

APPENDIX 9.6

HAZARDS AND HAZARDOUS MATERIALS TECHNICAL REPORTS

PHASE I ENVIRONMENTAL SITE ASSESSMENT

1300 ACRES – MURRIETA

COUNTY of RIVERSIDE COUNTY, CALIFORNIA

Menifee-Antelope
Community Hall

SITE NAME:

MURRIETA HILLS

PROJECT #: 012561

Site

PREPARED FOR:
BENCHMARK PACIFIC

PREPARED BY:
IWS ENVIRONMENTAL

February 17, 2006

IWS Environmental, Westminster, California



IWS Environmental, Inc.
Environmental Management & Engineering

DATE: February 17, 2006

PROJECT NUMBER: 012561

PROJECT NAME: Murrieta Hills

TO: Benchmark Pacific
550 Laguna Road, Suite B
Carlsbad, California 92008

ATTENTION: Mr. Richard Robotta

SUBJECT: Phase I Environmental Site Assessment for Thirteen Hundred Acres of Undeveloped Land in Riverside County, California.

Dear Mr. Robotta:

IWS Environmental has prepared this Phase I Environmental Site Assessment for thirteen hundred acres located east of the I-215 and south of Keller Road an unincorporated area of Riverside County, California. This report is designed to meet the specific requirements for Phase I Assessments as established by ASTM guidelines. Authorization to proceed on this project was received January 17, 2006.

As of the date this report was drafted, the Riverside County Department of Environmental Health Hazardous Materials Division had not responded to our written requests for review of public records. However, the data that was collected and reviewed was sufficient to draft this report and present our conclusions concerning the current environmental condition of the site. If pertinent records are found at a later date, an addendum for that section of this ESA report will be drafted and submitted to the client.

Should you have any questions regarding this report, please contact us at our office (714) 893-6140 at your convenience.

Sincerely Yours,

IWS Environmental, Inc.

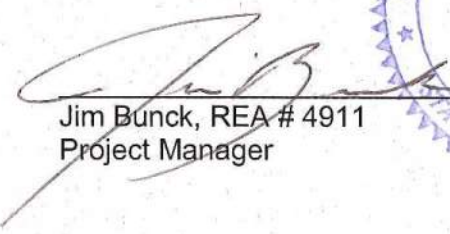

Jim Bunck, REA # 4911
Project Manager



TABLE OF CONTENTS

1.0 INTRODUCTION/SCOPE OF WORK	1
1.1 <i>Introduction</i>	1
1.2 <i>Scope of Work</i>	1
2.0 SITE CONDITIONS	2
2.1 <i>Site and Vicinity Description</i>	2
2.2 <i>Adjacent Properties</i>	3
2.3 <i>Geologic Features</i>	3
2.4 <i>Hydrogeology</i>	4
3.0 SITE INSPECTION/INTERVIEWS	4
3.1 <i>Site Inspection</i>	4
3.2 <i>Interviews</i>	7
4.0 HISTORICAL SITE LAND/ADJACENT PROPERTIES USE	8
4.1 <i>Aerial Photograph Review</i>	8
5.0 RECORD REVIEW	9
5.1 <i>Database Search of Site and Surrounding Area</i>	9
5.11 <i>Summary of Database Review</i>	11
5.2 <i>Sanborn Fire Insurance Map Review</i>	11
5.3 <i>Department of Oil and Gas Maps</i>	11
5.4 <i>Agricultural Use – Record Search</i>	12
5.5 <i>City Directory Review</i>	12
5.6 <i>Riverside County – Environmental Health Records</i>	12
5.7 <i>Riverside County Building and Planning Department</i>	12
5.8 <i>County Fire Department Record Search</i>	12
5.9 <i>Regional Water Quality Control Board (SARWQCB)</i>	13
6.0 RECOMMENDATIONS and CONCLUSIONS	13
6.1 <i>Conclusions</i>	13
6.2 <i>Recommendations</i>	15
7.0 LIMITATIONS	15
8.0 REFERENCES	16

FIGURES

FIGURE 1 – Site Location Map

FIGURE 2 – Site Plan

APPENDICES

Appendix A – Site Photographs

Appendix B – Aerial Photograph of Site

Appendix C – EDR Database Report

Appendix D – Parcel Map

Appendix E – City Directory Search

Appendix F – Sanborn Maps

Appendix G – Agricultural Commissioner Records

Appendix H – EMWD Ground Water Flow Chart

**PHASE I ENVIRONMENTAL SITE ASSESSMENT
MURRIETA HILLS
RIVERSIDE COUNTY, CALIFORNIA**

1.0 INTRODUCTION/SCOPE OF SERVICES

1.1 *Introduction*

IWS Environmental (IWS), has been retained by Benchmark Pacific to perform a Phase I Environmental Site Assessment for thirteen hundred acres of property comprised of farmland, limited structures, nursery, and undeveloped land. The subject site is identified as Murrieta Hills and is situated west of I-215 and south of Keller Road. The purpose of this ESA, was to evaluate, on the basis of readily available information, the potential presence of hazardous materials or substances at or near the site due to past or current land use practices, and the potential occurrence of soil and/or groundwater contamination resulting from these practices. This ESA also includes an evaluation of the potential for soil and/or groundwater contamination that may have impacted the site. This may be due to the documented release of hazardous substances within a radius of one-mile of the site. This ESA was prepared in general accordance with the Standard Practices for Environmental Site Assessments as established by the American Society for Testing and Materials (ASTM E1527).

The site is located in an unincorporated area of Riverside County at an approximate elevation of eighteen hundred feet above sea level (Figure 1 - Location Map Murrieta Quadrangle, USGS Topographic Series, photo revised in 1988). The topography of the property ranges from gently sloping uneven terrain on the eastern corner to more distinctive and dramatic elevation changes encompassing the remainder of the site.

1.2 *Scope of Work*

The scope of services conducted for this assessment is outlined:

- Conduct a detailed site reconnaissance to identify the presence or likely presence of any hazardous substances.
- Conduct a site reconnaissance of adjacent and nearby properties via public access to identify any hazardous substances or environmental concerns.
- Interview on-site/off-site individuals knowledgeable with site-specific conditions where available.
- Review and interpretation of available historical aerial photographs of the site and immediate site vicinity in order to identify past land uses.
- Review publicly available federal, state, and county records via EDR database to obtain information on known hazardous waste sites, or potential sites, or environmental violations within a radius of one-mile of the site.
- Review records at the Office of the Agricultural Commissioner of Riverside County for the identity of chemicals applied to the site.

- Review records at the Riverside County Department of Environmental Health, the enforcing agencies for industrial waste laws, as well as underground storage tanks.
- Review records at the Riverside County Department of Building and Planning for any previous building activities on the subject site.
- Review of pertinent and available geologic and hydro-geologic information pertaining to the site and surrounding area.
- Review of US Geological Survey (USGS) topographic maps to identify topography and major surface features.
- Review of any records at the Santa Ana Regional Water Quality Control Board (SARWQCB), the enforcing agency for leaking UST's and regional ground water conditions.
- Review Sanborn Fire Insurance Maps and city directories (if available).

2.0 SITE CONDITIONS

2.1 *Site and Vicinity Description*

The subject properties consist of thirty-seven contiguous parcels comprising approximately thirteen hundred acres (See parcel map in Appendix D). The subject site is defined by Keller Road, which extends along a limited portion of the northern boundary of the site and the I-215 freeway, which forms the eastern boundary of the site. The south boundary is partially defined by newer residential developments along the eastern portion. The east boundary of the site is not defined by any man made objects (roads, fences, barriers, etc.).

The subject site is situated in an unincorporated area in the southern portion of Riverside County adjacent to the City of Murrieta. The immediate area is dominated by scattered residences on larger parcels to the north, west and east, with newer high density residential developments directly south. Limited agricultural activities are present on land north and east of the site. The nearest major urban areas are Sun City located approximately five miles north and the City of Murrieta located approximately one mile south of the subject property.

Major vehicle arteries in the area include the I-215 Freeway, which forms the east boundary of the site and I-15 Freeway located approximately 3.5 miles west. Major lakes in the area include Canyon Lake, a private recreational lake located five miles northwest, Skinner Lake located seven miles southwest and Diamond Valley Lake located seven miles northeast of the subject property. The two latter lakes are designated for drinking water.

Ridges extending along the north and south borders of the site direct natural drainage toward the middle of the site via a series of seasonal creeks. These seasonal creeks drain into larger seasonal creeks located in the center portion of the site that exit the property to the east and west.

2.2 Adjacent Properties

The following sites/areas surround the subject property:

North

Keller Road forms the north boundary of the site. Keller Road extends from the I-215 Freeway west for .75 miles where it turns north into Kasper Lane. A primitive sporadic path accessible only by foot extends west of Kasper Lane along the north border of the site where it connects again at Daily Road. Keller Road continues at this point west where it "T's" into Wright Road. The area located north of Keller Road is comprised primarily of residences situated on large parcels intermixed with vacant land and limited agricultural fields. This pattern extends for several miles north of the site. Many of these residences in this area utilized portions of their property for business purposes. An inspection of these properties via public access revealed many of the residences were littered with a wide variety of household "junk" (i.e. old cars, trailers, refrigerators, stoves, etc.), however no significant negative environmental concerns were noted.

South

The site is bound on the south by high density residential developments established within the last five years. This pattern extends several miles south. An inspection of this area via public access did not reveal any recognized negative environmental concerns.

West

The property is bound on the west by vacant, undeveloped land. This pattern continues for approximately one mile before contact with residences consisting of newer tracks and established residences on larger parcels. Numerous unimproved dirt roads criss-cross this area and appear to be used sporadically by off-road recreational vehicles. Small scattered piles of wind born debris and trash littered this area. An inspection of this area via public access did not reveal any recognized negative environmental concerns.

East

The property is bound on the east by the I-251 Freeway. Extending northeast of the I-215 Freeway is a newly established residential neighborhood. Extending directly east and southeast of the I-215 Freeway is an area comprised primarily of residences situated on large parcels intermixed with vacant land and agricultural fields. This pattern extends for approximately one mile east. These residences are consistent with the residences located north of the subject site in that many of them utilized portions of their property for business purposes. An inspection of these properties via public access revealed that many of the residences were littered with a wide variety of household "junk" (i.e. old cars, trailers, refrigerators, stoves, etc.), however no significant negative environmental concerns were noted.

2.3 GEOLOGIC FEATURES

Physiographically, the subject site is located in the Peninsular Range geologic province, approximately two miles southeast of the former Lake Elsinore shoreline. The site rests upon the sand-

stone member of the Pleistocene Pauba Formation. The sandstone member is a light-brown, moderately well indurated sandstone and siltstone facies. The Pauba Formation nonconformable overlies Cretaceous granodioritic rocks of the Paloma Valley Complex. The Lake Elsinore Basin is a fault controlled basin with the Lake Elsinore Fault Zone occurring approximately two miles to the northwest of the property. There are no major faults trends through the subject property (California Division of Mines and Geology, 1991, *Geologic Map of the Santa Ana 1:100,000 Quadrangle, California*).

2.4 HYDROGEOLOGY

Depth to ground water information obtained from the Environmental Data Resources (EDR) report indicated that the depth to ground water in several wells in the area range from eleven feet below surface grade (bsg), to one hundred fifty feet bsg. A well located in the middle portion of the site and utilized by the nursery for watering of their shrubs, indicated a depth of four hundred bsg. This depth may not be consistent throughout the site due to the variations in terrain. Shallow perched zones may be present under or near the larger seasonal creek located on the site.

Limited areas of confined to semi-confined perched groundwater are known to exist locally in the immediate area at a depth of sixty to one hundred ten feet bsg. The direction of free-flowing ground water in the area of the site is inferred to be in a south, southeast direction. Information collected for this report indicates there are no known polluted ground water plumes under or near the subject property. EMWD ground water basins and flow directions can be found in Appendix H.

3.0 SITE INSPECTION/INTERVIEWS

3.1 Site Inspection

On January 26, 2006, personnel from IWS completed a site inspection of the subject property. Pertinent site features were logged in and photographs were taken. Photographs of the subject site are included in Appendix A. Figure 2 depicts the general site layout including adjacent properties, and should be referred to as they are stated below.

Due to steep terrain and thick vegetation, access to portions of the site was not possible. Consequently, the visual inspection was primarily focused on those areas of the site that were reachable by vehicle or foot traffic, and have the greatest potential to be present an environmental concern. Those areas of the site inaccessible were viewed via binoculars for any unusual features or conditions.

The subject site consists of thirty seven contiguous parcels comprising approximately thirteen hundred acres in a rectangular configuration. Primary vehicle entrance to the site is via Kelly Road which extends along the northeast boundary of the site. From this access point, a two lane dirt road identified as Shauna Charmain Lane extends through the middle portion of the site. The eastern portion of the site can be accessed via Scenic View Drive which winds through the eastern portion of the site, dead ending at a new residential development bordering the property on the south. Additional entry points would include Wright Road on the northwest and a multitude of dirt trails and paths leading from the adjacent properties. Most of these secondary

entry points can only be traversed by off road vehicles (jeep, motorcycles, ATV's, mountain bikes, etc.), and on foot.

A small portion of the northeast corner of the site comprising approximately one hundred acres is relatively flat with a gentle grade rising in elevation to the west and south. This area is also defined by gently sloping terrain with localized granite rock out-croppings and several seasonal creeks. At the time of our inspection, this area of the site appeared to be recently planted as seed sprouts rising several inches in a consistent pattern were observed.

Two ridge lines extending in a generally east/west direction lengthen along the northern and southern boundary of the site. These portions of the site are defined by moderate to steep grades with distinctive elevation changes. Located between these two ridges in the middle portion of the site is a small valley comprising approximately two hundred acres of what would be considered gentle sloping terrain punctuated by drainage incises extending from the ridges above.

Those areas of the site not utilized for agriculture or other purposes are covered with native vegetation consisting of low thick Chaparral and Sage-type brushes with scattered patches of oak and eucalyptus trees. The vegetation at the site ranges from sparse to extremely thick. Many portions of the site would be considered inaccessible by foot due to the thickness of the vegetation.

The following is a brief description of the potential environmental concerns noted during the inspection of the site:

- A two lane dirt road identified as Shauna Charmain Lane acts as the primary access to the site. Easily accessible from Keller Road and suitable for normal vehicle traffic, areas abreast of this road serve as a natural "dumping ground" for debris. Additionally, Scenic View Drive which extends along the western portion of the site holds the same glamour for depositors of debris (See Photo#: 14). Each debris pile was inspected for the presence of any significant quantities of hazardous materials. The debris piles primarily consisted of old TV's, furniture, cloths, wood, gym equipment, and a general collection of household junk. Several of the piles contained empty plastic containers (pints, quarts, buckets), of motor oil, transmission fluid, and paint (See Photo#: 13). Only minor stains were noted in a few of the areas with no indication of any significant soil incursions.
- Located atop a ridge road on the south portion of the site are six fifty-five gallon metal drums set on a wood pallets (See Photo#: 11,12). It appeared the drums had been there for some time as they were $\frac{3}{4}$ filled with rain water and were supporting plant growth and a vibrant bug population. There were no indications of stains under or near the drums or any labels on the drums identifying what the former contents may have been.
- Located approximately one hundred feet southwest of the drums along the same ridge line was a collection of five gallon plastic containers of discarded paint. Most of the containers were empty, however several had varying quantities left over. None of the containers appeared to be significantly leaking.
- Located in the middle portion of the site is a wholesale nursery by Murrieta Oaks Nursery (See Photo#: 5). This is a family run business that has conducted operations on

the site for the past fourteen years. The nursery primarily grows potted ornamental shrubs and palm trees. There were no indications of any use or storage of hazardous materials on or near the nursery.

- Located approximately four hundred feet east of the nursery is a small single story brick building. (See Photo #: 7). Located in this building is the ground water well that supplies water for the nursery. Also located in this building is a generator that provides power to the pump. Located directly adjacent to the building to the east is a three hundred gallon diesel fuel tank and portable generator. There were minor stains of diesel fuel noted on the soil under the tank, and extending from the building (See Photo #: 8). The stains appeared to be surface stains only.
- Located in the center of the property is a single story rock/concrete house (See Photo #: 9). Based upon historical aerial photographs reviewed, the house was built prior to 1938. Currently the house is utilized as a residence for the workers for Murrieta Oaks Nursery. Several small trailers parked directly adjacent to the house are also used by the workers. Scattered trash and debris was noted around the house and trailers. There was no indication that hazardous materials were utilized or disposed of in this area of the property.
- Located approximately one hundred feet west of the house in a small ravine is a small single room one story rock/concrete structure (See Photo #: 10). Based upon its construction and design, it most likely was built at the same time as the house stated above. It appears it may have been used as a bath house. At the time of the inspection this structure was empty. No environmental concerns were noted in or near this structure.
- Located in the northeast portion of the property are oat fields (See Photo #: 1). Based upon historical photographs reviewed, this area has been consistently farmed for seventy plus years. There is a possibility that low levels of residual herbicides could be present in the under-lying soil.
- Located approximately three hundred feet west of the nursery is an open area cleared of vegetation (See Photo #: 15). This area is marked with mounds of soil that appeared to be created by a bulldozer or other similar type of earth moving equipment. It is apparent that this area is used by motorcyclists as a type of race track or motocross course. There were no significant stains or other indications that hazardous materials have been stored or spilled in this area.
- Located directly adjacent to the above referenced motocross course is an area used as a weekend shooting range (See Photo#:16). Numerous shell casings (primarily shot gun casings) and aluminum beer containers were observed in this area.
- Located in the southeastern portion of the site is a large area cleared out and void of any vegetation. Located on the eastern portion of this area are piles of soil. It appears the soil has been deposited by grading activities conducted on the adjacent residential neighborhood directly south of the property (See Photo#: 18). There was no indication the piles of soil were contaminated.

- Located on the northern portion of the site at Keller Road is a EMWD water storage tank (See Photo#: 17). The volume of the tank appears to be in the range of several million gallons. A fence with barb wire encloses this facility. There was no indication of the storage or use of any hazardous materials within this facility.

Other than what was noted above, the visual inspection of the property did not reveal any indication of any current or former underground storage tanks, significant surface staining, and vaulted electrical transformer boxes. There was also no evidence of any subsurface abandoned foundations, seeps, or stressed vegetation. In addition, there was no visible indication that the adjacent properties have negatively impacted the subject site with the disposal or use of hazardous materials.

2.3 Interviews

As part of the assessment for the subject site interviews were conducted with Mr. Richard Robotta, a representative of Pacific Benchmark Pacific who is the current owner of the site and Michael and Richard Greer, co-owners of Murrieta Oaks Nursery who have operated a small nursery on the site for the last twelve years. Additionally, Mr. Mike Lahti, an Agricultural Standards Investigator for the Riverside County Agricultural Commissioners office, who coincidentally, was conducting an inspection of the nursery at the time our visit, was also interviewed.

Listed below is a summary of the interview conducted with Mr. Robotta:

- In February of 2004 Benchmark Pacific purchased the middle portion of the property consisting of approximately nine hundred eighty acres. In February of 2005, Benchmark Pacific purchased the north and south portions of the property consisting of approximately three hundred twenty acres.
- Mr. Robotta indicated that during the time they have owned the site he was not aware of any incidents of significant spills of hazardous materials or any documented response by the Fire Department or Riverside County Environmental Health.
- Mr. Robotta is not aware of any underground tanks, structures, sumps, pits, subsurface formations or any other adverse environmental conditions concerning the subject site.

Listed below is a summary of the interview with Mr. Michael Greer and Mr. Richard Greer:

- Mr. Michael Greer indicated they have operated a nursery on the site for approximately fourteen years under a lease agreement with the former owner of the site, Rose Hills. As part of their lease agreement, they had the responsibility to maintain the property, which involved discouraging transient activities as well as the dumping of trash on the site.
- Mr. Richard Greer indicated the site is frequented by those discarding trash. Most of the trash is dumped at or near the site entrance at Keller Road and along the east portion of the site. Mr. Greer indicated that from time to time they will gather up the trash and remove it from the site. He cannot recall encountering any unknown hazardous materials in these piles of trash or any large spills/stains from any hazardous materials.
- Mr. Michael Greer indicated they do not utilize any pesticides in their nursery business. They use only limited quantities of herbicides – specifically a product identified as “Round Up”. He further stated they have never had a significant spill of “Round Up”.
- Water for their nursery is supplied by an on-site well located approximately three hundred feet east from the nursery. Well water is pumped up the hill to two large metal

- storage tanks (See Photo #: 6). Mr. Michael Greer indicated the depth to water in the well is four hundred feet. On rare occasions the well has dried out, especially during extended drought periods.
- Mr. Richard Greer indicated there have been minor leaks of diesel fuel from the generator and diesel fuel tank that supplies fuel to the generator. He believes most of the soil where the diesel fuel has impacted is surface stains only.
- Mr. Michael Greer indicated the stone house and several trailers located on the property are utilized by his nursery workers for their residences. A portable gas generator supplies power to the house and trailers.
- Mr. Richard Greer indicated at the present time he believes there are no transients living on the site. However, from time to time in the past there have been problems with transients setting up makeshift shelters on the site. He further stated the site is regularly frequented by an assortment of off road vehicles and weekend target shooters.
- In an attempt to keep "off roader's" from transiting some of the secondary access routes on the site the Greer's have "ditched" several roads. They indicated this technique cut down on a number of the 4-wheel traffic but not necessarily the 2-wheel traffic.
- Mr. Richard Greer stated that during their time on the site no other business or operations have been conducted on the site and they are not aware of any businesses operating on the site prior to their arrival.

Listed below is a summary of the interview conducted with Mr. Mike Lahti:

- Mr. Lahti indicated he has had the responsibility for conducting the inspections of the Murrieta Oaks Nursery located at the site for the last 14 years. He stated that the only chemical he is aware of that is used at the nursery is "Round Up". He indicated that he has never cited the nursery for any violations and felt the nursery has done a "good job" in making sure no significant quantities of herbicides have been utilized in their operation.

4.0 HISTORIC SITE LAND USE/ADJACENT PROPERTY

4.1 *Aerial Photograph Review*

Aerial photographs of the subject site and surrounding property were reviewed for this report. The following representative photos and stereo pairs (if available) were made available through EDR's private collection. During the review, the photographs were specifically examined for evidence of hazardous materials, as well as on, and off-site features that may affect the environmental quality of the property. The features include sumps, pits, ponds, lagoons, above ground tanks, landfills, collection of drums or containers, discoloration of soil, structures, and general land use. Unless stated below, there are no discernable unusual features on the site or surrounding property, and no visible evidence of hazardous materials stored or dumped on, or adjacent to the site.

1938 (Flyer, 1"=555') - The subject site and general region was a rural area of Riverside County. A one lane dirt road extended onto the site from the northeast, in the approximate location of today's road. A house and several small structures were present in the middle portion of the site, in the same location as existing structures today. Located in the center portion of the site near the existing house were areas cleared of native vegetation, which appeared to be planted with citrus trees and oats. Oat fields were also present on the northeast portion of the site.

1953 (Pacific Air, 1"=555') – The site and surrounding area remained a rural area of Riverside County with only scattered residences located primarily five miles west of the subject site. A larger area in the middle portion of the site appears to be devoted to farming oats as seen from the 1938 photograph reviewed. Many of the citrus trees noted in the 1938 photograph appeared to be removed in this photograph. A small quarter acre pond was present directly west of the house.

1967 (Western, 1"=555') – No significant changes were noted on the site as compared to the 1953 photograph reviewed. Only a few more access roads cut into the northern portion of the site.

1980 (AMI, 1"=600') – It appeared that many of areas of the site actively farmed in the middle portion of the site, which were noted in the previous photographs were void of any agricultural activities in this photograph. Keller Road was present along the northeast portion of the site. An increase of dirt roads/trails were noted in the middle portion of the site.

1989 (Flyer, USGS 1"=666') – Areas in the middle portion of the site utilized for farming as noted in previous photographs of the site were void of any farming use in this photograph. Increased residences were noted north of the site. No other significant changes were noted in this photograph.

1994 (Flyer, USGS 1"=666') – Large areas in the middle portion of the site and extending east were cleared of vegetation. A nursery was present in the middle portion of the site. The northeastern portion of the site continued to be utilized for agricultural activities. Newer residential developments were present directly south of the site.

2002 - (USGS 1"=666') The subject site appeared in its current configuration. Other than stated above, there were no significant discernable or unusual features on the site or surrounding property on any of the photographs reviewed.

5.0 RECORDS REVIEW

5.1 Computer Database Search of Site and Surrounding Area

Environmental Data Resources, Inc., (EDR) was contacted to supply the database search, which consisted of a review of the existing federal, and state environmental databases per the ASTM standards for environmental site assessments (E1527-94). The database search distance is a maximum of a one-mile radius from the subject property.

Each entry listed on the database was screened to identify and document potential contaminated sources that may affect the subject property by exposure to contaminated media (soil, water or air). Potential sources that were not adjacent to, or hydrogeologically upgradient of the subject property (northeast) were eliminated from further review. Further review also eliminated sites that fit the following profile:

- The site was not in violation of environmental regulations as reported in the database.

- The site was in violation of environmental regulations; however, the reported violation was a result of documentation errors rather than hazardous conditions.
- The site was a small quantity generator or transporter of hazardous waste that was located greater than 600-feet from the site or was located down gradient from the site.
- The site had one or more reported releases, however, the reported releases were small and contaminant migration mechanisms were not likely to be sufficient to carry the contaminant to the subject site, based on the geologic and hydrogeologic data obtained for this assessment.

Sites that were retained after the initial screening were examined further during the site reconnaissance by visual inspection via public access. Special attention was given to those identified as potential contaminated sites not listed on the databases, which may present on sites adjacent to or nearby the subject property to identify any additional environmental concerns not listed on the database report. In addition, the immediate area was surveyed for environmental concerns (i.e. dead vegetation, stained soil, discarded hazardous containers, etc.).

Federal Sources

NPL National Priority List

Proposed NPL Proposed National Priority List Sites

CERCLIS Comprehensive Environmental Response, Compensation, and Liability Information System

CERC-NFRAP CERCLIS No Further Remedial Action Planned

CORRACTS Corrective Action Report

RCRIS-TSD Resource Conservation and Recovery Information System

RCRIS-LQG Resource Conservation and Recovery Information System

ERNS Emergency Response Notification System

Federal ASTM Supplements

CONSENT Superfund (CERCLA) Consent Decrees

ROD Records Of Decision

Delisted NPL National Priority List Deletions

FINDS Facility Index System/Facility Identification Initiative Program Summary Report

HMIRS Hazardous Materials Information Reporting System

MLTS Material Licensing Tracking System

MINES Mines Master Index File

NPL Liens Federal Superfund Liens

PADS PCB Activity Database System

DOD Department of Defense Sites

US BROWNFIELDS A Listing of Brownfields Sites

RAATS RCRA Administrative Action Tracking System

TRIS Toxic Chemical Release Inventory System

TSCA Toxic Substances Control Act

SSTS Section 7 Tracking Systems

FTTS INSP FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

State of California Sources

AWP Annual Workplan Sites
Cal-Sites Calsites Database
CHMIRS California Hazardous Material Incident Report System
Cortese "Cortese" Hazardous Waste & Substances Sites List
Toxic Pits Toxic Pits Cleanup Act Sites
SWF/LF Solid Waste Information System
WMUDS/SWAT Waste Management Unit Database
CA BOND EXP. PLAN Bond Expenditure Plan
UST List of Underground Storage Tank Facilities
VCP Voluntary Cleanup Program Properties
INDIAN LUST Leaking Underground Storage Tanks on Indian Land
INDIAN UST Underground Storage Tanks on Indian Land
CA FID UST Facility Inventory Database
HIST UST Hazardous Substance Storage Container Database

5.11 Summary of Database Review

The subject site does not appear on the database report as having underground storage tanks, a recorded spill of hazardous materials, or as having been impacted by an off-site source of contamination (soil or ground water). There are no recorded industrial or business facilities within a radius of one mile that use or generate hazardous materials and no recorded contaminated groundwater plumes within a radius of one mile of the subject site.

Additionally, there are no NPL (national priority list) or Superfund sites located within a one mile radius of the subject property.

It should be noted that government agency records pertaining to sites may remain on file for years, and may not be representative of the current environmental status of the site. In addition, while the listing of the addresses of the regulatory agencies database may be accurate, listings of the current occupant of the site may not be accurate.

The County, State, and Federal computer databases reviewed by EDR is listed in their "Geo-Check" report and presented in Appendix C.

5.2 Sanborn Fire Insurance Map Review

EDR, Inc. was contacted to perform a historical search of the Sanborn Fire Insurance Maps archives. Fire insurance maps typically identify structures from a fire hazard point-of-view. In addition, these maps identify structures/improvements, which may pose environmental concerns. **NO COVERAGE** is available for the subject site or adjoining properties (Appendix F).

5.3 Department of Oil and Gas Maps

On January 30, 2006, Department of Oil and Gas (DOG) maps concerning the subject property and nearby properties were reviewed. DOG maps contain information regarding oil and gas development. According to the DOG maps, no oil wells are located within one thousand feet of the subject property.

5.4 Agricultural Use – Record Search

A written request was made to the Riverside County Agricultural Commissioner to review any files pertaining to the use and application of pesticides and herbicides on subject site. On February 17, 2006 they responded to our request. The agency was able to find records dating back to 2003. Records for the site indicate herbicides have consistently been utilized on the northeast corner of the site used for dry farming. Additionally, specific pesticides have been used to control rodents in that area. No chemicals are listed for use at the nursery at the site. Listed below is the documented chemicals utilized, however, additional chemicals may also have been applied to the site.

Insecticides

Carbaryl (1-naphthyl N-methylcarbamate), Aluminum Phosphate, Zinc phosphate, Strychnidin-10-one, Monohydrochlorite, Hydrochloride, Strychnine Alkaloid. Strychnine Sulfate.

Herbicides

Chlorsulfuron, 2,4-dichlorophenoxy, Dichloride, Banvel II, 2-Chloro-n-(4-Methoxy-6-Methyl - 1,3,5-Triazin-2YI) Aminocarbonyl Benzenessulfonamide, 3,6-Dichloroanistic Acid, Avadex BX, Avenge, Banvel, Bladex, Buctril, Cabyne,

It should be noted that herbicides generally biodegrade within a relatively short period of time. Residual quantities of these pesticides and herbicides may be present in the soil. A copy of the Agricultural Commissioner's records and MSDS/Data sheets for the chemicals are attached to Appendix G of this report.

5.5 City Directory Review

A search of street directories was preformed by EDR, Inc. to determine the occupancy history of the property over an extended period of time and the potential for recognized negative environmental conditions. A review of the directory listings did not reveal any pertinent occupant history that would be considered as a negative environmental issue pertaining to the subject site. (Appendix E).

5.6 Riverside County – Environmental Health Records

A written request was made to the Riverside County Department of Environmental Health Hazardous Materials Division to review any files pertaining to subject site. As of the writing of this report, the agency has not responded to our request. Based upon data collected for this report, it is unlikely any records will be found at their agency for this site. In the event pertinent records are found, an addendum to this report will be drafted.

5.7 Riverside County Building and Safety Department Records

The Riverside County Department of Building and Safety was contacted to review records pertaining to the site, including any building applications, permits, and any notices of code violations. No records were found for the subject site.

5.8 County Fire Department Record Search

A phone call was made to the Riverside County Fire Department, Station # 3, which is the

responding station for the subject site. I spoke with Captain Berman. Captain Berman indicated that they have no records on file nor can he recall responding to the site. He did indicate that they only keep records for up to one year and additional records for hazardous materials response may be on file with the Riverside County Department of Environmental Health (See section 5.6 above).

5.9 Santa Ana – Regional Water Quality Control Board (SARWQCB) Record Search

A phone call was placed to Ms. Annette Subriar at the SARWQCB to see if any files were available for the site. Ms. Subriar indicated no files are held by their agency for the subject site.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

Based upon the results of this ESA for the subject property, the following conclusions are presented for review:

1. The subject site is comprised of thirty seven contiguous parcels encompassing approximately thirteen hundred acres in a rectangular configuration. A rock/concrete house and ancillary structures, believed to have been built in the late 1920's are still present on the site. The majority of the site is undeveloped vacant land that has remained undisturbed.
2. The northeast corner of the subject site had been utilized for farming for approximately seventy years, possibly longer. The middle portion of the site was utilized sporadically for farming of oats and citrus trees between the 1930's through the 1970's. The remaining portions of the site have virtually remained untouched since the 1930's. There is a limited possibility that residual herbicides may be present in the underlying soil in the northeast portion of the site that has been farmed for the past seventy years. However, it should be noted that herbicides have a short life span and are easily degraded to non-detect levels during plowing and grading activities.
3. Currently a wholesale nursery occupies in a small section of land located in the middle portion of the site. The nursery grows a variety of shrubs and trees in potted containers. The nursery does not utilize pesticides in its operations and only limited quantities of herbicides. The nursery has not been cited by the Riverside County Agricultural Commissioners office for the improper application or use of chemicals.
4. Historically the surrounding areas have been utilized for agricultural applications. Properties east and north of the subject site have been utilized for both dry farming and citrus crops. A review of historical topography maps and aerial photographs of the late 1930's and late 1970's shows the portions of the site and surrounding parcels as agricultural fields. This practice existed until the early 1980's when residential development gradually began to replace farmland. Presently agricultural activities in the immediate area (one mile radius), comprise only ten percent of available land use.
5. Records obtained from the Riverside County Agricultural Commissioner's Office indicate

6. a variety of herbicides to control weeds and pesticides to control rodents have been applied to that area of the site utilized for dry farming for the last 70 years. Limited quantities of herbicides have been applied to the nursery property, however, no documented pesticides or fungicides. Due to the rapid rate in which most herbicides biodegrade, there is a low probability that any significant levels of these chemicals would remain in the soil, especially those areas of the site actively farmed. There is a possibility detectable levels of pesticides may be present in farmed fields of the site, however there is a low probability they are above actionable levels.
7. Piles of discarded debris were noted at several locations throughout the site. At one of the locations partially filled containers of used paint were observed. None of these containers of paint appeared to have significantly stained the underlying soil. Other debris included TV's, furniture, cloths, wood, gym equipment, landscaping debris, and a general collection of household junk.
8. Data reviewed for this report indicates the regional groundwater beneath the subject site lies somewhere between three hundred to four hundred feet bsg. It is believed that unknown confined or semi-confined shallow perch aquifers may be present on the site near and adjacent to the seasonal creeks. The direction of free-flowing groundwater in the area of the site is inferred to be in a south, southeasterly direction. Groundwater quality conditions beneath the subject site cannot conclusively be determined at this time. Records assessed for this report do not indicate any recorded contaminated plume beneath, or in the vicinity of the subject site from farming or industrial pollutants.
9. The subject property was not utilized as a landfill.
10. There are no NPL (national priority list) or Superfund sites located within a one mile radius of the subject property.
11. According to the DOG maps and visual inspection of the immediate area surrounding the property, no oil wells are located within one thousand feet of the subject property.
12. There were no significant environmental concerns noted in the historical aerial photographs reviewed for the site.
13. Obtainable government records available at the time of this report indicated that the site has no underground storage tanks. There has been no recorded spill of hazardous materials, and it has not been impacted by an off-site source of contamination (soil or groundwater). Additionally, the site has not been cited or issued violation notices by any environmental regulatory agency for the improper use or disposal of hazardous materials.
14. There was no evidence of any sumps, pits, or other underground structures on the site. There was also no evidence of any, springs, seeps, stressed vegetation, stained asphalt, concrete or soil, on, or adjacent to the site.
15. From the aerial photographs reviewed, physical site inspection, and review of government records and databases, there is a "*low probability*" the subject site has been significantly impacted by the presence of hazardous materials or waste that would have a negative impact on both health and the environment.

