12 E 25 SE	19 1 27434 LD JIM NO 16	ACAC INC	27372	264,180	2/13/1961	1966
SE 69	27435 LD JIM NO 23		27372	252,151	7/17/1959	1966
SE 69	27436 LD JIM NO 24		27372	252,153	7/17/1959	1966
SW 69	27437 LD JOE NO 17		27372	268,309	5/12/1961	1966
W 69	27438 LD MARTIN #3		27372	248,337	5/05/1959	1966
E2 69	27439 LD MARTIN #4		27372	252,143	7/07/1959	1966
SE 69	27440 LD MARTIN #5		27372	252,105	7/07/1959	1966
SE 69	27441 LD FUDGE		27372	254,47	9/17/1959	1966
NE 69	27444 LD TED NO 2		27372	253,491	9/05/1959	1966
NE 69	27445 LD TED NO 3		27372	253,493	9/05/1959	1966
E2 69	27446 LD TED NO 4		27372	262,482	10/13/1960	1966
E2 69	27447 LD TED NO 5		27372	262,495	10/13/1960	1966
E2 69	27448 LD TED NO 6		27372	262,496	10/13/1960	1966
NE 69	27449 LD TED NO 9		27372	253,305	10/13/1959	1966
SE 69	27450 LD TED NO 10		27372	252,498	10/13/1960	1966
NE 69	27451 LD TED NO 13		27372	254,454	10/30/1959	1966
SE 69	27452 LD TEE #2		27372	253,308	10/25/1959	1966
SW 69	27458 LD VIRJON NO 1		27372	214,471	6/05/1955	1966
SW 69	27459 LD VIRJON NO 2		27372	214,473	6/05/1955	1966
SU 69	27460 LD VIRJON NO 3		27372	214,475	6/05/1955	1966
SW 69	27461 LD VIRJON NO 6		27372	264,381	5/11/1961	1966
SW 69	27462 LD VIRJON NO 7		27372	264,385	5/11/1961	1966
SE 69	27463 LD VIRJON NO 8		27372	264,387	5/11/1961	1966

DISCLOSURE: ALL INFORMATION RECEIVED IN THIS OFFICE MAY NOT YET BE LISTED ON THIS REPORT. NAMES AND ADDRESSES ARE ENTERED AS THEY APPEAR ON THE LOCATION NOTICE OR ARE ASSOCIATED TO THE LOCATION. THEY MAY NOT APPEAR IN THE EXPECTED SEQUENCE.
A BLACK LATEST ASSESSMENT YEAR IN THIS REPORT DOES NOT CONSTITUTE AN APPROVED LOCATION.

