### APPLICATION FOR SURFACE MINING PERMIT AND RECLAMATION PLAN NILES CANYON QUARRY

NAME OF APPLICANT: S.R.D.C., INC. ADDRESS: 1265 MONTECITO AVE., MTN. VIEW, CA 94043 TELEPHONE: (415) 961-2742 FAX (415) 968-3945 LOCATION OF PROPERTY TO BE MINED AND/OR RECLAIMED: NORTHERLY SIDE OF STATE ROUTE 84 NILES CANYON ROAD, ONE MILE EAST OF THE FREMONT CITY BOUNDARY AND ONE HALF MILE WEST OF SUNOL. ASSESSOR'S DESIGNATION(S): MAP: BLOCK: BOOK 96, pp.115 PARCELS: 2-4 BOOK 96, pp.126-61 BOOK 96, pp.125,6,2 BOOK 96, pp.125.3 RECORDED OWNER & ADDRESS: S.R.D.C. INC., 1265 MONTECITO AVE., MT. VIEW, CA. 94034 PLAN. ..... RECLAMATION PLAN ONLY.

INFORMATION FOR SURFACE MINING PERMIT APPLICATION:

QUESTIONS:

- 1. PURPOSE OF THE PROPOSED MINING OPERATION:
- A. TO EXTRACT KNOWN QUANTITIES OF CLAY, SHALE AND NATURAL ROCK FROM THE SITE OVER A TWENTY FIVE YEAR PERIOD.
- B. TO DEVELOP A CLASS 2 MATERIAL BY INSTALLING A PORTABLE ROCK CRUSHING OPERATION AT SITE 1, MIXING RECYCLED CONCRETE WITH THE INDIGENOUS SHALE.
- 2. PROPOSED STARTING DATE: UPON GRANTING OF THE RENEWED SMP.
- 3. PROPOSED TERMINATION DATE: 25 YEARS AFTER COMMENCING DATE.
- 4. WILL OPERATIONS BE CONTINUOUS .....; INTERMITTENT.....; SEASONAL.....; OTHER (EXPLAIN), OPERATION WILL BE CONTINUOUS BUT WILL BE MARKET DRIVEN WITH ACTIVITY DEPENDENT ON DEMAND.
- 5. MINERAL COMMODITIES TO BE MINED: SHALE CLAY NATURAL AGGREGATE.
- 6. TOTAL ANTICIPATED PRODUCTION:

SITE 1. MINERAL COMMODITIES TO BE REMOVED: CUBIC YARDS....750,000

SITE 2.

MINERAL COMMODITIES TO BE REMOVED: CUBIC YARDS..1,000,000

WASTE RETAINED ON SITE ..... NONE

WASTE REMOVED FROM SITE ..... 200,000 TONS REBAR

MAXIMUM ANTICIPATED DEPTH.....SITE 1....100 FEET SITE 2.....150 FEET

7. MINING METHOD:

QUARRY; SIDE HILL MULTI BENCH SHOVEL MINING PLAN:

QUESTION #8

SITE 1

THE PROPOSED MINING PLAN IS TO DEVELOP AND OPERATE TWO MINING SITES ON THIS LAND. ALTHOUGH FITE NUMBER ONE HAS BEEN MINED FOR A NUMBER OF YEARS ONLY A SMALL AMOUNT OF MATERIAL HAS BEEN EXTRACTED TO DATE. WE PLAN TO CONTINUE MINING THE SITE FORM CURRENT ELEVATIONS TO ELEVATION 440' AND THEN PROCEED UP THE SLOPE TO ELEVATION 840'. MATERIAL WILL BE REMOVED FORM THE SLOPES BY RIPPING AND DOZING. WORK WILL COMMENCE AT ELEVATION 516' ON THE EASTERN PORTION OF THE OPERATION AND PROCEED TO ELEVATION 840' ON THE NORTH SIDE. ELEVATION 520' IS THE GOAL FOR THE WEST SIDE OF THE OPERATION AND 520' ALONG THE SOUTHERN RIDGE (THEREBY ALLOWING THE ULTIMATE OPERATION TO BE KEPT OUT OF SIGHT FROM ROUTE 84).

AT ELEVATION 480 WE PLAN TO INSTALL A PORTABLE CONCRETE CRUSHER AT THE EASTERN PART OF THE BASIN. IMPORTED CONCRETE RUBBLE WILL BE REDUCED TO ITS BASIC ROCK CONTENT AND MIXED WITH CRUSHED SHALE TO PRODUCE A CLASS 2 MATERIAL. CLASS 2 MATERIAL IS A BASIC COMPACTION MATERIAL USED IN CONSTRUCTION FOR ROADS, ETC. THERE IS NO WASTE FROM THIS OPERATION EXCEPT FOR A MAXIMUM OF ONE LOAD OF REBAR IRON PER WEEK. THIS IS EXTRACTED FORM THE CONCRETE RUBBLE. A DETENTION BASIN WILL BE INSTALLED AT ELEVATION 560'. INTERCEPTOP DRAINS WILL BE INSTALLED IN ORDER TO BYPASS THE OUAPRY OPERATION

OPERATIONS AT SITE 1 ARE TO BE "MARKET DRIVEN". EXTRACTION OF MATERIAL AND MINING OPEPATIONS WILL NEVER EXCEED THE MARKET DEMAND AND THE SUPPLY OF CONCRETE RUBBLE. THE DEMAND IS FURTHER LIMITED BY THE NUMBER OF CONTRACTS S.R.D.C. IS ABLE TO OBTAIN IN THE OPEN MARKET PLACE AND MOST LIKELY WILL FALL BELOW THE YEARLY ANTICIPATED EXTRACTION.

MINING PHASES AT SITE 1 ARE AS FOLLOWS:

PHASE 1. (THE EASTERN PORTION) INSTALL DETENTION BASINS AND BY-PASS STORM DRAINS AT THIS TIME. THE CLASS 2 FINISHED MATERIAL COMING OUT OF THIS SITE IS APPROXIMATELY A BLEND OF 60% CRUSHED CONCRETE AND 40% SHALE. THE TOTAL EXPORT OF CLASS 2 MATERIAL IS EXPECTED TO BE IN EXCESS OF 625.000 CUBIC YARDS. THE SHALL EXCAVATION WILL BE APPROXIMATELY 250.000 CUBIC YARDS. UPON THE COMPLETION OF THIS PHASE LANDSCAPING WILL BE PLANTED ON THE SOUTHERN RIDGE TO SCREEN FUTURE OPERATIONS.

PHASE 2. (THE SOUTH WESTERN PORTION) THE TOTAL SHALE MINED IS EXPECTED TO BE NEAR 500.000 CUBIC YARDS.

DURING PHASE 2 CRUSHED CONCRETE WILL CONTINUE TO BE INTRODUCED THROUGH THE ROCK CRUSHING OPERATION PHASE 3. (FINAL DEPTH REACHED) THE TOTAL AMOUNT OF EXCAVATED SHALE IS EXPECTED TO BE 100,000 CUBIC YARDS.

THERE IS A PROBABILITY THAT SOME SHALE EXTRACTED DURING THESE PHASES WILL ALSO BE SOLD FOR COMMON FILL, HOWEVER SITE 2. WILL BE THE PRIMARY SOURCE OF FILL MATERIAL.

SITE 2

PHASE 1.

PHASE 1 OF THE SITE 2 QUARRY OPERATION CONSISTS OF THE FOLLOWING WORK.

- 1. CONSTRUCT A PORTION OF THE QUARRY PIT DOWN TO ELEVATION 440'.
- 2. EXCAVATE IN A NORTH WESTERN DIRECTION FROM THE PIT TO ELEVATION 560'.
- 3. INSTALL HAUL ROADS INCLUDING RAMPS TO AND FROM THE PIT. THESE ROADS AND RAMPS WILL MOST LIKELY REMAIN THROUGH-OUT THE OPERATION CYCLE OF THE PROJECT.
- 4. AFTER THE NORTH WESTERN PORTION OF THE SITE IS COMPLETED SCREENING AND LANDSCAPING WILL BE INSTALLED. BY THE TIME THE QUARRY OPERATIONS HAVE BEEN EXTENDED TO THE HIGHER CONTOURS THESE TREES SHOULD HAVE GROWN TO A HEIGHT THAT WILL SCREEN ALL FUTURE QUARRY OPERATIONS.

PHASE 2.

INSTALL THE ULTIMATE DETENTION BASIN AND THE ULTIMATE BY-PASS STORM LINES. AS THE FINAL SLOPES ARE FORMED PERMANENT LANDSCAP-ING CAN BE INSTALLED. WATER USAGE:

QUESTION 9.

IF FULL OPERATION WAS EVER TO OCCUR A MAXIMUM OF 20,000 GALLONS OF WATER WOULD BE USED FOR EVERY WORKING DAY. THIS BREAKS DOWN TO 10,000 GALLONS AT SITE 1 (ON A RARE PERIOD OF FULL PRODUCTION) AND 10,000 GALLONS AT SITE 2. THERE PRESENTLY ARE TWO 100,000 GALLON WATER TANKS ON THE LOWER PART OF THE SITE. THEY ARE FED BY A 3 INCH LINE FORM THE CREEK THAT IS ACROSS THE HIGHWAY (ROUTE 84). WATER IS PUMPED FORM THE CREEK INTO THE TWO 100,000 GALLON TANKS, AND THEN IS TRANSPORTED BY A TWO INCH LINE TO A 10,000 GALLON TANK THAT IS PLACED IN THE RAVINE BEHIND THE CURRENT QUARRY OPERATION TOWARD THE TOP OF THE PROJECT IN THE AREA WE CALL SITE 1. IT CAN NOT BE SEEN FORM THE ROAD WAY.

THIS IS NON-POTABLE WATER, NOT INTENDED FOR HUMAN CONSUMPTION. IT WILL BE USED FOR DUST CONTROL, THE CRUSHER OPERATIONS, LANDSCAPING AND FIRE FIGHTING.

THERE IS NO WASTE OR SURPLUS WATER FORM THE CURRENT AND/OR PROPOSED MINING OPERATIONS. WATER WILL BE RELEASED FORM THE TANKS ON AN AS NEEDED BASIS THEREBY NEGATING ANY WASTE OR SURPLUS USAGE.

WATER PUMPED FROM THE ALAMEDA CREEK IS METERED AND AUTHORIZED BY A CONTRACT WITH THE ALAMEDA COUNTY WATER DISTRICT.

SEE APPENDIX NUMBER 5 FOR A COPY OF THE AGREEMENT.

QUESTION 10:

ON SITE PROCESSING:

AT SITE 1. WE ARE PROPOSING THE INSTALLATION OF A CONCRETE CRUSHER. THIS MACHINE RECYCLES CONCRETE RUBBLE BACK TO ITS BASIC ROCK CONTENT. THE ONLY WASTE FROM THIS OPERATION IS AN ANTICIPATED ON TRUCK LOAD OF REBAR PER WEEK. THE REBAR WILL ALSO BE RECYCLED. THERE WILL BE NO WASTE OR TAILING MATERIAL TO BE DISPOSED OF, EVERYTHING WILL BE USED FOR THE PRODUCTION OF CLASS TWO (2) MATERIAL.

THE CRUSHING OF CONCRETE RUBBLE IS FAVORED BY BOTH THE STATE OF CALIFORNIA AND THE COUNTY OF ALAMEDA. THIS TYPE OF RECYCLING NOT ONLY GREATLY REDUCES THE AMOUNT OF MATERIAL (RUBBLE) GOING TO LAND FILLS BUT RECLAIMS AN EVER DWINDLING COMMODITY, I.E., SUITABLE ROCK FOR CLASS 2 BASE MATERIAL. THIS PROCESS ALSO RECYCLES REBAR STEEL. WHICH ALSO REDUCES THE IMPACT ON COUNTY LAND FILLS.

BOTH THE "CYPRESS AND 280 (EMBARCADERO)" FREEWAYS, VICTIMS OF THE 1988 EARTHQUAKE, WERE RECYCLED IN THIS MANNER.

QUESTION 11:

BATCH OPERATIONS:

NO CONCRETE BATCH OPERATIONS WILL BE CONDUCTED ON THIS SITE.

QUESTION 12:

ACTIVITIES:

NO OTHER TYPE OF ACTIVITIES ARE CONTEMPLATED AT THIS TIME.

QUESTION 13:

DAYS AND TIME OF OPERATIONS:

MINING AND/OR PROCESSING OPERATIONS COULD OCCUR APPROXIMATELY 300 DAYS A YEAR. OPERATIONS WILL OCCUR DURING NORMAL CONTRACTOR BUSINESS DAYS AND HOURS, I.E.. MONDAY THROUGH SATURDAY FROM 07:00 HOURS TO 17:00 HOURS.

THIS OPERATION AND BUSINESS IS "MARKET DRIVEN". AS WE ALL KNOW THE DEMAND FOR FILL MATERIAL AND CLASS TWO MATERIAL IS NOT THE SAME AS IT WAS DURING THE HEIGHT OF THE "FREEWAY" CONSTRUCTION YEARS. THE OPERATION OF THIS PLANT WILL EBB AND FLOW WITH THE DEMAND FOR FILL AND CLASS 2 MATERIAL. QUESTION 14:

THE PROPOSED OPERATIONS WILL NOT EXTEND NEAR OR INTO A USABLE WATER-BEARING STRATUM.

QUESTION 15:

"PROTECT...AGAINST OVERFLOW OF ADJACENT STREAMS":

THE ONLY ADJACENT STREAM, ALAMEDA CREEK, IS DOWNHILL AND ACROSS THE HIGHWAY (ROUTE 84) FROM THE SITE. IF A HUNDRED YEAR FLOOD OCCURS THE STREAM MIGHT CROSS ROUTE 84. THE WATER WOULD HAVE TO RISE 40' (+/-) TO REACH THE SITE AT ITS LOWEST LEVEL. AT SITE 1. AND AT SITE 2. EXISTING SWALES WILL BE REROUTED AS NECESSARY TO AVOID QUARRY OPERATIONS.

QUESTION 16:

"EQUIPMENT TO BE USED":

OTHER THAN THE CONCRETE CRUSHER, THE OTHER CONTEMPLATED EQUIPMENT TO BE USED IN THE MINING AND CRUSHING OPERATIONS ARE: SCRAPERS, DOZERS, SCREENS, CONVEYORS, LOADERS, BACKHOE, TRUCKS AND OTHER EQUIPMENT COMMON TO THIS TYPE OF OPERATION.