6.2 Recommendations

Based on our findings, IWS Environmental recommends the following for your review.

- If additional, more site specific groundwater quality information is necessary, it is recommended that 2" PVC ground water monitoring wells, or hydropunch bores be completed on the subject site, and sampled by a qualified Registered Geologist.
- It is recommended that the soil in those areas of the site that have been extensively utilized for farming for the last seventy years be tested for pesticides and herbicides prior to any development activities.
- It is recommended that the small containers of paint and oil noted on the site be properly contained and removed in accordance with applicable regulations and laws.
- If any additional environmental concerns not discussed in the report are discovered, please notify our office for further recommendations.

7.0 LIMITATIONS

The Phase I Environmental Site Assessment and Limited Phase II are intended exclusively for the purposes outlined herein and at the site location and project indicated. This report is for the sole use of Benchmark Pacific and its authorized personnel.

The conclusions presented in this report are the professional opinions based solely upon visual observation of the site and vicinity, personal interviews, interpretation of available historical information, and examination of obtainable government documents. It should be noted that governmental agencies often do not list all sites with environmental contamination, or lists could be inaccurate and/or incomplete.

It should be recognized that this study was not intended to be a definitive investigation of contamination, which may, or may not, be present at the subject site, as defined in this report. The absence of any potential gross contamination source, historical or present, does not necessarily imply that the site is free of any contamination.

Any opinions and recommendations presented in this report apply to site conditions existing at the time of this Phase I and cannot necessarily apply to site changes of which IWS is not aware of, or has had an opportunity to evaluate under separate cover. Changes in the conditions of the subject property may occur with time due to natural processes or the work of man. This report only represents a "due diligence" effort as to the current environmental status of the site. No other warranty, expressed or implied, is made as to the professional conclusions and recommendations presented in this report.

8.0 REFERENCES

California Department of Water Resources (CDWR), 1975, *California' Ground Water*, Bulletin 118.

California Division of Mines (CDM), 1954, *Geology of Southern California*, Bulletin 170.

California Division of Mines and Geology (CDMG), 1965, *Geologic Map of California - Santa Ana Sheet*, Scale 1:250,000.

Eastern Municipal Water District (EMWD), 2000a, *Eastern Municipal Water District Groundwater SubBasin Boundaries*, <http://www.emwd.org/water_service/where_water-gwater-basins.html>.

-----, 2000b, *Eastern Municipal Water District – Direction of Groundwater Flow Based on Spring 1999 Ground Water Elevations*, <http://www.emwd.org/water_service/where_water-gwater-flow.html>.

Munger Oil Information Service, Inc., 1994, *Munger Map Book - California-Alaska Oil and Gas Fields*.

United States Geological Survey, 1996, *Perris Quadrangle, 7.5-Minute Topographic Series*, Scale 1:24,000.

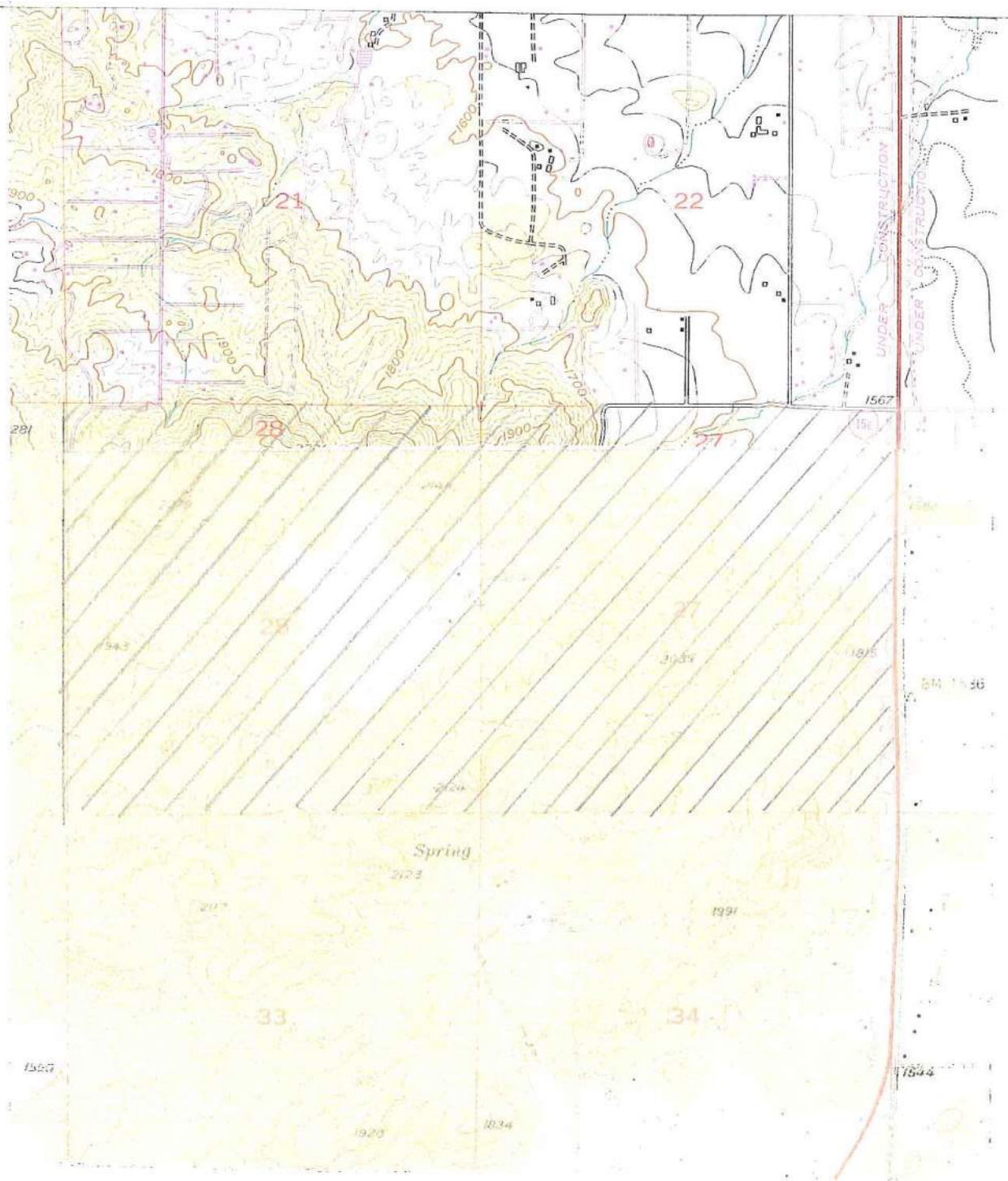
County of Riverside Flood Control District – *Aerial Photographs Section*

County of Riverside, Department of Environmental Health, *Hazardous Materials Division*

Environmental Data Resources, Inc., *The EDR Radius Map with GeoCheck*

FIGURES

SITE LOCATION MAP & SITE PLAN



Source: USGS Topographical Map, Murrieta

1" = 2000'

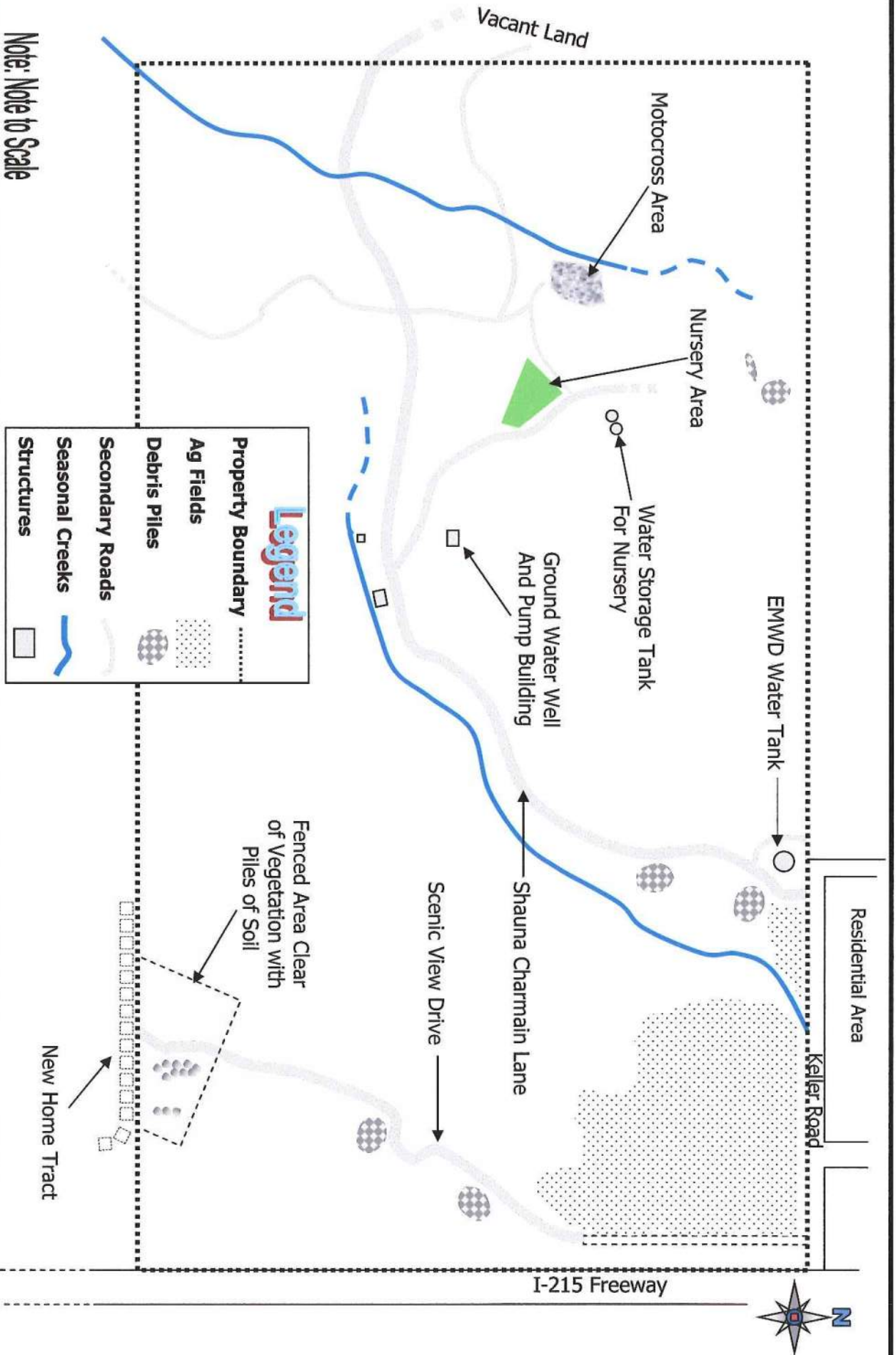
IWS ENVIRONMENTAL

5211 Hartford Way
Westminster, California 92683

FIGURE - 1
Site Map
MURRIETA HILLS

Project No.
012561

Date
Feb. 24, 2006



IWS ENVIRONMENTAL

5211 Hartford Way
Westminster, California 92683

FIGURE 2

Site Plan

Project Name
Murrieta Hills

Date:
Feb. 24, 2006

APPENDIX A

SITE PHOTOGRAPHS



Photograph : Looking southwest at recently planted oat field located on the northeast corner of the site.



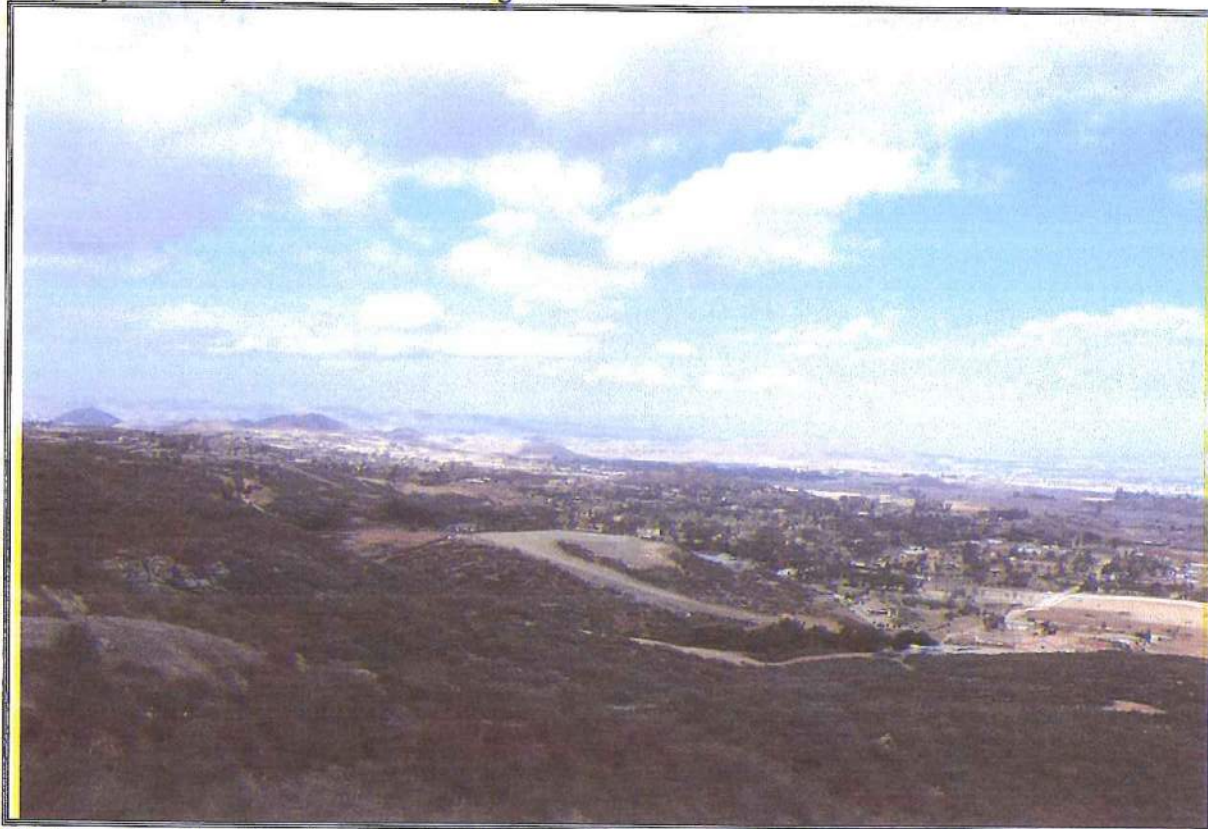
Photograph 2: Looking southwest at valley located in the middle portion of the site. Road pictured in middle is the primary access road to site. Ridge in background defines south border of site. Nursery located on right next to trees.

SITE PHOTOS

Appendix – A



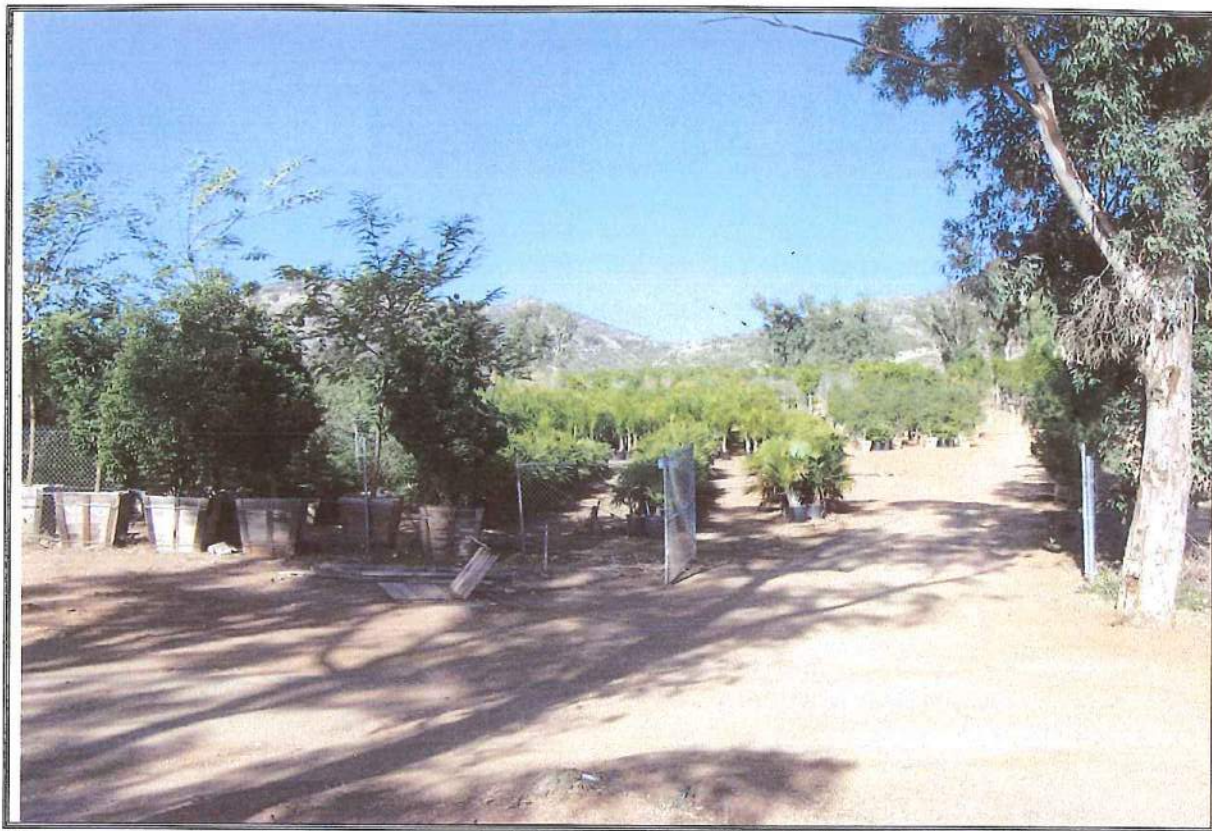
Photograph 3: Looking the north ridgeline of site from the south ridgeline south boundary of property. Nursery on site located on right. .



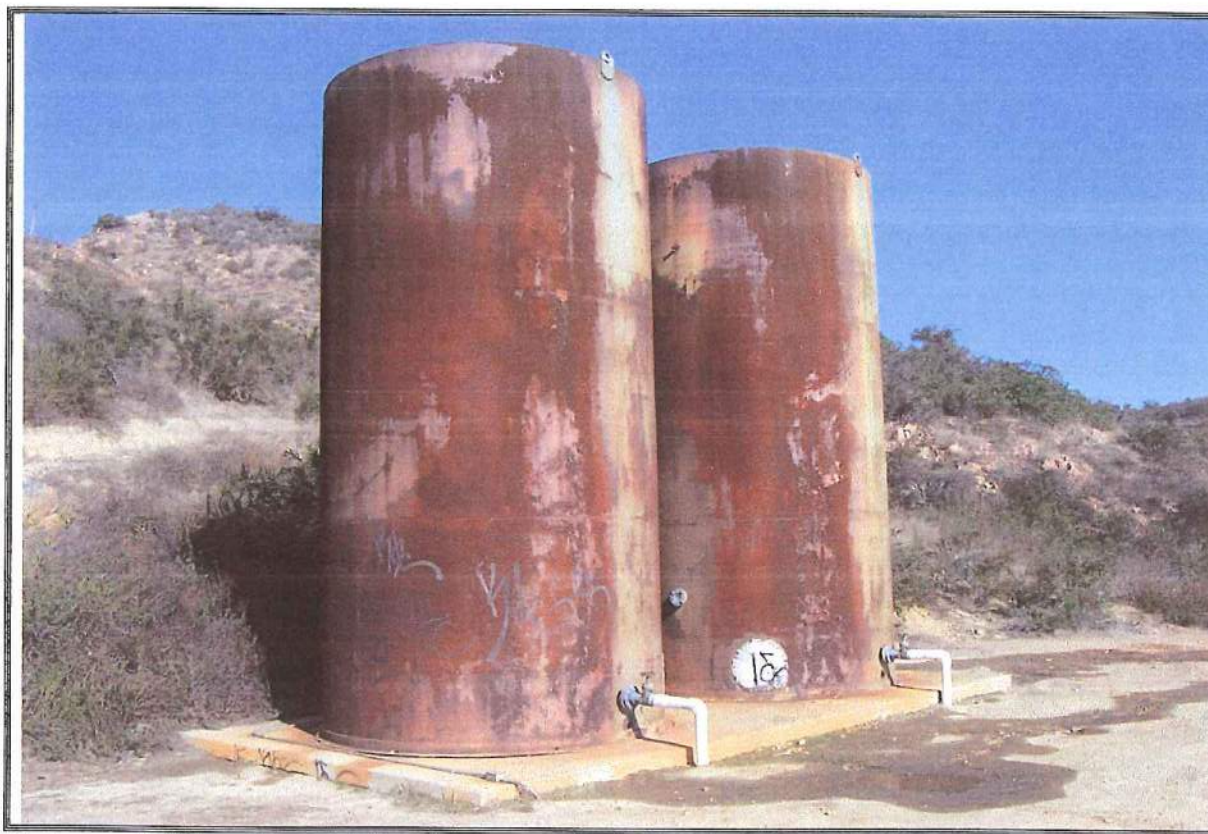
Photograph 4: Looking from north ridgeline of site at residential area located directly north of site.

SITE PHOTOS

Appendix – A



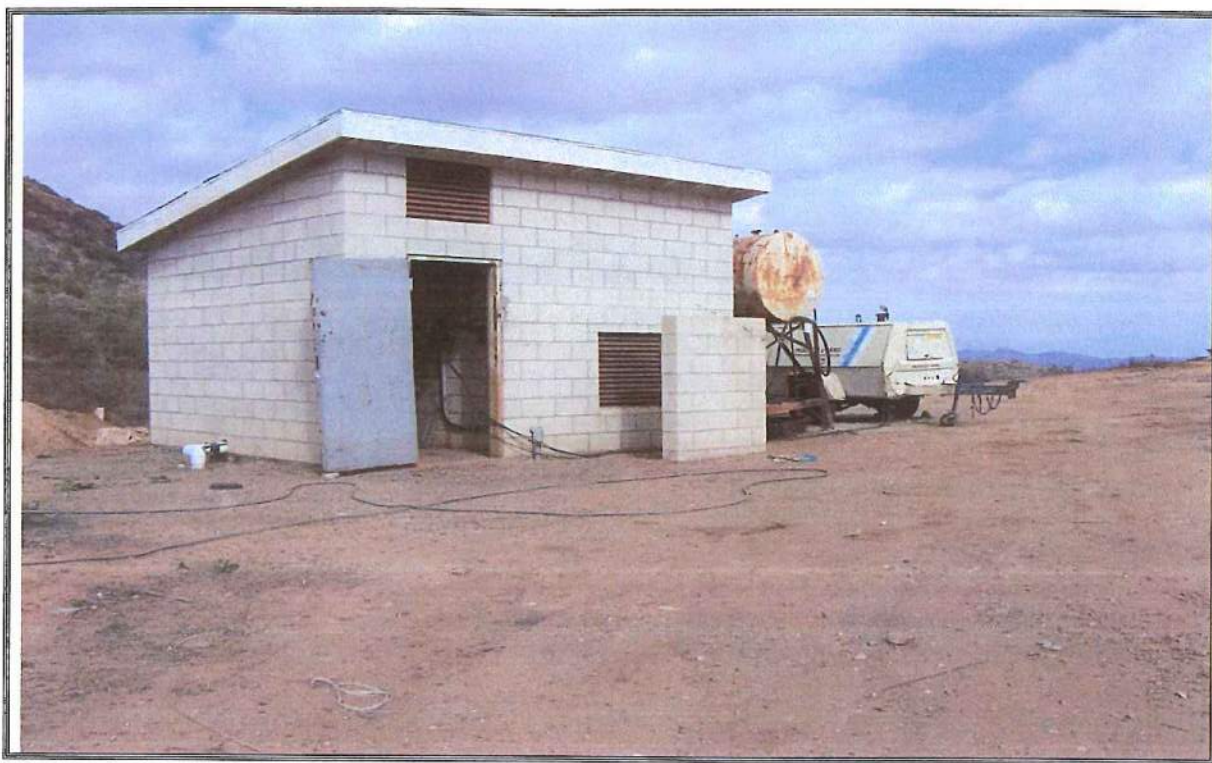
Photograph 5: Looking the northwest at Murrieta Oaks Nursery located in middle of the site.



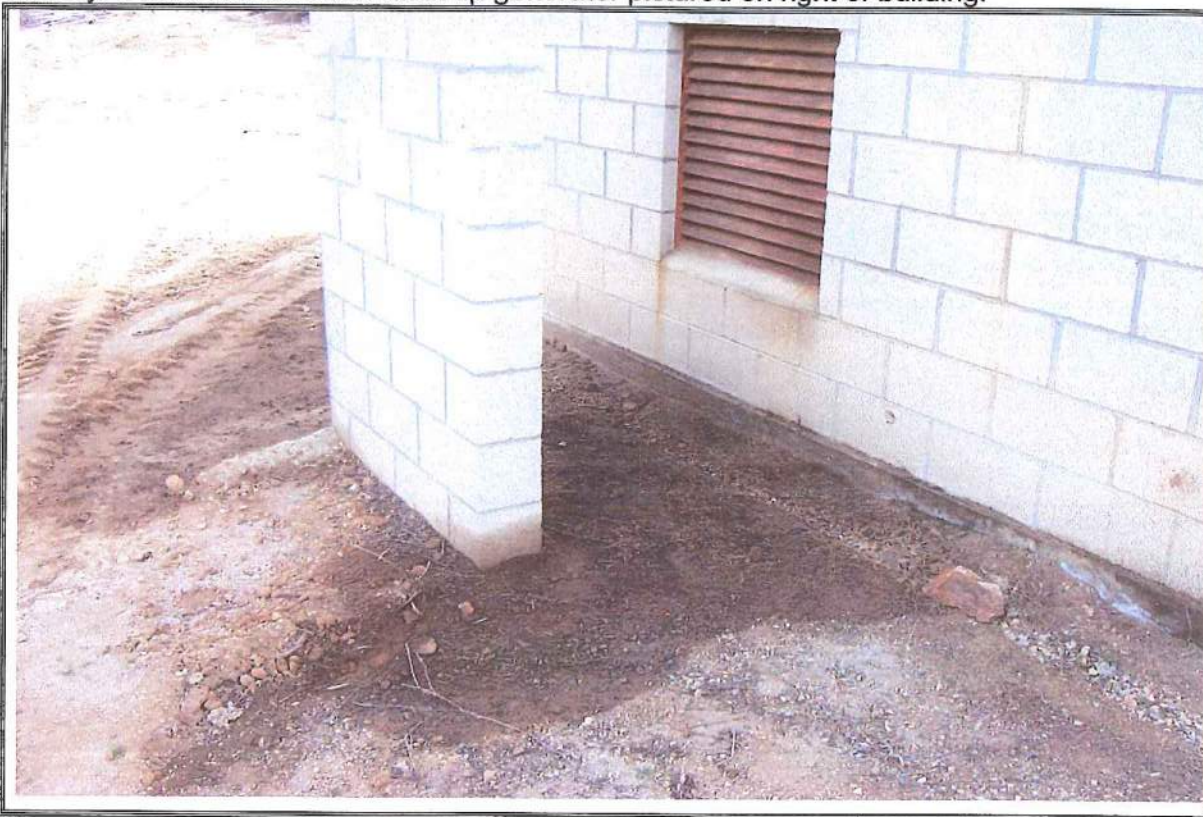
Photograph 6: Looking metal water storage tanks located above the nursery.

SITE PHOTOS

Appendix – A



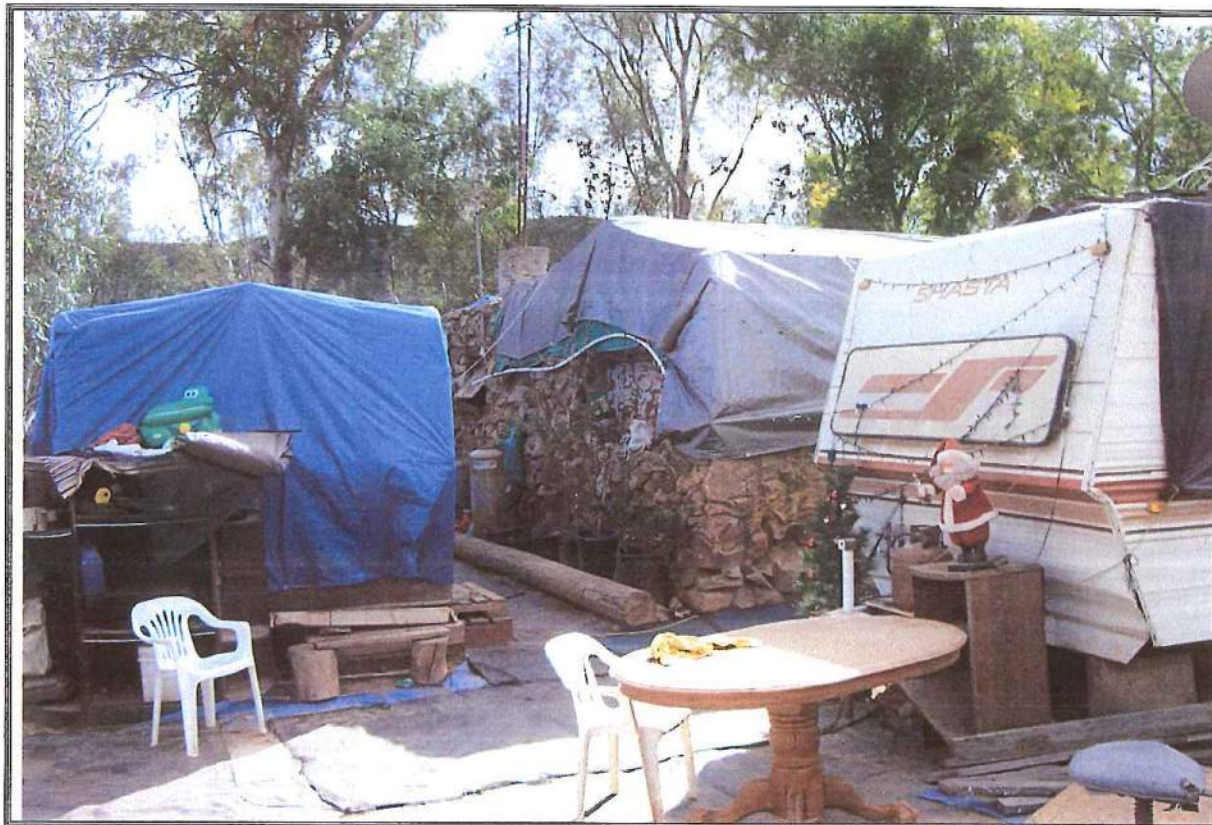
Photograph 7: Looking at brick building that contains the water well and generator utilized by the nursery. Diesel fuel tank and back up generator pictured on right of building.



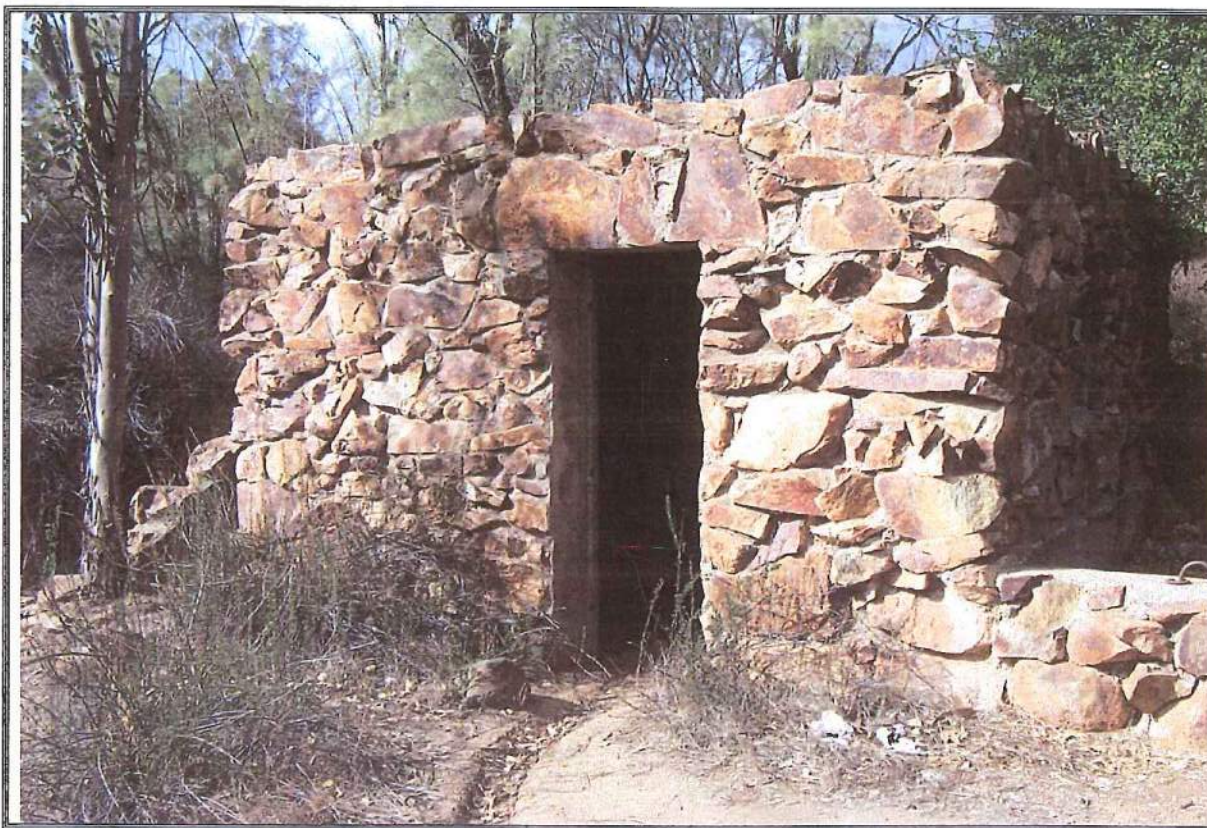
Photograph 8: Looking on back side of number 6 photograph at diesel fuel stained soil from generator and fuel tank.