18 S 12 E 25 SE

G-3

PAGE NO. 251

REPORT DATE: APR 8 1987 FOR: (108299) UNILCO STATES DEPARTMENT OF THE INTERIOR

STATE: CALIFORNIA

PERIODIC: PLANT DIABLO

GEOGRAPHIC INDEX

TRAP-SET	RANGE	SET	SUB	CITY	DIST	NO.	TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD FILE	COUNTY	BOOK/PAGE	LOCATION DATE	LATEST ASSESSOR
10 S	12 E	25 SE	19	1	42638	LD	CODON 42	AKERS CHARLES A	AKERS CHARLES A	42638	444	829	5/02/1969	1966
			19	1	42639	LD	CODON 41	AKERS MARTHA	AKERS MARTHA	42639	444	828	9/02/1969	1966
			69	19	129474	PL	LITTLE LOA	AKERS MARTHA	AKERS MARTHA	129474	493	1758	7/07/1983	1986
			69	19	144020	PL	SIDE BY SIDE	BOURDEAU GUY	BOURDEAU GUY	144020	40	84	2/24/1984	1984
			69	19	172491	LD	JAMES COUCH 41	CHRISTOPHER WILLIAM	CHRISTOPHER WILLIAM	172491			9/09/1985	1985
			69	19	172492	LD	JAMES COUCH 42	CHRISTOPHER WILLIAM	CHRISTOPHER WILLIAM	172492			9/09/1985	1985
			69	19	144020	PL	SIDE BY SIDE	FLANK DEAN	FLANK DEAN	144020	40	84	2/24/1984	1984
			69	19	150976	LD	UNDER THE	KACAC INC	KACAC INC	150976	4258	321	5/10/1985	1985
			69	19	150977	LD	UNDER THE	KACAC INC	KACAC INC	150977	4258	321	5/10/1985	1985
			69	19	150978	LD	SANTA MARGARITA 41	MUNEZ MIGUEL	MUNEZ MIGUEL	150978			5/23/1984	1984
			69	19	150979	LD	FLORENCE MACK 41			150979			5/23/1984	1984
			69	19	150980	LD	FLORENCE MACK 42			150980			5/23/1984	1984
			69	19	150981	LD	FLORENCE MACK 43			150981			5/23/1984	1984
			69	19	150982	LD	FLORENCE MACK 44			150982			5/23/1984	1984
			69	19	150983	LD	FLORENCE MACK 45			150983			5/23/1984	1984
			69	19	150984	LD	FLORENCE MACK 46			150984			5/23/1984	1984
			69	19	150985	LD	FLORENCE MACK 47			150985			5/23/1984	1984
			69	19	150986	LD	FLORENCE MACK 48			150986			5/23/1984	1984
			69	19	150987	LD	FLORENCE MACK 49			150987			5/23/1984	1984
			69	19	150988	LD	FLORENCE MACK 50			150988			5/23/1984	1984
			69	19	150989	LD	FLORENCE MACK 51			150989			5/23/1984	1984
			69	19	150990	LD	FLORENCE MACK 52			150990			5/23/1984	1984
			69	19	150991	LD	FLORENCE MACK 53			150991			5/23/1984	1984
			69	19	150992	LD	FLORENCE MACK 54			150992			5/23/1984	1984
			69	19	150993	LD	FLORENCE MACK 55			150993			5/23/1984	1984
			69	19	150994	LD	FLORENCE MACK 56			150994			5/23/1984	1984
			69	19	150995	LD	FLORENCE MACK 57			150995			5/23/1984	1984
			69	19	150996	LD	FLORENCE MACK 58			150996			5/23/1984	1984
			69	19	150997	LD	FLORENCE MACK 59			150997			5/23/1984	1984
			69	19	150998	LD	FLORENCE MACK 60			150998			5/23/1984	1984
			69	19	150999	LD	FLORENCE MACK 61			150999			5/23/1984	1984
			69	19	151000	LD	FLORENCE MACK 62			151000			5/23/1984	1984
			69	19	151001	LD	FLORENCE MACK 63			151001			5/23/1984	1984
			69	19	151002	LD	FLORENCE MACK 64			151002			5/23/1984	1984
			69	19	151003	LD	FLORENCE MACK 65			151003			5/23/1984	1984
			69	19	151004	LD	FLORENCE MACK 66			151004			5/23/1984	1984
			69	19	151005	LD	FLORENCE MACK 67			151005			5/23/1984	1984
			69	19	151006	LD	FLORENCE MACK 68			151006			5/23/1984	1984
			69	19	151007	LD	FLORENCE MACK 69			151007			5/23/1984	1984
			69	19	151008	LD	FLORENCE MACK 70			151008			5/23/1984	1984
			69	19	151009	LD	FLORENCE MACK 71			151009			5/23/1984	1984
			69	19	151010	LD	FLORENCE MACK 72			151010			5/23/1984	1984
			69	19	151011	LD	FLORENCE MACK 73			151011			5/23/1984	1984
			69	19	151012	LD	FLORENCE MACK 74			151012			5/23/1984	1984
			69	19	151013	LD	FLORENCE MACK 75			151013			5/23/1984	1984
			69	19	151014	LD	FLORENCE MACK 76			151014			5/23/1984	1984
			69	19	151015	LD	FLORENCE MACK 77			151015			5/23/1984	1984
			69	19	151016	LD	FLORENCE MACK 78			151016			5/23/1984	1984
			69	19	151017	LD	FLORENCE MACK 79			151017			5/23/1984	1984