COMPANY OWNED AS WELL AS PRIVATE OWNER OPERATED TRUCKS WILL BE USED FOR THE IMPORT OF CONCRETE RUBBLE AS WELL AS FOR THE EXPORT OF FINISHED MATERIAL.

QUESTION 17:

"DUST AND NOISE CONTROL":

THE APPLICATION OF WATER WILL BE THE PRIMARY DUST CONTROL MEDIUM. A POLYETBER WILL BE ADDED TO THE WATER IN THE 10,000 GALLON STORAGE TANK. THE WATER WHEN SPRAYED ON THE SHALE - CONCRETE ROCK MIX WILL ENTRAIN AND ENTRAP AND CONTROL THE DUST. THERE WILL BE WATER TRUCKS AT BOTH MINING SITES AND ON THE HAUL ROADS TO RETARD ANY AND ALL DUST FORM EQUIPMENT OPERATIONS. THERE IS VERY LITTLE DUST AND NOISE FORM THE CONCRETE CRUSHING OPERATION. WATER, WITH THE POLYETBER ADDED, ALMOST TOTALLY CONTROLS DUST. THE CRUSHING OPERATION AT S.R.D.C.'S REDWOOD CITY SITE IS DUST FREE. ALTHOUGH, THE CRUSHER IS LOCATED WITHIN 150 FEET OF THE FRONT GATE ON SEAPORT BOULEVARD YOU CAN NOT HEAR NOISE FROM THE MACHINE AT THIS POINT.

NOISE AT SITE 1. WILL BE MITIGATED BY ITS LOCATION UPHILL AND TOWARD THE REAR OF THE PROPERTY. THIS SITE IS REMOVED FROM THE HIGHWAY AND IS SITUATED IN A CANYON. SITE 1. IS THE LOCATION OF THE CONCRETE CRUSHER WHERE NOISE WILL FURTHER BE MITIGATED BY THE CONTOURING OF THE TERRAIN AND THE PLANTING OF TREES.

NOISE AT SITE 2. WILL BE MITIGATED BY THE CONSTRUCTION OF A BERM, THE PLANTING OF TREES AND OTHER LAND SCAPE PLANTINGS. THERE WILL BE NO CRUSHING AT SITE 2.

\*\*\*\* POLYETBER IS ADDED TO THE WATER FOR DUST CONTROL:

... "DUSTROL IS NON-TOXIC TO HUMANS, ANIMALS, PLANTS, GERMINATION OF SEEDS - IS BIODEGRADABLE, NONPOLLUTING, ECOLOGICALLY CLEAN, COLORLESS WHEN APPLIED, AND HAS NO OBNOXIOUS ODOR".

\*\*\*\* SEE APPENDIX 3.: MANUFACTURE'S DATA SHEET'S AND THE U.S. DEPT. OF LABOR, 0.S.H.A., "MATERIAL SAFETY DATA SHEET". (REV. MAY, 72) QUESTION 18:

"DRINKING WATER AND SANITARY FACILITIES FOR EMPLOYEES":

BOTTLED WATER AND PORTABLE TOJLETS WILL BE PROVIDED FOR THE EMPLOYEES.

QUESTION 19:

"ACCESS TO PUBLIC ROADS ... FREEWAYS "

TRUCKS WILL LEAVE THE SITE VIA THE MAIN DRIVEWAY ENTRANCE TO ROUTE 84. THEY WILL THEN PROCEED IN AN EASTERLY OR WESTERLY DIRECTION TO THE FREEWAY TERMINI ON HIGHWAY #680 AND HIGHWAY #880.

QUESTION 20:

"ESTIMATE .. AVERAGE AND MAXIMUM NUMBER OF TRUCK TRIPS":

THE ANTICIPATED DISTRIBUTION OF TRUCK TRIPS IN EACH DIRECTION WILL BE 80% TOWARD HIGHWAY #880 AND 20% TOWARD HIGHWAY #680.

TRAFFIC CALCULATIONS -- 25 YEAR PERIOD.

SITE 1.

750,000 CY (TOTAL EXCAVATION) ....30,000 CY PER YEAR DIVIDED BY; 300 OPERATING DAYS PER YEAR = 100 CY = 150 TONS PER DAY SINCE 60% OF CLASS 2 BASE MATERIAL IS DEMOLISHED CONCRETE AND 40% IS EXCAVATED SHALE 375 TONS OF CLASS 2 WILL BE EXPORTED. THEREFORE DEMO. CONCRETE TRUCKS WILL IMPORT 300 TONS PER DAY.

\*375 TONS CLASS 2 EXPORT (22 TONS PER TRUCK) = 18 TRUCKS PER DAY.

\*267 TONS OF CONCRETE RUBBLE IMPORT (22 TONS PER TRUCK) = 11 TRUCKS PER DAY (ASSUMING 100% OF ALL CONCRETE RUBBLE TRUCKS COMING TO THE SITE WILL LEAVE WITH CLASS 2 MATERIAL.

\*EMPTY INCOMING TRUCKS NECESSARY = 18 MINUS 11 = 7 TRIPS PER DAY.

\*\*TOTAL TRIPS PER DAY (IN AND OUT) = 36.

SITE 2.

1.000.000 CY

DIVIDED BY; 300 OPERATING DAYS PER YEAR = 133 CY PER DAY EXPORT = TOTAL ROUND WAY TRUCK TRIPS PER DAY = 6 TRIP TOTAL = 12 TRIPS PER DAY, EACH WAY, = 12

TOTAL TRUCK TRIPS PER DAY FROM SITES 1. & 2. \*\*\*\* 48.

THESE TRIP NUMBERS ARE BASED ON MAXIMUM PRODUCTION QUANTITIES. SINCE THIS OPERATION IS MARKET DRIVEN AND TOTALLY BASED ON DEMAND. MAXIMUM PRODUCTION WILL VERY SELDOM OCCUR. QUESTION 21.

"COMPANY OWNED VEHICLES...ESTIMATE":

APPROXIMATELY 40% OF THE TRUCK TRIPS WILL BE WITH S.D.R.C. OWNED TRUCKS. WE ESTIMATE THAT 60% OF TRUCK TRIPS WILL BE IN OTHER OWNER-OPERATED TRUCKS.

QUESTION 22.

REQUIRED PLANS:

SEE SUBMITTED PLANS.

QUESTION 23.

REQUIRED PLANS:

SEE SUBMITTED PLANS FOR TREATMENT AREAS UNDER THE RECLAMATION PLAN.

QUESTION 24.

"FUTURE USE":

THE ULTIMATE PHYSICAL CONDITION OF THE SITE WILL BE CONSISTENT WITH THE GENERAL PLAN OF ALAMEDA COUNTY.

THE MINED AREAS WILL BE BENCHED WITH WIDE BENCHES AND THE HILLSIDES STABILIZED IN ACCORD WITH THE TERRASEARCH REPORT. DURING THE INITIAL STAGE THE PROBLEM OF FALLING ROCKS WILL BE MITIGATED BY "CATCH TRENCHES" AND "CATCH FENCES" LOCATED WHERE DEEMED NECESSARY.

THE RESTORED SITE WILL BE RECLAIMED IN A MANNER COMPATIBLE WITH THE NATURAL ENVIRONMENT. NATIVE GRASSES AND TREES WILL BE PLANTED WHERE NECESSARY.

THE FUTURE USE OF THE MINE SITE IS UNCERTAIN AT THIS TIME. THE OWNERS HAVE ALREADY CONVERTED ABOUT SEVEN ACRES OF THE SITE INTO VINEYARDS AND ORCHARDS AND FORESEE AGRICULTURAL USES AS BEING COMPATIBLE WITH THE ALAMEDA GENERAL PLAN.

QUESTION 25.

THE APPLICANT IS S.R.D.C.. INC (A CALIFORNIA CORPORATION) WHOSE SHARES ARE OWNED SOLELY AND COMPLETELY BY THE FERRARI BROTHERS, WHO ARE ALL ACTIVELY PARTICIPATING IN THIS APPLICATION. THE FERRARI BROTHERS ARE THE PRINCIPLES OF FERMA CORP., A GENERAL ENGINEERING FIRM. QUESTION 26.

SOIL CONDITIONS AND REDISPOSITION OF SOILS:

SOIL CONDITIONING IN THIS AREA CAN ROUGHLY BE DESCRIBED AS A SHALLOW LAYER OF TOPSOIL OVER A LAYER OF CLAY. BOTH LAYERS COVER A DEEP DEPOSIT OF SHALE.

IT IS THE INTENTION OF THIS PROPOSAL TO REMOVE THE TOPSOIL MATERIAL AND STOCK PILE SAME.

THIS MATERIAL WILL THEN BE REINTRODUCED DURING THE RECLAMATION PROCESS. THERE WILL BE NO MOUNDS OF WASTE MATERIAL UPON CLOSE OUT OF THIS OPERATION. IE.. THERE WILL RE NO WASTE SOIL LEFT ON THE SITE.

THE OWNERS. VIA THEIR CIVIL ENGINEER. HAVE INSTRUCTED TERRASEARCH INC., GEOTECHNICAL ENGINEERS AND GEOLOGISTS, TO TAKE ANOTHER LOOK AT THIS PROPERTY. THEIR REPORT DATED APRIL 25, 1995, IS ATTACHED TO THIS APPLICATION AS APPENDIX 6.

HEEDING THE TERMS OF THE SOILS REPORT. THE LIMITS OF THE NEW QUARRY WORK ARE AWAY FROM THE UNSTABLE AREAS AND FROM THE PREVIOUSLY RECOMMENDED SETBACKS.

THE NEW TERRASEARCH REPORT CONCLUDES WITH THE FOLLOWING STATEMENT...."IT IS OUR OPINION THAT THE PROPOSED PLAN FOR MINING THE NILES CANYON QUARRY CONFORMS TO THE REQUIREMENTS SET FORTH IN REFERENCE 1, (THEIR ORIGINAL REPORT), AND THE STABILITY OF THE AREA SHOULD NOT BE ENDANGERED." QUESTION 27. AND QUESTION 28. COMBINED:

WE HAVE CHOSEN TO RESPOND TO THESE QUESTIONS WITH A SINGLE RESPONSE SINCE WE PROPOSE PHASING (QUESTION 28) TO BRING ABOUT TOTAL AND COMPREHENSIVE RECLAMATION. IF SEPARATION IS ESSENTIAL WE CAN EASILY ACCOMPLISH THAT BUT WE BELIEVE COMBINING QUESTIONS 27 AND 28 WILL BETTER RESPOND TO THE GENERAL ISSUE.

RECLAMATION PLAN

I. SEQUENCE OF OPERATIONS;

A. SITE 1. PROGRAM:

(A) PHASE I.

ONCE EXCAVATION IS UNDER WAY THE FOLLOWING RECLAMATION STEPS WILL BE TAKEN:

1. TOP SOIL WILL BE STRIPPED AND STOCKPILED TO THE WEST IN THE PHASE 2 AREA.

2. CUT SLOPES WILL BE BROUGHT TO FINAL CONTOUR.

3. INTERIM PIT DRAINS WILL BE CONSTRUCTED (WITH PUMP FACILITIES AS REQUIRED).

4. TOP SOIL WILL BE RETURNED AND REVEGETATION OF CUT SLOPES UNDERTAKEN.

5. FINISHED SLOPES ON NORTHERN EASTERN AREAS WILL BE PLANTED WITH PINES AND OAKS. (SEE LANDSCAPE DRAWING)

6. BENCHES AND OPEN AREAS WILL BE SEEDED.

7. TREES WILL BE PLANTED ON THE FINAL CUT-SLOPES AS SOON AS GRASS CROP BECOMES ESTABLISHED.

8. MAINTENANCE PERFORMED AS SPECIFIED IN LANDSCAPE SPECIFICA-TION APPENDIX #7. THE APPENDIX CONTAINS A REPORT ON THE NATIVE LANDSCAPING OF THIS AREA AND HOW TO RECLAIM THE AREA WITHIN THE SAME NATIVE FRAMEWORK. THE AUTHOR STATED THAT A 80% RATE IS FEASIBLE FOR THE ORIGINAL PLANTINGS. REPLANTING WILL OCCUR WHEN AND WHERE NECESSARY.

(B.) PHASE II. PHASE 2 WILL FOLLOW A SIMILAR PROCEDURE AS PHASE 1. FINAL STORM FACILITIES WILL BE INSTALLED IN THE PIT BOTTOM. FINISHED SLOPES ALONG THE SOUTHERN EDGE OF THE SITE WILL BE LANDSCAPED WITH PINES, ETC. (SEE LANDSCAPE PLAN). THESE TRESS WILL ACT AS A SCREEN FOR THE UPPER AREA DURING FURTHER QUARRYING. (C.) PHASE III. PHASE 3 (FINAL PHASE) IS SIMILAR TO PHASES 1 AND 2 ABOVE.

COMPLETION OF THE UPPER PART OF SITE 1 FACE IS ESTIMATED AT 25 YEARS. AS EACH SECTION OF THE UPPER SLOPE IS COMPLETED, RECLAMATION FOLLOWING THE SAME SCHEME AS ABOVE WILL BE STARTED. DRAINAGE APPLIANCES WILL BE INSTALLED AS NEEDED AS BOTH EXCAVATION AND RECLAMATION PROCEED.

### B. SITE 2. PROGRAM.

(A.) RECLAMATION OF THE MINING OF SITE 2 PHASE 1 WILL BE THE SAME AS THE 4 ACRE PART OF SITE 1 PHASE 1 AS DESCRIBED ABOVE.

DURING EXCAVATION BELOW ELEVATION 290 THE NOW EXISTING DETENTION BASINS AND DRAINS WILL REMAIN. AN ADDITIONAL TEMPORARY DETENTION BASIN WILL BE CONSTRUCTED AT THE WORK AREA AND DIVERSION PIPES INSTALLED DURING THIS PERIOD.

ONCE EXCAVATION IS UNDER WAY THE HAUL ROADS WILL BE DEVELOPED AND THE RECLAMATION STEPS SPECIFIED FOR SITE 1. WILL BE INSTALLED.

(B.) PHASE 2 OF SITE 2 RECLAMATION.

RECLAMATION OF THIS AREA, THE COMPLETION OF THE UPPER PART OF SITE 2, WILL BE THE SAME AS THOSE PROCEEDURES DESCRIBED FOR SITE I.