SITE PHOTOS

Appendix – A



Photograph 9: Looking at rock house on site and trailers where workers at nursery live.



Photograph 10: Looking on at bath house located 200 feet west of house in photo # 9 above.

SITE PHOTOS

Appendix – A



Photograph 11: Looking at metal drums located along dirt path on north ridgeline of site.



Photograph 12: Looking at contents of drums pictured in photo # 11 above. Contents consist of rain water, plants growth and bugs.

SITE PHOTOS

Appendix – A



Photograph 13: Looking at paint containers located on north ridgeline near drums in photo #11. Most containers were empty with a few having varying quantities of paint.



Photograph 14: Looking at typically debris dumped on the site. This area located on eastern portion of the site.

SITE PHOTOS

Appendix – A



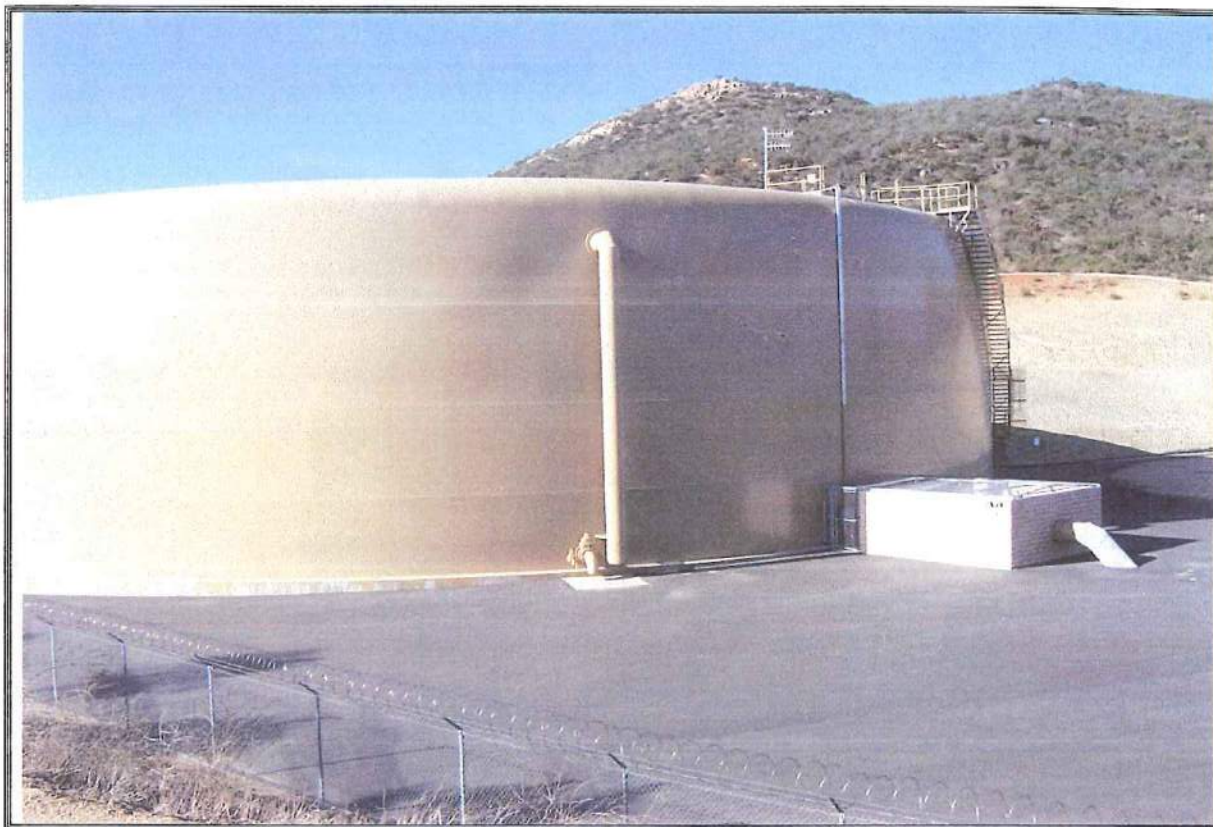
Photograph 15: Looking at area in middle portion of site used as motocross area. North ridge line of property pictured in background.



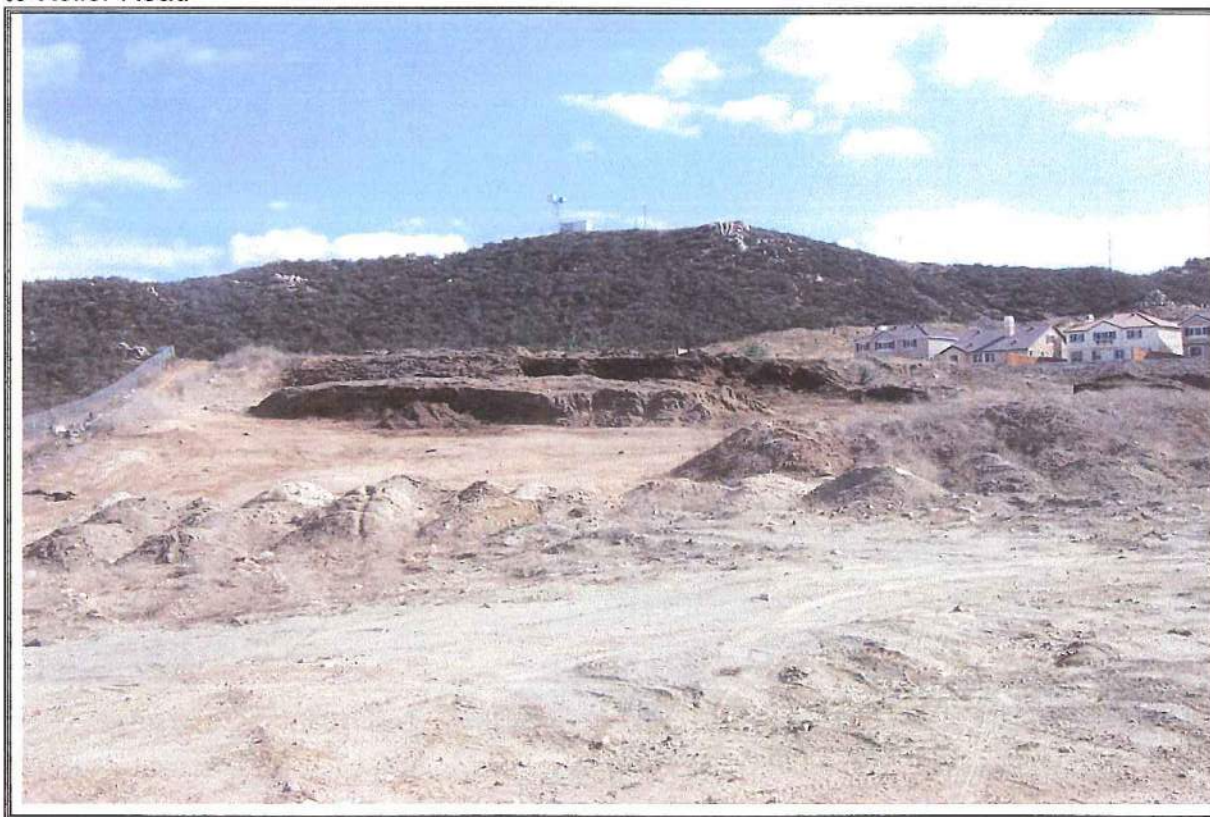
Photograph 16: Looking at shooting area located directly south of motocross area in photo # 15 above. Most of the casings in picture are from shotguns.

SITE PHOTOS

Appendix – A



Photograph 17: Looking at EMWD water storage tank located on northern portion of site next to Keller Road



Photograph 18: Looking at piles of dirt spread out over a cleared area of located in the southeast portion of the site. Homes on right form the south boundary of the site..

SITE PHOTOS

Appendix – A

A P P E N D I X B

AERIAL PHOTOGRAPH OF SITE



APPENDIX C



EDR® Environmental
Data Resources Inc

The EDR Radius Map with GeoCheck®

**Murrieta Hills
Keller Road
Murrieta, CA 92584**

Inquiry Number: 1588925.2s

January 09, 2006

The Standard in Environmental Risk Management Information

**440 Wheelers Farms Road
Milford, Connecticut 06461**

Nationwide Customer Service

**Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com**

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary.....	ES1
Overview Map.....	2
Detail Map.....	3
Map Findings Summary.....	4
Map Findings.....	6
EDR Proprietary Historical Map Findings.....	7
Orphan Summary.....	8
Government Records Searched/Data Currency Tracking.....	GR-1
 <u>GEOCHECK ADDENDUM</u>	
Physical Setting Source Addendum.....	A-1
Physical Setting Source Summary.....	A-2
Physical Setting Source Map.....	A-7
Physical Setting Source Map Findings.....	A-8
Physical Setting Source Records Searched.....	A-17

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

KELLER ROAD
MURRIETA, CA 92584

COORDINATES

Latitude (North):	33.622100 - 33° 37' 19.6"
Longitude (West):	117.188900 - 117° 11' 20.0"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	482478.2
UTM Y (Meters):	3720079.2
Elevation:	1839 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	33117-E2 MURRIETA, CA
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL.....	National Priority List
Proposed NPL.....	Proposed National Priority List Sites
Delisted NPL.....	National Priority List Deletions
NPL Liens.....	Federal Superfund Liens
CERCLIS.....	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP.....	CERCLIS No Further Remedial Action Planned
CORRACTS.....	Corrective Action Report
RCRA-TSDF.....	Resource Conservation and Recovery Act Information
RCRA-LQG.....	Resource Conservation and Recovery Act Information

EXECUTIVE SUMMARY

RCRA-SQG	Resource Conservation and Recovery Act Information
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
US BROWNFIELDS	A Listing of Brownfields Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS	Section 7 Tracking Systems
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

AWP	Annual Workplan Sites
Cal-Sites	Calsites Database
CA BOND EXP. PLAN	Bond Expenditure Plan
NFA	No Further Action Determination
NFE	Properties Needing Further Evaluation
REF	Unconfirmed Properties Referred to Another Agency
SCH	School Property Evaluation Program
Toxic Pits	Toxic Pits Cleanup Act Sites
SWF/LF	Solid Waste Information System
CA WDS	Waste Discharge System
WMUDS/SWAT	Waste Management Unit Database
Cortese	"Cortese" Hazardous Waste & Substances Sites List
SWRCY	Recycler Database
LUST	Geotracker's Leaking Underground Fuel Tank Report
CA FID UST	Facility Inventory Database
SLIC	Statewide SLIC Cases
UST	Active UST Facilities
HIST UST	Hazardous Substance Storage Container Database
AST	Aboveground Petroleum Storage Tank Facilities
SWEEPS UST	SWEEPS UST Listing
CHMIRS	California Hazardous Material Incident Report System
Notify 65	Proposition 65 Records
DEED	Deed Restriction Listing
VCP	Voluntary Cleanup Program Properties
CLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
HAZNET	Facility and Manifest Data
EMI	Emissions Inventory Data

TRIBAL RECORDS

INDIAN RESERV	Indian Reservations
----------------------	---------------------

EXECUTIVE SUMMARY

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
INDIAN UST..... Underground Storage Tanks on Indian Land

EDR Proprietary Records

See the EDR Proprietary Historical Database Section for details

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EDR Proprietary Records

See the EDR Proprietary Historical Database Section for details

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name

GTE MURRIETA PLANT YARD

SINGE -F IDEN SITE

MURRIETA VALLEY USD

MURRIETA STORM DRAIN IMPROVEME

MURRIETA CREEK FLOOD CONTROL

MURIETTA HIGHLANDS PROJECT

Database(s)

LUST, Cortese, CA FID

UST, SWEEPS UST

Notify 65, HAZNET

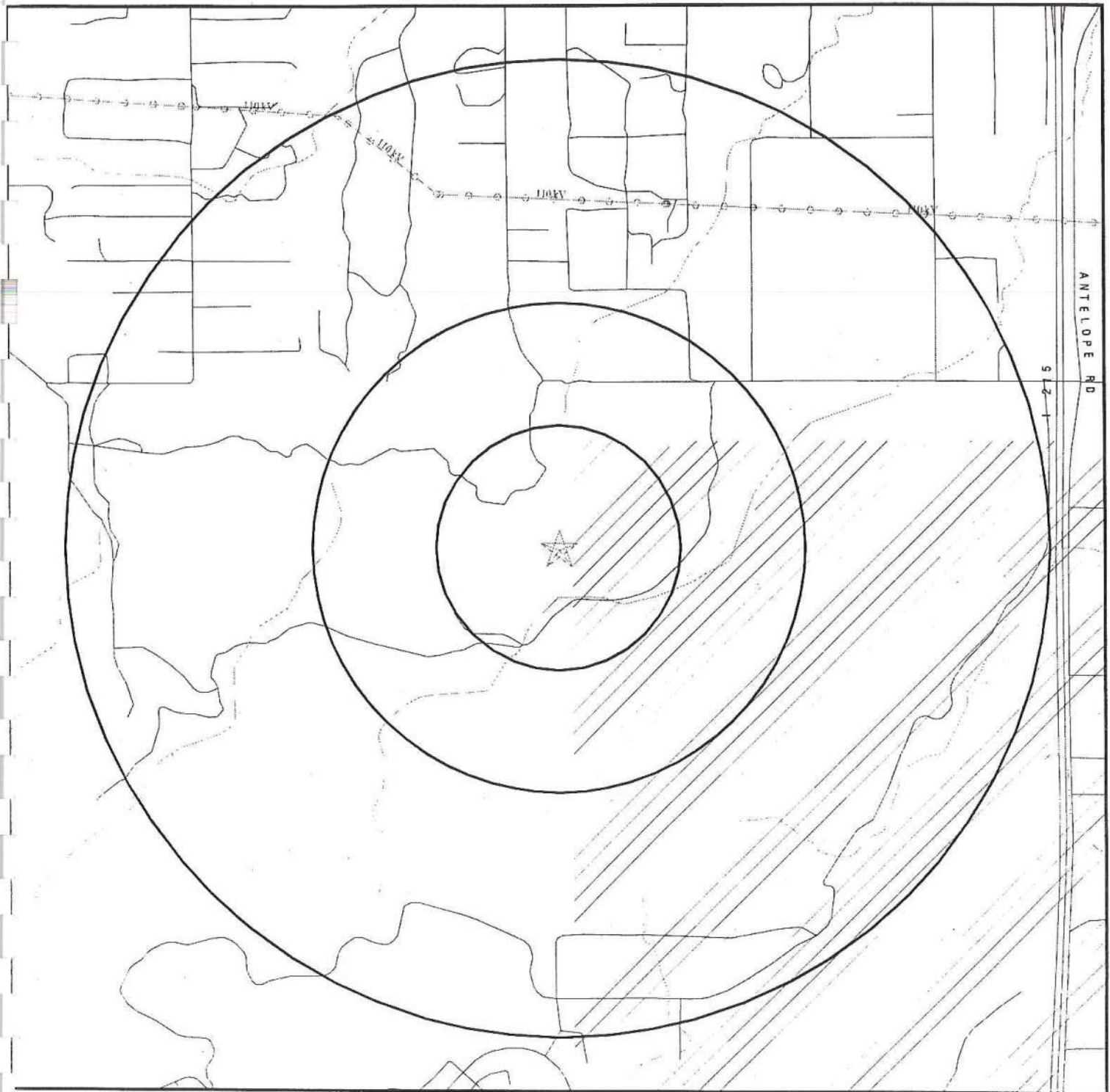
CA WDS

CA WDS

CA WDS

SCH

OVERVIEW MAP - 1588925.2s



* Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

▲ Manufactured Gas Plants

□ National Priority List Sites

□ Landfill Sites

□ Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

Oil & Gas pipelines

□ 100-year flood zone

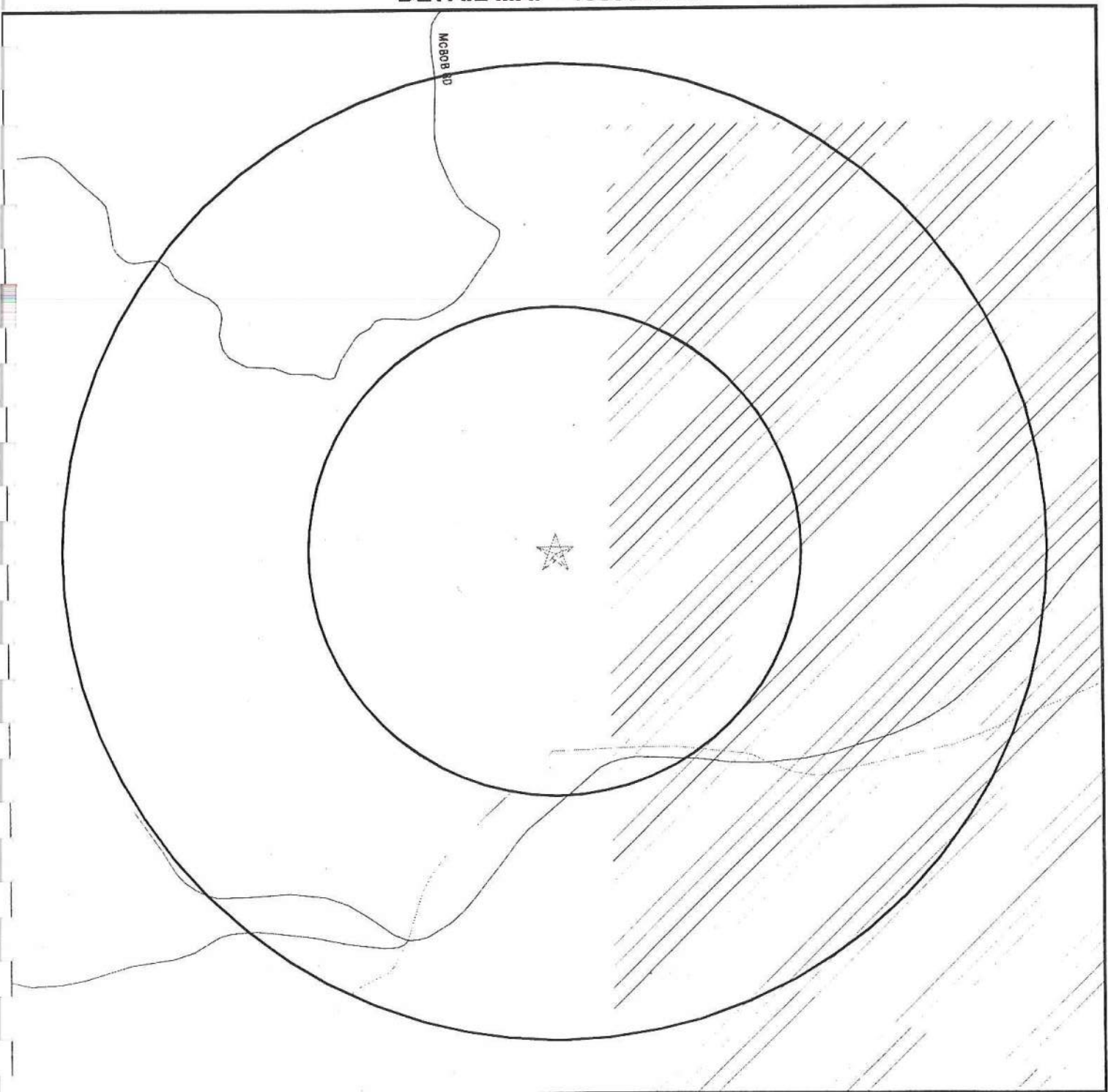
□ 500-year flood zone

Areas of Concern

SITE NAME: Murrieta Hills
 ADDRESS: Keller Road
 Murrieta CA 92584
 LAT/LONG: 33.6221 / 117.1889

CLIENT: IWS Environmental
 CONTACT: Jim Bunck
 INQUIRY #: 1588925.2s
 DATE: January 09, 2006

DETAIL MAP - 1588925.2s



- Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- Historical Gas Stations / Historical Dry Cleaners
See the EDR Proprietary Historical Map Findings
- ▲ Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites

- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone

- Areas of Concern

0 1/16 1/8 1/4 Miles

SITE NAME: Murrieta Hills
 ADDRESS: Keller Road
 Murrieta CA 92584
 LAT/LONG: 33.6221 / 117.1889

CLIENT: IWS Environmental
 CONTACT: Jim Bunck
 INQUIRY #: 1588925.2s
 DATE: January 09, 2006

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<u>FEDERAL RECORDS</u>								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL Liens	TP		NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS	TP		NR	NR	NR	NR	NR	0
HMIRS	TP		NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
<u>STATE AND LOCAL RECORDS</u>								
AWP		1.000	0	0	0	0	NR	0
Cal-Sites		1.000	0	0	0	0	NR	0
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
NFA		0.250	0	0	NR	NR	NR	0
NFE		0.250	0	0	NR	NR	NR	0
REF		0.250	0	0	NR	NR	NR	0
SCH		0.250	0	0	NR	NR	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
CA WDS	TP		NR	NR	NR	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
Cortese		0.500	0	0	0	NR	NR	0
SWRCY		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0
CA FID UST		0.250	0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SLIC		0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
HIST UST		0.250	0	0	NR	NR	NR	0
AST		0.250	0	0	NR	NR	NR	0
SWEEPS UST		0.250	0	0	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
Notify 65		1.000	0	0	0	0	NR	0
DEED		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
CLEANERS		0.250	0	0	NR	NR	NR	0
WIP		0.250	0	0	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0

TRIBAL RECORDS

INDIAN RESERV	1.000	0	0	0	0	NR	NR	0
INDIAN LUST	0.500	0	0	0	NR	NR	NR	0
INDIAN UST	0.250	0	0	NR	NR	NR	NR	0

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	1.000	0	0	0	0	NR	NR	0
Gas Stations/Dry Cleaners	0.250	0	0	NR	NR	NR	NR	0

NOTES:

See the EDR Proprietary Historical Database Section for details

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS - EDR PROPRIETARY HISTORICAL DATABASES

YEAR	NAME	ADDRESS	CITY	ST	DIR.	DIST.	ELEV.	TYPE
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EDR Historical Gas Station & Dry Cleaner Search: No mapped sites were found in EDR's search of the EDR Historical Gas Station & Dry Cleaner Database within 0.250 mile of the Target Property.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MURRIETTA MURRIETTA	S105628750 S101590033	MURRIETTA HIGHLANDS PROJECT GTE MURRIETTA PLANT YARD	I-215/ANTELOPE ROAD/KELLER ROAD 32477 HUAN RD	92584	SCH LUST, Cortese, CA FID UST, SWEEPS UST CA WDS CA WDS CA WDS
MURRIETTA MURRIETTA MURRIETTA SAN LEANDRO	S106105455 S106105398 S106203481 S100179678	MURRIETTA VALLEY USD MURRIETTA STORM DRAIN IMPROVEME MURRIETTA CREEK FLOOD CONTROL SINGE -F IDEN SITE	41870 MCALBY CT MURRIETTA HOT SPRINGS RD/MARGAR MURRIETTA CREEK 2350 WASHINGTON AVE	92584	Notify 65, HAZNET

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/14/05
Date Data Arrived at EDR: 11/02/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 11/02/05
Next Scheduled EDR Contact: 01/30/06
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 8
Telephone: 303-312-6774

EPA Region 4
Telephone 404-562-8033

Proposed NPL: Proposed National Priority List Sites

Date of Government Version: 10/14/05
Date Data Arrived at EDR: 11/02/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 11/02/05
Next Scheduled EDR Contact: 01/30/06
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/14/05
Date Data Arrived at EDR: 11/02/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 11/02/05
Next Scheduled EDR Contact: 01/30/06
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/91
Date Data Arrived at EDR: 02/02/94
Date Made Active in Reports: 03/30/94
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/22/05
Next Scheduled EDR Contact: 11/21/05
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 09/19/05
Date Data Arrived at EDR: 10/21/05
Date Made Active in Reports: 10/27/05
Number of Days to Update: 6

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 10/21/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 08/22/05
Date Data Arrived at EDR: 09/20/05
Date Made Active in Reports: 10/27/05
Number of Days to Update: 37

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 09/20/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 10/13/05
Date Data Arrived at EDR: 10/27/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 41

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/06/05
Next Scheduled EDR Contact: 01/16/06
Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 10/14/05
Date Data Arrived at EDR: 10/27/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 41

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/27/05
Next Scheduled EDR Contact: 12/26/05
Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/04
Date Data Arrived at EDR: 01/27/05
Date Made Active in Reports: 03/24/05
Number of Days to Update: 56

Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Last EDR Contact: 01/27/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 08/17/05
Date Data Arrived at EDR: 10/18/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 50

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/18/05
Next Scheduled EDR Contact: 01/16/06
Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/02/05
Date Data Arrived at EDR: 08/12/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 55

Source: Environmental Protection Agency
Telephone: 703-603-8867
Last EDR Contact: 07/05/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/10/05
Date Data Arrived at EDR: 02/11/05
Date Made Active in Reports: 04/06/05
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 703-603-8867
Last EDR Contact: 01/03/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03
Date Data Arrived at EDR: 11/12/03
Date Made Active in Reports: 11/21/03
Number of Days to Update: 9

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 08/09/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/04
Date Data Arrived at EDR: 06/29/05
Date Made Active in Reports: 08/08/05
Number of Days to Update: 40

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 06/29/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 08/18/05
Date Data Arrived at EDR: 08/18/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 49

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 08/11/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/14/04
Date Data Arrived at EDR: 02/15/05
Date Made Active in Reports: 04/25/05
Number of Days to Update: 69

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/27/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 10/07/05
Date Data Arrived at EDR: 10/20/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 48

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 10/06/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized. In 1978, 24 inactive uranium mill tailings sites in Oregon, Idaho, Wyoming, Utah, Colorado, New Mexico, Texas, North Dakota, South Dakota, Pennsylvania, and on Navajo and Hopi tribal lands, were targeted for cleanup by the Department of Energy.

Date of Government Version: 12/29/04
Date Data Arrived at EDR: 01/07/05
Date Made Active in Reports: 03/14/05
Number of Days to Update: 66

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 12/21/04
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/85
Date Data Arrived at EDR: 08/09/04
Date Made Active in Reports: 09/17/04
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 05/23/95
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 07/13/05
Date Made Active in Reports: 08/17/05
Number of Days to Update: 35

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 07/13/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02
Date Data Arrived at EDR: 04/27/04
Date Made Active in Reports: 05/21/04
Number of Days to Update: 24

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 07/18/05
Next Scheduled EDR Contact: 10/17/05
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/12/05
Date Data Arrived at EDR: 10/31/05
Date Made Active in Reports: 12/20/05
Number of Days to Update: 50

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 09/19/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/12/05
Date Data Arrived at EDR: 10/31/05
Date Made Active in Reports: 12/20/05
Number of Days to Update: 50

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 09/19/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 01/03/05
Date Made Active in Reports: 01/25/05
Number of Days to Update: 22

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 11/29/04
Next Scheduled EDR Contact: 10/17/05
Data Release Frequency: Annually

PADS: PCB Activity Database System

PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 08/30/05
Date Data Arrived at EDR: 09/13/05
Date Made Active in Reports: 10/27/05
Number of Days to Update: 44

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 09/13/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/18/05
Date Data Arrived at EDR: 10/31/05
Date Made Active in Reports: 12/20/05
Number of Days to Update: 50

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/03/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/12/05
Date Data Arrived at EDR: 09/27/05
Date Made Active in Reports: 11/14/05
Number of Days to Update: 48

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/27/05
Next Scheduled EDR Contact: 12/26/05
Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 09/29/05
Date Data Arrived at EDR: 10/04/05
Date Made Active in Reports: 11/14/05
Number of Days to Update: 41

Source: EPA
Telephone: N/A
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Date Data Arrived at EDR: 07/03/95
Date Made Active in Reports: 08/07/95
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 09/06/05
Next Scheduled EDR Contact: 12/05/05
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 06/17/05
Date Made Active in Reports: 08/04/05
Number of Days to Update: 48

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/17/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Biennially

STATE AND LOCAL RECORDS

AWP: Annual Workplan Sites

Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 08/08/05
Date Data Arrived at EDR: 08/29/05
Date Made Active in Reports: 09/21/05
Number of Days to Update: 23

Source: California Environmental Protection Agency
Telephone: 916-323-3400
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Annually

CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 08/08/05
Date Data Arrived at EDR: 08/29/05
Date Made Active in Reports: 09/21/05
Number of Days to Update: 23

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89
Date Data Arrived at EDR: 07/27/94
Date Made Active in Reports: 08/02/94
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/94
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NFA: No Further Action Determination

This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 08/08/05
Date Data Arrived at EDR: 08/29/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Quarterly

NFE: Properties Needing Further Evaluation

This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process. PEA in Progress indicates properties where DTSC is currently conducting a PEA. PEA Required indicates properties where DTSC has determined a PEA is required, but not currently underway.

Date of Government Version: 08/08/05
Date Data Arrived at EDR: 08/29/05
Date Made Active in Reports: 09/21/05
Number of Days to Update: 23

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Quarterly

REF: Unconfirmed Properties Referred to Another Agency

This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Date of Government Version: 08/08/05
Date Data Arrived at EDR: 08/29/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Quarterly

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 08/08/05
Date Data Arrived at EDR: 08/29/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/95
Date Data Arrived at EDR: 08/30/95
Date Made Active in Reports: 09/26/95
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 08/01/05
Next Scheduled EDR Contact: 10/31/05
Data Release Frequency: No Update Planned

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/12/05
Date Data Arrived at EDR: 09/13/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 23

Source: Integrated Waste Management Board
Telephone: 916-341-6320
Last EDR Contact: 09/13/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CA WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 09/19/05
Date Data Arrived at EDR: 09/20/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 16

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 09/20/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/00
Date Data Arrived at EDR: 04/10/00
Date Made Active in Reports: 05/10/00
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 09/06/05
Next Scheduled EDR Contact: 12/05/05
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/01
Date Data Arrived at EDR: 05/29/01
Date Made Active in Reports: 07/26/01
Number of Days to Update: 58

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-9100
Last EDR Contact: 07/26/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 10/03/05
Date Data Arrived at EDR: 10/10/05
Date Made Active in Reports: 10/31/05
Number of Days to Update: 21

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 10/10/05
Next Scheduled EDR Contact: 01/09/06
Data Release Frequency: Quarterly

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 10/10/05
Date Data Arrived at EDR: 10/10/05
Date Made Active in Reports: 10/31/05
Number of Days to Update: 21

Source: State Water Resources Control Board
Contact: Riverside County Environmental Health, (951) 358-5055
Last EDR Contact: 10/10/05
Next Scheduled EDR Contact: 01/09/06
Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/04
Date Data Arrived at EDR: 09/07/04
Date Made Active in Reports: 10/12/04
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 09/27/05
Next Scheduled EDR Contact: 12/26/05
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/03
Date Data Arrived at EDR: 09/10/03
Date Made Active in Reports: 10/07/03
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424
Last EDR Contact: 09/06/05
Next Scheduled EDR Contact: 12/05/05
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/01
Date Data Arrived at EDR: 04/23/01
Date Made Active in Reports: 05/21/01
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 07/18/05
Next Scheduled EDR Contact: 10/17/05
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/05
Date Data Arrived at EDR: 02/15/05
Date Made Active in Reports: 03/28/05
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-4130
Last EDR Contact: 02/08/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing

Date of Government Version: 02/26/04
Date Data Arrived at EDR: 02/26/04
Date Made Active in Reports: 03/24/04
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-346-7491
Last EDR Contact: 09/27/05
Next Scheduled EDR Contact: 12/26/05
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Date of Government Version: 06/07/05
Date Data Arrived at EDR: 06/07/05
Date Made Active in Reports: 06/29/05
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491
Last EDR Contact: 05/23/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Date of Government Version: 10/01/05
Date Data Arrived at EDR: 10/20/05
Date Made Active in Reports: 10/31/05
Number of Days to Update: 11

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 10/20/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database

Date of Government Version: 05/19/03
Date Data Arrived at EDR: 05/19/03
Date Made Active in Reports: 06/02/03
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 08/15/05
Next Scheduled EDR Contact: 11/14/05
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01
Date Data Arrived at EDR: 02/28/01
Date Made Active in Reports: 03/29/01
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220
Last EDR Contact: 08/22/05
Next Scheduled EDR Contact: 11/21/05
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Date of Government Version: 09/30/04
Date Data Arrived at EDR: 10/20/04
Date Made Active in Reports: 11/19/04
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 07/11/05
Next Scheduled EDR Contact: 10/10/05
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94
Date Data Arrived at EDR: 09/05/95
Date Made Active in Reports: 09/29/95
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/98
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases

The Spills, Leaks, Investigations, and Cleanups (SLIC) listings includes unauthorized discharges from spills and leaks, other than from underground storage tanks or other regulated sites.

