



# **TRASHING THE SESPE**

**How the Oil Industry is Littering Our  
Public Lands and Endangering Wildlife**

**November 2013**



## ABSTRACT

Located approximately four miles north of Fillmore in Ventura County, the Sespe Oil Field is one of the oldest oil fields in California. Approximately half of the field's oil and gas wells are in the Los Padres National Forest, and the other half are found throughout a patchwork of private land that is intermingled with the national forest land. The entire area provides important habitat for endangered California condors.

Microtrash – broken glass, bottle caps, plastic bits, bullet casings, and other small fragments – is one of the leading causes of injury and death to California condors. Between 2001 and 2010, of the 29 California condor chicks hatched in the wild, 25 were determined to have micro-trash in their digestive tracts, 10 died as a result, others were removed from the wild for recuperation, and two had emergency surgery and were eventually returned to the wild. According to federal biologists that manage California condor populations, microtrash is “one of the single most threatening challenges to condor recovery.”

One possible source of microtrash is garbage and debris left on oil well pads. Oil companies operating in the Sespe Oil Field – and the government agencies that regulate them – have proposed numerous measures to prevent the accumulation of microtrash on well pads.

To determine whether these measures are being effectively implemented, Los Padres ForestWatch field inspectors conducted visits to twelve pads in the Sespe Oil Field between August 20, 2013 and September 18, 2013. Our inspections revealed significant – and potentially lethal – amounts of microtrash at all twelve pads we visited, along with numerous violations of other measures that have supposedly been in place since 2005 to protect condors and other wildlife.

We collected a total of 1,756 pieces of trash from all twelve pads we inspected, for an average of 146 pieces per pad. We also observed open containers of hazardous fluids, strangulation hazards, and fragments of solder possibly containing lead, which is toxic to condors and other wildlife. Our results suggest that all, or nearly all, of the pads in the Sespe Oil Field contain significant amounts of microtrash and other hazards that can be harmful or fatal to condors and other wildlife.

We recommend that the oil industry, land managers, condor biologists, and nonprofit organizations work immediately and collaboratively to inspect all pads in the Sespe Oil Field, to remove all microtrash that is currently present, and to quickly enact best management practices that will eliminate microtrash and other hazards from the area. The oil industry must take immediate steps to comply with its own wildlife protection measures; without these measures in place, the industry is in ongoing violation of the Endangered Species Act and will continue to jeopardize the success of ongoing efforts to bring the California condor back from the brink of extinction.

## ABOUT THE AUTHOR

Los Padres ForestWatch is an independent nonprofit organization based in Santa Barbara, California that works to protect the Los Padres National Forest. Since 2007, ForestWatch has worked with condor biologists to identify key areas in and around the Los Padres National Forest where microtrash is accessible to endangered California condors. Working with teams of skilled volunteers, ForestWatch has organized microtrash cleanups throughout the Los Padres National Forest in Santa Barbara, Ventura, Kern, and Los Angeles counties. During these cleanup efforts, more than 500 volunteers have contributed 3,000+ hours removing more than 8,000 pounds of microtrash from a dozen key sites. ForestWatch has organized more microtrash cleanups, and our volunteers have removed more microtrash, than any other organization in our region, giving us the expertise necessary to effectively identify and remove this hazard from the environment.

## ACKNOWLEDGMENTS

This report was made possible through the generous contributions of our members and donors. Thank you for supporting our efforts to keep the Los Padres National Forest safe for California condors and other wildlife.