C. SITE 3, PROGRAM,

THE SITE, APPROXIMATELY 15 ACRES (+/-), WAS INITIALLY QUARRIED BY BOTH KAISER AND LASSENITE. THE SITE IS THE AREA CLOSEST TO THE FRONT GATE. MOST OF THE EQUIPMENT, BUILDINGS, MATERIALS AND MACHINERY ARE IN THIS AREA. IT IS THE STAGING AREA FOR ALL OF THE MINING OPERATIONS AS WELL AS BEING A NECESSARY SPACE FOR MAINTENANCE, STORAGE OF MATERIALS USED IN THE MINING OPERATIONS AND THE LAND RECLAMATION SEQUENCES.

APPROXIMATELY 6 ACRES OF THIS AREA IS PAVED. THE PAVING IS IN THE AREA OF THE MAINTENANCE BUILDING, THE SCALES AND SCALE HOUSE, THE WATER TANKS AND SOME OF THE STORAGE AREA. MOST OF THE EQUIP-MENT IN THIS LOCATION, LEFTOVER'S FORM THE PREVIOUS OWNERS, WILL BE SCRAPPED AND DISCARDED.

AT THE CONCLUSION OF THE PERMIT TIME SPAN, (AND OR MINING OPERATIONS), EVERYTHING WILL BE REMOVED FORM THIS SITE. THE LAND WILL BE TOTALLY CLEANED AND RECLAMATION WILL PROCEED IN THE SAME MANNER AS DESCRIBED ABOVE IN SITE 1., PHASE 1.

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ALL CUT SLOPES WILL BE BACKFILLED TO SUPPORT NEW PLANTING. THERE WILL BE NO MAJOR BACK FILL ON THE QUARRY FLOOR. MINOR BACK FILL WILL TAKE PLACE AS A REMEDY TO FILL ANY AREA THAT BECOMES WORN OR ERODED. FILL MATERIAL PLACED ON THE QUARRY FLOOR SHALL MEET ALL COMPACTION REQUIREMENTS OF THE UNIFORM BUILDING CODE. ALL OTHER BACKFILL WILL BE AS SPECIFIED BY A CIVIL ENGINEER AND AS APPROVED BY THE COUNTY BUILDING OFFICIAL. MATERIAL USED FOR BACKFILL SHALL BE NATIVE MINERAL SOIL OR OTHER INERT MINERAL MATERIAL AS APPROVED. FILL MATERIAL SHALL MEET THE REQUIREMENTS OF THE COUNTY BUILDING OFFICIAL AND SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 7010, CHAPTER 70 OF THE UNIFORM BUILDING CODE, (1991), THE COUNTY GRADING ORDINANCE OR THE COUNTY BUILDING OFFICIAL.

PILES OR DUMPS OF TOP SOIL SHALL BE STOCKPILED IN SUCH A MANNER AS TO FACILITATE PHASED RECLAMATION. TOP SOIL AND TOP SOIL SUBSTITUTES OR GROWTH MEDIA SHALL BE SEGREGATED FORM ANY OTHER TYPE OF MATERIAL AS SALVAGED FOR USE IN RECLAMATION. IN ADDITION THE PHYSICAL CHARACTERISTICS OF THE FILL MATERIAL WILL BE SUCH THAT THE CONTAINMENT REQUIREMENTS OF THE ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION WILL BE MET.

FINAL RECLAIMED FILL SLOPES, INCLUDING PERMANENT PILES OF OVERBURDEN, SHALL NOT EXCEED 1:1 (HORIZONTAL:VERTICAL), EXCEPT WHEN SITE-SPECIFIC AND ENGINEERING ANALYSIS DEMONSTRATE THAT THE PROPOSED FINAL SLOPE SUITABLE WILL HAVE AT LEAST THE MINIMUM SLOPE STABILITY FACTOR OF SAFETY THAT IS SUITABLE FOR THE PROPOSED END USE AND WHEN THE PROPOSED FINAL SLOPE CAN BE SUCCESSFULLY REVEGETATED. AT CLOSURE, ALL FILL SLOPES SHALL CONFORM WITH THE SURROUNDING TOPOGRAPHY AND/OR APPROVED END USE. CUT SLOPES, INCLUDING QUARRY FACES, SHALL HAVE AT LEAST A MINIMUM SLOPE STABILITY FACTOR OF SAFETY THAT IS SUITABLE FOR THE PROPOSED END USE AND CONFORM WITH THE SURROUNDING TOPOGRAPHY AND/OR APPROVED END USE.

NOTE: AUTHORITY CITED: SECTIONS 2755, 2756 AND 2773, PUBLIC RESOURCES CODE. REFERENCE: SECTIONS 2773, PUBLIC RESOURCES CODE.

SLOPE STABILIZATION AND RECONTOURING SHALL INCLUDE ALL SCARRED, DENUDED AND EXCAVATED SLOPES. THESE SLOPES SHALL UNDERGO A RESTORATION AND REVEGETATION PROGRAM. FINAL SLOPE GRADIENT WILL BE AS RECOMMENDED IN THE "TERRASEARCH REPORT". ALL SLOPE GRADIENTS SHALL NOT EXCEED 1:1 AND LOWER SLOPE GRADIENT WILL NOT EXCEED 1:1. SLOPE BENCHES WILL BE CONTOURED TO ENHANCE ORDERLY DRAINAGE AND TO MINIMIZE THE POSSIBILITY OF SLOPE SLIPPAGE AND SLIDES. A SYSTEM OF 12" TO 36" DIAMETER CORRUGATED METAL PIPES WILL BE INSTALLED AS NECESSARY TO AID SLOPE DRAINAGE DURING AND AFTER MINING OPERATIONS. REHABILITATION OF PRE-MINING DRAINAGE WILL BE RESTORED WHERE-EVER POSSIBLE AND MAINTAINED IN ORDER TO ENHANCE SLOPE STABILITY. HOWEVER, THE PROPOSED PLAN SHOULD MINIMIZE SURFACE GROUND MOVEMENT AT THE SITE. GEOLOGIC STUDIES OF THE SITE SHOW THAT MINOR SLIDES HAVE OCCURRED EVEN WHEN THE LAND WAS UNDISTURBED. AFTER THE TREES AND GRASSES THAT WILL BE PLANTED AS PART OF THE RECLAMATION PLAN HAVE BECOME ESTABLISHED THE FREQUENCY AND DEGREE OF SLIDES AND SLIPPAGE WILL BE MINIMAL. MOST SLIDE ACTIVITY OCCURRED NORTH OF SITE 1 WHERE THE "TERRASEARCH" REPORT SPECIFIED 1.5:1 FINAL SLOPES, (OUTSIDE PROPOSED WORK AREA).

SHOULD THE NEED ARISE FINAL SLOPE GRADIENT WILL BE FLATTENED IN ANY AREA WHERE UNANTICIPATED STABILITY PROBLEMS ARE ENCOUNTERED.

SITE CLEAN UP:

ALL STOCKPILES, PRODUCTION STRUCTURES AND EQUIPMENT, REFUSE, AND MOST BUILDINGS WILL BE REMOVED AFTER OPERATIONS ARE TERMINATED. DURING THE POST MINING MAINTENANCE PERIOD ONE OR TWO BUILDINGS MAY REMAIN ON THE SITE FOR USE BY THE RECLAMATION CREW. THE OFFICE BUILDING MAY BE RETAINED AS A PERMANENT STRUCTURE. PRESENT STRUCTURES LEFT BY PRIOR OWNERS ARE IN THE PROCESS OF BEING REMOVED FORM THE PREMISES.

CONTAMINANT CONTROL:

THE REVEGETATION AND RECLAMATION PROGRAM SHOULD EFFECTIVELY CONTROL THE MOVEMENT OF SILT AND/OR LOOSE SOIL BY WATER RUN OFF DURING THE RAINY PERIOD. THERE SHOULD BE NO GROUND WATER CONTAMINATION, OR IF THERE IS IT WILL BE NO MORE THAN THAT WHICH EXISTED BEFORE THE MINING OPERATIONS. THERE WILL BE NO SALT OR ACID LADEN TAILINGS ON THE PREMISES DURING OR AFTER MINING. IF THE EXISTING SEPTIC TANK IS SILL IN OPERATION WHEN THE QUARRY IS SHUT DOWN, THE TANK WILL BE PUMPED, EXCAVATED AND THE HOLE FILLED WITH APPLICABLE FILL AND COMPACTION REGULATIONS. IF SEWER SERVICE BECOMES AVAILABLE PRIOR TO SHUT DOWN THE SEPTIC TANK WILL BE TREATED IN THE ABOVE MANNER AND A SEWER HOOK-UP WILL BE MADE.

### STREAM BANK TREATMENT:

THERE ARE NO STREAMS OR CREEKS RUNNING THROUGH THE QUARRY. POST MINING DRAINAGE CHANNELS WILL BE SUBJECT TO "GREEN WATER-WAY" TREATMENT TO MINIMIZE OR ELIMINATE SILTING OF RUNOFF WATER. THE SWALE PASSING THROUGH SITES 1 & 2 WILL BE DIVERTED VIA DETENTION BASINS AND REROUTING STORM LINES TO THE EXISTING SEDIMENTATION BASIN. QUESTION 29; DESCRIBE HOW RECLAMATION OF THIS SITE IN THIS MANNER MAY EFFECT FUTURE MINING AT THIS SITE AND IN THE SURROUNDING AREA:

WE ANTICIPATE THAT THERE WILL BE NO EFFECT ON ANY FUTURE MINING OPERATIONS IN THIS AREA. THE MINING PLAN SUBMITTED IS SELF CONTAINED AND APPLIES TO ONLY APPROXIMATELY 15% OF THE TOTAL SITE.

QUESTION 30: PROVIDE A REPORT BY AN ENGINEERING GEOLOGIST ...

RE: TERRA SEARCH REPORT ..... 1980

THIS REPORT WAS PREPARED FOR THE LASSENITE PROJECT, WHICH EXTENDED OVER 80% OF THE SITE AND REACHED THE UPPER PORTIONS OF THE SITE, WE HAVE USED PORTIONS OF THE REPORT WHICH DEAL WITH SLOPE STABILITY IN OUR CURRENT REPORT.

RE: TERRA SEARCH REPORT.....1995

TERRA SEARCH REVIEWED THEIR ORIGINAL REPORT FORM THE STAND POINT OF SLOPE STABILITY AND RECLAMATION. THEY REVIEWED THE SITE AND THE MINING PLAN DEVELOPED BY THE CIVIL ENGINEER.

SEE APPENDIX 6. FOR A COPY OF THE 1995 REPORT

### SAPE NEW ARRIVE MENT

### APPENDIX 1.

INTERIN MANAGEMENT PLAN

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### INTERIM MANAGEMENT PLAN

WE DO NOT ANTICIPATE LONG PERIODS OF SHUTDOWN, HOWEVER THE FOLLOWING PLAN IS OFFERED.

THE INTERIM MANAGEMENT PLAN, OR IMP, HAS BEEN CONCEIVED FOR PERIODS OF LITTLE OR NO ACTIVITY AT THE QUARRY SITE. THESE PERIODS WOULD BE WINTER MONTHS DURING BAD WEATHER, SLOW DOWN'S OR SLUMP'S IN THE MARKET, MECHANICAL RE-TOOLING AND/OR BREAK DOWN'S.

SAFETY, SLOPE STABILITY AND EROSION ARE THE PRIMARY CONCERNS OF THE OWNERS. THE EXISTING DRAINAGE AND SEDIMENTATION PLAN(S) HAVE BEEN FILED WITH THE COUNTY. OUR PROPOSAL INDICATES A NEW SEDIMENTATION BASIN AND SEVERAL INTERCEPTOR DRAINAGE LINES ARE TO BE INSTALLED THROUGHOUT THE SITE. DETENTION BASINS WILL BE INSTALLED AT BOTH PITS FOR THE PURPOSE OF DIRECTING STORM FLOWS AROUND THE QUARRY OPERATIONS.

SLOPE STABILITY, ON A SHORT TERM BASES, WILL CONSIST OF ROCK TRENCHES AND ROCK FENCES. THE EARLY RECLAMATION WILL ALSO IMPROVE THE CONDITIONS LEADING TOWARD GOOD SLOPE STABILITY. AS THE PLANTINGS TAKE HOLD AND RECLAMATION IS WELL IN PROGRESS, FACTORS OF SLOPE STABILITY WILL IMPROVE. THERE HAVE BEEN MINOR SLIDES IN THIS AREA IN THE RECENT AND FAR PAST. AND, THERE WILL BE MINOR SLIDES IN THE FUTURE DUE TO THE NUMBER OF FAULTS IN THE AREA.

SECURITY: THE TOTAL SITE IS FENCED, AS ARE THE PARCELS TO THE EAST AND THE WEST. THE FRONT ACCESS AT THE DRIVEWAY ON ROUTE 84 HAS A GATE. THERE IS ANOTHER GATE AND SOME CHAINLINK CROSS FENCING ON THE SITE ON THE LOWER ELEVATIONS. WE ANTICIPATE BOTH GATES TO BE CLOSED AND LOCKED DURING PERIODS OF INACTIVITY. OTHER GATES WILL BE CONSTRUCTED AT THE ENTRANCES TO THE QUARRIES AND ON THE HAUL ROADS.

THERE IS A WATCHMAN LIVING ON THE SITE.

ALL EQUIPMENT WILL BE LOCKED AND THE KEYS REMOVED DURING SLACK PERIODS. THE SCALE HOUSE WILL BE LOCKED AS WELL AS THE OPERATING CONTROL ROOM OF THE CONCRETE CRUSHER.

IF A SECURITY AND/OR SAFETY ISSUE ARISES, THE SHERIFFS OFFICE FOR ALAMEDA COUNTY HAS TWO CARS IN THE IMMEDIATE AREA DURING THE DAY TIME AND ONE EACH FOR THE SWING AND MID SHIFTS. THESE SHIFTS HAVE TWO MAN PATROLS.

S.R.D.C. STAFF IS ALWAYS ON CALL AND CARRY BEEPERS. IF AN EMERGENCY OR PROBLEM OCCURS ONE OR MORE CAN BE ON THE SITE IN A SHORT TIME.