Date of Government Version: 10/10/05
Date Data Arrived at EDR: 10/10/05
Date Made Active in Reports: 10/31/05
Number of Days to Update: 21

Source: State Water Resources Control Board
Contact: Riverside County Environmental Health, (951) 358-5055
Last EDR Contact: 10/10/05
Next Scheduled EDR Contact: 01/09/06
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

Date of Government Version: 04/03/03
Date Data Arrived at EDR: 04/07/03
Date Made Active in Reports: 04/25/03
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/22/05
Next Scheduled EDR Contact: 11/21/05
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 09/30/04
Date Data Arrived at EDR: 10/20/04
Date Made Active in Reports: 11/19/04
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 07/11/05
Next Scheduled EDR Contact: 10/10/05
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 11/16/05
Date Data Arrived at EDR: 11/16/05
Date Made Active in Reports: 12/12/05
Number of Days to Update: 26

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 11/14/05
Next Scheduled EDR Contact: 02/13/06
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 11/17/04
Date Data Arrived at EDR: 11/18/04
Date Made Active in Reports: 01/04/05
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/25/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 04/01/05
Date Data Arrived at EDR: 04/05/05
Date Made Active in Reports: 04/21/05
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 04/05/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Date of Government Version: 05/24/05
Date Data Arrived at EDR: 05/25/05
Date Made Active in Reports: 06/16/05
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 04/18/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites

Date of Government Version: 09/07/04
Date Data Arrived at EDR: 09/07/04
Date Made Active in Reports: 10/12/04
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 09/06/05
Next Scheduled EDR Contact: 12/05/05
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List

Date of Government Version: 11/24/04
Date Data Arrived at EDR: 11/29/04
Date Made Active in Reports: 01/04/05
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/22/05
Next Scheduled EDR Contact: 11/21/05
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Date of Government Version: 07/01/04
Date Data Arrived at EDR: 08/10/04
Date Made Active in Reports: 09/08/04
Number of Days to Update: 29

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 07/05/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

Date of Government Version: 09/28/05
Date Data Arrived at EDR: 09/29/05
Date Made Active in Reports: 10/31/05
Number of Days to Update: 32

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 09/26/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Annually

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/10/05
Date Data Arrived at EDR: 10/10/05
Date Made Active in Reports: 11/18/05
Number of Days to Update: 39

Source: SWRCB
Contact: Riverside County Environmental Health, (951) 358-5055
Last EDR Contact: 10/10/05
Next Scheduled EDR Contact: 01/09/06
Data Release Frequency: Semi-Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90
Date Data Arrived at EDR: 01/25/91
Date Made Active in Reports: 02/12/91
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/01
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

AST: Aboveground Petroleum Storage Tank Facilities Registered Aboveground Storage Tanks.

Date of Government Version: 11/01/05
Date Data Arrived at EDR: 11/23/05
Date Made Active in Reports: 12/15/05
Number of Days to Update: 22

Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 11/22/05
Next Scheduled EDR Contact: 01/30/06
Data Release Frequency: Quarterly

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/94
Date Data Arrived at EDR: 07/07/05
Date Made Active in Reports: 08/11/05
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/05
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 05/18/04
Date Made Active in Reports: 06/25/04
Number of Days to Update: 38

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 08/22/05
Next Scheduled EDR Contact: 11/21/05
Data Release Frequency: Varies

NOTIFY 65: Proposition 65 Records

Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93
Date Data Arrived at EDR: 11/01/93
Date Made Active in Reports: 11/19/93
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 07/19/05
Next Scheduled EDR Contact: 10/17/05
Data Release Frequency: No Update Planned

DEED: Deed Restriction Listing

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 10/03/05
Date Data Arrived at EDR: 10/03/05
Date Made Active in Reports: 10/31/05
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/03/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Semi-Annually

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 08/08/05
Date Data Arrived at EDR: 08/29/05
Date Made Active in Reports: 09/21/05
Number of Days to Update: 23

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Quarterly

CLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 04/18/05
Date Data Arrived at EDR: 04/18/05
Date Made Active in Reports: 05/06/05
Number of Days to Update: 18

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 04/15/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 11/07/05
Date Data Arrived at EDR: 11/07/05
Date Made Active in Reports: 11/29/05
Number of Days to Update: 22

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 11/07/05
Next Scheduled EDR Contact: 01/23/06
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 10/11/05
Date Made Active in Reports: 10/31/05
Number of Days to Update: 20

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 08/23/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 07/19/05
Date Made Active in Reports: 08/11/05
Number of Days to Update: 23

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 07/19/05
Next Scheduled EDR Contact: 10/17/05
Data Release Frequency: Varies

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 10/01/03
Date Data Arrived at EDR: 11/12/03
Date Made Active in Reports: 11/21/03
Number of Days to Update: 9

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 08/09/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Semi-Annually

INDIAN LUST: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 09/07/05
Date Data Arrived at EDR: 09/08/05
Date Made Active in Reports: 10/31/05
Number of Days to Update: 53

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/25/05
Next Scheduled EDR Contact: 11/21/05
Data Release Frequency: Varies

INDIAN LUST: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 06/02/05
Date Data Arrived at EDR: 06/03/05
Date Made Active in Reports: 07/01/05
Number of Days to Update: 28

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 05/25/05
Next Scheduled EDR Contact: 11/21/05
Data Release Frequency: Varies

INDIAN UST: Underground Storage Tanks on Indian Land

Date of Government Version: 11/08/05
Date Data Arrived at EDR: 11/09/05
Date Made Active in Reports: 12/12/05
Number of Days to Update: 33

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/21/05
Next Scheduled EDR Contact: 02/20/06
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

Date of Government Version: 11/15/05
Date Data Arrived at EDR: 12/05/05
Date Made Active in Reports: 12/28/05
Number of Days to Update: 23

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: 12/05/05
Next Scheduled EDR Contact: 03/13/06
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COUNTY RECORDS

ALAMEDA COUNTY:

Underground Tanks

Date of Government Version: 11/08/05
Date Data Arrived at EDR: 11/10/05
Date Made Active in Reports: 12/08/05
Number of Days to Update: 28

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/24/05
Next Scheduled EDR Contact: 01/23/06
Data Release Frequency: Semi-Annually

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 11/08/05
Date Data Arrived at EDR: 11/15/05
Date Made Active in Reports: 12/12/05
Number of Days to Update: 27

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/24/05
Next Scheduled EDR Contact: 01/23/06
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 08/29/05
Date Data Arrived at EDR: 08/30/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 37

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Semi-Annually

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/17/05
Date Data Arrived at EDR: 10/18/05
Date Made Active in Reports: 11/29/05
Number of Days to Update: 42

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/18/05
Next Scheduled EDR Contact: 02/06/06
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 10/10/05
Date Data Arrived at EDR: 10/12/05
Date Made Active in Reports: 11/18/05
Number of Days to Update: 37

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 10/10/05
Next Scheduled EDR Contact: 12/05/05
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LOS ANGELES COUNTY:

List of Solid Waste Facilities

Date of Government Version: 02/01/05
Date Data Arrived at EDR: 02/18/05
Date Made Active in Reports: 03/28/05
Number of Days to Update: 38

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 02/18/05
Next Scheduled EDR Contact: 11/14/05
Data Release Frequency: Varies

City of El Segundo Underground Storage Tank

Date of Government Version: 11/14/05
Date Data Arrived at EDR: 11/14/05
Date Made Active in Reports: 12/08/05
Number of Days to Update: 24

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 11/14/05
Next Scheduled EDR Contact: 02/13/06
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Date of Government Version: 03/28/03
Date Data Arrived at EDR: 10/23/03
Date Made Active in Reports: 11/26/03
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 08/22/05
Next Scheduled EDR Contact: 11/21/05
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Date of Government Version: 11/29/05
Date Data Arrived at EDR: 12/01/05
Date Made Active in Reports: 12/16/05
Number of Days to Update: 15

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 11/28/05
Next Scheduled EDR Contact: 02/13/06
Data Release Frequency: Semi-Annually

City of Los Angeles Landfills

Date of Government Version: 03/01/05
Date Data Arrived at EDR: 03/18/05
Date Made Active in Reports: 04/08/05
Number of Days to Update: 21

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 03/18/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Varies

HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 08/31/05
Date Data Arrived at EDR: 10/26/05
Date Made Active in Reports: 11/29/05
Number of Days to Update: 34

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/03/05
Next Scheduled EDR Contact: 02/13/06
Data Release Frequency: Semi-Annually

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/25/05
Date Data Arrived at EDR: 05/27/05
Date Made Active in Reports: 07/01/05
Number of Days to Update: 35

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 05/16/05
Next Scheduled EDR Contact: 11/14/05
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98
Date Data Arrived at EDR: 07/07/99
Date Made Active in Reports: N/A
Number of Days to Update: 35

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 07/06/99
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 08/08/05
Date Data Arrived at EDR: 08/26/05
Date Made Active in Reports: 09/28/05
Number of Days to Update: 33

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 08/01/05
Next Scheduled EDR Contact: 10/31/05
Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination

Date of Government Version: 09/28/05
Date Data Arrived at EDR: 09/29/05
Date Made Active in Reports: 10/31/05
Number of Days to Update: 32

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 09/26/05
Next Scheduled EDR Contact: 12/26/05
Data Release Frequency: Semi-Annually

Closed and Operating Underground Storage Tank Sites

Date of Government Version: 09/28/05
Date Data Arrived at EDR: 09/29/05
Date Made Active in Reports: 10/31/05
Number of Days to Update: 32

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 09/26/05
Next Scheduled EDR Contact: 12/26/05
Data Release Frequency: Annually

ORANGE COUNTY:

List of Underground Storage Tank Cleanups

Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 09/01/05
Date Data Arrived at EDR: 09/19/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 17

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 09/09/05
Next Scheduled EDR Contact: 12/05/05
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities

Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 09/01/05
Date Data Arrived at EDR: 09/19/05
Date Made Active in Reports: 10/31/05
Number of Days to Update: 42

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 09/09/05
Next Scheduled EDR Contact: 12/05/05
Data Release Frequency: Quarterly

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

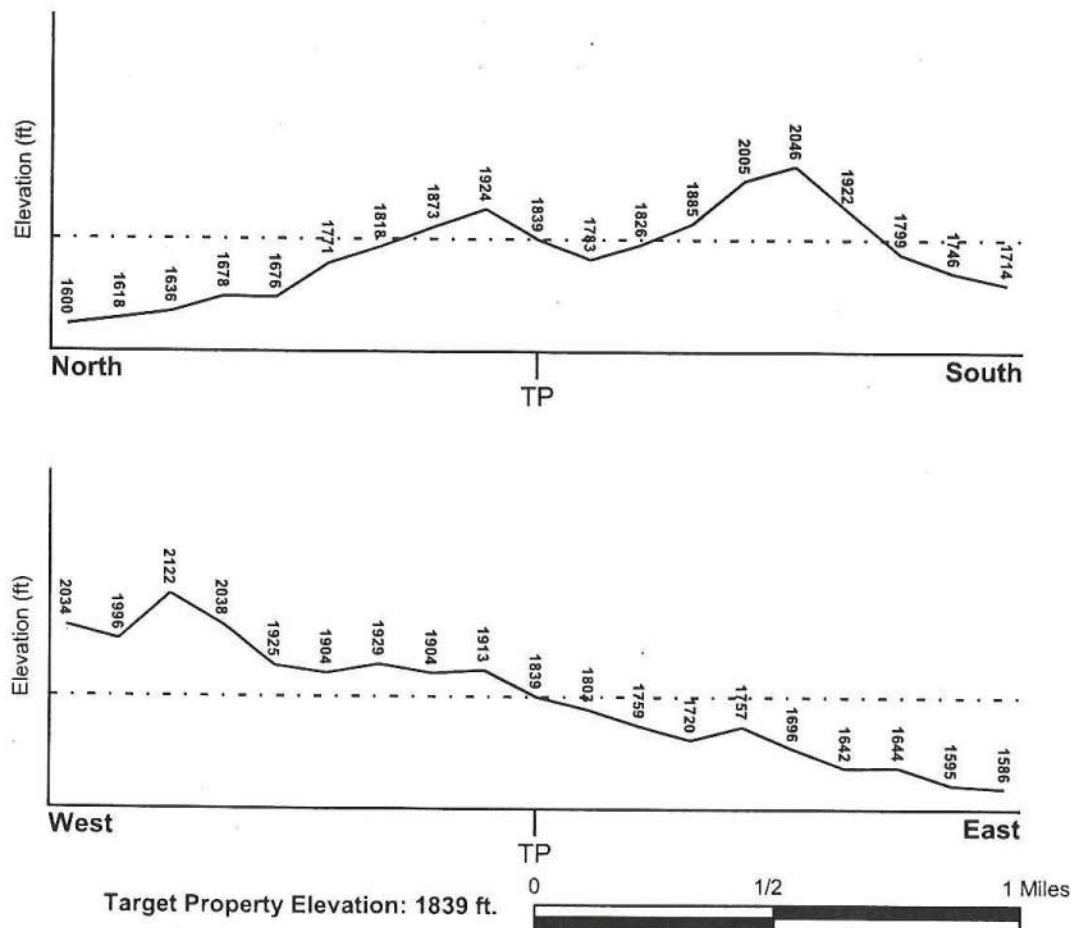
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map: 33117-E2 MURRIETA, CA
General Topographic Gradient: General East
Source: USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County
RIVERSIDE, CA

FEMA Flood
Electronic Data
YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0602452730B

Additional Panels in search area: 0602452090B
0602452095A
0602452735A
0607510000A

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property
MURRIETA

NWI Electronic
Data Coverage
Not Available

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data:*

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID
Not Reported

LOCATION
FROM TP

GENERAL DIRECTION
GROUNDWATER FLOW

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era: Mesozoic
System: Cretaceous
Series: Cretaceous granitic rocks
Code: Kg (decoded above as Era, System & Series)

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: CAJALCO

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 20 inches

Depth to Bedrock Max: > 40 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	13 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 7.30 Min: 6.10
2	13 inches	22 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 2.00 Min: 0.60	Max: 7.30 Min: 6.60
3	22 inches	26 inches	weathered bedrock	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: loam
unweathered bedrock
sandy loam
coarse sandy loam
gravelly - sandy loam

Surficial Soil Types: loam
unweathered bedrock
sandy loam
coarse sandy loam
gravelly - sandy loam

Shallow Soil Types: No Other Soil Types

Deeper Soil Types: unweathered bedrock
cemented
stratified
loam

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	USGS3125540	1/4 - 1/2 Mile SSW
2	USGS3125542	1/4 - 1/2 Mile SW
3	USGS3125480	1/2 - 1 Mile South
4	USGS3125476	1/2 - 1 Mile SSE
A5	USGS3125475	1/2 - 1 Mile SSE
A6	USGS3125474	1/2 - 1 Mile SSE
B7	USGS3125673	1/2 - 1 Mile South
8	USGS3125672	1/2 - 1 Mile South
B9	USGS3125668	1/2 - 1 Mile South
10	USGS3125571	1/2 - 1 Mile ENE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

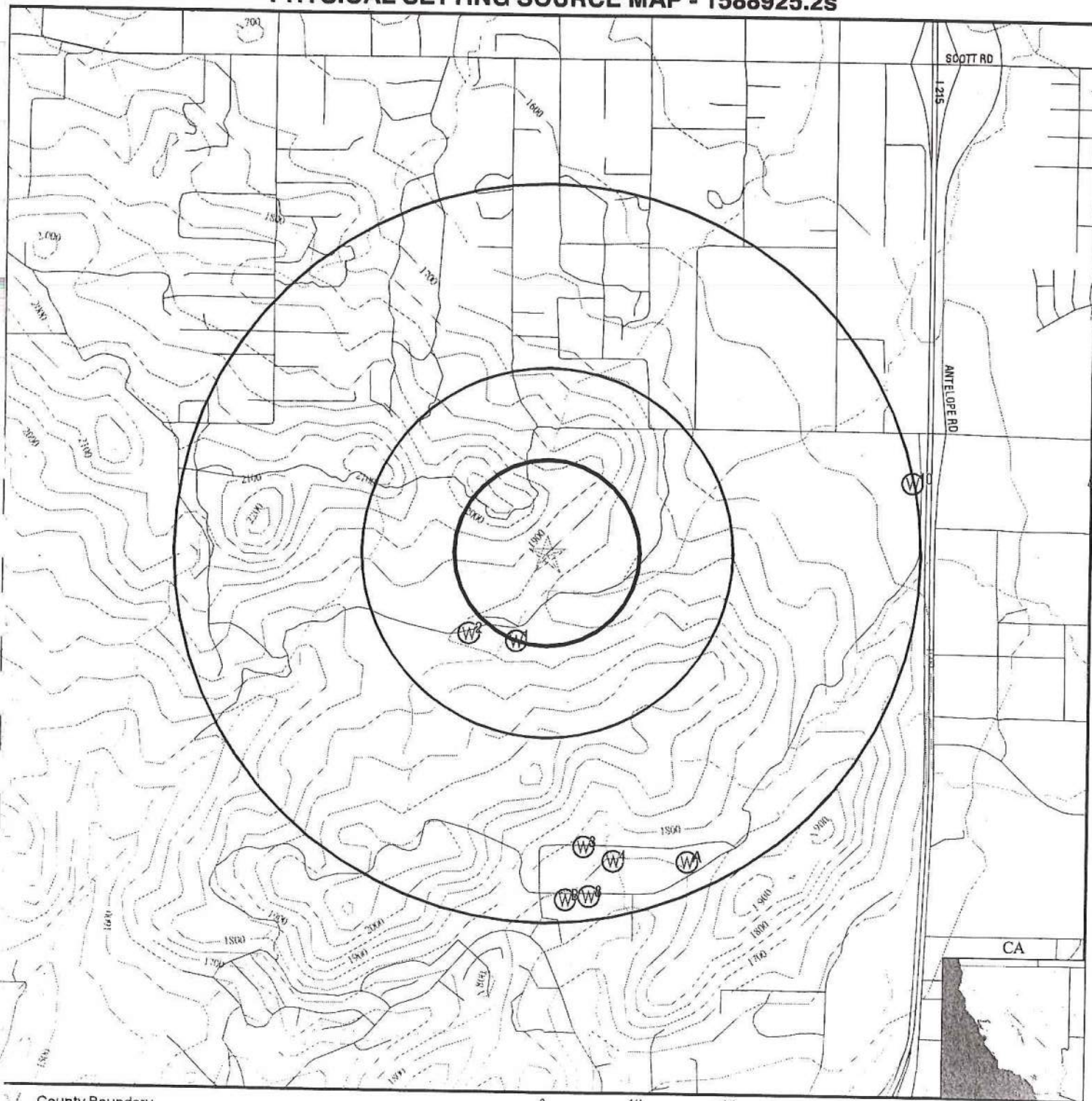
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 1588925.2s



County Boundary

Major Roads

Contour Lines

Earthquake Fault Lines

Earthquake epicenter, Richter 5 or greater

Water Wells

Public Water Supply Wells

Cluster of Multiple Icons

Groundwater Flow Direction

(GI) Indeterminate Groundwater Flow at Location

(GV) Groundwater Flow Varies at Location

(HD) Closest Hydrogeological Data

Oil, gas or related wells

SITE NAME: Murrieta Hills
ADDRESS: Keller Road
Murrieta CA 92584
LAT/LONG: 33.6221 / 117.1889

CLIENT: IWS Environmental
CONTACT: Jim Bunck
INQUIRY #: 1588925.2s
DATE: January 09, 2006

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
1		
SSW		
1/4 - 1/2 Mile		
Lower	FED USGS	USGS3125540

Agency cd:	USGS	Site no:	333707117112201
Site name:	006S003W28J001S		
Latitude:	333707		
Longitude:	1171122	Dec lat:	33.6186349
Dec lon:	-117.19031141	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	065
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	1820.00	Altitude method:	M
Altitude accuracy:	20	Altitude datum:	NGVD29
Hydrologic:	San Jacinto. California. Area = 757 sq.mi.		
Topographic:	Stream channel		
Site type:	Ground-water other than Spring	Date construction:	19300101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	11.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1968-04-01	Ground water data end date:	1968-04-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1968-04-01	6.00	

2
SW
1/4 - 1/2 Mile
Lower

FED USGS USGS3125542

Agency cd:	USGS	Site no:	333708117113001
Site name:	006S003W28J002S		
Latitude:	333708		
Longitude:	1171130	Dec lat:	33.61891266
Dec lon:	-117.19253373	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	065
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Altitude:	1825.00	Altitude method:	M
Altitude accuracy:	20	Altitude datum:	NGVD29
Hydrologic:	San Jacinto. California. Area = 757 sq.mi.		
Topographic:	Stream channel		
Site type:	Ground-water other than Spring	Date construction:	19300101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	13.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1968-04-01	Ground water data end date:	1968-04-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1968-04-01	9.00	

3
South
1/2 - 1 Mile
Lower

FED USGS USGS3125480

Agency cd:	USGS	Site no:	333638117111001
Site name:	006S003W34D002S		
Latitude:	333638	Dec lat:	33.61057961
Longitude:	1171110	Coor meth:	M
Dec lon:	-117.18697789	Latlong datum:	NAD27
Coor accr:	S	District:	06
Dec latlong datum:	NAD83	County:	065
State:	06	Land net:	Not Reported
Country:	US	Map scale:	Not Reported
Location map:	Not Reported	Altitude method:	M
Altitude:	1795.00	Altitude datum:	NGVD29
Altitude accuracy:	20		
Hydrologic:	Santa Margarita. California. Area = 731 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19650101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	240	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1968-04-01	Ground water data end date:	1968-04-01
Ground water data count:	1		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1968-04-01	72.00	

4

SSE

1/2 - 1 Mile

Lower

FED USGS

USGS3125476

Agency cd:	USGS	Site no:	333636117110501
Site name:	006S003W34D001S		
Latitude:	333636		
Longitude:	1171105	Dec lat:	33.61002408
Dec lon:	-117.18558894	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	065
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	1740.00	Altitude method:	M
Altitude accuracy:	20	Altitude datum:	NGVD29
Hydrologic:	Santa Margarita, California. Area = 731 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring		
Date inventoried:	Not Reported	Date construction:	19650101
Local standard time flag:	Y	Mean greenwich time offset:	PST
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	150		
Source of depth data:	Not Reported		
Real time data flag:	0		
Daily flow data end date:	0000-00-00		
Peak flow data begin date:	0000-00-00		
Peak flow data count:	0		
Water quality data end date:	0000-00-00		
Ground water data begin date:	1968-04-01		
Ground water data count:	1		
	Hole depth:	Not Reported	
	Project number:	Not Reported	
	Daily flow data begin date:	0000-00-00	
	Daily flow data count:	0	
	Peak flow data end date:	0000-00-00	
	Water quality data begin date:	0000-00-00	
	Water quality data count:	0	
	Ground water data end date:	1968-04-01	

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1968-04-01	40.00	

A5

SSE

1/2 - 1 Mile

Lower

FED USGS

USGS3125475

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Agency cd:	USGS	Site no:	333636117105301
Site name:	006S003W34C002S		
Latitude:	333636		
Longitude:	1171053	Dec lat:	33.6100241
Dec lon:	-117.18225546	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	065
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	1740.00	Altitude method:	M
Altitude accuracy:	20	Altitude datum:	NGVD29
Hydrologic:	Santa Margarita, California. Area = 731 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19650101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	294	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1968-04-01	Ground water data end date:	1968-04-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1968-04-01	56.00	

A6
SSE
1/2 - 1 Mile
Lower

FED USGS USGS3125474

Agency cd:	USGS	Site no:	333636117105201
Site name:	006S003W34C001S		
Latitude:	333636		
Longitude:	1171052	Dec lat:	33.61002411
Dec lon:	-117.18197767	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	065
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	1750.00	Altitude method:	M
Altitude accuracy:	20	Altitude datum:	NGVD29
Hydrologic:	Santa Margarita, California. Area = 731 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19650101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Local standard time flag: Y
 Type of ground water site: Single well, other than collector or Ranney type
 Aquifer Type: Not Reported
 Aquifer: Not Reported
 Well depth: 100
 Source of depth data: Not Reported
 Real time data flag: 0
 Daily flow data end date: 0000-00-00
 Peak flow data begin date: 0000-00-00
 Peak flow data count: 0
 Water quality data end date: 0000-00-00
 Ground water data begin date: 1968-04-01
 Ground water data count: 1

Hole depth: Not Reported
 Project number: Not Reported
 Daily flow data begin date: 0000-00-00
 Daily flow data count: 0
 Peak flow data end date: 0000-00-00
 Water quality data begin date: 0000-00-00
 Water quality data count: 0
 Ground water data end date: 1968-04-01

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1968-04-01	43.00	

B7
 South
 1/2 - 1 Mile
 Lower

FED USGS USGS3125673

Agency cd:	USGS	Site no:	333631117111401
Site name:	006S003W34E002S		
Latitude:	333631		
Longitude:	1171114		
Dec lon:	-117.18808904	Dec lat:	33.60863521
Coor accr:	S	Coor meth:	M
Dec latlong datum:	NAD83	Latlong datum:	NAD27
State:	06	District:	06
Country:	US	County:	065
Location map:	Not Reported	Land net:	Not Reported
Altitude:	1735.00	Map scale:	Not Reported
Altitude accuracy:	20	Altitude method:	M
Hydrologic:	Santa Margarita, California. Area = 731 sq.mi.	Altitude datum:	NGVD29
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19650101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	300		
Source of depth data:	Not Reported	Hole depth:	Not Reported
Real time data flag:	Not Reported	Project number:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data begin date:	Not Reported
Peak flow data begin date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data count:	Not Reported	Peak flow data end date:	Not Reported
Water quality data end date:	Not Reported	Water quality data begin date:	Not Reported
Ground water data begin date:	Not Reported	Water quality data count:	Not Reported
Ground water data count:	Not Reported	Ground water data end date:	Not Reported

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

8
South
1/2 - 1 Mile
Lower

Database EDR ID Number

FED USGS USGS3125672

Agency cd:	USGS	Site no:	333631117110901
Site name:	006S003W34E001S		
Latitude:	333631		
Longitude:	1171109	Dec lat:	33.60863522
Dec lon:	-117.18670009	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	065
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported
Altitude:	1725.00	Altitude method:	M
Altitude accuracy:	20	Altitude datum:	NGVD29
Hydrologic:	Santa Margarita, California. Area = 731 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	19650101
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	140	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1968-04-01	Ground water data end date:	1968-04-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1968-04-01	78.00	

B9
South
1/2 - 1 Mile
Lower

FED USGS USGS3125668

Agency cd:	USGS	Site no:	333630117111201
Site name:	006S003W34E003S		
Latitude:	333630		
Longitude:	1171112	Dec lat:	33.60835744
Dec lon:	-117.18753346	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	065
Country:	US	Land net:	Not Reported
Location map:	Not Reported	Map scale:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Altitude:	1738.00	Altitude method:	M
Altitude accuracy:	20	Altitude datum:	NGVD29
Hydrologic:	Santa Margarita, California. Area = 731 sq.mi.		
Topographic:	Hillside (slope)		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	241	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1968-04-01	Ground water data end date:	1968-04-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1968-04-01	51.00	

10
ENE
1/2 - 1 Mile
Lower

FED USGS USGS3125571

Agency cd:	USGS	Site no:	333730117101601
Site name:	006S003W27A002S		
Latitude:	333730	Dec lat:	33.62502374
Longitude:	1171016	Coor meth:	M
Dec lon:	-117.17197728	Latlong datum:	NAD27
Coor accr:	S	District:	06
Dec latlong datum:	NAD83	County:	065
State:	06	Land net:	Not Reported
Country:	US	Map scale:	Not Reported
Location map:	Not Reported	Altitude method:	M
Altitude:	1580.00	Altitude datum:	NGVD29
Altitude accuracy:	20		
Hydrologic:	San Jacinto, California. Area = 757 sq.mi.	Date construction:	Not Reported
Topographic:	Undulating	Mean greenwich time offset:	PST
Site type:	Ground-water other than Spring		
Date inventoried:	Not Reported		
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	48.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1968-04-01	Ground water data end date:	1968-04-01
Ground water data count:	1		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1968-04-01	23.00	

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for RIVERSIDE County: 2

Note: Zone 1 indoor average level > 4 pCi/L.

: Zone 2 indoor average level ≥ 2 pCi/L and ≤ 4 pCi/L.

: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for RIVERSIDE COUNTY, CA

Number of sites tested: 12

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.117 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.450 pCi/L	100%	0%	0%
Basement	1.700 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

California Drinking Water Quality Database

Source: Department of Health Services

Telephone: 916-324-2319

The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations for District 2, 3, 5 and 6

Source: Department of Conservation

Telephone: 916-323-1779

RADON

State Database: CA Radon

Source: Department of Health Services

Telephone: 916-324-2208

Radon Database for California

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98

Date Data Arrived at EDR: 07/07/99

Date Made Active in Reports: N/A

Number of Days to Update: 35

Source: EPA Region 9

Telephone: 415-972-3178

Last EDR Contact: 07/06/99

Next Scheduled EDR Contact: N/A

Data Release Frequency: No Update Planned

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 08/08/05

Date Data Arrived at EDR: 08/26/05

Date Made Active in Reports: 09/28/05

Number of Days to Update: 33

Source: Public Works Department Waste Management

Telephone: 415-499-6647

Last EDR Contact: 08/01/05

Next Scheduled EDR Contact: 10/31/05

Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination

Date of Government Version: 09/28/05

Date Data Arrived at EDR: 09/29/05

Date Made Active in Reports: 10/31/05

Number of Days to Update: 32

Source: Napa County Department of Environmental Management

Telephone: 707-253-4269

Last EDR Contact: 09/26/05

Next Scheduled EDR Contact: 12/26/05

Data Release Frequency: Semi-Annually

Closed and Operating Underground Storage Tank Sites

Date of Government Version: 09/28/05

Date Data Arrived at EDR: 09/29/05

Date Made Active in Reports: 10/31/05

Number of Days to Update: 32

Source: Napa County Department of Environmental Management

Telephone: 707-253-4269

Last EDR Contact: 09/26/05

Next Scheduled EDR Contact: 12/26/05

Data Release Frequency: Annually

ORANGE COUNTY:

List of Underground Storage Tank Cleanups

Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 09/01/05

Date Data Arrived at EDR: 09/19/05

Date Made Active in Reports: 10/06/05

Number of Days to Update: 17

Source: Health Care Agency

Telephone: 714-834-3446

Last EDR Contact: 09/09/05

Next Scheduled EDR Contact: 12/05/05

Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities

Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 09/01/05

Date Data Arrived at EDR: 09/19/05

Date Made Active in Reports: 10/31/05

Number of Days to Update: 42

Source: Health Care Agency

Telephone: 714-834-3446

Last EDR Contact: 09/09/05

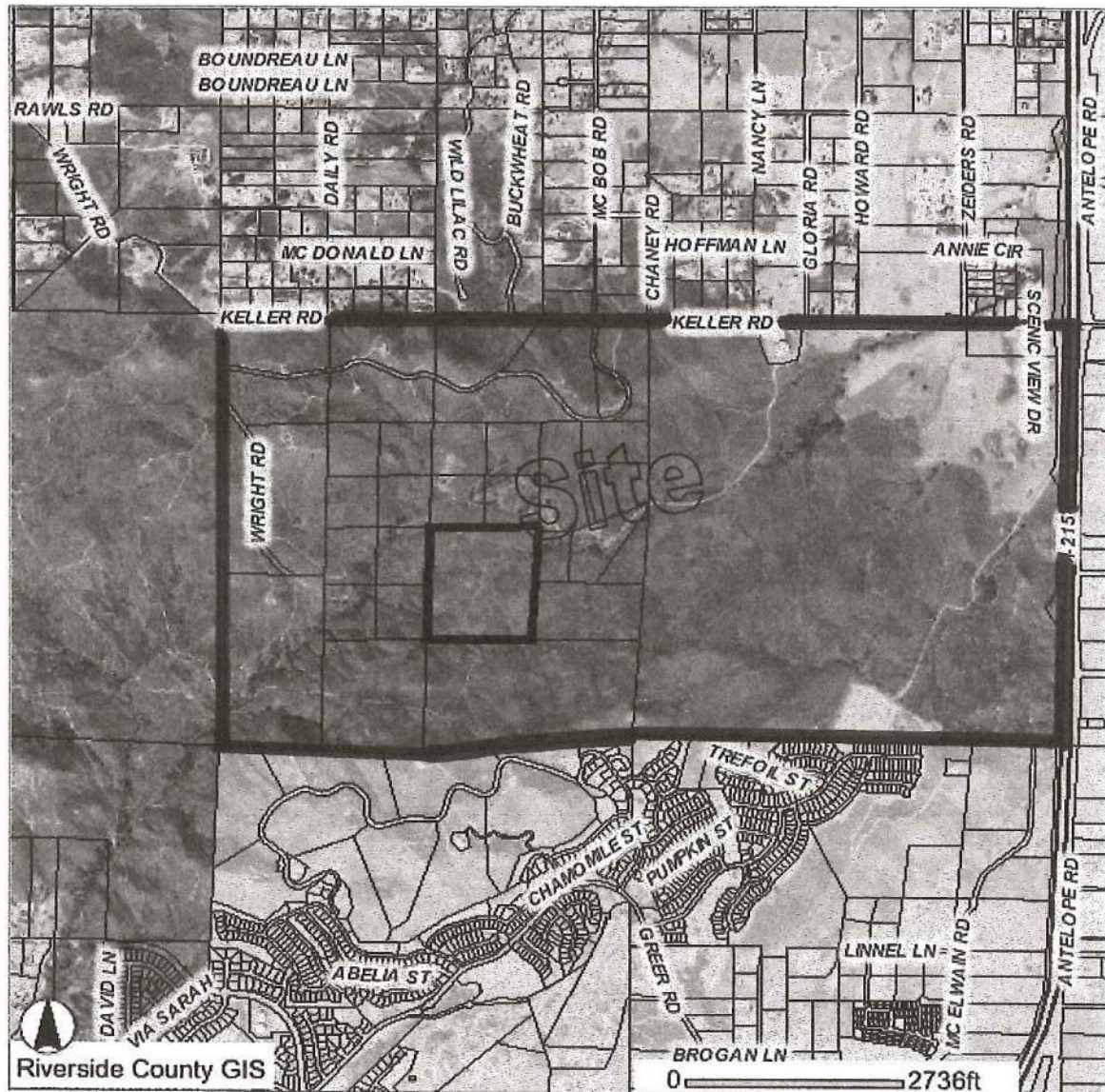
Next Scheduled EDR Contact: 12/05/05

Data Release Frequency: Quarterly

APPENDIX

PARCEL MAP

Murrieta Hills



Selected parcel(s):
384-200-013

LEGEND

☐ SELECTED PARCEL
  HIGHWAYS
 ☐ PARCELS
  CITIES

IMPORTANT

This information is made available through the Riverside County Geographic Information System. The information is for reference purposes only. It is intended to be used as base level information only and is not intended to replace any recorded documents or other public records. Contact appropriate County Department or Agency if necessary. Reference to recorded documents and public records may be necessary and is advisable.