			69	19	151018	LD	FLORENCE MACK 80			151018			5/23/1984	1984
			69	19	151019	LD	FLORENCE MACK 81			151019			5/23/1984	1984
			69	19	151020	LD	FLORENCE MACK 82			151020			5/23/1984	1984
			69	19	151021	LD	FLORENCE MACK 83			151021			5/23/1984	1984
			69	19	151022	LD	FLORENCE MACK 84			151022			5/23/1984	1984
			69	19	151023	LD	FLORENCE MACK 85			151023			5/23/1984	1984
			69	19	151024	LD	FLORENCE MACK 86			151024			5/23/1984	1984
			69	19	151025	LD	FLORENCE MACK 87			151025			5/23/1984	1984
			69	19	151026	LD	FLORENCE MACK 88			151026			5/23/1984	1984
			69	19	151027	LD	FLORENCE MACK 89			151027			5/23/1984	1984
			69	19	151028	LD	FLORENCE MACK 90			151028			5/23/1984	1984
			69	19	151029	LD	FLORENCE MACK 91			151029			5/23/1984	1984
			69	19	151030	LD	FLORENCE MACK 92			151030			5/23/1984	1984
			69	19	151031	LD	FLORENCE MACK 93			151031			5/23/1984	1984
			69	19	151032	LD	FLORENCE MACK 94			151032			5/23/1984	1984
			69	19	151033	LD	FLORENCE MACK 95			151033			5/23/1984	1984
			69	19	151034	LD	FLORENCE MACK 96			151034			5/23/1984	1984
			69	19	151035	LD	FLORENCE MACK 97			151035			5/23/1984	1984
			69	19	151036	LD	FLORENCE MACK 98			151036			5/23/1984	1984
			69	19	151037	LD	FLORENCE MACK 99			151037			5/23/1984	1984
			69	19	151038	LD	FLORENCE MACK 100			151038			5/23/1984	1984
			69	19	151039	LD	FLORENCE MACK 101			151039			5/23/1984	1984
			69	19	151040	LD	FLORENCE MACK 102			151040			5/23/1984	1984
			69	19	151041	LD	FLORENCE MACK 103			151041			5/23/1984	1984
			69	19	151042	LD	FLORENCE MACK 104			151042			5/23/1984	1984
			69	19	151043	LD	FLORENCE MACK 105			151043			5/23/1984	1984
			69	19	151044	LD	FLORENCE MACK 106			151044			5/23/1984	1984
			69	19	151045	LD	FLORENCE MACK 107			151045			5/23/1984	1984
			69	19	151046	LD	FLORENCE MACK 108			151046			5/23/1984	1984
			69	19	151047	LD	FLORENCE MACK 109			151047			5/23/1984	1984
			69	19	151048	LD	FLORENCE MACK 110			151048			5/23/1984	1984
			69	19	151049	LD	FLORENCE MACK 111			151049			5/23/1984	1984
			69	19	151050	LD	FLORENCE MACK 112			151050			5/23/1984	1984
			69	19	151051	LD	FLORENCE MACK 113			151051			5/23/1984	1984
			69	19	151052	LD	FLORENCE MACK 114			151052			5/23/1984	1984
			69	19	151053	LD	FLORENCE MACK 115			151053			5/23/1984	1984
			69	19	151054	LD	FLORENCE MACK 116			151054			5/23/1984	1984
			69	19	151055	LD	FLORENCE MACK 117			151055			5/23/1984	1984
			69	19	151056	LD	FLORENCE MACK 118			151056			5/23/1984	1984
			69	19	151057	LD	FLORENCE MACK 119			151057			5/23/1984	1984
			69	19	151058	LD	FLORENCE MACK 120			151058			5/23/1984	1984
			69	19	151059	LD	FLORENCE MACK 121			151059			5/23/1984	1984
			69	19	151060	LD	FLORENCE MACK 122			151060			5/23/1984	1984
			69	19	151061	LD	FLORENCE MACK 123			151061			5/23/1984	1984
			69	19	151062	LD	FLORENCE MACK 124			151062			5/23/1984	1984
			69	19	151063	LD	FLORENCE MACK 125			151063			5/23/1984	1984
			69	19	151064	LD	FLORENCE MACK 126			151064			5/23/1984	1984
			69	19	151065	LD	FLORENCE MACK 127			151065			5/23/1984	1984
			69	19	151066	LD	FLORENCE MACK 128			151066			5/23/1984	1984
			69	19	151067	LD	FLORENCE MACK 129			151067			5/23/1984	1984
			69	19	151068	LD	FLORENCE MACK 130			151068			5/23/1984	1984
			69	19	151069	LD	FLORENCE MACK 131			151069			5/23/1984	1984
			69	19	151070	LD	FLORENCE MACK 132			151070			5/23/1984	1984
			69	19	151071	LD	FLORENCE MACK 133			151071			5/23/1984	1984
			69	19	151072	LD	FLORENCE MACK 134			151072			5/23/1984	1984
			69	19	151073	LD	FLORENCE MACK 135			151073			5/23/1984	1984
			69	19	151074	LD	FLORENCE MACK 136			151074			5/23/1984	1984
			69	19	151075	LD	FLORENCE MACK 137			151075			5/23/1984	1984