SHUT DOWN'S OR PERIODS OF INACTIVITY WILL BE OF SHORT DURATIONS AND MOSTLY DUE TO WET WEATHER.

APPENDIX 2. CHARTENT WAS STOLD ON PRIME OF THE LOW

## LANDSCAPE PLAN

REFERENCE APPENDIX 7.

### REPORT ON ENVIRONMENTAL RESOURCE MANAGEMENT

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AND ALTER ACTIVE ACTIVE AND MININE ANIMAL THERE AS HELD WALL THE ACTIVE AND ALLE WALLS AND ALLE AND AL

- ANTER COMING TIMES OF RAIL OF FUN-OFF FICE CLICKS
- OF DENDIS AND SECTION IN SUMERIES AT LOND CONTINUE.
  - LAND AN THUL LIFE.

### LANDSCAPE PLAN:

AS THE MINING OPERATION PROGRESSES SOIL WHICH HAS BEEN PROTECTED BY A LAYER OF VEGETATION WILL BE EXPOSED TO THE FULL EFFECTS OF THE WEATHER. ALTHOUGH SUN AND WIND PLAY A PART IN THE NATURAL ALTERATION OF DENUDED LAND THE MOST IMPORTANT WEATHERING EFFECT IS THAT CAUSED BY RAIN. WHILE BARE OR DENUDED LANDS CAN WITHSTAND THE EFFECTS OF LIGHT RAINFALLS, HEAVY RAINFALLS OR RAIN WASH (I INCH OR GREATER IN 24 HOURS) CAUSE MATERIAL DAMAGE IN TEMPERATE REGIONS WHERE PLANT COVER HAS BEEN PARTIALLY OR COMPLETELY DESTROYED. WHERE VEGETATION IS SCANTY OR ABSENT, THE PRINCIPAL EFFECT OF RAINWASH IS THE EROSION OF GULLIES IN WEAK ROCK LIKE CLAY, SHALE OR SOFT MATERIAL.

OF GREAT IMPORTANCE IN DETERMINING THE EFFECT OF SHEET FLOOD OR RAIN WASH EROSION IS THE VEGETATION COVER. IF THIS IS DENSE, THE IMPACT OF THE FALLING RAIN IS RECEIVED CHIEFLY BY THE PLANTS, THROUGH AND DOWN WHICH THE WATER TRICKLES MUCH MORE SLOWLY; CONSEQUENTLY THE EFFECT OF HEAVY RAIN OR HAIL IS NULLIFIED. ROOTS, ESPECIALLY THE MANIFOLD SYSTEMS OF THE SMALLER PLANTS, BIND THE SOIL PARTICLES TOGETHER AND IMPEDE THEIR REMOVAL BY RAIN WASH.

VEGETATION ACTS IN A VARIETY OF WAYS TO RETARD RUN-OFF, REDUCE IT'S VOLUME AND HOLD SOIL PARTICLES IN PLACE. THE PLANT COVER, ESPECIALLY IF IT IS CONTINUOUS OVER THE SURFACE, ABSORDS THE IMPACT OF THE RAIN AS STATED ABOVE.

VEGETATION RENDERS THE SOIL CAPABLE OF ABSORBING MOISTURE RAPIDLY. THE SOIL IS AS AGGERATE OF LOOSE PARTICLES WHOSE NATURAL TEXTURE IS RATHER LIKE THAT OF A SPONGE. IT IS THE INTENT OF THIS PLAN TO RESTORE THIS AREA SITE AS MUCH AS POSSIBLE TO THIS STATE.

GRASS IS THE MOST EFFECTIVE AGENT IN DEVELOPING POROUS STRUCTURE IN SOIL. GRASS ROOTS PENETRATE MOST SOILS TO CONSIDERABLE DEPTHS. THE ABUNDANT ROOT SYSTEMS HOLD LOOSE SOIL TOGETHER. THE SOILS IN THE THIS AREA ARE KNOWN TO SUPPORT GOOD GRASS GROWTH.

INCESSANTLY ACTIVE, PLANT AND MINUTE ANIMAL ORGANISMS HELP MAKE A SOIL MELLOW, FRIABLE AND <u>ABSORBENT.</u> RESTORING AND MAINTAINING A DENSE WATER SHED COVER IN DENUDED OR SCARRED LANDS WILL:

- \* REDUCE THE QUANTITY AND RATE OF RUN-OFF FROM DRAINAGE AREAS DURING TIMES OF RAINFALL.
- \* REDUCE THE RATE OF EROSION AND THE RATE OF DEPOSITION OF DEBRIS AND SEDIMENT IN STREAMS AND FLOOD CONTROL STRUCTURES.
- \* ENHANCE THE ENVIRONMENT FOR THE NATURALLY OCCURRING LAND ANIMAL LIFE.

PAGE 18.

THE FOLLOWING LAND MANAGEMENT AND PLANTING SCHEME IS INTENDED TO ACCOMPLISH RESTORATION OF GOOD WATERSHED VEGETATION.

### PLANTS:

THE GRASSES WERE PICKED FOR A NUMBER OF CHARACTERISTICS. VIGOROUS GROWTH NITROGEN FIXING ABILITIES, FAIL RATE AND A SUCCESSFUL HISTORY OF USE IN THE AREA WERE THE PRINCIPAL CONSIDERATIONS FOR CHOICE. (SEE APPENDIX NO. 7)

### MATERIALS;

A. SEED -- THE FOLLOWING SEED MIX IS RECOMMENDED FOR THE GRASS CROP ON THE SOUTH AND WEST FACING PROPOSED SLOPES.

TYPE; -DESCHAMPSIA CESPITOSA (TUFTED HAIR GRASS) -ELYMUS GLAUCUS (BLUE WILD RYE) -NASSELLA LEPIDA (TUSSOCK GRASS) -NASSELLA PULCHRA, OR STIPA PULCHRA (TUSSOCK GRASS) -FESTUCA IDAHOENSIS (IDAHO FESCUE)

B. SEED -- THE FOLLOWING SEED MIX IS RECOMMENDED FOR THE GRASS CROP ON THE NORTH OR EAST FACING PROPOSED SLOPES.

TYPE; -NASSELLA PULCHRA (TUSSSOCK GRASS) -MELICA CALIFORNIA (CALIFORNIA MELICA GRASS) -ELYMUS CANADENSIS (NODDING WILD RYE)

SEE APPENDIX NO. 7 FOR THE RECOMMENDED LISTS OF "FORBS AND SCUBS" PLANTINGS. ET. SIC., FOR RECOMMENDED SITE PREPARATION AND PLANTING TECHNIQUES.

COVER MATERIALS;

STRAW COVERING MAY BE DERIVED FROM OATS, RICE, WHEAT OR BARLEY. STRAW SHOULD BE OF FRESH QUALITY, FREE FROM ROT AND MILDEW AND ACCEPTABLE BY THE COUNTY AGRICULTURAL COMMISSIONER.

CELLULOSE MATTER SUCH AS WOOD CHIPS CAN BE USED AS A SURFACE COVER. SAW DUST MAY BE USED AS A SOIL CONDITIONER IF AGED AND SUPPLEMENTED WITH ADEQUATE NATURAL NITROGEN RELEASING MATTER. CEDAR AND/OR WALNUT CHIPS AND SAW DUST MAY NOT BE USED.

TREES: WHERE INDICATED TREES NATIVE OR ADAPTABLE TO THE AREA WILL BE PLANTED. THE TREES ARE TO BE PLANTED IN LARGE PITS, BACKFILLED WITH TOPSOIL AND ADMIXTURES, AND HAVE MULCHED WATER BASINS AT THE TOP OF THE PLANTING PIT. THE TREES MUST BE OF GOOD QUALITY, FREE FROM DISEASE AND FUNGUS AND BE AT LEAST THREE YEARS OLD AT THE TIME OF PLANTING.

### THE TREES CHOSEN ARE:

CALIFORNIA LIVE OAK....QUERCUS AGRFOLA CALIFORNIA WHITE OAK...QUERCUS LOBATA CALIFORNIA BAY LAUREL....UMBELLULARIA CALIFORNICA BISHOP PINE.....PHINUS RADIATA PACIFIC WILLOW....SALIX LASIANDRA

THE TREES WILL BE PLANTED AS SCREENING AND ALONG THE RIMS ACCORDING TO SPECIE AND AS INDICATED ON THE LAND SCAPE DRAWING.

INTERIM IRRIGATION FACILITIES WILL BE INSTALLED TO WATER THE TREES AND THE GRASSES NOT ONLY IN THE GROWING, IE., (NURSERY) PLOTS, BUT ALSO WHEN THEY ARE PLANTED IN THEIR PERMANENT POSITIONS. HEALTHY 5 GALLON TREES WILL BE OBTAINED, PROBABLY FROM THE UNIVERSITY OF CALIFORNIA AT DAVIS, AND THEN DEVELOPED INTO THREE YEAR OLD TREES BEFORE THEY ARE PLANTED ON THE SITE.

SURFACE PVC PIPE WITH RAIN BIRD HEADS WILL BE USED FOR THE IRRIGATION SYSTEM. THIS SYSTEM CAN BE MOVED AND ADDED TO WHEN EVER NECESSARY. THE WATER WILL BE PUMPED FROM THE HOLDING TANKS ON THE SITE OR, IF NECESSARY, THE WATER CAN BE PUMPED FROM WATER TRUCKS.

A DRIP SYSTEM WILL BE INSTALLED WHERE CONDITIONS ALLOW FOR THIS TYPE OF IRRIGATION.

### APPENDIX # 3.

POLYETBER SAFETY DATA SHEETS (MANUFACTURE) AND "MATERIAL SAFETY DATE SHEETS"....OSHA.



OMB NC. JANR ; 38"

Occupational Safety and Health Administration

### MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing. Shippuliding, and Shippreaking (29 GFR 1918, 1916, 1917)

		SECT	TION :		
MANUFACTURER'S NAME B-D CREMICA	EMERGENCY TELEPHO (408) 663-	(408) 663-0378			
ADDRESS Number Street. GITY, State and ZIP ( 17561 VIERRA CANYO SASSINGAL NAME AND SYNCHYMS	N R	DAD, S	ALINAS, CA 93907		
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SECTION IV -	FIRE	AND	EXPLOSION HAZARD DATA	-	110
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	SECTION VIII . SPECIAL P	PROTECTION INFORMATION
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	SECTION IX . SPE	CIAL PRECAUTIONS
PRECAUTIONS TO	SE TAKEN IN NANDLING AND STORING	IS REALES FILL FRANKS
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PAGE (2)

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Form OSHA-20

A NTON INSTRUCTIONS WATTAK Th..... APPLICATIONE DBRT ROADS, DIRT VANDS OR PARKING AREAS.

ANDNAS, RACE TRACKS, ETC.

- FII water track to 90% of councily, add Dushvul at the rate of 2 gallons per 1,000 gallons of water (towning is characterence of Dustingly FII balance of task.
- 2. Drive truck slower than normal, allowing more under to be applied than usual.
- Repeat on newly treaded areas at least 6 times at this rate.
- Reduce amount of Dustriel to 1 gallon per 1,000 gallons -- continue driving abudy.
- Reditions application of Deentrol in unsper to first trip in morning and last trip at night cen stabborn areas and heavily traveled roads.
- Reduce application frequency as control becomes apparent (often to 1/2 or less). (Some soil types respood second than others.)
- Pleavy vehicle teathic scutts the surface of the hard strata beneg towned, occasional watering will be necessary.
- B. Race track areaaas: Control can usually be obtamed writin 12 applications.

Pira

74

## SPNAY ANTIJCATIKINI: CONVEYCING, TIPPLIES, ETC

- Durative may be supported into weeker lines leading to a pray member with Bhue White Type Metering Pump, directly from absorpting drum at any convertient potol.
- 2. Inject at the rate of 1 gallon per 1,000 gallons of water, Rednas water volume 1/2 or mass.
- Bacha sendont, either dry organic meterials require approximately 2 sumes year calles yeard of material.
- Milating Operations: inject at the rate of 1 gellon per 1.000 gallons of water tota water line: leading to sprayers at nearest connectionit point. Roduce water witume 1/2 to 2./3.
- 5. Dirt banks and amail yander Bantrol and be applied with hencered applicator full strength. Area with little toot traffic can be constrolled with I applicator per work.

FOLLOW CURONS CAREPULLY: GOOD APPLIC JENN GETS GOOD RESULTS.

(408) 663-0378 • 1 (800) 662-0378

17561 Vienta Canyon Pd. Salinas, CA 93907

CHEMICALS

PRODUCED BY



Dustrol is an organic chemical agent for Dust Control:

# ECOLOGICALLY CLEAN:

- · BIODEGRADABLE
- · NON-POLLUTING

# NON-TOXIC TO:

- · PLANTS
- · SEED GERMINATION
- · ANIMALS
- · HUMANS

Distributed in This Area By



"The Best Way to Control Dust WHEREVER IT OCCURS"

DUST IS A NUSANCE, HAZARD, AND A THREAT TO HEALTH

23.9

Dust is technically described as particles of solid matter 1-150 miccons in suce which pass through a 305 mess screen.

On Dirs Koads: (Hauß Ronds - Detours - Farm Noads, etc.)

Drank is a hazard to tendfir, causes excessive wear and matchenames to equipment, extra expense for weshing vehicks, tenpare the health of people moving equipences, depuedts that an the leaves of teness and plants providing a hidding place for miles and other tonscels, preventing matural predators from constrolling them and extra expense of apraying and damaging crops and trees. On Paved Roader. Dust is still a perifician because of spillage from trucks and the said created by large vehicles. proving along roads. Wead blows dust off of particing sesses, equipment yards where light vehicle traffic occurs, stock piles and slag otts.

On conveyor belie and tipples charying area and eggregates to be processed or londed create considerable dust. Minung Operationes: Drilling and blasting are also a lung entropy source of deast (a health hazard).

Contracting or creatiling of ones and aggregates produce dust.

17.05T solvium adds to the PROFIT of any operation. APINERALLY it lowers PROFIT in many ways and IMB-IATESEVERYONE. The use of DUSTROL can increase art/OFITS.

# CHOICE - MUD OR DUGT

Most frequently used 1/3 of the time; dust 2/3 of the here and people writated at both! DUSTROV. CAN REDUCE THE NUISANCE.