MAP PRINTED ON...02/8/2006

APPENDIX



EDR® Environmental
Data Resources Inc

The EDR-City Directory *Abstract*

**Murrieta Hills
34337 McBob Road
Meifee, CA 92584**

Inquiry Number: 1588925.5

Thursday, January 12, 2006

The Standard in Environmental Risk Management Information

**440 Wheelers Farms Road
Milford, Connecticut 06461**

Nationwide Customer Service

**Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com**

City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. The city directory is a sophisticated tool for locating individuals and businesses. With each address, the directory lists the name of the corresponding occupant.

References

To meet the prior use requirements of ASTM E 1527-05, Section 8.3.2, the following *standard historical sources* may be used: aerial photographs, fire insurance maps, property tax files, land title records (although these cannot be the sole historical source consulted), topographic maps, city directories, building department records, or zoning/land use records. ASTM E 1527-05, Section 8.3 on Historical Use Information, identifies the prior use requirements for a Phase I environmental site assessment. ASTM E 1527-05 requires *"All obvious uses of the property shall be identified from the present, back to the property's first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources as are necessary and both reasonably ascertainable and likely to be useful."* (ASTM E 1527-05, Section 8.3.2) *Reasonably ascertainable means information that is publicly available, obtainable from a source within reasonable time and cost constraints, and practically reviewable.*

EPA's Standards and Practices for All Appropriate Inquiries (AAI), Section § 312.24, identifies the historical sources of information necessary to achieve the objectives and performance factors of § 312.20. According to AAI, *"historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps, building department records, chain of title documents, and land use records."*

Data Gaps

In order to address data gaps, additional sources of information may be consulted. According to the AAI, Section § 312.20 (g), *"to the extent there are data gaps (as defined in § 312.10) in the information developed...that affect the ability of persons (including the environmental professional) conducting the all appropriate inquiries to identify conditions indicative of releases or threatened releases...such persons should identify such data gaps, identify the sources of information consulted to address such data gaps, and comment upon the significance of such data gaps."* According to ASTM E 1527-05, Section 8.3.2.3, *"historical research is complete when either: (1) the objectives in 8.3.1 through 8.3.2.2 are achieved; or (2) data failure is encountered. Data failure occurs when all of the standard historical sources that are reasonably ascertainable and likely to be useful have been reviewed and yet the objectives have not been met....If data failure is encountered, the report shall document the failure and, if any of the standard historical sources were excluded, give the reasons for their exclusion."*

Thank you for your business.

Please contact EDR at 1-800-352-0050
with any questions or comments.

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SUMMARY

■ *City Directories:*

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1970 through 2005. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

Date EDR Searched Historical Sources: 1/12/2006

Target Property:

34337 McBob Road
Meifee, CA 92584

<u>Year</u>	<u>Uses</u>	<u>NAICS</u>	<u>Source</u>
1970	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
1975	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
1980	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
1985	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
1990	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
1995	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
2000	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
2005	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory

Adjoining Properties

SURROUNDING

McRob Road
Menifee, CA 92584

<u>Year</u>	<u>Uses</u>	<u>NAICS</u>	<u>Source</u>
1970	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
1975	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
1980	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
1985	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
1990	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
1995	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
2000	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory
2005	Street Not Listed in Research Source	N/A	Haines Criss-Cross Directory

APPENDIX E

SANBORN MAPS



EDR® Environmental
Data Resources Inc

"Linking Technology with Tradition"®

Sanborn® Map Report

Ship To: Jim Bunck

IWS Environmental

5211 Hartford Way

Westminster, CA 92683

Order Date: 1/9/2006

Completion Date: 1/9/2006

Inquiry #: 1588925.3

P.O. #: NA

Site Name: Murrieta Hills

Address: Keller Road

City/State: Murrieta, CA 92584

Cross Streets:

Customer Project: 010661

015063BAR

714-893-6140

This document reports that the largest and most complete collection of Sanborn fire insurance maps has been reviewed based on client supplied information, and fire insurance maps depicting the target property at the specified address were not identified.

NO COVERAGE

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report AS IS. Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any fact finding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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APPENDIX G

AGRICULTURAL COMMISSIONER'S RECORDS

IWS ENVIRONMENTAL

5211 HARTFORD WAY
WESTMINSTER, CA 92683

714-893-6140

FAX 714-893-1354

JIM@IWSENVIRONMENTAL.COM

FACSIMILE TRANSMITTAL SHEET

TO: AG COMMISSIONER

FROM: JIM BUNCK

COMPANY

DATE: January 26, 2006

FAX NUMBER 951-955-3012

TOTAL NO. OF PAGES INCLUDING COVER:

PHONE NUMBER:

SENDER'S REFERENCE NUMBER:

RE: RECORDS

NOTES/COMMENTS:

Attached is your form to requests any records you agency has on file for the use of herbicides and pesticides for the attached site. Since there are no addresses attached to the site, I have included a couple of maps indicating the location. The western portion of this site is utilized for dry farming. A nursery is located in the middle portion of the site. I believe your San Jacinto office handles this site.

If you need any additional information to access records, please feel free to give me a call at 714-893-6140.

Thanks

Jim Bunck

IWS ENVIRONMENTAL

5211 HARTFORD WAY
WESTMINSTER, CA 92683

714-893-6140

FAX 714-893-1354

JIM@IWSENVIRONMENTAL.COM

FACSIMILE TRANSMITTAL SHEET

TO: **BOB M.**

FROM: **JIM BUNCK**

COMPANY **AG COMMISSIONER**

DATE: **January 31, 2006**

FAX NUMBER **951-955-3047**

TOTAL NO. OF PAGES INCLUDING COVER:

PHONE NUMBER:

SENDER'S REFERENCE NUMBER:

RE: **PARCEL NUMBERS**

NOTES/COMMENTS:

Hi Bob: Per your phone message you felt with me yesterday, attached are the parcel numbers for the Murrieta site we are requesting records for. They are as follows:

384190001 thru 384190016

384200001 thru 384200018

384210001 thru 384210003

I hope this will give you the information you need to access any records you have for the site. Please feel free to give me a call at 714-893-6140.

Thanks

Jim Bunck



JOHN SNYDER
Agricultural Commissioner
Sealer of Weights & Measures

OFFICE OF THE
AGRICULTURAL COMMISSIONER

P.O. BOX 1089
RIVERSIDE CA 92502-1089
PHONE (951) 955-3000
FAX (951) 955-3012

WEIGHTS & MEASURES OFFICE
P.O. BOX 1480
RIVERSIDE, CA 92502-1480
PHONE (951) 955-3030
FAX (951) 276-4728

**STATEMENT OF PERSON REQUESTING PERMISSION
TO REVIEW FILES OR RECORDS OF
THE RIVERSIDE COUNTY DEPARTMENT OF AGRICULTURE / WEIGHTS & MEASURES**
(Please Type or Print)

Date of Request: 1/25/06

Name: BUNCK Jim A.
Last First Middle

I work/reside at the following address:

5211 HARTFORD Way
[Street Address]
WESTMINSTER, CA.
[City, State, and Zip]

E-MAIL:

Phone: 714 893-6140
Fax: 714 893-1354

and do hereby request permission to review the following data, files and/or records and obtain copies, if necessary, that are maintained at the Riverside County Agricultural Commissioner's Office located at 4080 Lemon Street, Room 19, P.O. Box 1089, Riverside, CA 92502-1089. Please describe request:

1. SEE ATTACHED MAPS
2. _____
3. _____

[Attach additional sheet if required]

Please be advised that my request for the review of the above identified data, files and/or records is not in any way connected with nor pertaining to (1) any pending matters of litigation to which the County is a party to, or (2) to claims made pursuant to Division 3.6 (commencing with Section 810) of Title I of the Government Code.

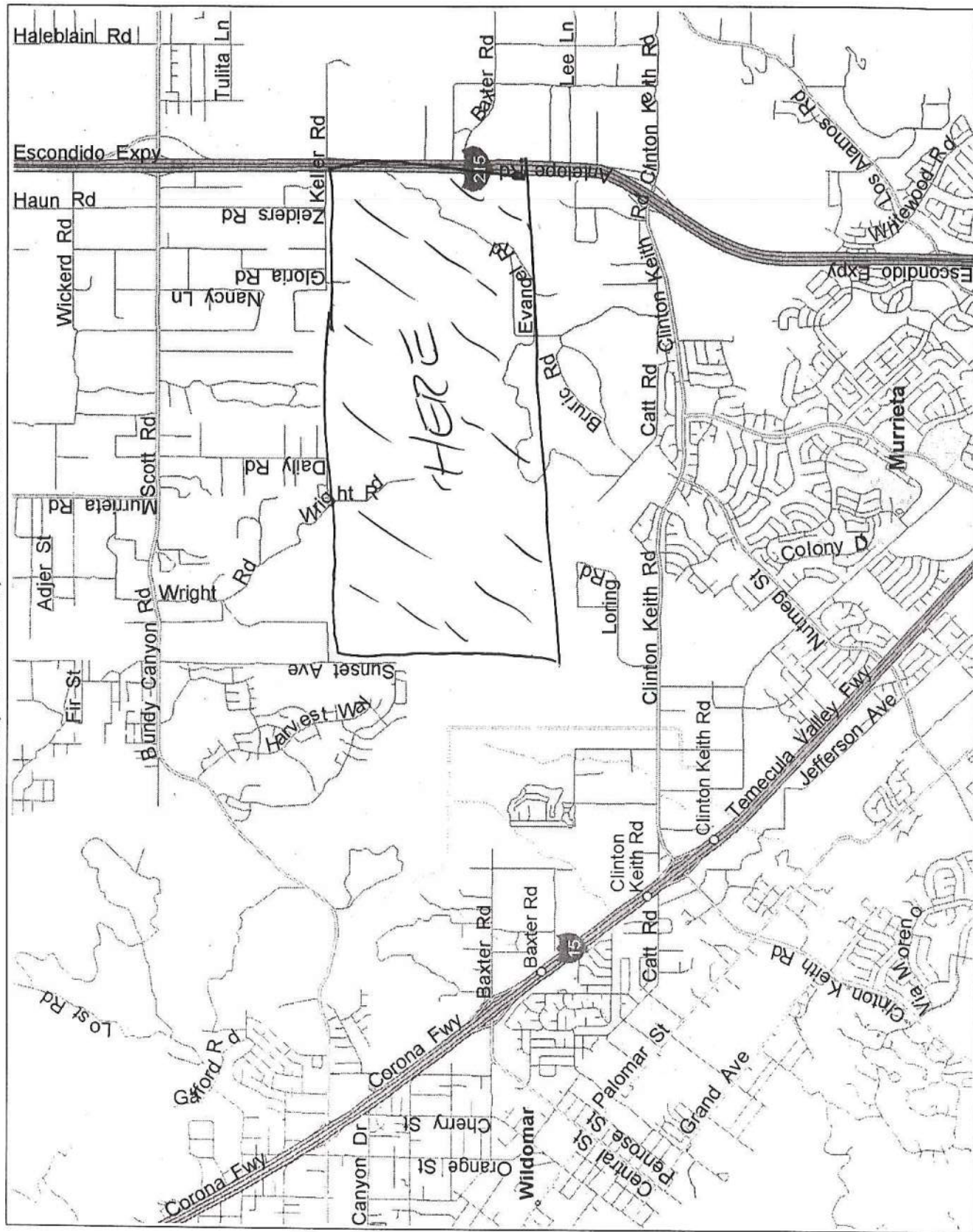
I understand that certain records are specifically exempted (under Section 6254 and 6254.7(d) and (e) and 6255 of the Government Code and within Section 1040 of the Evidence Code) from the general rule of accessibility and that it is the policy of the Department of Agriculture/Weights & Measures that data, files and/or records falling in this category will not be released for my review until specific approval is granted by the Agricultural Commissioner/Sealer. On this basis, I do hereby specifically request the Agricultural Commissioner/Sealer's immediate review of this request insofar as it is related to those items that the Department of Agriculture/Weights & Measures feels are classified as exempted materials.

Signed by: [Signature]

Received by: _____

Date: _____ Time: _____

Murrieta, California, United States



County of Riverside
4080 Lemon Street
Riverside, California

E.I.R. (company): SWS Environmental
Tim Bunde

Project: unknown - Pulte Homes?

Crop History - Present: * nursery 10 acres only (E 1/2 of section 28)
and approx 100 acres dryland wheat NE 1/4 of section 27

Crop History - Past: 100 acres dryland grain and 10 acres
nursery only out of 1280 acres. 2 sections are
steep hills with heavy native brush

R.M.P. Issued - Year(s): Bouris Ranches 05, 04 (Attached), 03, 02 etc

O.I.D.N. Issued - Years(s): Murrelet's Oaks Nursery 03, 04, 05 (Attached)

Pesticides(s): for dryland grain 1x/year herbicide application
typically 24D, chloresulfuron and dicamba alone or in combination.
Nursery stock can potentially get any # of insecticides, fungicides, herbicide.

Reported Usage(s): see Attached pesticide use reports
for Bouris Ranches - Record retention is 2yrs + current only

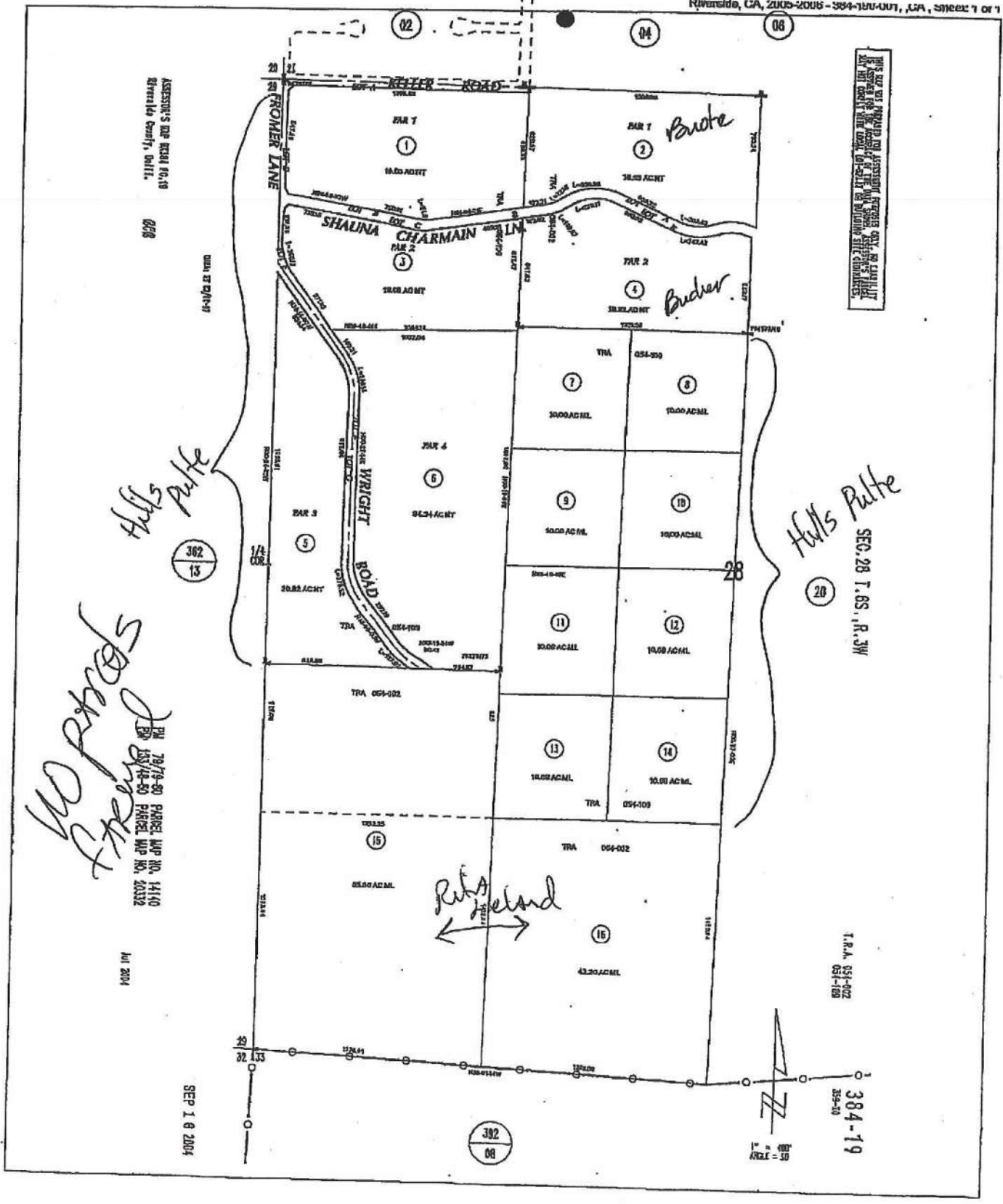
Typical Pesticide Usage - same as in "pesticides" and "Reported
(in area) Usage(s)" for dryland grain and/or nursery operations.

Comments: Nursery operation has not reported any pesticide
uses for 10+ years, unknown what if and how
been used for this location - contact Alice Green
@ Murrelet's Oaks Nursery 951-679-0664.

Biologist: [Signature]

Date Completed: 2/6/06

THIS MAP WAS PREPARED FOR AGRICULTURAL PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE INFORMATION HEREON. THE USER OF THIS MAP SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY SURVEY DATA AND RECORDS.



SEC. 28 T. 03. R. 3W

T.R.A. 031-002
031-100

384-19
35-10

05 = 1724
1.1

Rita Island

Hills Pulte

NO PLOTS
Crossed

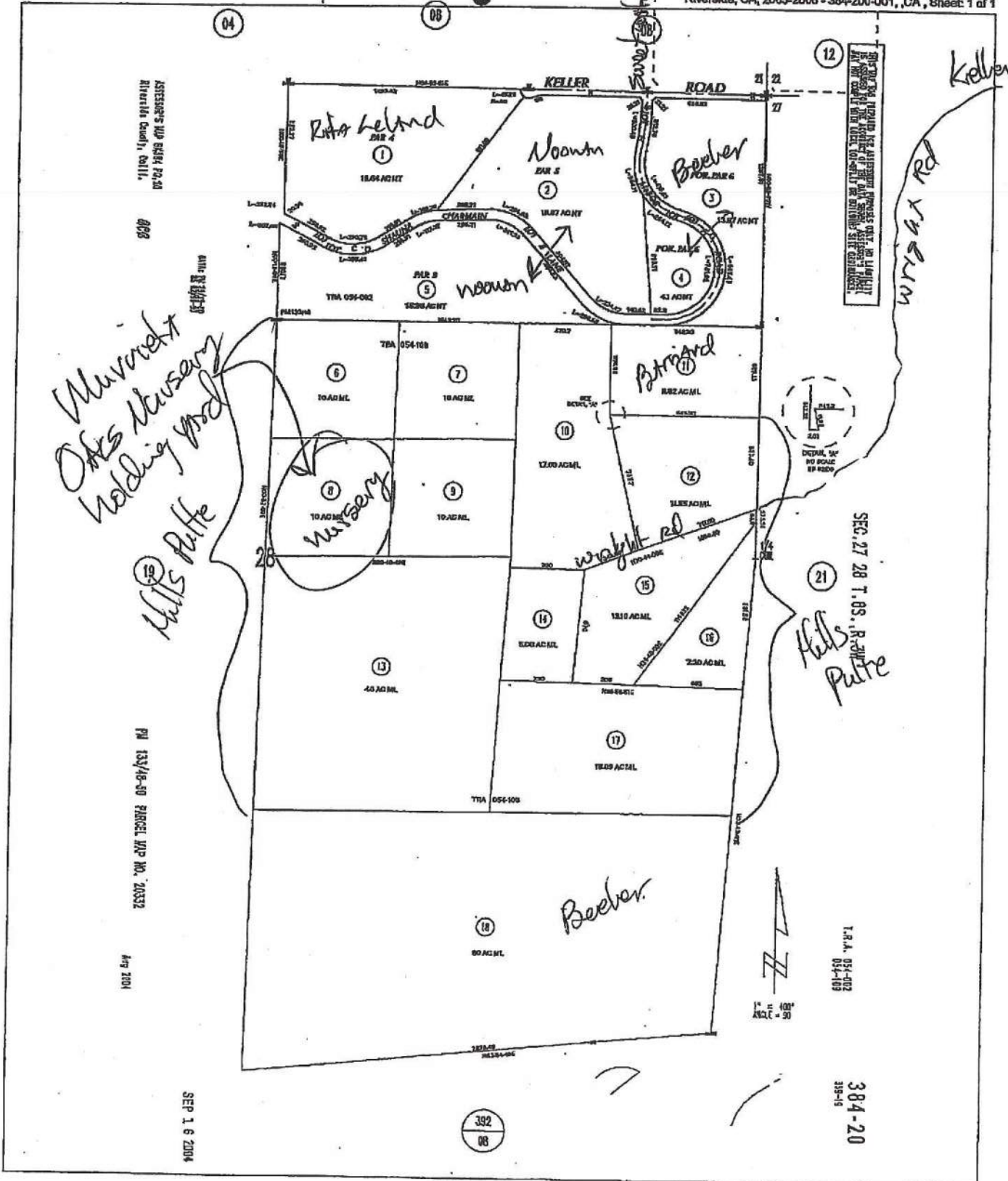
ASSESSOR'S MAP NO. 16,19
Riverside County, Calif.

PL 79/79-80 PARCEL MAP NO. 14140
PL 15/14-80 PARCEL MAP NO. 10332

SEP 10 2004

382
00

382
13



MURRIETA OAKS NURSERY

Operator/Site #: 33-05-3360200

Site #	Location/Site Narrative Crop	Dist	Sect	Town	Range	Meridian
			Quant	Unit	Condition	
1	35921 GREER RD X CLINTON KEITH APN# 359-580-004/005/029/030 N-OUTDR PLANTS (Code: 154- 0) 99999	SJ	34	06S	03W	S
			10.00	A		

*** Last Page ***

(2) Kelber Rd holding yard SJ 28/6S/3W
 APN# 359-190-017 parcel is now 384-200-008
 N-outdoor plants (154) 10 A
 99999

3 Antelope Rd yard (X of Cape View Rd) (old McKeel)
 APN# 359-240-024 SJ 35/6S/3W
 N-outdoor plants 154
 99999 10 A

NO postcard
 Use Records
 Submitted 03-05

RIVERSIDE COUNTY DEPT OF AGRICULTURE
950 N. RAMONA BLVD., STE. 15
SAN JACINTO, CA 92582

Office: (909)654-3266 Recorder (NOI) (909)654-3266 FAX: (909)654-8296

=====

OPERATOR/SITE IDENTIFICATION NUMBER

OPERATOR/SITE I.D. #: 33-05-3360200
County HQ District #: SJ

MURRIETA OAKS NURSERY
35921 GREER RD.
MURRIETA, CA 92562

Expiration Date: 12/31/2005
Effective Date: 08/20/2003

MIKE GREER
35921 GREER RD.
MURRIETA, CA 92562

Home: 951
Shop: 909-679-0664
Fax: 909-679-1918
Mobile: (909) 322-9220
(?)

Employees handle pesticides (Y or N) [N]

Contact People:	Phone	PCO	PCA	PCD	Other
J.S. NELSON LANDSCAPE		X			
JOHN NELSON					
QAL# 37398 BC 2003					

Numb	Pesticide	Pest(s)	Form.	Method(s)	Applicator(s)
99999	NON-PERMIT AG P VARIOUS		All Reg	Ground	PCO

Permit Applicant: MICHAEL GREER

Sign: Michael Greer

Title: PRESIDENT

Issue Date: 8/20/03

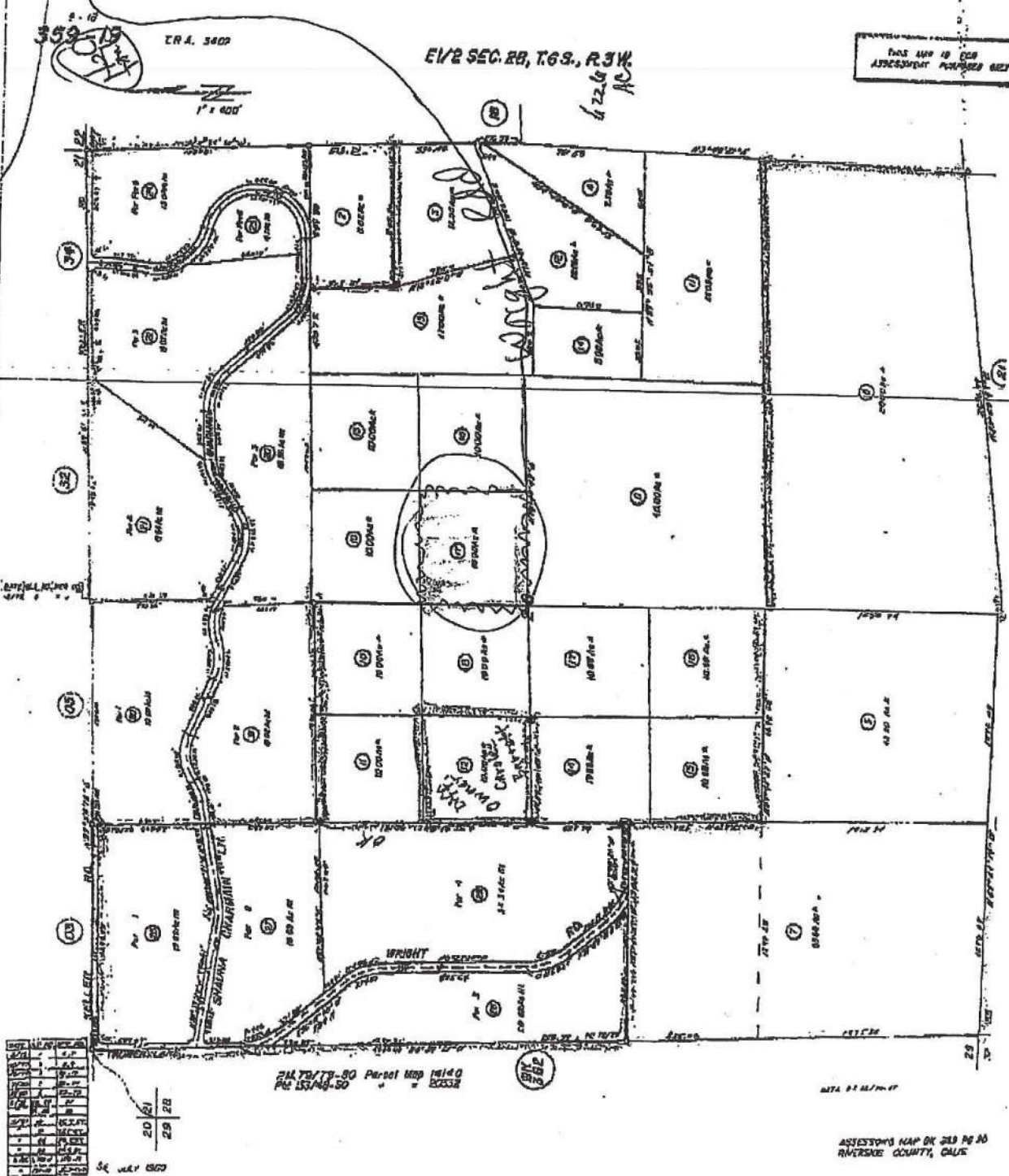
Issuing Officer: [Signature]

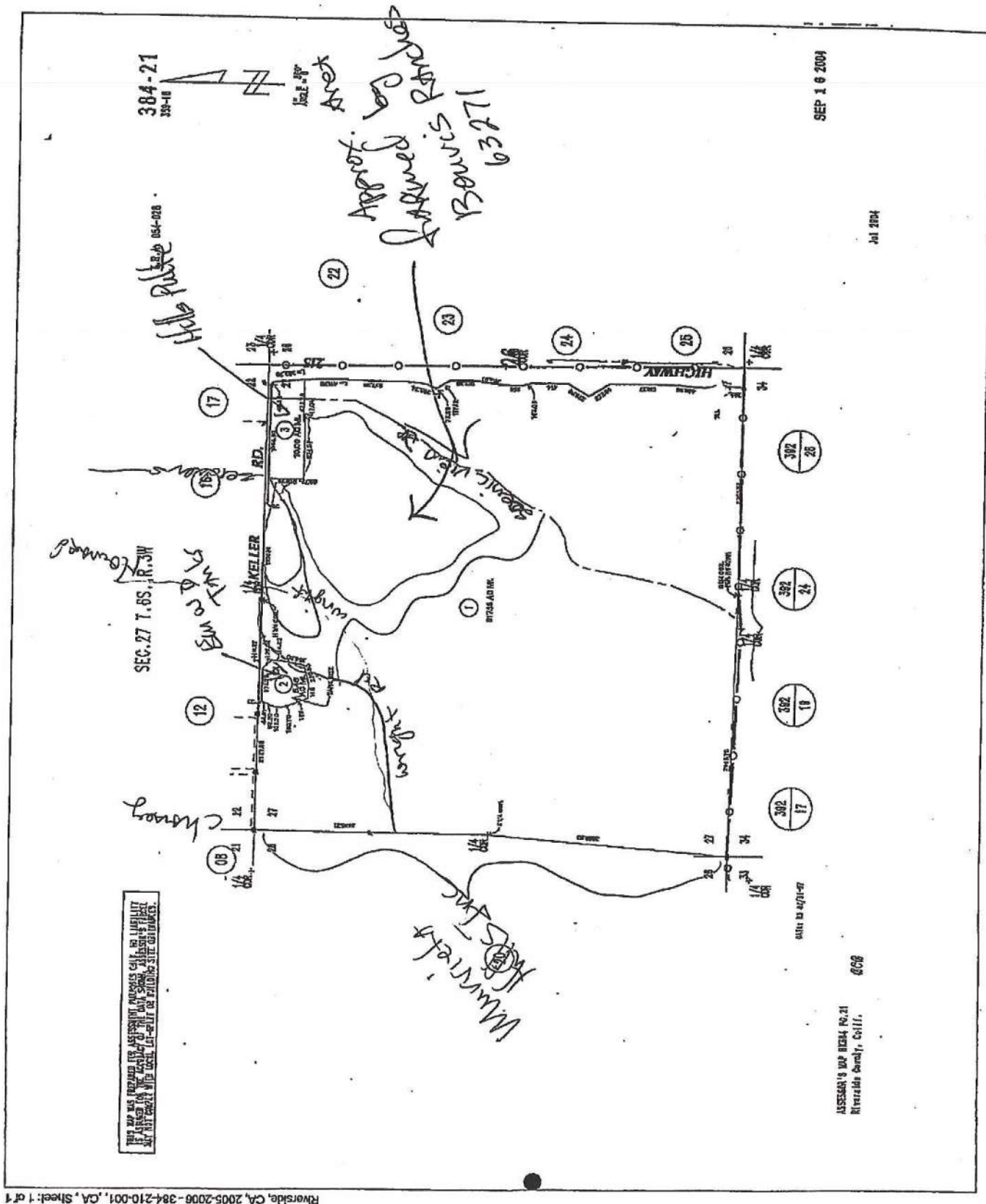
Issue Date: 8/20/03

Licensed Pest Control Business Only to purchase/
Apply All pesticides.