10 S 13 E 20 SW

REPORT DATE: APR 8, 1981

UNITED STATES DEPARTMENT OF THE INTERIOR

PAGE NO. 2150

STATE: CALIFORNIA

MON: LITHOGRAPH

NO. 1000000000

PERIOD: 1980-1981

GEOGRAPHIC INDEX

LEGAL DESCRIPTION	SECTION	TOWNSHIP	RANGE	SUBSECTION	SERIAL NO.	CASE NO.	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD FILE NO.	COUNTY	LOCATION DATE	LATEST ASSESS.
10 S 13 E 20 SW	19	1	27513	M	27513	1	MONN	MONN	27513	4312:215	9/17/1959	1960
			27515	M	27515	1	MONN	MONN	27515	4312:215	9/17/1959	1960
			27516	M	27516	1	MONN	MONN	27516	4312:215	9/17/1959	1960
			27517	M	27517	1	MONN	MONN	27517	4312:215	9/17/1959	1960
			27518	M	27518	1	MONN	MONN	27518	4312:215	9/17/1959	1960
			27519	M	27519	1	MONN	MONN	27519	4312:215	9/17/1959	1960
			27520	M	27520	1	MONN	MONN	27520	4312:215	9/17/1959	1960
			27521	M	27521	1	MONN	MONN	27521	4312:215	9/17/1959	1960
			27522	M	27522	1	MONN	MONN	27522	4312:215	9/17/1959	1960
			27523	M	27523	1	MONN	MONN	27523	4312:215	9/17/1959	1960
			27524	M	27524	1	MONN	MONN	27524	4312:215	9/17/1959	1960
			27525	M	27525	1	MONN	MONN	27525	4312:215	9/17/1959	1960
			27526	M	27526	1	MONN	MONN	27526	4312:215	9/17/1959	1960
			27527	M	27527	1	MONN	MONN	27527	4312:215	9/17/1959	1960
			27528	M	27528	1	MONN	MONN	27528	4312:215	9/17/1959	1960
			27529	M	27529	1	MONN	MONN	27529	4312:215	9/17/1959	1960
			27530	M	27530	1	MONN	MONN	27530	4312:215	9/17/1959	1960
			27531	M	27531	1	MONN	MONN	27531	4312:215	9/17/1959	1960
			27532	M	27532	1	MONN	MONN	27532	4312:215	9/17/1959	1960
			27533	M	27533	1	MONN	MONN	27533	4312:215	9/17/1959	1960
			27534	M	27534	1	MONN	MONN	27534	4312:215	9/17/1959	1960
			27535	M	27535	1	MONN	MONN	27535	4312:215	9/17/1959	1960
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REPORT DATE APR 8 1981

FILE NO. 212

UNITED STATES DEPARTMENT OF THE INTERIOR

LAND MANAGEMENT

LEGAL DESCRIPTION

SECTION 10 1

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212

LEGAL DESCRIPTION: SEC 10 1 29 SE 18 S 13 E 29 SE

RANGE 13 E T18S R13E

SECTION 10 1

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REPORT DATE: APR 9 1981
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

PAGE NO. 451

PERIOD: POINT DIABLO

GEOGRAPHIC INDEX

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APPENDIX D

Memorandum: California Regional Water Quality Control Board -
March 15, 1985

Memorandum

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD • CENTRAL VALLEY REGION

3374 E. Shields Avenue, Room 18

Fresno, California 93726

Phone: (209) 445-5116

TO: File *Lytt*

FROM: Lonnie M. Wass
Staff Engineer

DATE: 15 March 1985

SIGNATURE: *Lonnie M. Wass*

SUBJECT: ASBESTOS PROBLEM IN THE WHITE CREEK WATERSHED, FRESNO COUNTY

In western Fresno County and eastern San Benito County, the uplift of the coast range has yielded a massive localized "plug" (14 miles long and 4 miles wide) of asbestos-rich serpentine ore in the White Creek Watershed above the City of Coalinga. There are two abandoned asbestos mines with associated tailings waste in the watershed area. During heavy rains, water runoff is to White Creek, a tributary to Los Gatos Creek, which ends up ponding in settling basins at Gale Avenue against the California Aqueduct. Flows in excess of settling basin capacity enter the Aqueduct. Asbestos concentrations of 20×10^9 fibers per liter have been measured in the Aqueduct. Ingested asbestos is a suspected carcinogen; therefore, the use of the Aqueduct as a source of potable water may be impaired.

Staff conducted an investigation of the watershed to determine if the two abandoned mines were causing the asbestos problem in White Creek or if the problem emanated from the entire watershed. Observations of the tailings during minor storms showed that no runoff occurred. In March 1983, staff was able to successfully sample the four main drainages tributary to White Creek during heavy storm conditions. The analyses indicated that significant amounts of asbestos was being carried down from all areas of the watershed and not specific to the drainages where the mines were located. Staff concluded that control of the point sources (the mines) would not eliminate the asbestos problems.

1. Atlas Asbestos Mine

One of the mines was operated by the Atlas Asbestos Company. The mine, mill and tailings area are near the top of the watershed in the midst of the asbestos "plug". The mill and tailings pile cover approximately 30 acres. The natural bowl shape of the open pit mines allows ponding of the storm water in the bowls. In 1980, the Atals Asbestos Company ceased operation and filed for relief under Chapter 11 of the U. S. Bankruptcy laws.

During 1980, the U. S. Environmental Protection Agency (EPA) investigated the Atlas Asbestos Company's operation due to alleged violations of the Clean Air Act (CAA). In the process of their investigation, EPA discovered violations of the Clean Water Act (CWA). At the time, EPA assumed the responsibility as lead agency.