Dustrol is an organic chemical agent for Dust WHEREVER IT OCCURS

Control:

HOW PUSTROL HELPS CONTROL DUST

IAMARKA IS AN ORGANIC CHEMICAL COMPOUND

Durstered contains components which cause the menute particles to adhere to each other, formang a larger particle in size (which resists blowing when dry). Philofful contains components which cause WATER and PUSSTREP to immediately penetrate into the soil of roadbeds to a greater depth. (Reducing tons by evaporation – raducing cluick-holes caused by standing puddles of water), carrying the chemicals diseper into the area designed for forming a hard base-strate, which resists blowing (Dast). Overtral muses implantly with water (no agilation needed) and remarks as a homogeneous solution, even with extended storage in the water truck (will not separate).

Elevated well freeze at approximately 20°F, and should be stored in a protected area (above 32°F.). Freezang well not affect performance or cause separation of the compound.

Drustral is moa-tomic to humans, ammals, plants, genue nation of soeds, -- biodegnadable, no-pollating, acrehogic ally r lean, colvitiess when applied, no obnazious udor. Hurstrief is the result of 15 years of experimentation, development and testing in the area where it is needed and used. Letters from satisfied users are available upon request. Dustral has been improved as new chemicalls have priced beneficial to the formulation and performance of the product. DV/STROC, will containually the improved when new products appear and add to the results.

AUNIC

(IMPORTANT INFORMATION

**7 HOW EFFECTIVE IS WATER AL** 

Is there any residual effect on dist t by the application of water nione?? If set \$100 MUCH DOES (T TAKE 1 mile of road 10 th wide/1.22 acres

1-1500 gallon weter truck = 28.4 page inch of water applied. 1.2000 gallon water truck=21.3 pases inch of water applied.

- WITH WATER ALONE -

The TRANSTION between MUDDY and roadways IS A VERY SHORT TIME SHORTER during WARM and/or WEATHER.

Often the starting place is DRV before truck is empty.

The cost of LABOR - GASOLINE - and R today's prices make ineffectual water at TOO EXPENSIVE.

CUT YOUR WATER REQUIREMENT

THE ADDITIONAL COST OF DUISTR THE ALREADY FIXED COST OF WAT PLICATION IS MINIMAL FOR THE RI OBTAINED. (If the application have are followed explicitly.)



APPENDIX # 4. FINANCIAL ASSURANCE

### FINANCIAL ASSURANCE

UNDER THE PRESENT SURFACE MINING PERMIT #4 RECLAMATION FOR NILES CANYON QUARRY IS ASSURED BY AN ESCROW ACCOUNT HELD IN FAVOR OF ALAMEDA COUNTY AND THE STATE DEPARTMENT OF CONSERVATION. THE AMOUNT IN THAT ACCOUNT PRESENTLY TOTALS OVER \$34,000.00 AND IS ESTIMATED THAT IT WILL BE APPROXIMATELY \$40,000.00 BY JUNE 30, 1995. THERE ALSO IS IN EXISTENCE A COMPLIANCE BOND OF \$20,000.00 FAVORING THOSE TWO AGENCIES ABOVE. A COPY OF THE PRESENT ESCROW ACCOUNT IS INCLUDED.

IT IS S.R.D.C. INC.'S DESIRE TO TRANSFER BOTH THE ESCROW ACCOUNT AND THE COMPLIANCE BOND TO THE NEW S.M.P. AT THE TIME OF THE PERMITS BEING ISSUED.

INCLUDED BELOW ARE ESTIMATED RECLAMATION COSTS FOR THE VARIOUS PHASES OF RECLAMATION BASED ON SUCH ELEMENTS AS GRADING, SLOPE STABILIZATION, PLANTING, DRAINAGE AND IRRIGATION. COST ESTIMATES SEEM TO INDICATE THAT PRESENT AND PROJECTED REVENUES WILL ADEQUATELY PROVIDE FOR RECLAMATION COSTS.

	COST ESTIMATE, PHASE I. & II FOR NILES CANYON QUARRY	
ACI	VIVITIES:	COSTS:
1.	PERFORM GRADING OF DETENTION BASINS (2) TO BE CONSTRUCTED BY S.R.D.C. PERSONNEL AND EQUIPMENT.	\$ 5,000
2.	INSTALL STORM LINES/ CATCH BASINS/ J.B.'S APPROXIMATELY 2600 LF (+/-) OF 36" CMP 16 CATCH BASINS 1 JUNCTION BASIN	15,000
3.	PROVIDE TEMPORARY PUMPING (SITE 1.) TO BE CONSTRUCTED BY S.R.D.C. PERSONNEL AND EQUIPMENT.	1,500
4.	CONSTRUCTION PAVED DITCHES (10,000' X 2 X .50)	10,000
5.	PERFORM RECOMPACTION OF FINAL SLOPES SHEEPS FOOT W/ WENCH ON DRAG LINES	4,500
6.	REPLACE TOPSOIL AND APPLY ADDITIVES	11,500
7.	INSTALL TREES AND WELLS (*)	3,000
8.	HYDRO SEED GRASSES, ETC.	1,500

PAGE 26.

- 9. PROVIDE IRRIGATION (\*\*)
- 10. PROVIDE WATER SERVICE, IRRIGATION, INSTALL STORAGE TANKS ON SITE 2. 7,500

ALTER THE ALL SHOT, ME CH. CO., DIS & LIVET PRESS AS LIVE TO TAKE

There were and the second of the second second second or

\$61,000

\* STOCK WILL BE GROWN ON SITE \*\* SURFACE PVC WITH RAIN BIRD HEADS (MOVEABLE AS VEGETATION TAKES HOLD..APPROXIMATELY 2 YEARS)

ALL CONSTRUCTION, BOTH PERSONNEL AND EQUIPMENT, WILL BE DONE BY S.R.D.C. CORPORATION. COST ESTIMATES ARE DERIVED FROM EXPERIENCE IN THIS TYPE OF WORK.

PAGE 26 A.

2,500

### EXHIBIT 4A

### ESCROW AGREEMENT

IN CONNECTION WITH SURFACE MINING PERMIT (SMP-4) AND RECLAMATION PLAN FOR NILES CANYON QUARRY LOCATED NORTH OF NILES CANYON ROAD, 1-1/2 MILES WEST OF SUNOL/ASSESSOR'S PARCEL NUMBERS: BOOK 96, PAGE 115, PARCEL 2-4; BOOK 96, PAGE 125, PARCELS 6-1 AND 6-2

### 1. PARTIES

This Escrow Agreement (Agreement) is made among SRDC, Inc. D.B.A. Niles Canyon Quarry, P.O. Box 1316, Mountain View, California, COUNTY OF ALAMEDA (County), and Stewart Title, 601 Brewster Street, Redwood City, California (Escrow Holder). 

### 2. FACTS

County, through its Planning Commission, by Resolution No. 80-18, approved Surface Mining Permit (SMP-4) (Permit) and Reclamation Plan. Condition No. 3 of the Permit requires the creation of an escrow account for the purpose of guaranteeing timely performance of the reclamation requirements of the Alameda County Surface Mining Ordinance (ACSMO) and the conditions of the Permit. Agreement is made pursuant to the requirements of Condition No. 3 of the Permit.

Now, therefore, the Parties and each of them agree as follows:

### 3. ESCROW INSTRUCTIONS

3.1 <u>Appointment of Escrow Holder</u>. SRDC, Inc. and County hereby appoint Stewart Title, located at 601 Brewster Street, Redwood City, California 94063 as Escrow Holder; and Escrow Holder hereby accepts such appointment and agrees to be bound by these escrow instructions.

3.2 <u>Escrow Fees</u>. The Escrow Holder's fees, if any, shall be paid by SRDC, Inc.

3.3 <u>Deposits</u>. SRDC, Inc. shall deposit with Escrow Holder by July 1st of each year that this Agreement is in effect, an amount equal to Two Dollars and Fifty Cents (\$2.50) per one hundred (100) tons of material excavated and removed from its quarry site, located at Niles Canyon, California during the period commencing on July 1st and ending on June 30th of each year preceding the year of deposit, provided that the first deposit into the escrow shall cover only the period from September 1, 1990 to June 30, 1991. The amount shall be in December 1979 dollars and shall be adjusted annually in accordance with the Construction Cost Index for San Francisco, published by the Engineering News - Record to account for inflation.

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S.R.D.C., Inc. shall receive credit for completed reclamation work as determined by the Director of Public Works and said credit shall be deducted from the required deposit.

3.4 <u>Statement of Tonnage</u>. Each time SRDC, Inc. makes a deposit pursuant to Paragraph 3.3, SRDC, Inc. shall provide to County a statement of the tonnage involved and the amount of the deposit. Escrow Holder shall provide the County of Alameda with a receipt for the funds deposited, but shall have no responsibility for determining or collecting the proper amount from SRDC, Inc.

3.5 <u>Refund to SRDC, Inc.</u> Upon receipt of written notice from County, Escrow Holder may release to SRDC, Inc. such funds from the escrow as may be specified in said notice, provided that the escrow shall not fall below a minimum sum of Ten Thousand Dollars (\$10,000.00). All funds from the escrow shall be released to SRDC, Inc. at such time that County provides notice to Escrow Holder that reclamation has been completed at the quarry site.

3.6 <u>Savings Account</u>. The deposits made by SRDC, Inc. pursuant to Paragraph 3.3 shall be deposited to Escrow Holder in a passbook savings account, provided that such deposits may be invested and re-invested in such certificates of deposits as may be agreed to in writing by SRDC, Inc. Any interest accrued shall be to the benefit of and may be released without County involvement to SRDC, Inc. If funds are required to be released prior to maturity of any certificate of deposit, it is understood that SRDC, Inc. may incur an interest penalty for early withdrawal.

3.7 <u>Hold Harmless</u>. Provided that Escrow Holder exercises reasonable care in discharging its duties according to the Escrow Instructions set forth in Section 3 hereof, County and SRDC, Inc. hereby agree to hold Escrow Holder harmless from any loss or injury arising out of or in connection with discharging its duties hereunder.

3.8 <u>Waiver of Set-Off</u>. Escrow Holder hereby agrees to and hereby does waive any or all claims in or rights of set-off against the deposits made into the escrow pursuant to these Escrow Instructions.

3.9 <u>Termination</u>. In the absence of contrary instructions from both County and SRDC, Inc., this Agreement and the obligations of Escrow Holder hereunder shall terminate upon the delivery of all escrowed funds then on deposit to SRDC, Inc. pursuant to Paragraph 3.5.

-2-

3.10 <u>Notices</u>. Any notice required to be given pursuant to these Escrow Instructions shall be given in writing and shall be deemed delivered on the second day after deposit in the United States Postal Service, postage prepaid, return receipt requested, addressed to the party at the address as follows:

SRDC, Inc.:	Attention: Roy Ferrari P.O. Box 1316
	Mountain View, California 94042
COUNTY:	Attention: Permit/Grading Supervisor Director of Public Works 399 Elmhurst Street Hayward, California 94544
FREPOW HOLDER.	Stowart Mitle

ESCROW HOLDER: Stewart Title 601 Brewster Avenue Redwood City, California 94063

Each party may change its address by written notice in conformance with this Paragraph 3.10.

### 4. DETERMINATION OF CREDIT OR REFUND FOR COMPLIANCE WITH RECLAMATION PLAN AND ACSMO

4.1 Inspection by Director of Public Works. County shall cause its Director of Public Works to conduct an inspection for the guarry site to determine compliance with the Reclamation Plan and ACSMO. Within forty-five (45) days after such inspection, County shall cause its Director of Public Works to issue a report as required by Condition No. 4 and such report shall include an assessment of progress in achieving compliance with the Reclamation Plan and ACSMO in those areas where quarrying activity has occurred since the approval of the Reclamation Plan and ACSMO. The Director of Public Works' determination of assessment of compliance with the Reclamation Plan and ACSMO shall be based upon his inspection and the map and information submitted by SRDC, Inc. pursuant to Condition No. 4 and , in accordance with the issuance of the report by Director of Public Works, County shall send notice to Escrow Holder stating the amount of funds which may be released from the escrow to SRDC, Inc. based upon the degree of compliance with the Reclamation Plan and ACSMO in the areas in which quarrying has since occurred. Escrow Holder shall immediately release such authorized funds to SRDC, Inc. without any further demand.

4.2 Appeal of Reclamation Compliance. In the event that SRDC, Inc. should disagree with the Director of Public Works' determination of degree of compliance, SRDC, Inc. within thirty (30) days after receipt of the Director of Public Works' report, pursuant to Condition No. 4 of the Permit and Paragraph 4.1, may file a notice of appeal with the Alameda County Planning Commission specifying its reasons for the appeal. The appeal shall be ruled upon by the Planning Commission within thirty (30) days after the date of the filing of the appeal. SRDC, Inc. may appeal the ruling of the Planning Commission and any such appeal shall be made and heard in accordance with the procedures set forth in the ACSMO. Such an appeal by SRDC, Inc. shall not affect its right to the funds authorized to be released by County from the Escrow pursuant to Paragraph 4.1. Within ten (10) days after final determination by County of the appeal, County shall give notice to the Escrow Holder, with a copy to SRDC, Inc. stating what additional funds, if any, are to be released from escrow to SRDC, Inc. Escrow Holder shall immediately release such additional funds to him without any further demand.

### 5. RELEASE OF FUNDS TO COUNTY IN THE EVENT OF DEFAULT

5.1 <u>Notice of Default</u>. In the event SRDC, Inc. should default in the performance of its obligations under ACSMO or under the conditions of the Permit and should fail to cure such default in the manner provided by the applicable sections of the ACSMO, the County shall have the right to give notice of such default to the Escrow Holder with a copy to SRDC, Inc. and in such notice County shall specify the amount of funds required to be released from the escrow to cure such default.

5.2 <u>Appeal of Notice of Default</u>. Within the ten (10) days after receipt of the notice of default and request for release of funds by County pursuant to Paragraph 5.1, SRDC, Inc. may file a notice of appeal with the Alameda County Planning Commission specifying its reasons for the appeal.

SRDC, Inc. may appeal the ruling of the Alameda County Planning Commission and any such appeal shall be made and heard in accordance with the procedures set forth in the ACSMO.