Fieldworker/Nursery worker employees must be
trained prior to handling treated plants by
certified applicator (PCO - John Nelson)

2006-Feb-21 11:17 AM





OWNSHIP 6S RANGE 3W SECTION 27

NE 1/4

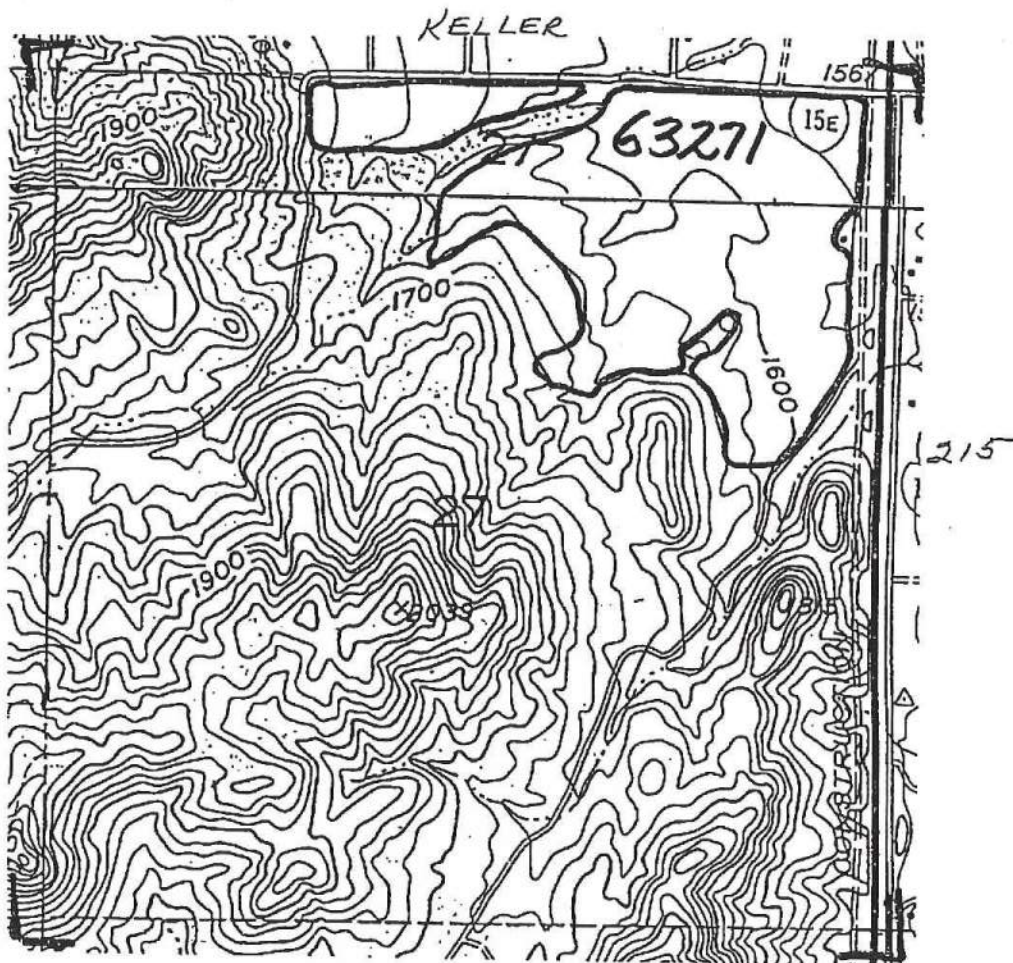
NO.: 63271

OWNER: ROSE HILLS

RES: 405.3 103.9

SCS #: 4266

Bouris Ranches



	<u>CROP</u>	<u>PLANT DATE</u>	<u>SPRAY DATE</u>	<u>YIELD</u>	<u>COMMENTS</u>
995	<u>WHEAT 105.3</u>				
996	<u>CANE</u>				
997					
998					
999					

RIVERSIDE COUNTY DEPT OF AGRICULTURE

950 N. RAMONA BLVD., STE. 15

SAN JACINTO, CA 92582

Office: (909)654-3266 Recorder (NOI) (909)654-3266 FAX: (909)654-8296

RESTRICTED MATERIALS PERMIT

PERMIT #: 33-05-3310120

County HQ District #: SJ

BOURIS RANCHES
PO BOX 62
SUNCITY, CA 92586-

Expiration Date: 12/31/2005
Effective Date: 01/24/2005

MIKE BOURIS
33751 ZIEDERS
MENIFEE, CA 92584-

Home: () -
Shop: (951)679-1009
Fax: 951-679-2398
Mobile: () -

Permittee Type	Permit Type	Possession	NOI Method of Submission
Private App <input checked="" type="checkbox"/>	Seasonal <input checked="" type="checkbox"/>	Poss & Use <input checked="" type="checkbox"/>	Phone <input checked="" type="checkbox"/>
Q A Cert <input type="checkbox"/>	Job <input type="checkbox"/>	Poss Only <input type="checkbox"/>	Box <input type="checkbox"/>
Ag PCO <input type="checkbox"/>			In Person <input checked="" type="checkbox"/>
Non-Ag <input type="checkbox"/>			Fax <input checked="" type="checkbox"/>
			Modem <input type="checkbox"/>

NOI required 24 hours prior to application

Numb	Pesticide	Pest(s)	Form.	Method(s)	Applicator(s)
1050	CARBARYL	BLACK SCALE	All Reg	Ground	PCO Grower
2001	BANVEL	WEEDS	Liquid	Air	PCO Grower
4840	ALUMINUM PHOSPH	GRAIN PEST	Fumigant	Ground	Grower Employee
5540	STRYCHNINE	GOPHERS	Bait	Ground	Grower Employee
6260	ZINC PHOSPHIDE	RODENTS	Bait	Ground	Grower Employee
6360	2,4-D	WEEDS	Liquid	Air	PCO Grower
99999	NON-PERMIT AG P	VARIOUS	All Reg	Ground	PCO Employee
<p>1 Enters for residences/businesses: 150ft ground/300ft air unless crop, give permission for</p> <p>2 no foliar apps near schools in session - 1/4m ground, 1/2m air (includes loading area of sight) closer</p> <p>3 240 restrictions for sensitive crops - no 240 within 1/4 mile of crop - assume only within 1/2</p>					

Non-Ag Use:

Conditions: NO PHENOXY W/IN 1/4M VEGIES, AMINE W/IN 1/2M, DRIFT CONDITION
BAITING ON KRAT SITES-ENDR SPEC CONDIT, SCHOOL CONDITIONS

I understand that this permit does not relieve me from liability for any damage to persons or property caused by the use of these pesticides. I waive any claim of liability for damages against the County Department of Agriculture based on the issuance of this permit. I further understand that this permit may be revoked when pesticides are used in conflict with the manufacturer's labeling or in violation of applicable laws, regulations and specific conditions of this permit. I authorize inspection at all reasonable times and whenever an emergency exists, by the Department of Pesticide Regulation or the County Department of Agriculture of all areas treated or to be treated, storage facilities for pesticides or emptied containers and equipment used or to be used in the treatment. [Form PR-ENF-125 (Rev. 07/92) Pesticide Enforcement Branch]

Permit Applicant: MIKE BOURIS

Sign: [Signature]

Title: [Signature]

Issue Date: [Signature]

Issuing Officer: [Signature]

Issue Date: 1/24/05

BURIS RANCHES

Permit #: 33-05-3310120

Site #	Location/Site Narrative Crop	Dist	Sect	Town	Range	Meridian	Quant	Unit	Condition
63271	SW KELLER/215 BOURIS OLD PLACE APN# 359-100-002 new APN = 384-210-001 WHEAT (Code: 29139-0) 2001, 5540, 6260, 6360, 99999	SJ	27	06S	03W	S	103.90	A	

~~*** Last Page ***~~

53231 Hospital - NE McCall & Antelope SJ 23/5s/3w S
 Apn #
 wheat (29139)
 2001, 6360, 99999

(20A)
 NO AIR next to hospital

State of California Department of Pesticide Regulation 33-025 (PML# 003)						PESTICIDE USE REPORT	
Co. 33	Sec 27	Twn 6 S	Rng 3 W	Base S	Ap. Meth Air	Permittee/ Property Operator Bouris Ranches	
Op-ID/Permit # 3310120		Site ID 63271		Total Planted Acres 100		Applicator Pacific Rotors 2650 Hope Street Oceanside, Ca. 92056	
Location SE of Keller & 215						Block ID n/a	
Date 2.17.05	Time Applied 1330		Acres Treated 100		Commodity Wheat		
Product LV 6		EPA/Ca reg. 71368-11-AA		Total Product 50 pt		Rate & Dilution 0.5 pt & 5 g	
Clarity		7969-137-AA		200 oz		2 oz & 5 g	
Re-entry 1		Preharvest 7		Applied/ Supervised By Markov		Contact PCA	
Environmental Changes/ Comments No Change.						<div style="border: 1px solid black; padding: 2px; display: inline-block;"> RECEIVED </div>	

LV6 = 24D
Clarity = decumba

FEB 28 2005

AGRICULTURAL COMMISSION
SAN JACINTO OFFICE

[PMEP Home](#)
[Page](#)[Pesticide Active Ingredient](#)
[Information](#)[Herbicides, Growth Regulators and](#)
[Desiccant](#)[dalapon to](#)
[ethylene](#)[dicamba](#)
[\(Banvel\)](#)[dicamba \(Banvel\) Herbicide](#)
[Profile 10/83](#)

dicamba (Banvel) Herbicide Profile 10/83

CHEMICAL FACT SHEET FOR:
DICAMBA

FACT SHEET NUMBER: 08

DATE ISSUED: OCTOBER 17, 1983

1. DESCRIPTION OF CHEMICAL

- Generic Name: 3,6-dichloro-o-anisic acid
- Common Name: dicamba
- Trade Names: Banvel, Banex, Brush Buster, Mediben, Velsicol 58-CS-11
- EPA Shaughnessy Number: 029802
- Chemical Abstracts Service (CAS) Number: 1918-00-9
- Year of Initial Registration: 1967
- Pesticide Type: Herbicide
- Chemical Family: Benzoic Acid
- U.S. and Foreign Producers: Velsicol Chemical Corporation

2. USE PATTERNS AND FORMULATIONS

- Application sites: corn, small grains, grain sorghum, asparagus, sugarcane, pastures, rangeland and agricultural seed crops, noncrop sites, forest lands, lawns and ornamental turf.
- Types of formulations: diethanolamine, monoethanolamine, dimethylamine and sodium salts as soluble concentrates or granulars.
- Types and methods of application: Applied by aerial or ground spray, invert system, tree injection, or granular equipment. Dicamba is applied preplant, preemergence, or postemergence.
- Application rates:
 - 1/4 pound active per acre to grain sorghum
 - 1/8-1/2 pound active per acre to small grains, asparagus
 - 1/4-3 pounds active per acre to sugarcane
 - 1/2-8 pounds active per acre to pasture, range, and noncropland
 - 1/4-1 pound active per acre to turf and grass seed crops
- Usual carriers: water, fluid and dry fertilizer, oil in water emulsions, clay or vermiculite

3. SCIENCE FINDINGS

Chemical Characteristics

- It is a light tan slightly phenolic crystalline solid. It is stable to oxidation and hydrolysis and melts at temperatures between 90-100 degrees C. Dicamba is nonflammable and does not present any unusual handling hazards.

Toxicological Characteristics

- Acute Toxicology Results:
 - Oral LD50 in rats: 2.74 mg/kg body weight, Toxicity Category III
 - Dermal LD50 in rats: >2,000 mg/kg, Toxicity Category IV
 - Inhalation LC50 in rats: >200 mg/l, Toxicity Category IV
 - Eye irritation in rabbits: Induced corrosiveness of conjunctival tissues and corneal injury which was reversible in 72 hours. In a recent study, eye damage was irreversible and pannus was observed. Toxicity Category I.
 - Dermal Irritation: slight dermal irritation.
- Chronic Toxicology Results:
 - Teratology in rabbits: NOEL of 3.0 mg/kg/day for maternal toxicity; not teratogenic.
 - Teratology in rats: Teratology NOEL s 400 mg/kg; maternal toxicity NOEL 5 160 mg/kg.
 - Three-generation reproduction study in rats: No evidence of toxicity among the rats from any of the generations in the study. No test article related effects were evident for any reproductive indices examined. NOEL of 25 mg/kg/day.
 - 90-day subchronic feeding study with rats: The NOEL is 250 mg/kg/day. LEL was 500 mg/kg/day (slight decrease in comparative body weight gains and food consumption and evidence of reduced glycogen storage).

- Major Routes of Exposure:

- Dermal and inhalation exposure to humans may occur during application, particularly via splashing during dilution, mixing, and loading. Application by aircraft increases the potential for exposure of humans, livestock, and wildlife due to spray drift and ventilation.

- Risk Assessment and Contaminants:

- The manufacturing process for dicamba has potential of resulting in traces of 2,7-dichlorodibenzo-p-dioxin as a contaminant. It is present at levels up to 50 ppb (parts per billion). The more toxic dioxin isomer, 2,3,7,8-tetra-chlorodibenzo-p-dioxin, has not been found at the limit of detection (2 ppb) of the method and is not expected as an impurity in dicamba.
- Dicamba products formulated with the dimethylamine salt have the potential of adding a dimethylnitrosamine (DMNA) contaminant. Nitrosamine levels in the dimethylamine formulations are expected to be less than 1 ppm. The risk levels for the dicamba products with the nitrosamine contaminant are in the 1×10 to minus 7 to 1×10 to minus 8 range.
- The benefits outweigh the risks associated with the nitrosamines. The performance of the dicamba-containing herbicides is such that they are viable alternatives to the suspended uses (home lawns, pastures, ditchbanks and forests) of silvex and 2,4,5-T.

Physiological and Biochemical Behavioral Characteristics

- Foliar absorption: Readily absorbed by leaves.
- Translocation: Dicamba is absorbed by leaves and is readily moved to other plant parts.
- Mechanism of pesticidal actions: Exhibits properties of an auxin-like plant growth regulator.
- Plant metabolism: Rapidly absorbed and metabolized almost entirely into soluble metabolites and insoluble plant products (celluloses).
- Animal metabolism: Some dicamba is demethylated to the metabolite, 3,6-dichloro-2 hydroxybenzoic acid. Most dicamba is excreted rapidly in urine as the free and/or conjugated form.

Environmental Characteristics

- Adsorption and leaching in basic soil types:
 - Dicamba (free acid and dimethylamine salt) is adsorbed to peat, but not appreciably adsorbed to soils ranging from heavy clay to loamy sand.
 - Dicamba is readily mobile in soils ranging from clay to loamy sand.
- Microbial breakdown:
 - Under aerobic conditions in soil dicamba degrades with half-lives ranging from 1-6 weeks, depending on soil texture. Degradation rates are slowed by decreasing temperatures (<20 degrees C) and decreasing soil moisture below field capacity.
- Loss from Photodecomposition and/or volatilization:
 - Phytotoxic dicamba (free acid) residue's are photodegraded in water to nonphytotoxic levels.
 - Dicamba is volatile with losses of 60% in glass flow tubes and 49% from thin films. Data from sterile and nonsterile soil samples indicate that larger losses of dicamba are due to metabolism rather than to volatilization.
- Resultant average soil persistence:
 - Dicamba has a half-life of 1 to 6 weeks. It may be leached out of the zone of activity in humid regions in 3 to 12 weeks. Dicamba may persist longer under conditions of low soil moisture and rainfall.

Ecological Characteristics

- Avian oral LD50: >2,510 mg/kg (practically non-toxic)
- Avian dietary LC50: > 10,000 ppm (practically non-toxic)
- Aquatic invertebrates LC50: >100 mg/l (practically non-toxic)
- Cold water fish LC50: 135.3 mg/l (slightly toxic)
- Warm water fish LC50: >1,000 mg/l (practically non-toxic)
- Available data indicate that dicamba is practically non-toxic to fish and wildlife and unlikely to directly affect these organisms.
- Use patterns of the chemical do not present any problem to endangered species.

Tolerance Assessments

- Crops and tolerances:
 - 0.1 ppm on sugarcane, sugarcane fodder, and sugarcane forage
 - 0.2 ppm on meat, fat and meat byproducts (except liver and kidney) of cattle, goats, hogs, horses, and sheep
 - 0.3 ppm on milk
 - 0.5 ppm on barley grain and barley straw; corn fodder, forage, and grain; oat grain and oat straw, and wheat grain and wheat straw.
 - 1.5 on kidney and liver of cattle, goats, hogs, horses, and sheep.
 - 2.0 ppm on sugarcane molasses (food/feed additive tolerance)
 - 3.0 ppm on asparagus, sorghum fodder, forage and grain
 - 40.0 ppm on grasses, hay; grasses, pasture; grasses, rangeland.
- Results of tolerance assessment:
 - The available residue data support the existing tolerances.
 - Tolerances on sorghum milling fractions, poultry and eggs may be required once requested residue data and poultry feeding are submitted.
 - Based on a NOEL of 600 ppm (rat subchronic study) and a 2,000-fold safety factor, the existing tolerance utilizes 37.58% of the PADI.

Problems Known to Have Occurred With the Use of the Chemical

- Based on the Pesticide Incident Monitoring System (PIMS) report, most reported incidents with dicamba involve phytotoxicity to adjoining crops because of drift.

Summary Science Statement

- Dicamba appears to pose little acute toxicity or environmental hazard. The major problem appears to be the potential for a dimethylnitrosamine (DMNA) contaminant in the dimethylamine formulations. The level of DMNA is expected to be below 1 ppm, and the risk level for dicamba with DMNA is 10⁻⁷ to 10⁻⁸ range.

4. SUMMARY OF REGULATORY POSITION AND RATIONALE

- Use classification: general use
- Summary of risk/benefit review:
 - The risk level for dicamba products containing DMNA is in the 10⁻⁷ to 10⁻⁸ range. The Agency considers that the benefits outweigh the risk associated with the nitrosamines. The product performance of dicamba-containing herbicides is such that they are viable alternatives of several of the suspended uses of silvex and 2,4,5-T, such as for home lawns, pastures, along ditchbanks and brush control in pastures.
- Use restrictions:
 - Dicamba may not be used in any way which contaminates irrigation ditches or water for domestic purposes.
- Unique label warning statement:
 - Crops for which dicamba is not registered may not be planted in dicamba-treated fields.

5. SUMMARY OF MAJOR DATA GAPS

- Residue data on poultry, eggs, and sorghum
- Milling fractions
- Poultry feeding study
- Hydrolysis
- Photodegradation
- Laboratory metabolism studies
- Mobility
- Field dissipation studies
- Accumulation studies
- 90-day feeding (nonrodent)
- Chronic feeding/oncogenicity (2 species)
- Mutagenicity test

NOTE: All the data gaps listed here are to be filled by October 1987.

6. CONTACT PERSON AT EPA

Robert J. Taylor
Environmental Protection Agency (TS-767C)
401 M St., SW
Washington, DC 20460
(703) 557-1800

DISCLAIMER:
THE INFORMATION PRESENTED IN THIS CHEMICAL INFORMATION FACT SHEET

IS FOR INFORMATIONAL PURPOSES ONLY AND NOT TO BE USED TO FULFILL
DATA REQUIREMENTS FOR PESTICIDE REGISTRATION AND REREGISTRATION.

Disclaimer: Please read the pesticide label prior to use. The information contained at this web site is not a substitute for a pesticide label. Trade names used herein are for convenience only; no endorsement of products is intended, nor is criticism of unnamed products implied. Most of this information is historical in nature and may no longer be applicable.



[To Top](#)

For more information relative to pesticides and their use, please contact the PMP staff at:

5123 Comstock Hall
Cornell University
Ithaca, NY 14853-0901
(607)255-1866



Cornell University

Questions regarding the development of this web site should be directed to the [PMP Webmaster](#)



FACT SHEET

Facts about Strychnine

What strychnine is

- Strychnine is a white, odorless, bitter crystalline powder that can be taken by mouth, inhaled (breathed in), or mixed in a solution and given intravenously (injected directly into a vein).
- Strychnine is a strong poison; only a small amount is needed to produce severe effects in people. Strychnine poisoning can cause extremely serious adverse health effects, including death.

Where strychnine is found and how it is used

- The primary natural source of strychnine is the plant *Strychnos nux vomica*. This plant is found in southern Asia (India, Sri Lanka, and East Indies) and Australia.
- In the past, strychnine was available in a pill form and was used to treat many human ailments.
- Today, strychnine is used primarily as a pesticide, particularly to kill rats.
- Uncommonly, strychnine is found mixed with "street" drugs such as LSD, heroin, and cocaine.

How you could be exposed to strychnine

- Following release of strychnine into water, you could be exposed by drinking contaminated water.
- Following contamination of food with strychnine, you could be exposed by eating the contaminated food.
- It is also possible to absorb strychnine through the membranes in the nose, eyes, or mouth. For example, a person could be poisoned by inhaling strychnine powder that has been released in the air.
- Strychnine could be smoked or snorted as a component of street drugs.
- Poisoning has been reported from strychnine given intravenously and through the nose.

How strychnine works

- The extent of poisoning caused by strychnine depends on the amount and route of strychnine exposure and the person's condition of health at the time of the exposure.
- Strychnine prevents the proper operation of the chemical that controls nerve signals to the muscles. The chemical controlling nerve signals works like the body's "off switch" for muscles. When this "off switch" does not work correctly, muscles throughout the body have severe, painful spasms. Even though the person's consciousness or thinking are not affected at first (except that the person is very excitable and in pain), eventually the muscles tire and the person can't breathe.

Immediate signs and symptoms of strychnine exposure

- Following the ingestion (swallowing) of strychnine, symptoms of poisoning usually appear within 15 to 60 minutes.
- People exposed to low or moderate doses of strychnine by any route will have the following signs or symptoms:
 - Agitation

Facts About Strychnine

(continued from previous page)

- Apprehension or fear
- Ability to be easily startled
- Restlessness
- Painful muscle spasms possibly leading to fever and to kidney and liver injury
- Uncontrollable arching of the neck and back
- Rigid arms and legs
- Jaw tightness
- Muscle pain and soreness
- Difficulty breathing
- Dark urine
- Initial consciousness and awareness of symptoms
- People exposed to high doses of strychnine may have the following signs and symptoms within the first 15 to 30 minutes of exposure:
 - Respiratory failure (inability to breathe), possibly leading to death
 - Brain death
- Showing these signs and symptoms does not necessarily mean that a person has been exposed to strychnine.

What the long-term health effects are

If the person survives the toxic effects of strychnine poisoning, long-term health effects are unlikely. However, long-term effects may result from damage caused by the poisoning (for example, brain damage from low oxygen, kidney failure). People severely affected by strychnine poisoning are not likely to survive.

How you can protect yourself, and what you should do if you are exposed to strychnine

- Since ingestion is likely to be the primary route of exposure, if poisoning is suspected, avoid any further ingestion and call 911 immediately.
- Recovery from strychnine exposure is possible with early hospital treatment. Therefore, the best thing to do is get medical care as quickly as possible.
- Do not induce vomiting or give fluids to drink.
- If you think strychnine may have been released into the air, the best thing to do is avoid it. If the strychnine release was indoors, get out of the building. If the release was outdoors, move away from the area of the release, stay upwind if possible, and seek higher ground. Quickly moving to an area where fresh air is available is highly effective in reducing the possibility of death from exposure to a chemical that has been released into the air.
- If you are near a release of strychnine, emergency coordinators may tell you to either evacuate the area or "shelter in place" inside a building to avoid being exposed to the chemical. For more information on evacuation during a chemical emergency, see "[Facts About Evacuation](http://www.bt.cdc.gov/planning/evacuationfacts.asp)" (<http://www.bt.cdc.gov/planning/evacuationfacts.asp>). For more information on sheltering in place during a chemical emergency, see "[Facts About Sheltering in Place](http://www.bt.cdc.gov/planning/Shelteringfacts.asp)" (<http://www.bt.cdc.gov/planning/Shelteringfacts.asp>).
- Removing your clothing:
 - Quickly take off clothing that has strychnine on it. Any clothing that has to be pulled over the head should be cut off the body instead of pulled over the head.
 - If you are helping other people remove their clothing, try to avoid touching any contaminated areas, and remove the clothing as quickly as possible.

Facts About Strychnine

(continued from previous page)

- Washing yourself:
 - As quickly as possible, wash any strychnine from your skin with large amounts of soap and water. Washing with soap and water will help protect people from any chemicals on their bodies.
 - If your eyes are burning or your vision is blurred, rinse your eyes with plain water for 10 to 15 minutes. If you wear contacts, remove them and put them with the contaminated clothing. Do not put the contacts back in your eyes (even if they are not disposable contacts). If you wear eyeglasses, wash them with soap and water. You can put your eyeglasses back on after you wash them.
- Disposing of your clothes:
 - After you have washed yourself, place your clothing inside a plastic bag. Avoid touching contaminated areas of the clothing. If you can't avoid touching contaminated areas, or you aren't sure where the contaminated areas are, wear rubber gloves or put the clothing in the bag using tongs, tool handles, sticks, or similar objects. Anything that touches the contaminated clothing should also be placed in the bag. If you wear contacts, put them in the plastic bag, too.
 - Seal the bag, and then seal that bag inside another plastic bag. Disposing of your clothing in this way will help protect you and other people from any chemicals that might be on your clothes.
 - When the local or state health department or emergency personnel arrive, tell them what you did with your clothes. The health department or emergency personnel will arrange for further disposal. Do not handle the plastic bags yourself.
- For more information about cleaning your body and disposing of your clothes after a chemical release, see "Chemical Agents: Facts About Personal Cleaning and Disposal of Contaminated Clothing" (<http://www.bt.cdc.gov/planning/personalcleaningfacts.asp>).
- Seek medical attention right away. Dial 911 and explain what has happened.

How strychnine exposure is treated

Treatment consists of removing the drug from the body (decontamination) and getting supportive medical care in a hospital setting. Supportive care includes intravenous fluids (fluids injected directly into a vein), medications for convulsions and spasms, and cooling measures for high temperature.

How you can get more information about strychnine

You can contact one of the following:

- Regional poison control center (1-800-222-1222)
- Centers for Disease Control and Prevention
 - Public Response Hotline (CDC)
 - 800-CDC-INFO
 - 888-232-6348 (TTY)
 - Emergency Preparedness and Response Web site (<http://www.bt.cdc.gov/>)
 - E-mail inquiries: cdcinfo@cdc.gov

Facts About Strychnine

(continued from previous page)

- Mail inquiries:
Public Inquiry c/o BPRP
Bioterrorism Preparedness and Response Planning
Centers for Disease Control and Prevention
Mailstop C-18
1600 Clifton Road
Atlanta, GA 30333

This fact sheet is based on CDC's best current information. It may be updated as new information becomes available.

Last reviewed on 03/23/05.

The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national, and international organizations.

For more information, visit www.bt.cdc.gov/chemical, or call CDC at
800-CDC-INFO (English and Spanish) or 888-232-6348 (TTY).

May 14, 2003

Page 4 of 4

DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION
SAFER • HEALTHIER • PEOPLE™



WORLD HEALTH ORGANIZATION
ORGANISATION MONDIALE DE LA SANTE

FOOD AND AGRICULTURE
ORGANIZATION
ORGANISATION POUR L'ALIMENTATION
ET L'AGRICULTURE

VBC/DS/77.24
ORIGINAL: ENGLISH

DATA SHEETS ON PESTICIDES No. 24
December 1976
ZINC PHOSPHIDE

It must be noted that the issue of a Data Sheet for a particular pesticide does not imply endorsement of the pesticide by WHO or FAO for any particular use, or exclude its use for other purposes not stated. While the information provided is believed to be accurate according to data available at the time when the sheet was compiled, neither WHO nor FAO are responsible for any errors or omissions, or any consequences therefrom.

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Part 1 - General information

CLASSIFICATION:

Primary use: Rodenticide

Secondary uses: None

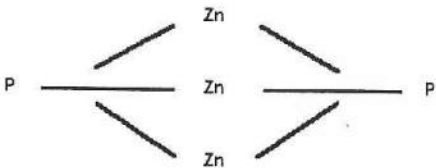
Chemical group: Inorganic phosphide

Data sheet No.: 24

Date issued: December 1976

1.1 COMMON NAME - ZINC PHOSPHIDE

Identity: $Zn_3 P_2$



Synonyms: Local synonyms:

1.2 SYNOPSIS

A rodenticide of high mammalian toxicity which in the presence of dilute acid will decompose to liberate phosphine. It is not cumulative in body tissues.

1.3 SELECTED PROPERTIES

1.3.1 Physical characteristics

A grey powder of high melting point which sublimes when heated in the absence of oxygen.

1.3.2 Solubility

Practically insoluble in water and ethanol. Soluble in benzene and carbon disulfide.

1.3.3 Stability

Stable when dry but decomposes slowly in moist air. It reacts violently with acids with decomposition to the spontaneously inflammable phosphine gas.

1.3.4 Vapour pressure

Very low. Phosphine odour detectable at 1.5-3.0 ml/m³ of air, depending on its purity.

1.4 AGRICULTURE, HORTICULTURE AND FORESTRY

1.4.1 Common formulations

2.5% and 5% pastes for bait preparations. These are diluted with 10 times their own weight of bait.

1.4.2 Pests mainly controlled

Mice, common rat, ship's rat, field mice, gophers, ground squirrels, prairie dogs.

1.4.3 Use pattern

Confined in most countries to trained personnel.

1.4.4 Unintended effects

Under exposed conditions toxicity is lost in about two weeks.

1.5 PUBLIC HEALTH PROGRAMME

Rodent control - see HOUSEHOLD USE

1.6 HOUSEHOLD USE

Rodent control. Under some circumstances secondary poisoning can result to cats eating freshly poisoned rodents.

Part 2 - Toxicology and risks

2.1 TOXICOLOGY - MAMMALS

2.1.1 Absorption route:

Absorbed by inhalation and from the gastrointestinal tract.

2.1.2 Mode of action:

Probably decomposes to phosphine in the stomach and is absorbed both as phosphine and as the phosphide. It has a toxic action on the heart, liver and kidneys. Death occurs from heart and kidney failure.

2.1.3 Excretion products:

Excreted in urine either as a hypophosphite or as dissolved phosphine. The presence of strong reducing substances in the urine is a common feature of poisoning with this material. Also, exhaled as phosphine from the lungs. Other metabolites include phosphoric acid and phosphate.

2.1.4 Toxicity, single dose

Oral: LD₅₀ Rat (M) 41 mg/kg.

After a massive dose, death may occur in 70 minutes; with smaller doses, death may be delayed from 24 hours up to 2-3 days. Symptoms appear after 20-25 minutes. Animals become prostrate with deep slow respiration, finally terminating in convulsions. Posture at death is characteristic: animals are found on their bellies with legs and tail spread out.

Dermal: No information.

2.1.5 Toxicity, repeated doses

Oral: After repeated doses, kidney damage and hyaline degeneration of the myocardium was observed. Livers showed cloudy swelling, hyaline degeneration and necrosis usually located in the centre of the lobules.

Inhalation

No information. However, inhalation of phosphine gas or dust would be hazardous. See 2.2.2 below for relevant human data.

Cumulation of compound:

Zinc phosphide is not cumulative in any body tissues.

Cumulation of effect:

In case of repeated exposure, there is cumulation of effect resulting in liver, kidney and lung damage.

2.1.6 Dietary studies

Short-term: Six rats were fed a diet containing 300 ppm zinc phosphide. During the first week weight gains were markedly reduced and all six died during the second week of feeding. A further group of six rats were fed zinc phosphide 200 ppm for one month. Two deaths were recorded in the second week and weight gains were half that of the controls over the feeding period. Histopathology revealed liver damage in the peripheral and central lobular areas. The lungs showed evidence of congestion with haemorrhage or exudate in the alveolar spaces.

Long-term: No information.

2.1.7 Supplementary studies of toxicity

Carcinogenicity

No information available.

Teratogenicity

No information available.

2.1.8 Modifications of toxicity

Experiments in dogs have shown that zinc phosphide has a low toxicity on these animals unless it is combined with a dilute acid or following the stimulation of normal gastric secretion. Under these circumstances phosphine is liberated in the stomach.

2.2 TOXICOLOGY - MAN

2.2.1 Absorption

Absorbed from the gastrointestinal tract. It can also be absorbed by inhalation of dust or of liberated phosphine gas. Does not appear to be absorbed through the intact skin, but can be absorbed through abrasions in the skin.

2.2.2 Dangerous doses

Single: A dose of 5 g has caused death. However a 50 g dose has been survived. Toxicity is lessened if vomiting occurs soon after ingestion. Phosphine gas can be hazardous to rodent control officers. 2.8 mg/litre of air is rapidly fatal in less than 30 minutes, but levels of 0.14-0.26 can be withstood for 30-60 minutes without consequences.

Repeated: Doses in the region of 100 mg daily appear to be

harmless, though 30 mg has been stated to cause nausea.

2.2.3 Observations of occupationally exposed workers

The safety record of this compound has been good; one industrial accident has been reported involving three cases.

2.2.4 Observations on exposure of the general population

Cases of poisoning, both accidental and intentional have resulted from ingestion of zinc phosphide, see 2.2.6 below.

2.2.5 Observations on volunteers

Volunteers who ate three geese poisoned with zinc phosphide over a period of two days were unaffected on the first day. However, on the second day two of the three volunteers suffered from stomach pains and diarrhoea.

2.2.6 Reported mishaps

Twelve children were poisoned by eating contaminated barley. Several cases of poisoning have occurred as domestic accidents. Between 1917 and 1965, 26 fatalities have been reported from zinc phosphide poisoning, of which 18 were suicides.

2.3 TOXICITY TO NON-MAMMALIAN SPECIES

2.3.1 Fish

No data available but presumably toxic.

2.3.2 Birds

Very toxic.

2.3.3 Other species

Very toxic to cows, goats, sheep, pigs, wild rabbits.

Part 3 - For regulatory authorities

RECOMMENDATIONS ON REGULATION OF COMPOUND

3.1 RECOMMENDED RESTRICTIONS ON AVAILABILITY

(For definition of categories, see introduction.)

All formulations, category 2

3.2 TRANSPORTATION AND STORAGE

All formulations: United Nations Classification 6.1 for all formulations. Should be stored in clearly labelled, hermetically sealed impermeable containers away from oxidizing agents, acids and living quarters, under lock and key, secure from access by unauthorized persons and children. They must not be stored in damp conditions or be allowed to become damp, as in these circumstances there is both a toxic and fire hazard. No food or drink should be stored in the same compartment.

3.3 HANDLING

All formulations: Full protective clothing should be used by all those handling the compound. Adequate washing facilities should be available at all times during handling and should be close to the site of handling. Eating, drinking and smoking should be prohibited during handling and before washing after handling. Baits of zinc phosphide should be removed and the area thoroughly cleaned up after the necessary purpose has been fulfilled.

3.4 DISPOSAL AND/OR DECONTAMINATION OF CONTAINER

All formulations:

Containers must either be crushed and buried below the topsoil or burned. Care must be taken to avoid subsequent contamination of water sources. Decontamination of containers in order to use them for other purposes should not be permitted.

3.5 SELECTION, TRAINING AND MEDICAL SUPERVISION OF WORKERS

All formulations:

Pre-employment and periodic medical examination of workers desirable. Workers suffering from active hepatic or renal disease should be excluded from contact. Special account should be taken of the workers' mental ability to comprehend and follow instructions. Training of workers in techniques to avoid contact essential.

3.6 ADDITIONAL REGULATIONS RECOMMENDED IF DISTRIBUTED BY AIRCRAFT

All formulations

Not applicable.

3.7 LABELLING

All formulations

Minimum cautionary statement "POISON" (skull and crossbones insignia).

Zinc phosphide is a very toxic substance. Do not inhale dust or fumes. Keep this material or baits containing it, out of reach of children and domestic animals and well away from foodstuffs, animal feed and their containers. Keep dry and away from acids of all kinds.

3.8 RESIDUES IN FOOD

If used correctly as a bit, residues of zinc phosphide will not appear in human food.

3.8.1 Maximum residue levels

Levels for zinc phosphide have not been recommended by the joint FAO/WHO meeting on Pesticide Residues.

Part 4 - Prevention of poisoning in man and emergency aid

4.1 PRECAUTIONS IN USE

4.1.1 General

Zinc phosphide is a rodenticide of high toxicity. It is readily absorbed from the gastrointestinal tract and dusts may be absorbed by inhalation. In addition it may decompose to liberate phosphine gas which is extremely hazardous. It is not readily absorbed through the intact skin.

4.1.2 Manufacture and formulation

T.L.V.

For phosphine gas, PH_3 (AGGIH) 0.4 mg/m³ (USSR) 0.1 mg/m³.

Closed system and forced ventilation may be required to reduce as much as possible the exposure of workers to the chemical.

4.1.3 Mixers and applicators

Particularly when opening container and when mixing, protective impermeable boots, clean overalls, gloves and a face mask should be worn. Mixing, if not mechanical, should always be carried out with a paddle of appropriate length. The applicator should avoid inhaling dust particles and avoid contact with the mouth. Particular care is needed when the equipment is being washed after use. All protective clothing should be washed immediately after use including the insides of gloves. Splashes must be washed immediately from the skin or eyes with large quantities of water. Before eating, drinking or smoking, hands and other exposed skin should be washed.