The Atlas site is mainly owned by the Bureau of Land Management, except for two 5-acre parcels covering the mill and a small portion of the tailings. One of the 5-acre parcels is owned by the California State Lands Commission and the other by a private concern. Because of the lack of a solvent responsible party, the EPA has indicated there is no imminent solution to the problems found at the site.

2. Coalinga Asbestos Mine

One of the mines was operated by the Johns-Manville Company doing business as the Coalinga Asbestos Company. The mill facilities and tailings site were leased from the Southern Pacific Land Company. The tailings were deposited in a natural drainage channel adjacent to the mill. In the mid 1970's, the Johns-Manville Company ceased operations and filed for relief under Chapter 11 of the U. S. Bankruptcy laws.

Staff investigated the Coalinga Asbestos Mine site in 1980 and found that the drainage control structures (diversion channel and dam) were not being maintained nor were adequate to control drainage. Staff observed only minor erosion of the tailings pile, but found the downgradient dam had been breached. Pursuant to staff's requests, the Southern Pacific Land Company has submitted their plans for providing drainage control facilities. Staff are reviewing these plans and will be developing any comments or concerns.

3. Actions by the EPA

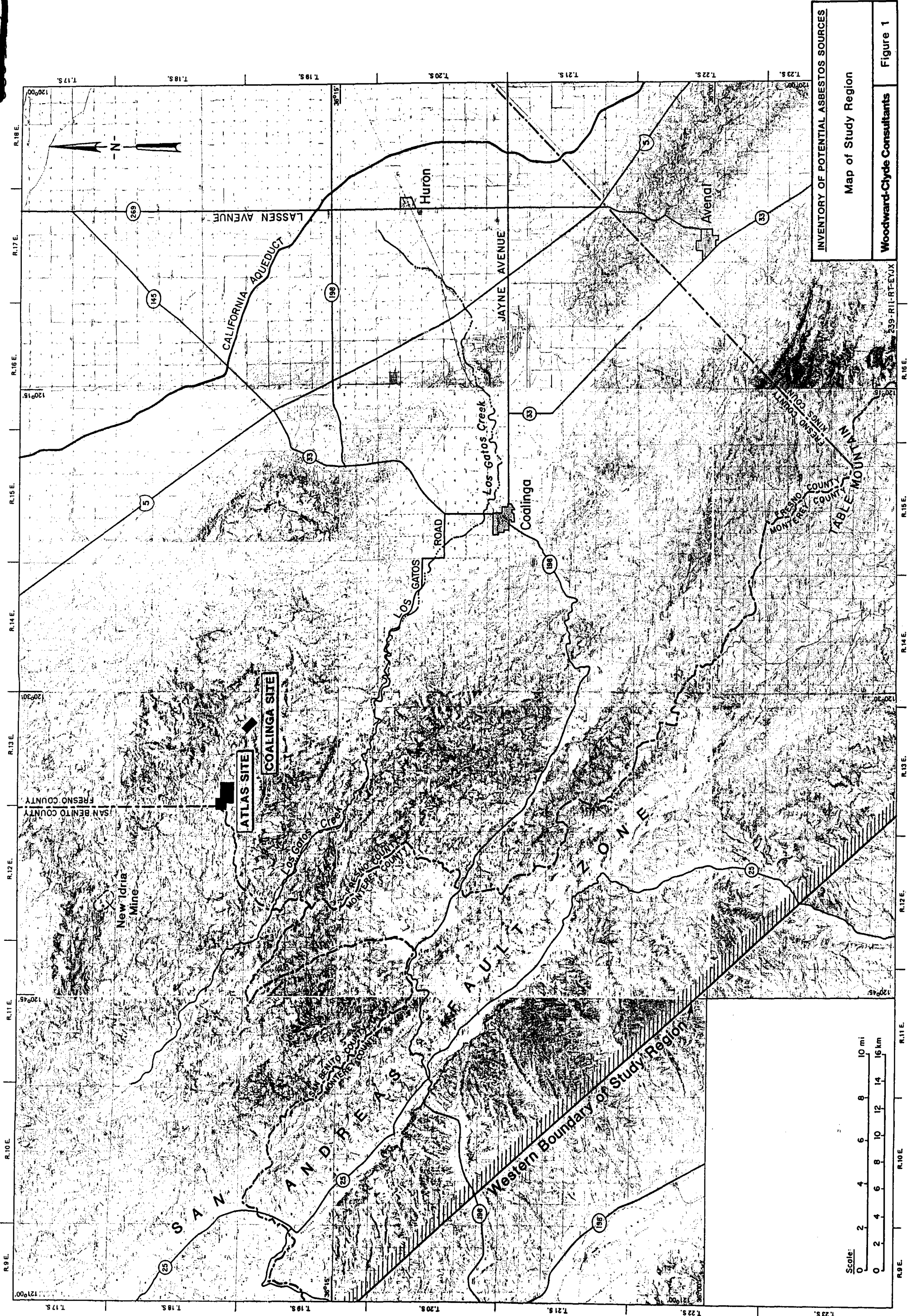
As part of the Superfund program, the EPA contracted CH2M Hill to complete investigations of the two abandoned mine sites. CH2M Hill is attempting to identify the contribution of the two abandoned mines on the problems encountered in White Creek.