5.3 <u>Release of Funds</u>. If Escrow Holder has not had actual receipt of the notice of appeal by SRDC, Inc. pursuant to Paragraph 5.2 by the fifteenth (15th) day after giving of notice by County for funds pursuant to Paragraph 5.1, Escrow Holder may release the funds to County as requested. If SRDC, Inc.'s notice of appeal has been received within said fifteen (15) day period, Escrow Holder shall not release any funds until the notice of appeal shall have been finally determined by County. After such final determination, County shall give Escrow Holder notice of the amount of the funds finally determined to be released. Escrow Holder shall not release the amount of funds so determined to County until the fifteenth (15th) working day after receipt of such notice.



Approved as to Form County Counsel

Deputy LORENZO E CHAMBLISS

I hereby certify under penalty of periory that the Chairman of the Beard of Supervisors was duly authorized to execute this decument on behalf of the County of Alameda by a majority vote of the Board on <u>CCT SO 1990</u> been delivered to the Chairman as provided by Government CCT SO 1990

Cede Section 25103, Attest: \_\_\_\_\_\_\_ U 199U\_\_\_\_ WILLIAM MEHRWEIN, Clerk, Board of Supervisors, County of Alameda, State of California.

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PAGE 31.

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Approved a	s to ]	Form
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KELVIN H. BOOTY, JR., County Counsel

By.....Deputy

### THE BOARD OF SUPERVISORS OF THE COUNTY OF ALAMEDA, STATE OF CALIFORNIA

On motion of Supervisor, and approved by the following vote,	Seconded by	Supervisor
Ayes: Supervisors		
Noes: Supervisors		
Excused or Absent: Supervisors		
THE FOLLOWING RESOLUTION WAS ADOPTED:		NUMBER (90-776

### THE FOLLOWING RESOLUTION WAS ADOPTED:

IMAGE

REFI

### CCT 30 1990

WHEREAS, by Resolution No. 80-18, adopted March 3, 1980, the Alameda County Board of Supervisors did impose upon Lassemite Industries Inc. the requirement of the deposit of security to guarantee the mitigation of the effects of the issuance of Surface Mining Permit No. 4; and

WHEREAS, the current owner of the property, SRDC Inc., has requested that the requirements of said Resolution No. 80-18 be fulfilled by the deposit of the required sum in an escrow account controlled by the Alameda County Director of Public Works;

NOW, THEREFORE, BE IT RESOLVED, that this Board of Supervisors does and it hereby authorizes and approves the fulfillment of the aforesaid obligations by the establishment of said escrow account, as requested; and

BE IT FURTHER RESOLVED that the Director of Public Works be and he is hereby authorized and directed to execute and control the escrow account on behalf of the County of Alameda.

I CERTIFY THAT THE FOREGOING IS A COR-PECT COPY OF A FE OLUTION ADOPTED BY THE BOAT D OF SUPERVISORS ALAMEDA CCT 3 0 1990 Y. CALLEDTINA N
EXMIBIL 48

GUPI

INSURANCE COMPANY P.O. Box 4500 Woodland Hills, CA 91365-4500

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# LICENSE OR PERMIT BOND

	Bond Number 12:	37491
	Premium \$ 1.000.0	DO/YR
KNOW ALL MEN BY THESE PRESENTS, That we	BA: NILES CANYON OUAFRY	
of		hereinafter referred
to as the Principal, and Amwest Surety Insurance Company, a corpor	ation organized and existing under	the laws of the State of
California, and authorized to do business in the State of	INTA, as Surety, are held	and firmly bound unto
County of Alameda	hereinafter referre	ed to as Obligee, in the
sum of twenty thousand dollars and 00/100		0.000.00 ),
lawful money of the United States of America, for the payment of whi	ch sum, well and truly to be made,	we bind ourselves, our
executors administrators successors and assigns firmly by these or	esents	
THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas, the	Principal has made application for a	license or permit to the
ree for the purposes of, or to exercise the vocation ofOPe	rating quarry at north	h side of State
Highway 84 per permit number 114835		
after be in force concerning said License or Permit, and shall save and	keep harmless the Obligee from all k	oss or damage which it
after be in force concerning said License or Permit, and shall save and may sustain or for which it may become liable on account of the issuance shall be void, otherwise, to remain in full force and effect.           X         THIS BOND IS OF INDEFINITE TERM — EFFECTIVE           THIS BOND IS OF DEFINITE TERM — BEGINNING           AND ENDING	keep harmless the Obligee from all k of said License or Permit to the Princi	oss or damage which it pal, then this obligation
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# LICENSE OR PERMIT ROAD

#### APPENDIX # 5.

COPY OF WATER AGREEMENT BETWEEN FERMA CORP. AND THE ALAMEDA COUNTY WATER DISTRICT.

August 24, 1984

Ferma Corporation P. O. Box 1316 Mountain View, CA 94010

Attention: Ray Ferrari

RAW WATER SERVICE AGREEMENT NO. 2167

Enclosed are two copies of the above-referenced agreement, fully executed, together with a Certified copy of Resolution No. 84-081 authorizing execution on behalf of this District.

You will note on the first page that the service charge on the documents you executed was in error and has been changed to reflect the current amount. Would you please initial the District's copy and return the document to us for our files. Thank you for your cooperation in this matter.

RUTH R. EVANS District Secretary

Enclosures

bc: Engineering

RECEIVED

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APP 1

#### ALAMEDA COUNTY WATER DISTRICT RAW WATER SERVICE AGREEMENT

AGREEMENT NO. 2167

THIS AGREEMENT, made and entered into as of the 23rd day of August, 1984, by and between ALAMEDA COUNTY WATER DISTRICT, a county water district duly organized and existing under the County Water District Law (being Division 12 of the Water Code of the State of California), hereinafter called DISTRICT; and FERMA CORPORATION, a California corporation, hereinafter called APPLICANT;

#### WITNESSETH

WHEREAS, DISTRICT owns, operates and maintains a water system, pursuant to the provisions of said County Water District Law, a portion of which system is within the City of Fremont, County of Alameda, State of California; and

WHEREAS, APPLICANT desires to purchase water from DISTRICT for industrial purposes on lands delineated as 182 ACRES on that certain sketch attached hereto, marked Exhibit A, and made a part hereof; and

WHEREAS, DISTRICT is willing to allow APPLICANT to draw water from Alameda Creek for the purposes and to the lands described above.

NOW, THEREFORE, in consideration of the premises, promises and covenants of the parties hereunto contained, it is mutually agreed as follows, to wit:

 All service piping, pumps and appurtenances required to deliver water shall be installed and maintained by APPLICANT subject to DISTRICT approval.

 DISTRICT does not guarantée delivery of any specific quantity or quality of water in Alameda Creek.

3. A meter furnished by DISTRICT shall remain on the service piping at all times and AFFLICANT shall pay a monthly service charge of \$35.00 and a water charge for water withdrawn from Alameda Creek at the rate equivalent to the DISTRICT Replenishment Charge plus 252. For 1984-85, the water charge would be \$64.00 plus \$16.00, totalling \$80.00 per acre foot.

4. The service given is personal to APPLICANT and shall not be transferred or assigned by APPLICANT without written consent of DISTRICT.

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written notice. If APPLICANT requests termination of this service prior to the expiration of the aforestated period, the then existing rules and regulations of DISTRICT shall govern termination of service.

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6. If the service is used for any other purpose than indicated above, said service shall be terminated by DISTRICT.

7. Notwithstanding the provisions set forth in Paragraph 5 above, failure to pay DISTRICT for water delivered or for any other DISTRICT charges levied against this service when due shall constitute breach of this agreement and shall result in immediate termination of this service.

IN WITNESS WHEREOF, the parties hereto have hereunto caused these presents to be duly executed in two counterparts by their proper officers first thereunto duly authorized the day and year set out below.

ALAMEDA COUNTE WATER DISTRICT timbay Brumbaugh, President D. 10 de Countersigned: Ruth R. Evans

Dated: AUG 2 3 1984

Dated:

District Secretary

FERMA CORPORATION Bv

### (SEAL)

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OF BOARD OF DIRECTORS OF ALAMEDA COUNTY WATER DISTRICT APPROVING AND AUTHORIZING EXECUTION OF CONTRACT BETWEEN ALAMEDA COUNTY WATER, DISTRICT AND FERMA CORPORATION FOR RAW WATER SERVICE.

BE IT RESOLVED by the Board of Directors of ALAMEDA COUNTY WATER DISTRICT that that certain contract dated August 23, 1984, covering raw water service, by and between ALAMEDA COUNTY WATER DISTRICT and FERMA CORPORATION, be and the same is hereby approved and entered into.

BE IT FURTHER RESOLVED that the President and Secretary of said DISTRICT be and they hereby are authorized and directed to sign and countersign said contract on behalf of said DISTRICT.

PASSED AND ADOPTED this 23rd day of August, 1984 by the following vote: AYES: Directors Borghi, Damas, Redeker, Strandberg and Brumbaugh NOES: None

y the days

ABSENT: None

/s/ HARRY D. BRUMBAUGH Harry D. Brumbaugh, President Board of Directors Alameda County Water District

#### ATTEST:

States and

/s/ RUTH R. EVANS Ruth R. Evans, District Secretary Board of Directors Alameda County Water District (SEAL)

APPROVED AS TO FORM:

/s/ GENE RHODES Gene Rhodes, Attorney Alameda County Water District

#### CERTIFICATE

I, the undersigned Secretary of ALAMEDA COUNTY WATER DISTRICT, do hereby certify that the foregoing is a full, true and correct copy of a Resolution of the Board of Directors of ALAMEDA COUNTY WATER DISTRICT, a political subdivision, which said Resolution was duly adopted at a meduing of said Board regularly held on \_\_\_\_\_\_\_

AUG 2 3 1984

that a copy of said Resolution was forthwith duty entered in the minutes of said meeting of said-Board, and that the same is in full force and effect.

Dated: AUG 1984 2 Ruth R. Evans, Secretary

Alemeda County Water District

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# APPENDIX # 6.

TERRASEARCH REPORT DATED; APRIL 25, 1995.



AB40 VIA DEL ORDI SUITE 110 S410003E CAL FERMIA 35118-1346 (408) 362-4920 FAX (408) 362-4926

Project No. 4367 25 April 1995

Mr. Roy Ferrari SRDC 1265 Montecito Avenue Mt. View, CA 94043

Subject: Proposed Reclamation Landscape and Vegetation Plan Niles Canyon Quarry Alameda County, California SOIL PLACEMENT RECOMMENDATIONS

Refs: 1) Quarry Slope Stability Evaluation on Light Weight Aggregate Mine By TERRASEARCH, INC.

2) Surface Mining and Reclamation Plans including Cross Section Exhibit Niles Canyon Quarry Alameda County, California By Whaley & Associates

3) Letter from Alameda County Planning Dept. Application for Renewed Surface Mining Permit -Niles Canyon Quarry Dated March 9, 1995

Dear Mr. Ferrari:

At the request of Mr. Warren Whaley of Whaley and Associates, we have reviewed our files pertaining to the subject site (Reference 1) and the plans prepared by Whaley & Associates (Reference 2). The purpose of the review was to render an opinion about the stability of the area to be guarried and recommend a procedure for soil placement on interim and final slopes.

The original report, Reference 1, was prepared for an area which was significantly larger than what is now proposed for quarrying. The report contained recommendations pertaining to setbacks for potential slide areas and property lines. The new plan for the quarry shows the limits of mining to be significantly inside and away from the originally recommended setbacks. In other words, the limits of quarrying are for away from the unstable areas and from the recommended setbacks.

11840 DUBLIN BOULEVARD, DUBLIN, CALIFORNIA 94568 (510) 833-9297 FAX (510) 833-9548

27 20 11 1995

Sheet 2 of 6, Cross Section Exhibit, prepared by Whaley and Associates, has been prepared in conformance with the recommendations contained in Reference 1. The upper 10 feet of soil mantle at the extremities of the cut may have to be flattened to 1.5:1 horizontal to vertical.

Or site scils generated from the upper 5 to 10 feet of the soil mantle should be satisfactory to support vegetation growth.

Given the steepness of the proposed slopes, special measures need to be undertaken to properly place a soil cover on the slope and permanently keep it there. One of the most dependable procedures is the method of Serration. This will include notching horizontally along the cut face 4 to 6 inches deep. Serration is mostly performed by utilizing a serrated steel blade welded to a dozer blade. The serrated blade is normally five to six feet wide with the Serration spaced 12 inches apart or less. Every pass the dozer makes on the slopes, six parallel notches or serrations are formed.

Given the nature of the proposed benches, twenty feet wide and placed at 40 foot vertical height intervals, the placement of soil can be accomplished without such difficulty. The top soil may be placed on the bench and then dozed over the slope. The soil should be in a moist condition when placed. After the soil is spread on the slope, it should be compacted by either using a sheepsfoot roller or by track walking. In both cases, the machinery used for compaction has to be hoisted up and down the slope by using a winch. After the soil is compacted, stability of the soil cover is enhanced by virtue of deep soil in the serration, which is confined as a wedge in the bedrock material. It will be beneficial to establish a root growth within the soil prior to anticipated heavy rain during the winter season. Seeding the slope and occasional controlled watering during late summer or early fall could be very essential for providing a stable soil mantle. Cnce a root system is established, significant erosion can be prevented by virtue of the steepness of the slope. The steeper the slope, the less the plane area exposed to direct rainfall. The proposed benches are 20 feet wide and provided with an interceptor ditch. This condition will provide adequate control of surface drainage and there will be no overflow from the bench to the slope below. Therefore, once a root system is established, the stability of the soil placed on the slope will be greatly enhanced.

TERRASEARCH, INC.

Page 2

A typical cross section showing the proposed servations is shown graphically on Figure No. 1.

It is our opinion that the proposed plan for mining the Niles Canyon Quarry conforms to the requirements set forth in Reference 1 and the stability of the area should not be endangered.

TERRASEARCH, INC., should provide occasional observation to ensure that the placement of top soil is adequately carried out. We recommend that our geologist occasionally observe the proposed cut to ensure that geologic conditions do not deviate from those contained in Reference 1.

Should you have any questions relating to the contents of this letter, or should you require additional information, please contact our office at your convenience.

> Very truly yours, TERRASEARCH, INC. Jon & Makaissu Tom Makdissy, P.E. Principal Engineer

SM/af

Copies: 3 to Mr. Roy Ferrari

TERRASEARCH, INC.