Zinc phosphide baits should not be used where there is a risk of contaminating food, animal feeding stuffs or drinking or washing water. Exposed baits should be laid in containers clearly marked "Poison". Baits should not be laid unless all access by children and animals other than rats and mice can be prevented. Except in locked unoccupied premises, baits should not remain down for more than 24 hours. All exposed baits and their containers should be removed after treatment and burned. Rodent bodies should be searched for and destroyed by burning.

4.1.4 Other associated workers (including flagmen in aerial operations)

Not applicable.

4.1.5 Other populations likely to be affected

With correct use as described under mixers and applicators (4.1.3 above) other populations should not be exposed to hazardous amounts of zinc phosphide.

4.2 ENTRY OF PERSONS INTO TREATED AREAS

The general public should be excluded from all access to premises while baits are exposed.

4.3 SAFE DISPOSAL OF CONTAINERS AND SPILLAGE

Residues in containers should be emptied in a diluted form into a deep pit, taking care to avoid contamination of ground waters. Decontamination of containers in order to use them for other purposes should not be permitted. Spillage should be removed as much as possible into a deep dry pit and the remainder washed away with large quantities of water. It should be borne in mind during these operations that in the presence of water, phosphine gas will be liberated and therefore a respirator may be advisable.

4.4 EMERGENCY AID

4.4.1 Early symptoms of poisoning

After ingestion there is a latent period of approximately one hour. Earliest symptoms are usually nausea, abdominal pain, chest tightness, excitement, and agitation and a feeling of chilliness and of being "cold all over". Vomiting is constant. Shock, early dyspnoea, thirst, oliguria, convulsions or coma have been observed.

4.4.2 Treatment before person is seen by a physician if these symptoms appear following exposure

If swallowed, vomiting should be induced if the person is conscious. Complete rest and quiet are indicated.

Part 5 - For medical and laboratory personnel

5.1 MEDICAL DIAGNOSIS AND TREATMENT OF CASES OF POISONING

5.1.1 General information

Zinc phosphide is a compound of high toxicity normally used in bait form as a rodenticide.

It is readily absorbed by the gastrointestinal tract and may be absorbed by inhalation in dust form or as phosphine gas. Although it is not absorbed through the unbroken skin, it may be absorbed through cuts or abrasions. Its toxicity is related to its liberation of phosphine on decomposition, following absorption. Organs that may be affected include the heart, lung, liver and kidney.

5.1.2 Symptoms and signs

There is a latent period of about 60 minutes following ingestion and the appearance of symptoms. Earliest symptoms are usually nausea, abdominal pain, chest tightness, excitement and agitation and a feeling of chilliness, of being "cold all over". Vomiting is constant. Later symptoms may include shock, dyspnoea, thirst, oliguria and kidney failure, convulsions and coma. Purpura and asymptomatic thrombocytopenia have been observed. Early deaths may occur from pulmonary oedema. The majority of fatal cases die after 30 hours as a result of cardiac damage.

5.1.3 Laboratory

There are no simple tests to confirm exposure. However, the patient's breath may smell of phosphine (garlic odour). Serum zinc levels will be raised and the urine will contain reducing substances, which may be hypophosphite, dissolved phosphine or due to zinc glycosuria. If stomach aspiration is performed a black fluid with a pungent smell of phosphine is typical of ingestion of this compound. Circulating methemalbumin has also been observed.

5.1.4 Treatment

Treatment is mainly symptomatic. Vomiting should be induced immediately followed by gastric lavage with 2-4 litres of water. It is important to clear zinc phosphide from the gastrointestinal tract, with non-oily purgatives if absorption of zinc phosphide particles is to be avoided. Correction of fluid loss and electrolyte disturbances is important.

Two suggested treatments are the use of 0.5 gm of copper sulfate (as a 1% aqueous solution) which has the additional theoretical benefit of forming insoluble copper phosphide, or gastric lavage with a 1 in 1000 potassium permanganate solution, which has been suggested as a means of oxidizing the phosphide.

5.1.5 Prognosis

Early vomiting improves the prognosis. If the patient survives for three days the further outlook is good. However, no patient who has experienced shock has yet survived.

5.1.6 References of previously reported cases

The following review covers poisoning cases with zinc phosphide reported in Europe and gives a detailed case history.

(a) Stephenson, J. B. (1967) Archives of Environmental Health, 15, 83-88

(b) Van Oettingen, E. W., The toxicity and potential dangers of zinc phosphide and of hydrogen phosphide, Public Health Report 203, 1.1947

(c) Frketic, J., Magdic, A. & Stajduhor-Djuric, Z., Otravanja cinkovrim fosfidom Arh. Hig. Rada., 8.15.1957

5.2 SURVEILLANCE METHODS

There are no readily available surveillance procedures.

5.3 LABORATORY METHODS

References only are given.

5.3.1 Detection and analysis

Microdistillation of liver and reaction of the phosphorous with silver nitrate to form silver phosphide using paper electrophoresis. Curry, A. S. et al., J. Pharm. Pharmacol., 10:635, 1958.

A sophisticated method involving neutron activation analysis for the determination of phosphides and white phosphorous in biological materials has been published. Krishnan, S.S. et al., Anal. Chem., 42(6), 557-560, 1970.

A method involving gas chromatography is reported by Robinson, W. H. et al., J. Ag. Food Chem., 19(5), 875-8, 1971.

5.3.2 Other tests in cases of poisoning

These include measurement of serum zinc levels, estimation of urine reducing substances, and estimation of methaemoglobin.

See Also:

Toxicological Abbreviations
Zinc phosphide (ICSC)



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont
Material Safety Data Sheet

Page 1

"DuPont" "GLEAN" FC HERBICIDE - CA USE ONLY
M0000442 Revised 19-AUG-2004

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"GLEAN" is a registered trademark of DuPont.

"DuPont" is a trademark of DuPont.

Tradenames and Synonyms

CHLORSULFURON 75XP

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.
302-774-1000)
Transport Emergency : CHEMTREC 1-800-424-9300 (outside U.S.
703-527-3887)
Medical Emergency : 1-800-441-3637 (outside the U.S.
302-774-1000)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
*CHLORSULFURON	64902-72-3	75
(2-CHLORO-N-[(4-METHOXY-6-METHYL-1,3,5- TRIAZIN-2-YL)AMINOCARBONYL]BENZENESULFONAMIDE)		
INERT INGREDIENTS		25

* Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

HAZARDS IDENTIFICATION

Emergency Overview

CAUTION! Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

Potential Health Effects

Based on animal data, Glean Fertilizer Compatible Herbicide may cause eye irritation with discomfort, tearing, or blurring of vision.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.

IF INHALED: No specific intervention is indicated, as the compound is not likely to be hazardous by inhalation. Consult a physician if necessary.

IF INGESTED: No specific intervention is indicated, as the compound is not likely to be hazardous by ingestion. Consult a physician if necessary.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for emergency medical treatment information.

FIRE FIGHTING MEASURES

Flammable Properties

Not a fire or explosion hazard.

Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixtures in air.

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Wear self-contained breathing apparatus. Use water spray. Cool tank/container with water spray. Runoff from fire control may be a pollution hazard.

If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Emergency Response - Chemical resistant coveralls, waterproof gloves, waterproof boots and face/eye protection. If dusting occurs, use NIOSH approved respirator protection.

Initial Containment

Dike spill. Prevent material from entering sewers, waterways, or low areas.

Spill Clean Up

Shovel or sweep up.

HANDLING AND STORAGE

Handling (Personnel)

Avoid breathing dust. Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling. Wash clothing after use. Do not store or consume food, drink or use tobacco in areas where they may become contaminated with this material.

(HANDLING AND STORAGE - Continued)

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Handling (Physical Aspects)

Keep away from heat, sparks and flames.

Storage

Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use only with adequate ventilation.

Use only with adequate ventilation. When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Personal Protective Equipment

For agricultural uses.

Always follow the label instructions when handling this product.

Some of the materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical-resistance category selection chart.

Applicators and other handlers must wear:

Long-sleeved shirt and long pants.
Chemical-resistant gloves made of any waterproof material
such as polyethylene or polyvinyl chloride.
Shoes plus socks.

Discard clothing and other absorbent material that have been drenched or heavily contaminated with this product. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

Coveralls.

Chemical-resistant gloves made of any waterproof material.

Shoes plus socks.

Exposure Guidelines

Applicable Exposure Limits

CHLORSULFURON

PEL (OSHA)	: None Established
TLV (ACGIH)	: None Established
AEL * (DuPont)	: 10 mg/m ³ , 8 & 12 Hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Solubility in Water	: Dispersible
pH	: 4.5 @ 1% suspension
Odor	: None
Form	: Solid
Color	: Tan
Specific Gravity	: 0.69 @ 25C (77F)
Density	: 0.64 to 0.74 g/mL

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

None reasonably foreseeable.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

Glean Fertilizer Compatible Herbicide

Oral LD50:	> 5000 mg/kg in rats (Very low toxicity)
Skin Absorption LD50:	> 2000 mg/kg in rabbits (Slightly to moderately toxic)

(TOXICOLOGICAL INFORMATION - Continued)

Glean Fertilizer Compatible Herbicide is not a skin irritant or a skin sensitizer, but is a moderate eye irritant in animals.

Chlorsulfuron

Inhalation 4 hour LC50: > 5.5 mg/L in rats
(Very low toxicity by inhalation)

Toxicity described in animals from the oral administration of a single dose of Chlorsulfuron include lung changes, weakness and other nonspecific effects.

The effects in animals from repeated exposures by inhalation to Chlorsulfuron include decreased weight gain, reversible kidney and spleen effects, and bone marrow changes.

Repeated oral dosing caused decreased weight gain, and hematological and clinical chemical changes. Long-term dosing resulted in decreased body weight gain and slight hematological changes.

Animal testing indicates that Chlorsulfuron, the active ingredient, did not show carcinogenic or reproductive effects. Developmental toxicity has been observed but only at maternally toxic dose levels.

Chlorsulfuron did not produce genetic damage in bacterial or mammalian cell cultures. It did not produce heritable genetic damage.

ECOLOGICAL INFORMATION-----
Ecotoxicological Information

AQUATIC TOXICITY:

CHLORSULFURON

96 hour LC50 - Sheepshead minnow: > 980 mg/L.

48 hour EC50 - Oysters: 385 mg/L.

CHLORSULFURON

AVIAN TOXICITY:

Acute Oral LD50 - Mallard Duck: > 5000 mg/kg mg/kg.

Acute Oral LD50 - Bobwhite Quail: > 5000 mg/kg

DISPOSAL CONSIDERATIONS-----
Waste Disposal

Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

ENVIRONMENTAL HAZARDS

(DISPOSAL CONSIDERATIONS - Continued)

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposing of equipment washwaters or wastes.

Container Disposal

For Plastic Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

For Fiber Sacks: Completely empty fiber sack by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into manufacturing or application equipment. Then dispose of sack in a sanitary landfill or by incineration if allowed by State and local authorities.

For Fiber Drums with Liners: Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by State and local authorities. If drum is contaminated and cannot be reused, dispose of in the same manner.

For Bags Containing Water Soluble Packets: Do not reuse the outer box or the resealable plastic bag. When all water-soluble packets are used, the outer packaging should be clean and may be disposed of in a sanitary landfill or by incineration, or if allowed by State and local authorities, by open burning. If burned, stay out of smoke. If the resealable plastic bag contacts the formulated product in any way, the bag must be triple-rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer wrap as described above.

For Metal Containers (non aerosol): Triple rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

For Paper and Plastic Bags: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO

Proper Shipping Name : NOT REGULATED BY IMO

REGULATORY INFORMATION

U.S. Federal Regulations

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : No
Fire : No
Reactivity : No
Pressure : No

In the United States this product is regulated by the US Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act. It is a violation of federal law to use this product in a manner inconsistent with its labeling.

EPA Reg. No. 352-522

State Regulations (U.S.)

*****ATTENTION *****

CALIFORNIA PROPOSITION 65

THIS PRODUCT CONTAINS CHLORSULFURON A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA Rating
Health : 1
Flammability : 1
Reactivity : 0

NPCA-HMIS Rating
Health : 1
Flammability : 1
Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

(Continued)

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS: DuPont Crop Protection
Address : Wilmington, DE 19898
Telephone : 1-888-638-7668

Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS

**WEEDONE® LV6 EC BROADLEAF HERBICIDE**

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY DESCRIPTION

Product Name: Nufarm Weedone LV6 EC Broadleaf Herbicide

Synonyms: 2,4-D 2EHE; 2,4-D IOE; 2,4-Dichlorophenoxyacetic acid, isooctyl (2-ethylhexyl) ester.

EPA Reg. No.: 71368-11

Company Name: Nufarm Americas, Inc.
Burr Ridge, IL 60521

Phone Numbers: **For Chemical Emergency, Spill, Leak, Fire, Exposure, Or Accident, Call CHEMTREC Day or Night: 1-800-424-9300.**
For Medical Emergencies Only, Call 877-325-1840.

Date: March 12, 2002

Revisions: New or updated information in all sections.

Reasons for Revisions: General revision utilizing more specific data.

Supersedes: March 31, 2000

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS REG. NO.	% BY WEIGHT
Acetic acid, (2,4-dichlorophenoxy)-, isooctyl (2-ethylhexyl) ester*	1928-43-4	86.6
Inert ingredients including emulsifier, petroleum distillates and other ingredients (trade secret)	Not applicable	13.4
*OSHA hazard		

3. HAZARDS IDENTIFICATION**Emergency Overview:**

Appearance and Odor: Amber liquid, phenolic odor.

Warning Statements: CAUTION. Keep out of reach of children. Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid breathing vapors or spray mist. Do not get in eyes, on skin or on clothing.

Potential Adverse Health Effects:

Likely Routes of Exposure: Inhalation, eye and skin contact.

Eye Contact: Minimally irritating.

Skin Contact: Minimally irritating. Overexposure by skin absorption may cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness, muscle spasms. May cause allergic reaction in sensitive individuals.

Inhalation: Harmful if inhaled. May cause symptoms similar to those from ingestion.

Ingestion: Harmful if swallowed. May cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness, muscle spasms.

Medical Conditions Possibly Aggravated By Exposure: Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

Subchronic (Target Organ) Effects: (An adverse effect with symptoms that develop slowly over a long period of time): Repeated overexposure may cause effects to liver, kidneys, blood chemistry, and gross motor function. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses of 2,4-D for prolonged periods.

Chronic Effects/Carcinogenicity: Prolonged overexposure can cause liver, kidney and muscle damage. The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as a class 2B carcinogen, the category for limited evidence for carcinogenicity in humans. However, more current 2,4-D lifetime feeding studies in rats and mice did not show carcinogenic potential. The USEPA has given a class D classification (not classifiable as to human carcinogenicity).

Reproductive Toxicity: No impairment of reproductive function attributable to 2,4-D has been noted in laboratory animal studies.

Developmental Toxicity: Studies in laboratory animals with 2,4-D have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals.

Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that 2,4-D is not mutagenic.

4. FIRST AID MEASURES

If swallowed: Do not induce vomiting. If patient is conscious and alert, give 2 to 3 glasses of water to drink. Do not give anything by mouth to an unconscious person. Get medical attention.

If on skin: Immediately wash skin with plenty of soap and water, if available.

If in eyes: Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Get medical attention, preferably an ophthalmologist.

If inhaled: Remove to fresh air. If not breathing, give artificial respiration. Administer oxygen if necessary. Get medical attention.

Note to Physician: This product contains petroleum distillates. If large amounts (greater than 1 ml/kg body weight) of this product have been ingested, the stomach should be evacuated by gastric intubation with the aid of a cuffed endotracheal tube to prevent aspiration of petroleum distillates and possible chemical pneumonia. After removal of stomach contents, wash stomach by instilling 30 to 50 grams of activated charcoal in 3 to 4 ounces of water through the stomach tube and again remove stomach contents. Avoid oily laxatives.

This product contains a phenoxy herbicidal chemical. There is no specific antidote. All treatments should be based on observed signs and symptoms of distress in the patient. Overexposure to materials other than this product may have occurred.

Myotonic effects may include muscle fibrillations, myotonia, and muscular weakness. Ingestion of massive doses may result in persistent fall of blood pressure. Myoglobin and hemoglobin may be found in urine. Elevations in lactate dehydrogenase (LDH), SGOT, SGPT and aldolase indicate the extent of muscle damage. It has been suggested that overexposure in humans may affect both the central and peripheral nervous systems. The acute effects on the central nervous system resemble those produced by alcohol or sedative drugs. In isolated cases, peripheral neuropathy and reduced nerve conduction velocities have been reported although these observations may be related to other factors. Gas-liquid chromatography for detecting and measuring chlorophenoxy compounds in blood and urine may be useful in confirming and assessing the magnitude of chlorophenoxy absorption.

5. FIRE FIGHTING MEASURES

Flash Point: 218° F (103° C) by Seta-Flash closed cup and ASTM D3278.

Autoignition Temperature: Not determined.

Flammability Limits: Not determined.

Extinguishing Media: Recommended (large fire): foam, water spray. Recommended (small fires): dry chemical, carbon dioxide.

Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion hazards: When heated above the flash point, this material emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mist or spray may be flammable at temperatures below the flash point. Under fire conditions, toxic, corrosive fumes are emitted. Containers will burst from internal pressure under extreme fire conditions.

Hazardous Decomposition Materials (Under Fire Conditions): Hydrogen chloride, other chlorine compounds, oxides of nitrogen and oxides of carbon.

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Containment of Spill: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Cleanup and Disposal of Spill: Pump any free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. (See Section 13.)

Environmental and Regulatory Reporting: Prevent material from entering public sewer system or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of top soil. The affected area should be removed and placed in an appropriate container for disposal. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Handling:

Handle containers carefully to avoid damage and spills.

Storage:

Store in original container in a dry secured storage area. Do not contaminate water, food or feed by storage or disposal. Avoid storage in close proximity to insecticides, fungicides, fertilizers and seeds. Keep container tightly closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

General:

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended usage, including maintenance and repair of equipment. Contact personal protective equipment manufacturers for assistance with selection, use and maintenance of such equipment.

Personal Protective Equipment:

Respiratory Protection: When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations. Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA or ANSI

standard(s): Air-purifying (half-mask/full-face) respirator with cartridges/canister approved for use against pesticides. Under conditions immediately dangerous to life or health, or emergency conditions with unknown concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.

Eye/Face Protection: Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material. Eye contact should be prevented through use of protective eyewear such as chemical safety glasses with side shields or splash proof goggles. An emergency eye wash should be readily accessible to the work area.

Skin Protection: Skin contact should be avoided through the use of permeation resistant clothing, gloves and footwear, selected with regard for use conditions and exposure potential. An emergency shower should be readily accessible to the work area. Consider both durability and permeation resistance of clothing.

Work Practice Controls: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.

Exposure Guidelines:

Exposure Limits:	OSHA PEL*	ACGIH TLV®*	STEL	Units
Acetic acid, (2,4-Dichlorophenoxy)-, isooctyl (2-ethylhexyl) ester	10**	10**	ND	mg/m ³

*8-hour TWA unless otherwise noted.

**Based on adopted limit for 2,4-D.

Ventilation:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

9. PHYSICAL AND CHEMICAL PROPERTIES

NOTE: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

Physical Appearance:	Amber liquid.
Odor:	Characteristic phenolic.
pH:	Not Available.
Specific Gravity:	Approximately 1.13
Water Solubility:	Product is emulsifiable in water.
Melting Point Range:	Not Available.
Boiling Point Range:	Not Available. Based on components, expected to be >200°C.
Vapor Pressure:	3.6×10^{-6} mm Hg @ 25°C (data on 2,4-D 2EHE)
Molecular Weight:	333.27 (data on 2,4-D 2EHE)

10. STABILITY AND REACTIVITY

Chemical Stability: This material is stable under normal handling and storage conditions described in Section 7.

Conditions To Be Avoided: Excessive heat.

Incompatibility With Other Materials: Strong oxidizing agents: bases, acids.

Hazardous Decomposition Products:

Decomposition Type: Thermal
Decomposition Products: Hydrogen chloride, other chlorine compounds, oxides of carbon and nitrogen.

Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological Data:

Data on this product:

Eye Irritation: Minimally irritating (Rabbit).

Skin Irritation: Slightly irritating (Rabbit).

Dermal: Slightly toxic. (Rabbit LD₅₀ >2020 mg/kg).

Inhalation: Slightly toxic. (Rat 4-hr LC₅₀: >5.12 mg/L)

Oral: Slightly toxic. (Rat LD₅₀ 1380 mg/kg).

This product contains substances that are considered to be probable or suspected human carcinogens as follows:

Ingredients Name	Regulatory Agency Listing As Carcinogen			
	OSHA	IARC	NTP	ACGIH
Chlorophenoxy herbicides	No	2B	No	No

(Also see Section 3.)

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:

Data on 2,4-D 2EHE or EC formulation:

96-hr LC₅₀ Bluegill: >5 mg/l

96-hr LC₅₀ Rainbow Trout: 7.2 mg/l

48-hr EC₅₀ Daphnia: >5 mg/l

Avian Toxicity:

Data on 2,4-D 2EHE:

Bobwhite Quail Dietary LC₅₀: >5620 ppm

Mallard Duck 8-day Dietary LC₅₀: >5620 ppm

Environmental Fate:

In representative laboratory and field studies, 2,4-D 2EHE rapidly hydrolyzed to parent acid. The typical half-life of the resultant 2,4-D acid ranged from a few days to a few weeks.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Pesticide wastes are toxic. Improper disposal of excess pesticide is a violation of Federal Law and may contaminate ground water. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling and Disposal:

Do not reuse empty container. Triple rinse (or equivalent) adding rinsate to application equipment. Then offer empty container for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

14. TRANSPORTATION INFORMATION

NOTE: Information is for surface transportation of package sizes generally offered and does not address regulatory variations due to changes in package size, mode of shipment or other conditions.

Packages containing less than 18.5 gallons of this product are generally not regulated. For packages containing 18.5 gallons or higher:

DOT Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(2,4-D ESTER), RQ (2,4-D ESTER)
DOT Hazard Class / I.D. No.: 9 / UN3082
DOT Label: Class 9
U.S. Surface Freight Classification: Weed killing compound, N.O.I.B.N

15. REGULATORY INFORMATION**Federal Regulations:**

TSCA Inventory: This product is excepted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):

Fire:	Reactive:	Release of Pressure:	Acute Health:	Chronic Health:
No	No	No	Yes	Yes

Section 313 Toxic Chemical(s):

ACETIC ACID, (2,4-DICHLOROPHENOXY)-, 2-ETHYLHEXYL ESTER, CAS NO. 1928-43-4 (86.6% by weight in product)

Reportable Quantity (RQ) under U.S. CERCLA:

Ingredient	RQ
ACETIC ACID, (2,4-DICHLOROPHENOXY)-, 2-ETHYLHEXYL ESTER	100 lbs

Selected State Regulations:

This product contains the following components that are regulated under California Proposition 65:

Ingredient Name	Cancer List	Reproductive List	Risk Level (ug/day)	
			California	Nufarm
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

16. OTHER INFORMATION

National Fire Protection Association (NFPA®) Hazard Ratings:

Ratings for This Product		Key to Ratings	
2	Health Hazard	0	Minimal
1	Flammability	1	Slight
0	Instability	2	Moderate
		3	Serious
		4	Severe

Abbreviations and Acronyms Not Defined Elsewhere:

ACGIH	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
DOT	Department of Transportation
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
IARC	International Agency for Research on Cancer
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
SARA	Superfund Amendments and Reauthorization Act of 1986
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
USEPA	U.S. Environmental Protection Agency

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

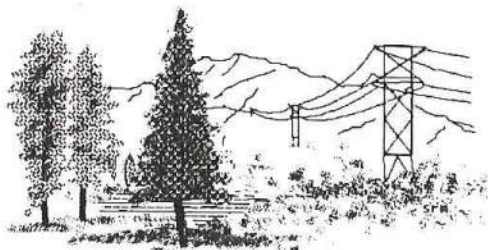
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2,4-D

Pesticide Fact Sheet

Prepared for the U.S. Department of Agriculture, Forest Service by
Information Ventures, Inc.



This fact sheet is one of a series issued by the Forest Service for their workers and the general public. It provides information on forest and land management uses, environmental and human health effects, and safety precautions for the herbicide 2,4-D and its formulations. Unless otherwise stated, the toxicity data presented in this fact sheet refer to the active ingredient, 2,4-D. When included, data on formulated products will be specifically identified. A list of definitions is included in Section VIII of the fact sheet.

I. Basic Information

Common name: 2,4-D

Chemical name: 2,4-Dichlorophenoxyacetic acid

Herbicides containing 2,4-D use the amine salt or ester forms of the compound. Unless otherwise noted within the text of this fact sheet, "2,4-D" refers collectively to the acid, salt, amine, and ester forms. The amine and ester forms may differ in health-related activity and environmental fate and effects from the parent 2,4-D acid. Known differences are indicated in the text.

Common Product names: Hi-Dep®, Weedar® 64, Weed RHAP A-4D®, Weed RHAP A

Pesticide classification: herbicide and plant growth regulator

Registered Use Status: General Use

Formulations: Commercial 2,4-D products generally contain one or more inert ingredients. An inert ingredient is anything added to the product other than an active ingredient. Because of concern for human health and the environment, the U.S. Environmental Protection Agency (EPA) announced its policy on toxic inert ingredients in the Federal Register on April 22, 1987 (52 FR 13305). The intent of this policy is the regulation of inert ingredients. EPA's strategy for the implementation of this policy included the development of four lists of inerts based on toxicological concerns. Inerts of toxicological concern were placed on List 1. Potentially toxic inerts/high priority for testing were placed on List 2. Inerts of unknown toxicity were placed on List 3 and inerts of minimal concern were placed on List 4.

For pesticides containing List 1 inerts, the EPA has given the pesticide registrant the opportunity to reformulate the product to remove the List 1 inerts. If the registrant chooses not to reformulate the product, then the List 1 inerts must be identified on the product label. For List 2 inerts, the EPA is monitoring ongoing testing and gathering existing information on the potential adverse effects of these chemicals to determine if further regulatory action is required. The EPA has no particular regulatory plans for List 3 and List 4 inerts. The Forest Service will incorporate new data on inerts into updated fact sheets as it becomes available.

The contents of two 2,4-D formulations are listed below.

Weedar® 64 (liquid): dimethylamine salt of 2,4-D (46.8%) and inerts (53.2%)

HiDep® (liquid): dimethylamine salt of 2,4-D (33.2%) and diethanol-amine salt of 2,4-D (16.3%), plus ethylene glycol (10%) and other inerts (40.3%).

Residue assay methods: Spectrophotometry and gas liquid chromatography of derivatives with electron capture detection are available for residue assay.

II. Herbicide Uses

Registered forestry, rangeland, right-of-way uses: conifer release, noxious and poisonous weed control, range improvement, right-of-way maintenance, site preparation, aquatic weed control, general weed control, thinning, timber management, wildlife habitat improvement, range management, research and engineering, recreation management, fire-break management, and nursery stand improvement

Operational details:

Target Plants: 2,4-D is used to control broadleaf weeds, grasses and other monocots, woody plants, aquatic weeds, and non-flowering plants.

Mode of action: 2,4-D is a plant-growth regulator that stimulates nucleic acid and protein synthesis and affects enzyme activity, respiration, and cell division. It is absorbed by plant leaves, stems, and roots and moves throughout the plant. It accumulates in growing tips.

Method of application: aerial and ground spraying, lawn spreaders, cut surface treatments, foliar spray, basal bark spray; injection

Use rates: Use at a rate of 0.475 to 3.8 pounds active ingredient per acre.

Use Precautions:

Always read all of the information on the product label before using any pesticide. Read the label for application restrictions.

Timing Of Application: Apply when weeds are small and actively growing and prior to bud stage. Perennial weeds should be near the bud stage, but not flowering at application. Biennial species should be in the seedling to rosette stage. Tree root-collar injections should be made during the growing season.

Drift Control: 2,4-D has the potential to drift from the target site and damage desirable plants. Apply as near to the target as possible. Do not apply on windy days or when wind is blowing toward desirable plants. Use coarse sprays to minimize drift. Do not apply with hollow cone-type insecticide or other nozzles that produce fine spray droplets. Decrease pounds of pressure at the nozzle tips. Increase the volume of spray mix per acre.

III. Environmental Effects/Fate

Soil:

- **Residual Soil Activity:** 2,4-D may remain active for one to six weeks in the soil.
- **Adsorption:** Over time, 2,4-D will bind to organic matter in soil. Soil high in organic matter will bind 2,4-D the most readily.
- **Persistence and Agents of Degradation:** 2,4-D is not persistent in soil. At its highest application rate it persists for 30 days in soil. 2,4-D is rapidly degraded in soil, especially by soil microorganisms. It degrades more rapidly under warm, moist conditions. It is also taken up from the soil by target plants. Some forms of 2,4-D will evaporate from the soil. 2,4-D will degrade to half of its original concentration in several days.
- **Metabolites/Degradation Products and Potential Environmental Effects:** In soil, 2,4-D may be metabolized by microbes in steps to 2,4-dichlorophenol and 4-chlorophenol and then ultimately to harmless forms.

Water:

- **Solubility:** The 2,4-D acid form, the oil-soluble amine salt and low-volatile ester do not dissolve well in water. Other amine salts dissolve very well in water.
- **Potential For Leaching Into Ground-Water:** 2,4-D has only limited potential to contaminate ground-water. 2,4-D ranges from being mobile to highly mobile in sand, silt, loam, clay loam, and sandy loam. However, it is unlikely to be a ground-water contaminant due to the rapid degradation of 2,4-D in most soils and rapid uptake by plants. Most reported 2,4-D ground-water contamination has been associated with spills or other large sources of 2,4-D release.
- **Surface Waters:** Maximum concentrations of 2,4-D applied to surface water are reached in one day. 2,4-D residues dissipate rapidly, especially in moving water. 2,4-D residues may be detected in still water after 6 months. Do not apply 2,4-D directly to water or wet-lands such as swamps, bogs, marshes, and potholes except as specified for certain aquatic

uses. Do not contaminate water when disposing of equipment wash waters.

Air:

- **Volatilization:** The tendency of 2,4-D to evaporate is dependent on the chemical form used. Forms with the least tendency to evaporate include the acid, inorganic salt, amines and long chain esters; the oil-soluble amines are least volatile. These forms may be used near desirable vegetation if spray drift is prevented. Other ester formulations evaporate readily and should not be used near desirable vegetation.
- **Potential For By-Products From Burning of Treated Vegetation:** The burning of vegetation treated with 2,4-D has not generated detectable 2,4-D byproducts in the field.

IV. Ecological Effects

Non-Target Toxicity:

- **Soil Microorganisms:** 2,4-D has no effect on microorganisms at recommended field application rates. At higher levels, 2,4-D suppresses soil fungi and nitrogen-fixing algae.
- **Plants:** 2,4-D is highly toxic to many nontarget plants.
- **Aquatic Animals:** 2,4-D forms range from being practically nontoxic to highly toxic to fish and aquatic invertebrates. 2,4-D amine salt forms are generally non-toxic to fish. Those compounds most toxic to fish include the 2,4-D ester formulations, N-oleyl-1,3-propylenediamine salt, and the N,N-dimethyl-oleyl-linoleylamine. Those 2,4-D compounds that are most toxic to invertebrates are the ester and dimethyl amine formulations. Acute toxic level:

species	LC50	Source Table
invertebrates	0.1 to > 100 ppm	(Table II, Aquatic)
amphibians	8 to > 346 ppm	(Table II, Aquatic)
fish	0.3 to 2840 ppm	(Table II, Aquatic)

- **Terrestrial Animals:** 2,4-D forms range from being practically nontoxic to moderately toxic to birds. The 2,4-D butyl ester is practically nontoxic to birds on both a short and long term basis. 2,4-D is relatively nontoxic to honey bees. The ester formulations are the least toxic to insects. Mammals have moderate sensitivity to 2,4-D exposure. Acute toxic level:

species	LD50	Source Table
birds	472 to >2000 mg/kg	(Table II, Avian)
mammals	639 to >5000 mg/kg	(Table II, Mammalian)

- **Threatened And Endangered Species:** Improper use of 2,4-D may kill or damage sensitive plant species. Animals may be affected by the loss of this vegetation. 2,4-D may be a hazard to endangered species if it is applied to areas where they live.

V. Toxicology Data

Acute toxicity:

- **Acute oral toxicity:** In tests in male and female rats with the dimethylamine salt of 2,4-D, the acute oral LD50 was 1100-4650 mg/kg (Toxicity Category III). The diethanolamine salt of 2,4-D was in the range of Toxicity Category III-IV. The butoxyethyl, isooctyl, and isobutyl esters of 2,4-D were in the range of Toxicity Category III. The isopropyl ester of 2,4-D was in the range of Toxicity Category II. (See Table I, Oral)

Acute dermal toxicity: The acute dermal (skin) LD50 of the dimethylamine salt of 2,4-D was >2000 mg/kg in rabbits

(Toxicity Category III). The diethanolamine salt of 2,4-D was in the range of Toxicity Category III-IV. The isooctyl, isobutyl, isopropyl, and butoxyethyl esters of 2,4-D were all in the range of Toxicity Category III. (See Table I, Dermal)

- **Primary irritation score:** In laboratory tests in rabbits, the dimethylamine salt of 2,4-D had a primary irritation score of 0.11-1.48 and was a minimal irritant (Toxicity Category III-IV). The diethanolamine salt of 2,4-D was in the range of Toxicity Category III-IV. The isopropyl and butoxyethyl esters of 2,4-D were all in the range of Toxicity Category III. (See Table I, Skin Irritation)
- **Primary eye irritation:** In laboratory tests in rabbits, the dimethylamine and diethanolamine salts of 2,4-D were severe eye irritants (Toxicity Category I). The isopropyl and butoxyethyl esters of 2,4-D were in the range of Toxicity Category III. (See Table I, Eye Irritation)
- **Acute inhalation:** In laboratory tests with rats, the dimethylamine and diethanolamine salts of 2,4-D did not cause deaths at the highest doses tested (Toxicity Category > II). The diethanolamine salt of 2,4-D was in the range of Toxicity Category III-IV. The isopropyl and butoxyethyl esters of 2,4-D were in the range of Toxicity Category III. (See Table I, Inhalation)

Chronic toxicity:

- **Carcinogenicity:** In two year dietary tests in mice and rats, 2,4-D was not oncogenic (tumor causing). Toxic effects in the animals' kidneys were seen at low dosages in these tests. Additional studies are underway on the carcinogenicity of 2,4-D.
- **Developmental:** Laboratory tests of 2,4-D in pregnant rats demonstrated no evidence of teratologic effects (birth defects). At the highest dose tested (75 mg/kg/day), rat fetuses showed delayed bone formation. An additional test in rabbits is required by the Environmental Protection Agency. Some other studies have shown evidence of toxic effects to fetuses, but no birth defects.
- **Reproduction:** A two-generation reproduction study in rats did not show any adverse effects on fertility or reproduction at doses up to 80 mg/kg/day of 2,4-D. A reduction in rat pup weight was seen when the parents were exposed to as little as 20 mg/kg/day.
- **Mutagenicity:** 2,4-D was not mutagenic (able to cause genetic damage) in most of the studies reviewed by the Forest Service. However, the Environmental Protection Agency requires studies to be submitted to them on the mutagenicity of 2,4-D.