4. Actions by Other Agencies

The U. S. Bureau of Reclamation (USBR) and the Department of Water Resources (DWR) have each initiated separate studies in the area. The DWR, who own and operate the California Aqueduct, are developing solutions to the asbestos sediment discharge to the aqueduct.

FIGURES

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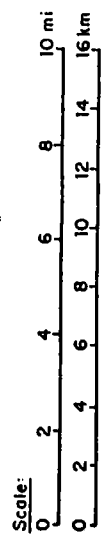


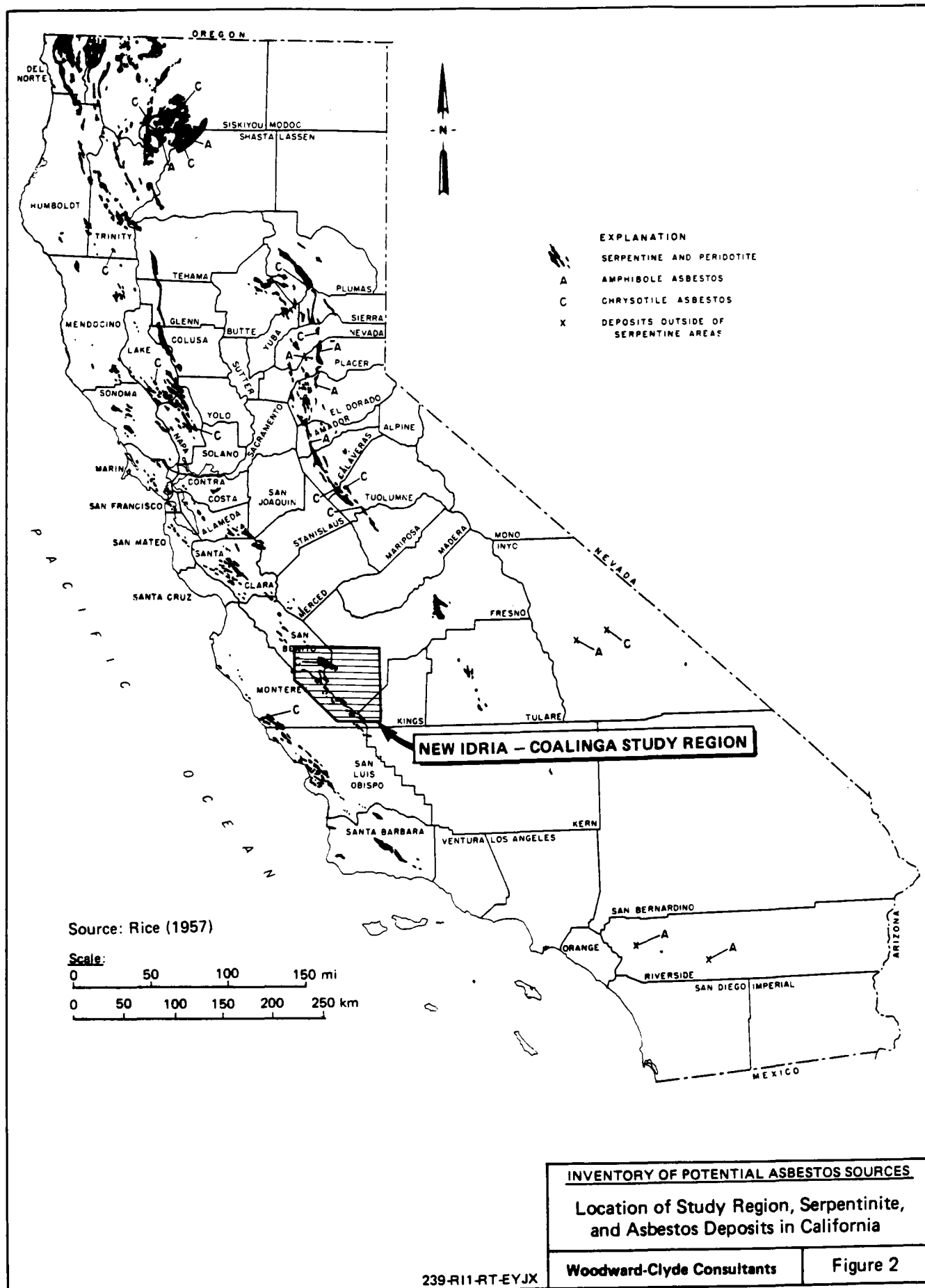
INVENTORY OF POTENTIAL ASBESTOS SOURCES