Page 3

# APPENDIX 7.

# GENERAL LAND RECLAMATION STRATEGY FOR SURFACE MINING AND QUARRYING ACTIVITIES AT THE NILES CANYON QUARRY.

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# General Land Reclamation Strategy for Surface Mining and Quarrying Activities at the Niles Canyon Quarry

Prepared by Cole Thompson for Whaley & Associates

### PURPOSE

In accordance with the <u>Performance Standards for Revegetation</u> of Article 9, Reclamation Standards, this preliminary restoration plan has been designed to aid Whaley & Associates in meeting specific standards needed for Surface Mining Operations in the Alameda County. The Reclamation Standards have been established in an attempt to ensure environmental viability for disturbed ecological sites, an urgently needed responsibility in light of modern environmental degradation as a result of surface mining, quarrying, etc. Thus these recommendations address the aspects and contingencies of the reclamation standards with a responsible attitude in order to achieve a ecologically sound site reclamation.

## SITE DESCRIPTION

The Niles Canyon Quarry is located north of Fremont, CA, on the southern facing slopes of the Diablo Mountain Range. Its rolling hills and Oak laden riparian valleys are typical of the biome known as California Grassland. The exposed slopes receive intense sun exposure throughout the entire day, while the valleys are more protected through a significantly higher percentage of tree cover. There are three actual sites that will eventually require land reclamation procedures, totalling roughly **35** acres of hillside and ravines. A lack of, or improper ecological restoration with make this site highly prone to top-soil erosion due to a heavy rainy season, steep slopes and intertwining stream beds.

# CLIMATIC CONDITIONS

Typical grassland characteristics, with discrete wet and dry seasons, in winter and summer respectively. This geographic regions receives roughly 15" to 25" of rainfall/year, of which mainly falls between the months of November and March, classifying this climate as semi-arid. The summer are usually long periods of drought, a significant consideration in the timing of plant revegetation, being ideal for the native grasses and scrubs of this region.

# RECOMMENDED PLANT SPECIES FOR SOUTH OR WEST FACING EXPOSED SLOPES

#### Grasses

-Deschampsia cespitosa (tufted hair grass) -Elymus glaucus (blue wild rye) -Nassella lepida (tussock grass) -Nassella pulchra, or Stipa pulchra (tussock grass) -Festuca idahoensis (Idaho Fescue)

#### Forbs

-Trifolium pratense (red clover)\* -Nemophila menziesii (baby blue eyes)

#### Scrubs

-Quercus dumosa (California scrub oak) -Lupinus bicolor (miniature lupine)\*

\* Nitrogen fixing plants provide sustainable N supply to soil

# RECOMMENDED MEANS FOR RECLAIMING SOUTH OR WEST FACING EXPOSED SLOPES

#### Site Preparation

-for most effective erosion control, and for higher levels of success rates for revegetating species, slope terracing would be ideal (See attached Figure 4.9); even smaller slope to bench sizes, etc., instead of the 40' 1:1 slopes to 20' bench ratios would be better; if this is not feasible, than lessening the slopes to 2:1 or 3:1 would radically decrease the chances of erosion on any parts of the 40' incline; it has been shown that soil loss due to erosion increases exponentially with slope length

-recontouring should tie degraded areas into adjoining undisturbed terrain, this will reduce erosion because of run-off problem due to land inconsistencies; consider this carefully, as it is a very important aspect to effective land reclamation

-stored soils lose their viability over time, thus organic amendments will be needed to help bring back soil viability to ensure high success rates (i.e, manures, mulch, compost, or sludge to bring P, K, N, etc. levels to adequate level); fertilizers should be avoided because of water contamination through soil leaching; the amendments will need to be added before revegetation if the soil has been stockpiled for more than a few months -soil pH should be in an optimal range; for semi-arid grassland, the pH needs to be between 6.5 to 8 for successful revegetation

-surface layer should be 'gouged' to break up weed establishment and to mix soil for seedlings; may only be possible on bench areas, but it is necessary for adequate seedling establishment

-proper irrigation installation in all areas of seeding- "drip systems" are most cost effective

#### Seeding and Planting

-at least a week before seeding, it would be ideal to treat soil with some type of fungicide to kill off developing weedy species

-grasses and forbs can than be 'drill seeded' in <u>fall</u> when air moisture concentrations are higher; for sloping regions, broad-cast seeding would be adequate

-See attached Table 25 for an example of seed mix ratios; it should be noted that the scrubs need to be planted as seedlings from nursery (this ensures a much higher success rate), and this should occur in <u>spring</u>; furthermore, staking' and 'wattling' are also very effective means of scrub revegetation (See Figure 4.10 of attached sheets); scrubs should be uniformly distributed at large distances on exposed slopes, roughly 20 to 30 ft. apart

-<u>erosion control blankets will be needed on any 1:1 slopes to aid seedling</u> <u>establishment, and reduce erosion</u>: I recommend jute or excelsior (not hay because it can contaminate area with exotic species); this material needs to be placed over seeds and seedlings, making sure scrub seedlings 'poke' through the netting

-consult with nursery about these issues

# RECOMMENDED PLANT SPECIES FOR NORTH OR EAST FACING EXPOSED SLOPES

-the species listed above can be used on north or east facing slopes, though as one can see from Table 25, the scrub % will be higher here -from my site survey, many of the north facing slopes had high percentages of tree cover (mainly Live Oaks), especially near the riparian areas- this is a natural occurrence as south or west facing slopes are hotter and dryer, and should certainly be taken into consideration when revegetating the different sides of a valley

# RECOMMENDED MEANS FOR RECLAIMING NORTH OR EAST FACING EXPOSED SLOPES

-see south facing slopes; See Table 25 for differences in seed mix ratios

# RECOMMENDED PLANT SPECIES FOR INTERMITTENT RIPARIAN AREAS

#### Grasses

-Nassella pulchra (tussock grass)

-Melica californica (California melic grass)

-Elymus canadensis (nodding wild rye)

#### Scrubs

-Quercus dumosa (California schrub oak)

-Sambucus mexicana (blue elderberry)

-Pickeringia montana (chaparral pea)

-Aesculus californica (California buckeye)

-Lupinus bicolor (miniature lupine)

-Salix ? (willow- needs to be collected from local area)

-Rosemary (sp. ?)

- these riparian areas have many trees (i.e. live oaks, valley oaks, willows) which need to be implemented into revegetation plan

# **PROTECTION MEASURES**

-fencing around areas of revegetation will be necessary in order for tender, young shoots to 'take hold' and prevent erosion problems, etc.

-scrub seedlings may need individual insect-proof contraptions; grasshoppers will be emerging very hungry in the fall, please consult with nursery

-controlled burning after the third year is the most effective management option for weedy species removal- I know little about this and specialists should be contacted

-early spring mowing inhibits weeds and woody species from dominating

### **TEST PLOTTING/ SUCCESS RATE/ MONITORING\***

-in order to establish standards of success and adequate confidence levels, test plotting is essential; there are various means of test plotting

-for large areas such as the three sites at Niles Canyon Quarry, quadrants of large sizes (5m x 5m) should be created for each acre in order to sample the growing species and study revegetation success rates; the larger the test plot, the more accurate the data

-See Summary of Procedures 8.1 (attached sheets) for further details

\*if the measures given in this restoration plan are considered and implemented, especially those that are noted, than an 80% confidence level is approachable; plant seeding and transplantation often can be very unpredictable, and even if the most effective means are properly implemented, success can often be alluding; I suggest that the revegetation efforts be monitored for up to two years after restoration, and if something is failing, find the problem (usually pretty obvious), and correct it- I can say right now that the irrigation system better be pretty effective with the dry climate of this valley grassland

# SEED AND NATIVE PLANT NURSERIES -see attached sheets under California

\* indicate known, reliable sources for native seed and seedling stocks



1. 4.9. Terraced, cut slope adjacent to highway aids in erosion control. Horizontal steps were seeded with native grasses. Interstate Highway, 30, near Colfax, California.



Fig. 4.10. Slope stabilization by brush-layering method. Cut brush or green branches of easy-to-root species such as willows are placed on contour benches across a slope as shown in the diagram.

LAND PEVEGETATION

waste Rock

ate Seed Mixb kg/ha (%) 18.9 2.3 0.5 4.1 2.2 18.1 0.2 1.6 6.9 56.6 0.04 0.3 0.2 0.02 0.02 0.2 12.18 100.0 21.1 1.2 42.1 2.4 2.1 36.8 5.7 100.0

r nd forbs are aterials than ises and forbs have

orbs, and shrubs on National Park Seronal Park is utilizing neighborhood of the am is to create wildcontrol erosion, and n the vicinity of the t production. These uccessful. Programs ields and in Yellowiminate use of intro-

rily of native species 25. The plant species oarse-textured, lowrovide good wildlife

#### Applied Vegetation Techniques for Common Disturbances

#### TABLE 25 Two Seed Mixes for a Hypothetical Waste Rock Dump Without Topsoil in Semiarid Western North America

		Seed	Seed Mix	
Plant Lifeform	Common Name	No./m <sup>2</sup>	kg/ha	(%)
	North or East	Slope	100	
Perennial				
Cool season	Sheep fescue	60	. 0.4	4.3
grasses	Bluebunch wheatgrass	60	2.2	23.9
0	Prairie junegrass	30	0.1	1.1
	Columbia needlegrass	30	0.8	8.7
	Mountain brome	20	1.1	12.0
Forbs				
	Western yarrow	20	0.1	1.1
	Common lupine	10	3.5	38.0
Shrubs	1 Charles and a second			~
1	Snowbrush ceanothus	20	1.0	10.9
-Seedlings/		250	-9.2	100.0
		-		
Cuttings	South or West	Slope		
Perennial	t attack and			
Cool season	Hardsheep fescue	80	0.6	5.6
grasses	Bluebunch wheatgrass	80	2.9	27.1
	Sandburg bluegrass	30	0.1	0.9
	Indian ricegrass	30	0.9	8.4
	Slender wheatgrass	30	1.0	9.4
Forbs	Later that have a second			
	American vetch	30	4.5	42.1
	Western yarrow	30	0.1	0.9
	Blue flax	30	0.4	3.7
Shrubs		~		~
	Fringed sagewort	40	0.1	0.9
-> sealling	Big sagebrush	40	01	0.9
72/10-	Hings	420	10.7	99.9

 $PLS - No./m^2 \div 10.6 = No./ft^2$ ; kg/ha × 0.9 = Ib/a.

By weight.

forage and livestock grazing even on waste rock without topsoil. The first seed mix was created for a 1500-m (5000-ft) or more, north-facing, waste rock slope in eastern Washington, Idaho, or Montana and the other for a south-facing slope in this same region. The Idaho fescue/ bluebunch wheatgrass community is one of the more common habitat types of the mountains west of the northern Great Plains and these mixes resemble the composition of this community. Sheep fescue (*Festuca ovina*) and hard sheep fescue (*F. ovina* var. *duriuscula*) are substituted for Idaho fescue (*F. idahoensis*) because they germinate and establish better.

The north-facing slope is more mesic and includes Columbia needlegrass (Stipa columbiana), mountain brome (Bromus marginatus), and lupine (Lupinus spp.), all of which require a slightly more mesic en-

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hapter 7

with the measurements should be clearly stical methods (derived from standard ever, such precision may be inappropriate d qualitatively with an expression of the suracies of the methods used. This is an some comparison with other results. If n environmental variable occurs which is cosystem, it is necessary to continue the o obtain data during as many of the variasituations it is appreciated that a mean ulikely to be meaningful biologically and dual years separately. It is important to uprecise is often of value at least in initial e inhibited from studying an ecosystem ita.

#### blications

ok should be reported in the usual way n in exceptional cases a separate publicaularly where an integrated programme pies of all publications should be sent to load, London, N.W.1, United Kingdom). d - readily accessible form and made

#### 8

#### Summary of Procedures

#### 8.1 Ungrazed grassland

The study area should be delimited and fenced.

8.11 Before beginning the study a trial to determine the optimum size, shape and number of sample plots should be undertaken. (Sections 4.2 and 4.3.)

The appropriate size and number of sample plots should be cut at the beginning of the growing season.

The cut vegetation should be stored in polythene bags, and either deep frozen or dried at 100° within a few hours. A sub-sample should be kept deep frozen if possible.

The same number of quadrats should be cut at appropriate or monthly (4 weekly) intervals throughout the growing season, each successive sample cut being taken in the same general area as the first but no closer than 3 m. in tall herbage (less, if necessary, in short grasslands).

If possible on each harvest date, the quantity of dead material should be determined either directly by separation or by the methods discussed in Section 4.53.

At the same time as harvest of above ground vegetation root cores should be taken, the size and depth to depend on previous investigation.

The dried material harvested, both roots and shoots, should have their calorific value determined using standard bomb calorimetry (Section 6.3). This should include samples of dead and green if separated. At least three separate determinations should be made on each component at each harvest date and calorific value expressed as the mean of these determinations. Total chlorophyll should be measured on fresh or frozen rather than dried material (Sections 6.2, 6.4). A general survey of the small herbivore fauna should be undertaken to determine possible losses of net primary production which will not be determined by the harvest method.



#### Chapter 8

8.12 Calculations. Using the method outlined above net primary herbage production can be calculated as follows:

If  $B_1$  is the above ground biomass measured at the first sampling period (time  $t_1$ ) and  $B_2$  is the biomass at the second sampling period (time  $t_2$ ) and  $B_n$  is the biomass at the *n*th sampling period at the end of the growing season (time  $t_n$ ). Then:

Total annual net primary aerial production is given by

$$(B_2 - B_1) + (B_3 - B_2) + \cdots + (B_n - B_{n-1})$$

viz.  $\sum_{2}^{n-1} (B_n - B_{n-1})$ 

and the mean daily net primary production is given by

$$\left(\frac{B_2 - B_1}{t_2 - t_1}\right) \quad \text{or} \quad \left(\frac{B_n - B_{n-1}}{t_n - t_{n-1}}\right)$$

for the appropriate period.

If B is expressed as  $g./m.^2$  then the final total will be  $g./m.^2$  To convert to calories/m.<sup>2</sup> each B must be multiplied by the calorific value/gm. of the harvested sample.

Although the problems of root production are great (see Section 4.6) in certain cases, i.e. annual and ephemeral grasslands where all the roots die, a similar calculation utilising changes in root biomass will give the total net root production. This figure added to herbage production gives *net primary production*. In many unfortunately this will not be possible and root production will need to be measured indirectly and the data added to the herbage production. (These calculations do not take into account plant material dying during the growing period and the techniques discussed in Sections 4.52 and 4.72 should be used, (e.g. Wiegert and Evans (1964).)