The data reported above are results of animal studies which the Environmental Protection Agency has evaluated in support of the registration of 2,4-D, or which have been evaluated by the Forest Service. These data are used to make inferences relative to human health.

HAZARD: Based on the results of animal studies with 2,4-D, direct contact of the eyes to some 2,4-D formulations may cause irreversible eye damage. Some 2,4-D formulations may cause skin irritation. Skin exposure to 2,4-D may affect the nervous system. At occupational exposure levels, 2,4-D has limited potential to pose a risk to human fertility, reproduction, or the development of off-spring. Exposure to 2,4-D has limited potential to cause cancer, although this risk is still being evaluated.

VI. Human Health Effects

Acute toxicity (poisoning):

Reported effects: Nervous system damage has resulted from absorption of 2,4-D through the skin. This damage to the nerves may be irreversible. Prolonged inhalation may cause dizziness, burning in chest or coughing. Large doses of 2,4-D have caused digestive distress and effects on the neuromuscular system. Ingestion of large quantities of 2,4-D formulations has led to death within 1 to 2 days of poisoning. Poisoning by lower doses of 2,4-D has led to symptoms, such as neuromuscular problems, that lasted for several months after ingestion. Existing medical conditions such as asthma or skin lesions may be aggravated.

Chronic toxicity:

Reported effects: Long-term exposure to 2,4-D has been reported to cause liver, kidney, digestive, muscular, or nervous system damage. Symptoms may include weakness, fatigue, headache, dizziness, loss of appetite, nausea, eye and nasal irritation, skin irritation, hypertension, and slowed heart rate.

Potential for adverse health effects from contacting or consuming treated vegetation, water or animals: To keep residues

of 2,4-D out of meat or milk, do not graze dairy cattle on treated areas for 7 days after application. Also, do not cut hay for 30 days and do not slaughter meat animals for 3 days. Contact with dried residues on vegetation is not expected to be hazardous.

Potential for adverse health effects from inert ingredients contained in the formulated product: Inert ingredients found in 2,4-D products may include ethylene glycol, methanol, sequestering agents, petroleum hydrocarbons, and surfactants. Ethylene glycol is moderately toxic to humans; it may cause tearing, anesthesia, headache, cough, respiratory stimulation, nausea or vomiting, pulmonary, kidney and liver changes. Methanol is moderately toxic to humans; it may cause damage to the optic nerve, tearing, headache, cough, difficult breathing, other respiratory effects, nausea, or vomiting.

Health effects of exposure to formulated products: Some commercially-formulated 2,4-D products have LD50s which are much higher than the 2,4-D acid. This indicates that these formulations may have considerably less acute toxicity than the acid form. However, exposure to these formulated products may have other health effects similar to those reported for 2,4-D alone or for inert ingredients in commercial formulations.

Health effects associated with contaminants: Some 2,4-D formulations may be contaminated with halogenated dibenzo-p-dioxins (but not TCDD), dibenzofurans, or N-nitrosamines. Dibenzodioxins and dibenzofurans may cause disorders of the skin, blood and gastrointestinal tract; they may also cause headaches, numbness, birth defects, or fetal toxicity. Nitrosamines are carcinogenic.

Health effects associated with other formulations: 2,4-D is also available in commercial formulations containing other herbicide ingredients. Approximately 1500 products containing 2,4-D are registered with the U.S. EPA for general use. Some of the herbicides combined with 2,4-D include: 2,4-DP, picloram, dicamba, mecoprop, MSMA, DMA, prometon, clopyralid, and MCPP. The information in this fact sheet only applies to 2,4-D. Consult other fact sheets for information on the other herbicides.

Health risk management procedures: The Forest Service has evaluated health effects data in the development of both pesticide background statement documents and environmental impact statements for pesticide use on forest lands. These health effects evaluations have taken into consideration the potential for both worker and public exposure from Forest Service operations. This information has been used in assessing health risks and consequently in formulating protective measures to reduce risk to forest workers and to the public. Section VII of this fact sheet, Safety Precautions, provides guidance for the safe handling and use of 2,4-D.

VII. Safety precautions:

Signal word and definition:

Weedar® 64 and Hi-Dep®: DANGER - MAY BE FATAL IF ABSORBED THROUGH THE SKIN. CAUSES PERMANENT EYE DAMAGE.

Protective Precautions for Workers: 2,4-D is considered "highly toxic" due to its hazard to the eyes. Workers should wear goggles or a face shield, protective gloves, and protective clothing when handling 2,4-D products. Avoid breathing vapor or spray mist. Use a NIOSH/MSHA approved respirator for protection from pesticide mists. Under emergency conditions, workers should wear a positive-pressure self-contained breathing apparatus. When mixing or loading 2,4-D, workers should wear chemical-resistant gloves. Gloves should be washed with soap and water before removal. Remove contaminated clothing and wash before reuse. Workers should wash thoroughly with soap and water before eating, drinking or using tobacco. Individuals with skin lesions, disease, or sensitivity should avoid contact with 2,4-D. No delay after spray has dried is necessary before workers can reenter the treated area. There is some uncertainty as to 2,4-D's reproductive and developmental effects. As a precaution, therefore, the Forest Service advises that female workers should not be employed in back-pack or hack-and-squirt applications of 2,4-D.

Medical Treatment Procedures (Antidotes): If on skin wash promptly with soap and water; rinse thoroughly if irritation develops. Get medical attention. In case of eye contact, immediately hold eyelids open and flush eyes with plenty of water for 15 minutes. Get medical assistance at once. If swallowed, promptly drink plenty of milk, egg white, gelatin solution, or water; do not drink alcoholic beverages. If person is conscious, induce vomiting. Get medical attention at once. If inhaled move victim to fresh air and apply respiration if necessary. **In case of emergency, call your local poison control center for advice.**

Handling, Storage, And Disposal: The mixing and loading of spray mixtures into the spray equipment must be carried out on an impervious pad such as a concrete slab or plastic sheeting large enough to catch any spilled material. Improper disposal of excess herbicide, spray mixture, or rinse water is a violation of Federal law and may contaminate ground-water. Do not discharge effluent containing 2,4-D into lakes, streams, ponds, estuaries, oceans, public waters, or sewer systems. Do not apply directly to water.

Emergency (Spill) Hazards And Procedures: If spills occur, contain the spill by using an absorbent material such as sand, earth or synthetic absorbent. Dike large spills using absorbent or impervious materials such as sand or clay. If spilled on the ground, the affected area should be removed to a depth of one or two inches. Dispose of the contaminated absorbent material and earth by placing in a plastic bag and following disposal instructions on the label. **In the case of a large spill, call CHEMTREC at 1-800-424-9300 for advice.**

VIII. Definitions

adsorption - the process of attaching to a surface
avian - of, or related to, birds
basal treatment - applied to the stem of a plant just above the soil
carcinogenicity - ability to cause cancer
dermal - of, or related to, the skin
ecotoxicology - the study of the effects of environmental toxicants on populations of organisms originating, being produced, growing, or living naturally in a particular region or environment.
ecotoxicological - related to the study of the effects of environmental toxicants on populations of organisms originating, being produced, growing, or living naturally in a particular region or environment.
formulation - the form in which the pesticide is supplied by the manufacturer for use
half-life - the time required for half the amount of substance to be reduced by natural processes
herbicide - a substance used to destroy plants or to slow down their growth
LC50 - the concentration in air, water, or food which will kill approximately 50% of the subjects
LD50 - the dose which will kill approximately 50% of the subjects
leach - to dissolve out by the action of water
mg/kg - milligrams of the substance per kilogram of body weight
microorganisms - living things too small to be seen without a microscope
mutagenicity - ability to cause genetic changes
non-target - animals or plants other than the ones which the pesticide is intended to kill
persistence - tendency of a pesticide to remain in the environment after it is applied
ppm - parts per million
residual activity - the remaining amount of activity as a pesticide
volatility - the tendency to become a vapor at relatively low temperature

IX. Additional Reading

1. Final Environmental Impact Statement. Managing Competing and Unwanted Vegetation. Forest Service, U.S. Department of Agriculture, Portland, OR, 1988.
2. Final Environmental Impact Statement. Vegetation Management for Reforestation. Forest Service, U.S. Department of Agriculture, California, 1989.
3. Final Environmental Impact Statement. Vegetation Management in the Coastal Plain/Piedmont. Forest Service, U.S. Department of Agriculture, Atlanta, GA. Management Bulletin R8-MB-23, 1989.
4. Guidance for the Reregistration of Pesticide Products Containing 2,4-Dichlorophenoxyacetic Acid (2,4-D) as the Active Ingredient. Office of Pesticides and Toxic Substances, U.S. Environmental Protection Agency, Washington, DC. EPA Publication No. 540/RS-88-115, 1988.
5. Pesticide Background Statements. Volume I. Herbicides. Forest Service, U.S. Department of Agriculture, Agriculture Handbook Number 633, 1984.
6. Pesticide Fact Sheet: 2,4-Dichlorophenoxyacetic Acid. Office of Pesticide Programs, U.S. Environmental Protection Agency, Washington, DC. EPA Publication No. 540/FS-88-114, 1988.

X. Toxicity Categories

Tables of Categories of Toxicity

Table I: Human Hazards

Route of Administration	Hazard
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Category	Signal word	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (mg/L)	Eye Irritation	Skin Irritation
I	DANGER Poison	0-50	0-200	0-0.2	corrosive: corneal opacity not reversible within 7 days	corrosive
II	WARNING	>50-500	>200-2000	>0.2-20	corneal opacity reversible within 7 days; irritation persisting for 7 days	severe irritation at 72 hours
III	CAUTION	>500-5000	>2000-20,000	>2.0-20	no corneal opacity; irritation reversible within 7 days	moderate irritation at 72 hours
IV	none	>5000	>20,000	>20	no irritation	mild or slight irritation at 72 hours

40 CFR 162.10 (h) (1), July 3, 1975

Table II: Ecotoxicological Categories

Toxicity Category	Mammalian (Acute Oral)* mg/kg	Avian (Acute Oral)* mg/kg	Avian (Dietary)- ppm	Aquatic Organisms† ppm
very highly toxic	<10	<10	<50	<0.1
highly toxic	10-50	10-50	50-500	0.1-1
moderately toxic	51-500	51-500	501-1000	>1-10
slightly toxic	501-2000	501-2000	1000-5000	>10-100
practically non-toxic	>2000	>2000	>5000	>100

* Reflects dose given to test animals and is based on body weight of the test animal.

_ Concentration in the diet. Unrelated to body weight of the test animal. Measure of environmental exposure.

† Concentration in water. Unrelated to body weight of test animal. Measure of environmental exposure.

Adapted from Insecticides, Brooks, H.L. et al. (1973) Cooperative Extension, Kansas State University, Manhattan, Kansas
For more information on 2,4-D contact your local Forest Service, Bureau of Land Management, or Bonneville Power Administration office.

Prepared by Information Ventures, Inc. under U.S. Forest Service Contract. November 1995

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Carbaryl

Forest and Underbrush

Pesticide Fact Sheet

Prepared for the U.S. Department of Agriculture, Forest Service by
Information Ventures, Inc.

This fact sheet is one of a series issued by the Forest Service, the Bureau of Land Management, and the Bonneville Power Administration for their workers and the general public. It provides information on forest and land management uses, environmental and human health effects, and safety precautions for the insecticide carbaryl and its formulations. Unless otherwise stated, the toxicity data presented in this fact sheet refer to the active ingredient, carbaryl. When included, data on formulated products will be specifically identified. A list of definitions is included in Section VIII of the fact sheet.

I. Basic Information

Common name: Carbaryl

Chemical name: 1-naphthyl N-methylcarbamate

Common Product names: Sevin®, Chipco®

Pesticide classification: insecticide

Registered Use Status: "General Use"

Formulations: Commercial carbaryl products generally contain one or more inert ingredients. An inert ingredient is anything added to the product other than an active ingredient. Because of concern for human health and the environment, the U.S. Environmental Protection Agency (EPA) announced its policy on toxic inert ingredients in the Federal Register on April 22, 1987 (52 FR 13305). The intent of this policy is the regulation of inert ingredients. EPA's strategy for the implementation of this policy included the development of four lists of inerts based on toxicological concerns. Inerts of toxicological concern were placed on List 1. Potentially toxic inerts/high priority for testing were placed on List 2. Inerts of unknown toxicity were placed on List 3 and inerts of minimal concern were placed on List 4.

For pesticides containing List 1 inerts, the EPA has given the pesticide registrant the opportunity to reformulate the product to remove the List 1 inerts. If the registrant chooses not to reformulate the product, then the List 1 inerts must be identified on the product label. For List 2 inerts, the EPA is monitoring ongoing testing and gathering existing information on the potential adverse effects of these chemicals to determine if further regulatory action is required. The EPA has no particular regulatory plans for List 3 and List 4 inerts. The Forest Service will incorporate new data on inerts into updated fact sheets as it becomes available.

The contents of 2 carbaryl formulations are listed below.

Sevin® 50W: carbaryl (50%), crystalline silica (1.8%), and other ingredients (trade secret)

Chipco Sevimol®: carbaryl (40%), formaldehyde (0.4%), and other ingredients (trade secret)

Residue assay methods: Gas/liquid chromatography and high performance liquid chromatography methods are available for residue assay.

II. Insecticide Uses

Registered forestry, rangeland, right-of-way uses: insect control on forest and rangelands

Operational details:

Target Plants: Carbaryl is a broad spectrum insecticide. Forestry uses include control of western spruce budworm, pandora moth, various nursery and seed orchard insects, mountain pine beetle, and western pine beetle. Rangeland uses include control of grasshoppers, black grass bug, mormon cricket, range caterpillar and range crane fly.

Mode of action: Carbaryl has contact and stomach action on insects, and has slight systemic effects. It is also a weak cholinesterase inhibitor in insects.

Method of application: ground and aerial spraying

Use rates: Use at 0.53 to 6.4 pounds of active ingredient per acre

Special Precautions:

Always read all of the information on the product label before using any pesticide. Read the label for application restrictions.

Timing Of Application: Timing of application depends on the insect to be controlled. Consult label for application information.

Drift Control: Do not allow careless application or spray drift. Do not apply if wind conditions favor drift. Do not apply or allow drift to blooming crops or weeds if bees are foraging in the treatment area.

III. Environmental Effects/Fate

Soil:

- **Residual Soil Activity:** Carbaryl may be active in the soil. Small amounts of carbaryl are absorbed by plant roots.
- **Adsorption:** Carbaryl is adsorbed by soil particles.
- **Persistence and Agents of Degradation:** The persistence of carbaryl in the soil is moderate to short. The half-life of carbaryl is generally less than 2 months. Carbaryl is degraded or broken down by both chemical and biological means.
- **Metabolites/Degradation Products and Potential Environmental Effects:** The main break-down product of carbaryl in the soil is 1-naphthol, which is broken down further by soil microorganisms.

Water:

- **Solubility:** The solubility of carbaryl in water is low.
- **Potential For Leaching Into Ground-Water:** The potential for leaching is low.
- **Surface Waters:** Carbaryl has been found in surface waters. In water, carbaryl is broken down chemically, by sunlight, and by microorganisms. Carbaryl is not expected to persist in aquatic environments.

Air:

- **Volatilization:** Carbaryl does not evaporate easily.
- **Potential For By-Products From Burning of Treated Vegetation:** Information not available.

IV. Ecological Effects

Non-Target Toxicity:

- **Soil Microorganisms:** Carbaryl may have adverse effects on many soil microorganisms.
- **Plants:** Contact with non-target plants may injure some plants. Small amounts of carbaryl are absorbed by roots and leaves. Carbaryl acts as a plant growth regulator.
- **Aquatic Animals:** Carbaryl is moderately toxic to fish, and is highly toxic to aquatic invertebrate animals. It builds up (bioaccumulates) in fish at low rates. Carbaryl and its formulations have not been tested for chronic effects in aquatic animals. Acute toxic level:

species	LC50	Source Table
---------	------	--------------

fish	<1-10 ppm	(Table II, Aquatic)
water flea	6.4 ppb	(Table II, Aquatic)

- **Terrestrial Animals:** Carbaryl is slightly to moderately toxic to birds and mammals. It is extremely toxic to bees. Carbaryl and its formulations have not been tested for chronic effects in terrestrial animals. Acute toxic level:

species	LD50	Source Table
birds	<2000 mg/kg	(Table II, Avian)
bee	<0.2 micrograms/bee	---

- **Threatened and Endangered Species:** Carbaryl may be a hazard to endangered species if it is applied to areas where they live.

V. Toxicology Data

Acute toxicity:

- **Acute oral toxicity:** In tests in male and female rats, the acute oral LD50 was 255 mg/kg. (Toxicity Category II, Table I, Oral)
- **Acute dermal toxicity:** The acute dermal (skin) LD50 was greater than 2 grams/kilogram in rabbits. (Toxicity Category III, Table I, Dermal)
- **Primary irritation score:** : In laboratory tests in rabbits, carbaryl was not an irritant. (Toxicity Category IV, Table I, Skin irritation)
- **Primary eye irritation:** In laboratory tests in rabbits, carbaryl was a mild eye irritant. (Toxicity Category III, Table I, Eye irritation)
- **Acute inhalation:** No information available. The Environmental Protection Agency is requiring inhalation studies.

Chronic toxicity:

- **Carcinogenicity:** Laboratory tests in rats and mice fed up to 200 ppm (rats) or 400 ppm (mice) for 2 or 1.5 years did not show any evidence of carcinogenicity.
- **Developmental:** Studies with carbaryl in pregnant laboratory animals indicated that carbaryl is not a potential human teratogen (cause of birth defects). However, carbaryl showed teratogenic effects in studies in pregnant dogs. Differences in the metabolism of carbaryl between dogs and other animals may make the dog studies inappropriate for human health risk assessment.
- **Reproduction:** A three-generation reproduction study in rats did not show any adverse effects on fertility or reproduction at doses up to 200 mg/kg per day.
- **Mutagenicity:** Carbaryl was found to show weak mutagenicity (the ability to cause genetic damage).

The data reported above are results of animal studies which the Environmental Protection Agency has evaluated in support of the registration of carbaryl. These data are used to make inferences relative to human health.

HAZARD: Based on the results of animal studies, carbaryl does not cause cancer. Carbaryl is a weak mutagen and had only a low potential to cause birth defects. Carbaryl has little or no effect on fertility, reproduction, or development of offspring.

VI. Human Health Effects

Acute toxicity (poisoning):

Reported effects: Overexposure may cause salivation, watery eyes, pinpoint eye pupils, blurred vision, muscle tremors, difficult

breathing, excessive sweating, abdominal cramps, nausea, vomiting, diarrhea, weakness, and headache. Convulsion, unconsciousness and respiratory failure may occur in severe cases. Death has resulted from carbaryl intentionally taken in a suicide attempt.

Chronic toxicity:

Reported effects: Repeated overexposure may cause severe cholinesterase inhibition. Signs and symptoms are the same as those listed under acute toxicity. Workers regularly exposed to carbaryl should have preexposure and periodic checks of red blood cell cholinesterase levels.

Potential for adverse health effects from contacting or consuming treated vegetation, water or animals: The exposure levels a person could receive from these sources, as a result of routine operations, are below levels shown to cause harmful effects in laboratory studies.

Potential for adverse health effects from inert ingredients contained in the formulated product: Inert ingredients found in carbaryl formulations include formaldehyde, petroleum distillates, and crystalline silica (quartz). Formaldehyde is a possible carcinogen (cancer causing agent). Petroleum distillates are toxic if swallowed, and may cause chemical pneumonitis (inflammation of the lung). Inhalation of crystalline silica over a long period may cause silicosis; silica may be a carcinogen.

Health effects of exposure to formulated products: No information available.

Health effects associated with contaminants: No information available.

Health effects associated with other formulations: Some formulations of carbaryl also contain other insecticides, such as lindane. The information in this fact sheet only applies to carbaryl. Consult other sources for information on any other insecticides.

Health risk management procedures: The Forest Service has evaluated health effects data in the development of both pesticide background statement documents and environmental impact statements for pesticide use on forest lands. These health effects evaluations have taken into consideration the potential for both worker and public exposure from Forest Service operations. This information has been used in assessing health risks and consequently in formulating protective measures to reduce risk to forest workers and to the public. Section VII of this fact sheet, Safety Precautions, provides guidance for the safe handling and use of carbaryl.

VII. Safety precautions:

Signal word and definition:

Sevin® 50W: **Warning** - May be fatal if swallowed. May be harmful if inhaled.

Chipco Sevimol®: **Caution** - May be harmful if swallowed.

Protective Precautions for Workers: Avoid breathing dust or spray mist. Avoid contact with eyes, skin or clothing. Wear regular long sleeved work clothing and head covering. Change to clean clothing daily. Bathe and wash hair after each work day. Do not eat, drink, or use tobacco while working with carbaryl. Wash hands and face before eating, drinking or using tobacco. Wash thoroughly after handling.

Medical Treatment Procedures (Antidotes): If swallowed, induce vomiting. Get medical attention. For exposure to the eyes, flush with plenty of water. Get medical attention if irritation persists. For exposure to the skin, remove contaminated clothing and wash thoroughly with soap and water. Get medical attention if irritation persists. If inhaled, remove victim to fresh air, and get medical attention.

Note to Physician: Carbaryl is a moderate, reversible, cholinesterase inhibitor. Atropine is antidotal. Do not use 2-PAM, opiates or cholinesterase inhibiting drugs. **In case of emergency, call your local poison control center for advice.**

Handling, Storage, And Disposal: Carbaryl is stable under normal storage conditions. Store carbaryl in original container, in a cool, dry area. Do not store where temperatures frequently exceed 100 degrees F. Open dumping is prohibited. Wastes should be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food, animal feeds or seed by storage or disposal.

Emergency (Spill) Hazards And Procedures: Wear protective equipment including an approved respirator, chemical resistant gloves, full-body protective clothing, and goggles during spill cleanup. Spills of dry material should be scooped up using shovels

and placed in containers for disposal. Any remaining material should be cleaned from hard surfaces. Small spills of liquid material should be absorbed using an inert material such as sand. Dike large spills. Do not flush material to any waterway or public sewer system. If carbaryl is exposed to excessive heat, thermal decomposition (breakdown) may occur. Thermal decomposition products may be hazardous. **In the case of a large spill, call CHEMTREC at 1-800-424-9300 for advice.**

VIII. Definitions

adsorption - the process of attaching to a surface

avian - of, or related to, birds

carcinogenicity - ability to cause cancer

dermal - of, or related to, the skin

ecotoxicology - the study of the effects of environmental toxicants on populations of organisms originating, being produced, growing, or living naturally in a particular region or environment.

ecotoxicological - related to the study of the effects of environmental toxicants on populations of organisms originating, being produced, growing, or living naturally in a particular region or environment.

formulation - the form in which the pesticide is supplied by the manufacturer for use

half-life - the time required for half the amount of substance to be reduced by natural processes

insecticide - a substance used to kill or control insect pests

LC50 - the concentration in air, water, or food which will kill approximately 50% of the subjects

LD50 - the dose which will kill approximately 50% of the subjects

leach - to dissolve out by the action of water

mg/kg - milligrams of the substance per kilogram of body weight

microorganisms - living things too small to be seen without a micro-scope

mutagenicity - ability to cause genetic changes

non-target - animals or plants other than the ones which the pesticide is intended to kill

persistence - tendency of a pesticide to remain active after it is applied

ppb - parts per billion

ppm - parts per million

residual activity - the remaining amount of activity as a pesticide

volatility - the tendency to become a vapor at relatively low temperature

IX. Additional Reading

1. Pesticide Background Statements. Volume IV. Insecticides. Forest Service, U.S. Department of Agriculture. Agriculture Handbook No. 685, 1989.
 2. Pesticide Fact Sheet: Carbaryl. Office of Pesticide Programs, U.S. Environmental Protection Agency, Washington, DC. EPA Publication No. 540/FS-87-031, 1985.
 3. Guidance for the Registration of Pesticide Products Containing Carbaryl as the Active Ingredient. Office of Pesticide Programs, U.S. Environmental Protection Agency, Washington, DC. EPA Publication No. 540/RS-84-004, 1984.
-

X. Toxicity Categories

Tables of Categories of Toxicity

Table I: Human Hazards

Category	Signal word	Route of Administration			Hazard	
		Oral (mg/kg)	Dermal (mg/kg)	Inhalation (mg/L)	Eye Irritation	Skin Irritation
I	DANGER Poison	0-50	0-200	0-0.2	corrosive: corneal opacity not reversible within 7 days	corrosive
II	WARNING	>50-500	>200-2000	>0.2-20	corneal opacity reversible within 7 days; irritation persisting for 7 days	severe irritation at 72 hours
III	CAUTION	>500-5000	>2000-20,000	>2.0-20	no corneal opacity; irritation reversible within 7 days	moderate irritation at 72 hours
IV	none	>5000	>20,000	>20	no irritation	mild or slight irritation at 72 hours

40 CFR 162.10 (h) (1), July 3, 1975

Table II: Ecotoxicological Categories

Toxicity Category	Mammalian (Acute Oral)* mg/kg	Avian (Acute Oral)* mg/kg	Avian (Dietary)- ppm	Aquatic Organisms† ppm
very highly toxic	<10	<10	<50	<0.1
highly toxic	10-50	10-50	50-500	0.1-1
moderately toxic	51-500	51-500	501-1000	>1-10
slightly toxic	501-2000	501-2000	1000-5000	>10-100
practically non-toxic	>2000	>2000	>5000	>100

* Reflects dose given to test animals and is based on body weight of the test animal.

_ Concentration in the diet. Unrelated to body weight of the test animal. Measure of environmental exposure.

‡ Concentration in water. Unrelated to body weight of test animal. Measure of environmental exposure.

Adapted from Insecticides, Brooks, H.L. et al. (1973) Cooperative Extension, Kansas State University, Manhattan, Kansas
 For more information on Carbaryl contact your local Forest Service, Bureau of Land Management, or Bonneville Power Administration office.

Prepared by Information Ventures, Inc. under U.S. Forest Service Contract. November 1995

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APPENDIX H

EMWD GROUND WATER FLOW CHART



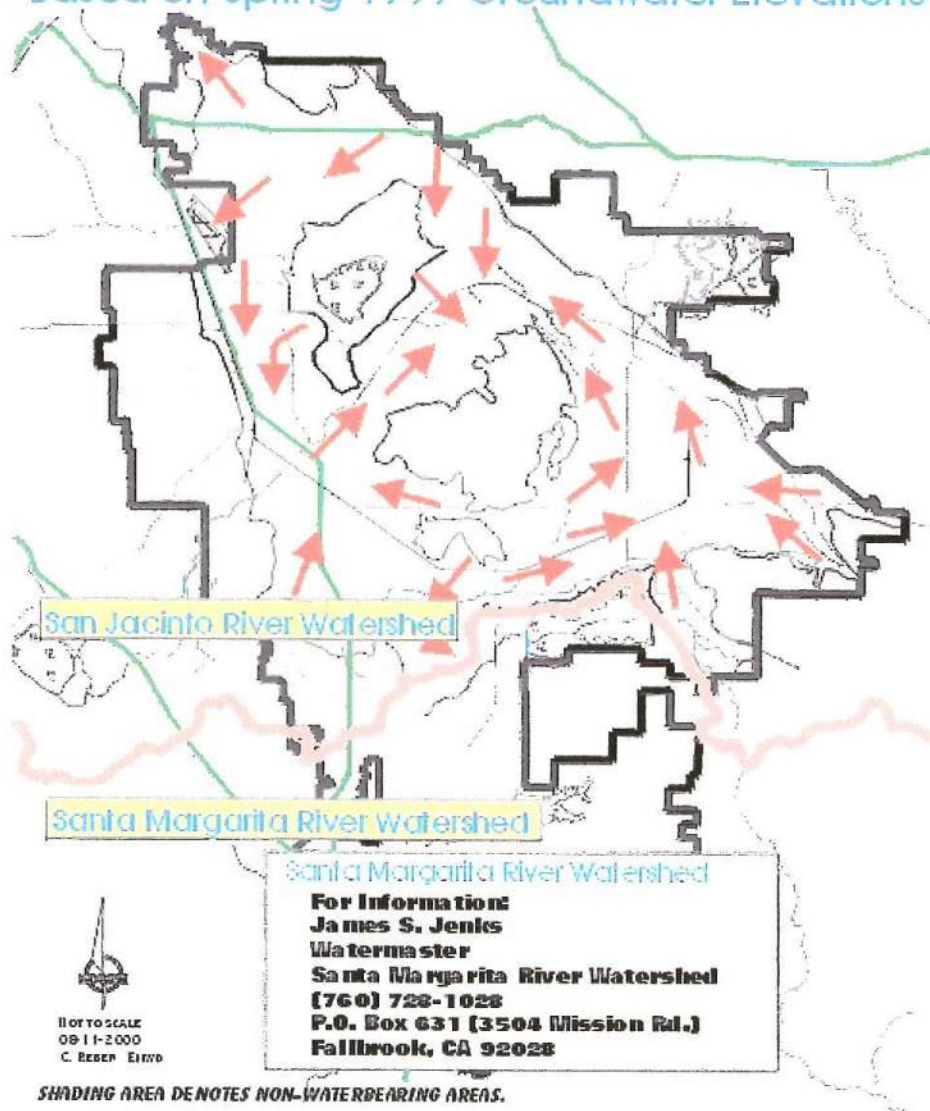
Groundwater Flow

[< Back to Where the Water Comes From](#)

EASTERN MUNICIPAL WATER DISTRICT

Direction of Groundwater Flow

Based on Spring 1999 Groundwater Elevations



[< Back to Where the Water Comes From](#)



IWS Environmental, Inc.
Environmental Management & Engineering

March 17, 2014

Mr. Richard Robotta
Benchmark Pacific
550 Laguna Road, Suite B
Carlsbad, California 92008

Subject/Project: Environmental Site Inspection
973 Acres, Vacant Land
South of Keller Road, West of 215 Freeway
Murrieta, California

Dear Mr. Robotta:

In February 2006, our company conducted a Phase I Environmental Assessment (ESA), of the above referenced property. At that time the property consisted of thirty-seven contiguous parcels comprising approximately 1,300 acres. In February of 2008 our firm conducted an additional ESA for 8.8 acres which was situated within the 1,300 acres which was not part of the original assessment. Both ESA's concluded there was a *"low probability the subject site has been significantly impacted by the presence of hazardous materials or waste that would have a negative impact on both health and the environment"*. Those assessments only noted a few small containers of paint and oil on the site located next to the rock house on the property which was occupied at that time.

Per your request, on February 14, 2014, our firm conducted a physical inspection of the property once again. The purpose of the inspection was to determine if any hazardous materials have been spilled or discarded on the property that may represent an environmental concern and alter the conclusions and recommendations presented in our two previous ESA's.

On February 26, 2014, we conducted a physical inspection of the subject site via accessible, unimproved roads and trails which intertwine the property. The purpose of this inspection was to identify any hazardous materials that may have been purposely spilled or discarded on the property subsequent to our last inspection of the site. It should be noted, that due to steep terrain and thick vegetation in many portions of the property, the visual inspection was limited to those areas accessible by vehicle or foot traffic. Those areas of the site inaccessible by vehicle or foot were viewed via binoculars for any unusual features or conditions.

Since our last inspection of the property in 2008, only a few minor changes have occurred on the site. The nursery which operated in the middle portion of the site is no longer present, and the rock house located east of the nursery is now vacant. It appears the level of use on the site by off-roaders, specifically motorcycles, has increased slightly. More small trails carved out by off-road motorcycles are now present on the property. IWS noticed a couple of isolated areas of the property that have been used for target practice as spent shell casing from fire arms discharge were observed on the ground.

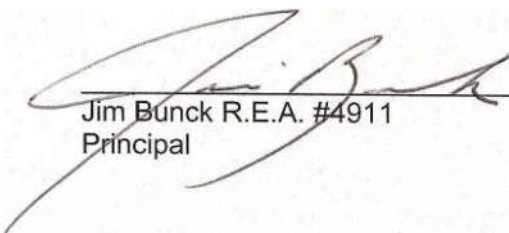
Litter and debris was present on the site, especially in those areas of the property accessible by vehicle. The litter and debris included the usual paper and plastics from food and drink items, along with discarded couches, beds, clothing, and other miscellaneous items. Each area where debris was observed was inspected to determine if the debris included any containers which may contain hazardous materials. Additionally, the inspection included any areas on the site where the soil appeared to be stained by hazardous material (oils, solvents, etc.).

None of areas where litter and debris was observed on the site contained any containers of hazardous materials. There were no areas observed on the property where hazardous materials have been discarded or spilled. Based upon our physical inspection, it appears the site is absent of any significant surface contamination which would represent an environmental concern. Furthermore, since the general land use characteristics of the subject property have not changed (buildings, development, etc.), subsequent to our last inspection of the site, the conclusions and recommendations presented in our previous Phase I's should remain valid at this time.

It should be noted this was a physical inspection of the property only. No database records or regulatory agency files were obtained or reviewed as part of this assessment. This letter report is not intended to be to an "Update" to our previous Phase I's conducted for this site.

If you have any questions concerning this report, please do not hesitate to contact me at 714-893-6140.

Sincerely,



Jim Bunck R.E.A. #4911
Principal