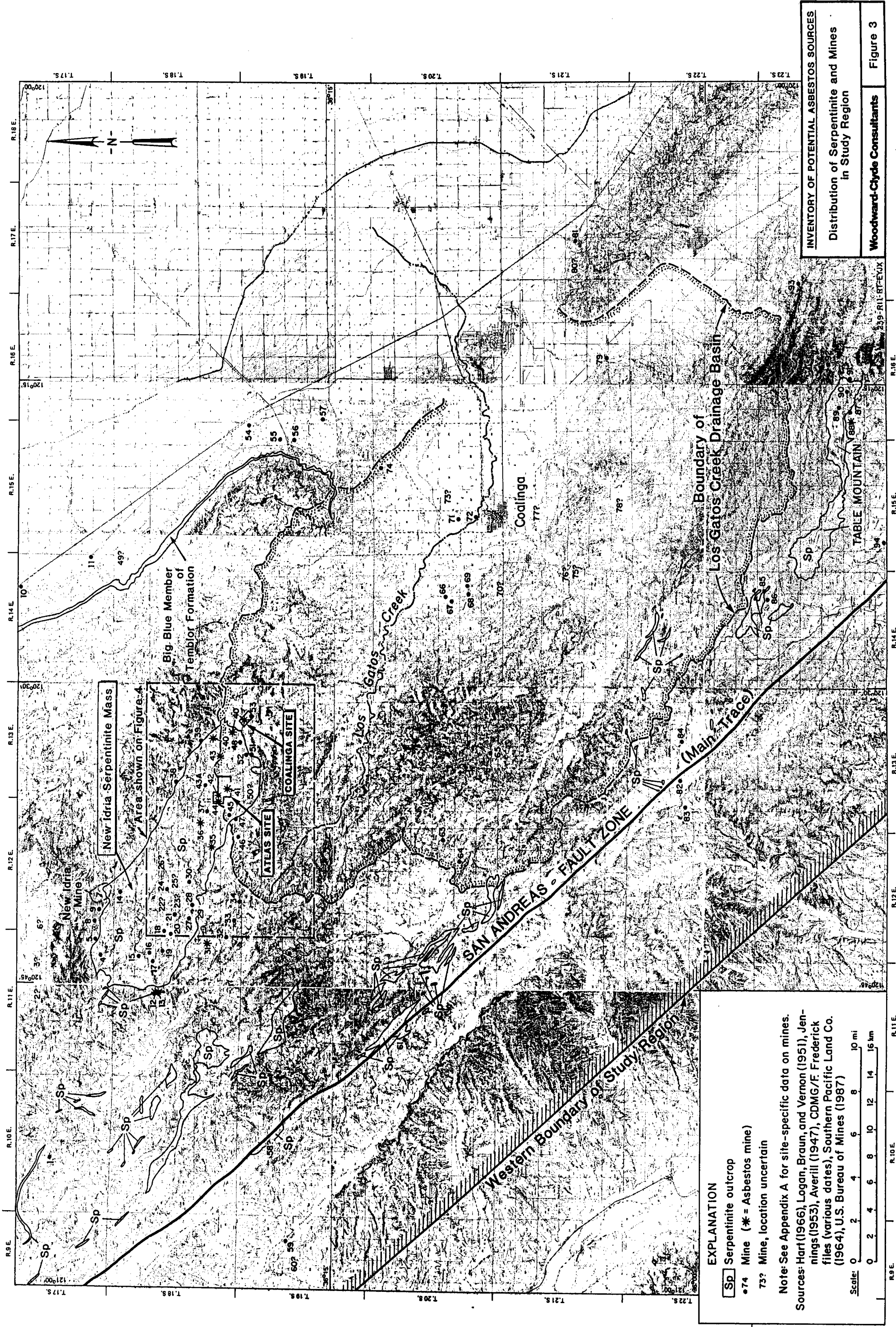
Map of Study Region

Woodward-Clyde Consultants

Figure 1







EXPLANATION

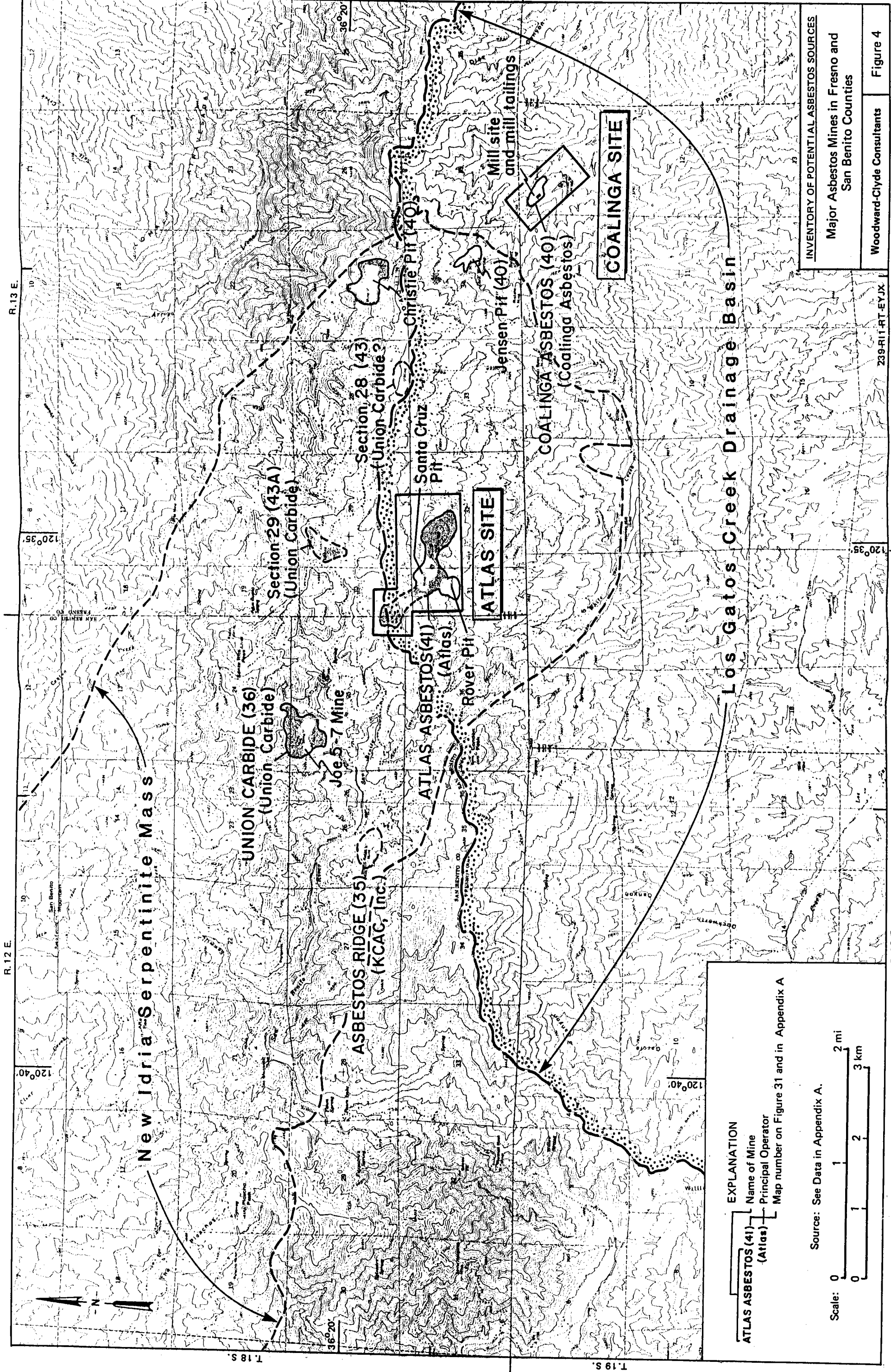
- Sp Serpentine outcrop
- 74 Mine (* = Asbestos mine)
- 73? Mine, location uncertain

Note: See Appendix A for site-specific data on mines.

Sources: Hart (1966), Logan, Braun, and Vernon (1951), Jennings (1953), Averill (1947), CDMG/F. Frederick files (various dates), Southern Pacific Land Co. (1964), U.S. Bureau of Mines (1987)

Scale: 0 2 4 6 8 10 12 14 16 mi
0 2 4 6 8 10 12 14 16 km

1153



EXPLANATION

ATLAS ASBESTOS (41) (Atlas) — Name of Mine
Principal Operator
Map number on Figure 31 and in Appendix A

Source: See Data in Appendix A.

Scale: 0 1 2 3 mi
0 1 2 3 km

INVENTORY OF POTENTIAL ASBESTOS SOURCES		
Major Asbestos Mines in Fresno and San Benito Counties		
Woodward-Clyde Consultants	Figure 4	

13135 Lee Jackson Memorial Highway
Suite 200
Fairfax, Virginia 22033
(703) 968-0900