#### 8.2 Grazed grasslands

8.21 The method outlined below applies where large grazing animals obviously remove a large proportion of the above ground production. It can also apply where small rodents are the only herbivores if the cages are made with wire mesh which excludes them.

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Nursery Sources for Native Plants and Seeds

California Nocsene

Albright Seed Co. 487 Dawson Drive Camarillo, CA 93012 (805) 484-0551 Sales type: wholesale Type of stock: seeds, seed mixes, custom collection of seed Native stock: 75% Regional focus: southwest U.S., Pacific Coast Services: habitat and wetland restoration Comments: We've been selling and collecting native seed for 25 years with an emphasis on erosion control.

All Season's Wholesale Nursery and Seed Co. 10656 Sheldon Woods Way Elk Grove, CA 95624 (916) 682-8154 Sales type: wholesale Type of stock: trees and shrubs, seeds Native stock: 85% Regional focus: west, midwest, east, southwest, south Services: habitat and wetland restoration Comments: We offer 35 species of oaks, sapling-sized seedlings, and containerized oaks.

Anderson Valley Nursery 18151 Mountain View Road, Box 504 Boonville, CA 95415 (707) 895-3853 Sales type: retail, wholesale Type of stock: trees, shrubs, herbaceous plants Native stock: N/A Regional focus: northern and central California Services: consultation Comments: We specialize in water-conserving plants, using mostly woody species native to California.

Appleton Forestry Native Plant Nursery 1369 Tilton Road Sebastopol, CA 95472 (707) 823-3776 Sales type: retail, wholesale Type of stock: trees, shrubs Native stock: 100% Regional focus: northwest California Services: habitat and wetland restoration Comments: We specialize in revegetation species and contract growing of site-specific species.

Blue Oak Nursery 2731 Mountain Oak Lane Rescue, CA 95672 (916) 677-2111 Sales type: mail-order, retail, wholesale Type of stock: trees, shrubs Native stock: 75% / Regional focus: western states Services: contract grower Comments: We offer a large variety of native plants found in the western U.S. C. H. Baccus 900 Boynton Avenue San Jose, CA 95117 (408) 244-2923 Sales type: mail-order, retail Type of stock: herbaceous plants and bulbs Native stock: 100% Regional focus: western U.S. Services: contract growing Comments: We are a small mail-order grower selling 100% seed grown stock.

California Flora Nursery P.O. Box 3 Fulton, CA 95439 (707) 528-8813 Sales type: retail, wholesale Type of stock: trees, shrubs, perennials, and grasses Native stock: 33% Regional focus: Mediterranean climates, including California Services: delivery available in the Bay Area Comments: We specialize in California native plants.

Christensen Nursery Co. 16000 Sanborn Road Saratoga, CA 95070-9707 (408) 867-4181 Sales type: wholesale Type of stock: trees, shrubs, herbaceous plants, seeds, seed mixes Native stock: N/A Regional focus: N/A Services: N/A Comments: N/A Circuit Rider Productions

9619 Old Redwood Hwy. Windsor, CA 95492 (707) 838-6641 Sales type: wholesale Type of stock: trees, shrubs Native stock: 100% Regional focus: northern California Services: wetland and habitat restoration Comments: We specialize in northern California woody plants for restoration and revegetation work.

Clotilde Merlo Forest Tree Nursery 1508 Crannell Road Trinidad, CA 95570 (707) 677-0911 Sales type: mail-order, retail, wholesale Type of stock: reforestation size tree seedlings and liners Native stock: N/A Regional focus: western U.S. Services: reforestation following logging Comments: We deal with reforestation conifer species native to CA., the Northern Sierra and Pacific NW.

Landscape Restoration Handbook

Clyde Robin Seed Co., Inc.
3670 Enterprise Ave.
Hayward, CA 94545 (510) 785-0425
Sales type: mail-order, retail, wholesale
Type of stock: native wildflower seeds, seed mixes
Native stock: N/A
Regional focus: west, mid-west, southeast U.S.
Services: habitat restoration and consultation
Comments: Established in 1934, we offer species native to most of the U.S.

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P.O. Box 455 Rio Vista, CA 94571 (916) 775-1646 Sales type: retail, wholesale Type of stock: trees, shrubs, herbaceous plants, seeds, seed mixes Native stock: 90% Regional focus: CA, AZ, OR, WA Services: habitat and wetland restoration, erosion control, construction Comments: We are moving towards California native bunch grasses that are area specific.

#### Cornflower Farms P.O. Box 896

Elkgrove, CA 95759 (916) 689-1015 Sales type: wholesale Type of stock: trees, shrubs, herbaceous plants Native stock: 80% Regional focus: California Services: habitat and wetland restoration Comments: We propagate native ornamentals and revegetation natives for California landscapes.

Endangered Species P.O. Box 1830 Tustin, CA 92680 (714) 544-9505 Sales type: mail-order, retail, wholesale Type of stock: trees, shrubs, palms, bamboo, cycads, grasses Native stock: 30% Regional focus: FL, LA, TX, CA Services: habitat and wetland restoration, landscaping Comments: We have a huge selection of hardy, tropical bamboo, native palms, and rare ornamentals.

Environmental Seed Producers P.O. Box 2709, 1851 W. Olive Ave. Lompoc, CA 93438-2709 (805) 735-8888 Sales type: wholesale Type of stock: seeds and custom wildflower seed mixes Native stock: 50% Regional focus: species from all over the U.S. Services: custom wildflower seed mixes Comments: We offer over 130 species of wildflowers, native and ornamental grasses to choose from. Forest Seeds of California 1100 Indian Hill Road Placerville, CA 95667 (916) 621-1551 Sales type: mail-order, wholesale Type of stock: seeds Native stock: 95% Regional focus: west coast Services: habitat restoration, weed control, forestry services Comments: We offer tree and shrub seed collection and processing and are a licensed pest control operator.

Freshwater Farms 5851 Myrtle Avenue Freshwater, CA 95501 (707) 444-8261 Sales type: mail-order, retail, wholesale Type of stock: trees and shrubs, herbaceous plants, and wetland plants Native stock: 90% Regional focus: Pacific coast Services: habitat and wetland restoration, irrigation, landscaping Comments: We specialize in wetland plants used in biofiltration systems.

Habitat Restoration 3234 "H" Ashford St. San Diego, CA 92111 (619) 279-8769 Sales type: wholesale Type of stock: herbaceous plants, seeds, seed mixes Native stock: 98% Regional focus: southwest Services: habitat and wetland restoration, mitigation landscaping Comments: Habitat restoration specializing in the endangered habitats of coastal San Diego County.

Hardscrabble Seed Co. Route 2, Box 255 Springville, CA 93265 (209) 539-2635 Sales type: mail-order, wholesale Type of stock: seeds Native stock: 100% Regional focus: the west Comments: We deal only in Sequoiadendron, separated by grove.

J. L. Hudson, Seedsman P.O. Box 1058 Redwood City, CA 94064 Sales type: mail-order (catalog is \$1.00) Type of stock: seeds Native stock: 100% Regional focus: all regions, all continents except Antarctica. One World! Services: consulting Comments: I offer a large selection of seeds—worldwide collection and distribution to all regions.

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#### Nursery Sources for Native Plants and Seeds

KSA Jojoba 19025 - EF Parthenia Northridge, CA 91324 (818) 701-1534 Sales type: mail-order, wholesale Type of stock: Jojoba seeds Native stock: 100% Regional focus: Sonoran Desert area of California, Arizona, Mexico Services: N/A Comments: We provide a free catalog for sending a selfaddressed stamped (2 stamps) envelope.

Larner Seeds P.O. Box 407 Bolinas, CA 94924 (415) 868-9407 Sales type: mail-order, retail, wholesale Type of stock: trees, shrubs, herbaceous plants, seeds, seed mixes Native stock: 100% Regional focus: California Services: habitat restoration and landscaping Comments: We concentrate on coastal areas in habitat restoration and landscaping. Consultation is available. Las Pilitas Nursery Las Pilitas Road Santa Margarita, CA 93453 (805) 438-5992 Sales type: mail-order. retail, wholesale (catalog-\$4.00, price list-free)

Type of stock: trees, shrubs, herbaceous plants, seeds, seed mixes Native stock: 100%

Regional focus: California Services: habitat and wetland restoration, landscaping Comments: We offer site specific consultation, habitat restoration, and landscaping services.

Mockingbird Nurseries, Inc. 1670 Jackson Street Riverside, CA 92504 (714) 780-3571 Sales type: retail, wholesale Type of stock: trees, shrubs, herbaceous plants, seeds, seed mixes Native stock: 95% Regional focus: southwest, California Services: grow species for habitat and wetland restoration Comments: We specialize in sustainable landscape plants and habitat and wetland restoration plants.

Mostly Natives Nursery 27215 Highway 1, P.O. Box 258 Tomales, CA 94971 (707) 878-2009 Sales type: mail-order, retail, wholesale Type of stock: trees, shrubs, herbaceous plants Native stock: 50% Regional focus: west coast Comments: We specialize in coastal native plants.

Native Sons Nursery. 379 West El Campo Road Arroyo Grande, CA 93420 (805) 481-5996 Sales type: wholesale Type of stock: trees, shrubs, herbaceous plants Native stock: 50% Regional focus: all regions Comments: We offer a large selection of California natives and Mediterranean perennials. Olle Olsson Nurseries, Inc. 2154 Peck Road Monrovia, CA 91016 1-800-752-6873 Sales type: wholesale Type of stock: trees and shrubs Native stock: N/A Regional focus: N/A Comments: N/A Pacific Open Space, Inc./ Northcoast Native Nursery P.O. Box 744 Petaluma, CA 94953 (707) 769-1213 Sales rype: wholesale Type of stock: trees, shrubs, herbaceous plants, native grass seeds, seed mixes Native stock: 100% Regional focus: California, Pacific northcoast Services: habitat and wetland restoration, landscaping Comments: Northcoast Native Nursery, a division of Pacific Open Space, offers ecological and environmental consultation, including propagation of native plants and seed and offer land management planning. Pacific Coast Seed, Inc. 7074 D Commerce Circle Pleasanton, CA 94588 (510) 463-1188 Sales type: wholesale Type of stock: seeds. custom seed mixes Native stock: 60% Regional focus: northern California, western Nevada Services: habitat and wetland restoration, landscaping Comments: We specialize in California native grasses,

native shrubs. trees, and wildflowers. Pacific Southwest Nursery P.O. Box 985 National City, CA 91951-0985 (619) 477-5333 Sales type: mail-order, retail, wholesale Type of stock: trees. shrubs, herbaceous plants Native stock: 70% Regional focus: coastal southern California Services: habitat and wetland restoration Comments: We focus on native habitat restoration plants

as well as drought tolerant native and exotic plants.

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Landscape Restoration Handbook

Pecoff Bros. Nursery & Seed, Inc. 20220 Elfin Forest Road Escondido, CA 92029 (619) 744-3120 Sales type: wholesale Type of stock: trees, shrubs, herbaceous plants, seeds, seed mixes Native stock: 30% Regional focus: southwestern U.S., Australia Services: habitat and wetland restoration, landscaping Comments: We offer Washington robust palm trees. Redwood City Seed Co. P.O. Box 361 Redwood City, CA 94064 (415) 325-7333 Sales type: mail-order, retail, wholesale Type of stock: grass plugs of California native perennial bunchgrass Native stock: 100% Regional focus: California Services: habitat restoration, landscaping, bunchgrasses for lawns Comments: We use 100% native grass plugs in habitat restoration and landscaping.

S & S Seeds
P.O. Box 1275
Carpinteria, CA 93013 (805) 684-0436
Sales type: wholesale
Type of stock: seeds
Native stock: 75%
Regional focus: California, Arizona
Services: site specific seed collection
Comments: We offer all types of seeds used in erosion control, revegetation, and landscaping.

San Simeon Nursery HCR 33 Villa Creek Road Cayucos, CA 93430 (805) 995-2466 Sales type: wholesale Type of stock: trees, shrubs, herbaceous plants, cacti, and succulents Native stock: 60% Regional focus: California, southwest Services: habitat restoration, landscaping Comments: We offer drought adaptive species from temperate and semi-arid regions.

Santa Barbara Botanic Garden 1212 Mission Canyon Road Santa Barbara, CA 93105 (805) 682-4726 Sales type: retail Type of stock: trees, shrubs, herbaceous plants Native stock: 60% Regional focus: California Comments: We have a large selection of drought-tolerant plants from mediterranean climates. Sunset Coast Nursery P.O. Box 221/ 2745 Tierra Way Watsonville, CA 95076 (408) 726-1672 Sales type: retail, wholesale Type of stock: trees, shrubs, herbaceous plants, bare root, grasses Native stock: 100% Regional focus: California, southwest Services: habitat and wetland restoration, site specific services Comments: We specialize in coastal plants native to the Monterey Bay area. Taylor's Herb Garden 1535 Lone Oak Road Vista, CA 92084 (619) 727-3485 Sales type: mail-order, retail, wholesale Type of stock: herbaceous plants, seeds, wreaths

Native stock: 50% Regional focus: southwest Services: offer to ship live plants in U.S. Comments: We specialize in growing many varieties of herbs for gardeners around the world.

The Living Desert 47900 Portola Ave. Palm Desert, CA 92260 (619) 346-5694 Sales type: retail, wholesale Type of stock: trees, shrubs, herbaceous plants Native stock: 90% Regional focus: southwest U.S. Comments: We have a zoological garden with a small retail nursery.

#### **Theodore Payne Foundation** 10459 Tuxford Street Sun Valley, CA 91352 (818) 768-1802 Sales type: mail-order, retail (offer discount to landscapers) Type of stock: trees, shrubs, herbaceous plants, seeds, seed mixes, books Native stock: 100% Regional focus: California and southwest Services: provide referrals on habitat and wetland restoration, landscaping Comments: We are a non-profit, membership organization. We emphasize rare and endangered species. **Village Nurseries** P.O. Box 25509 Anaheim, CA 92825-5509 (714) 282-5880 Sales type: wholesale Type of stock: trees, shrubs, herbaceous plants

Native stock: 10% Regional focus: California Services: habitat and wetland restoration Comments: Our 300 acre nursery offers native and drought tolerant plants in sizes from liners to 48" boxes.

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