## MORE INFORMATION

For more information about microtrash, California condors, and our efforts to protect the Los Padres National Forest, please visit our website at [www.LPFW.org](http://www.LPFW.org) or contact us at:

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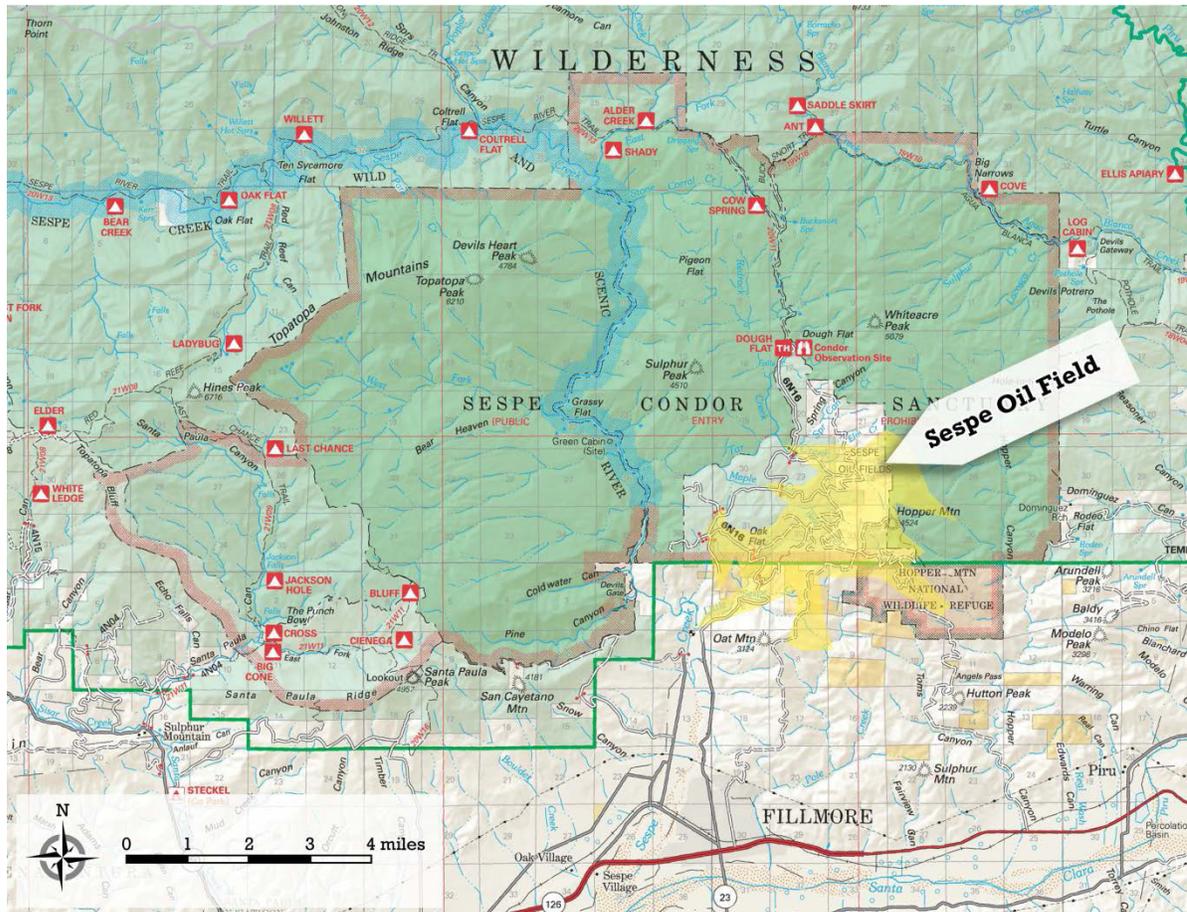
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*Endangered California condors roost on an oil well pump in the Sespe Oil Field. Photo courtesy USFWS.*

## THE SESPE OIL FIELD

Located approximately four miles north of Fillmore in Ventura County, the Sespe Oil Field is one of the oldest oil fields in California. The field has produced commercial quantities of oil and gas since it was first discovered in the late 1880s, and currently contains 270 active oil wells spread across 3,000 acres of land. In 2012, the field produced 392,332 barrels of oil and 753,969 Mcf of natural gas, representing just 0.2% and 0.4% of the state's total oil and gas production, respectively.



Map of Sespe Oil Field and Surrounding Federal Lands

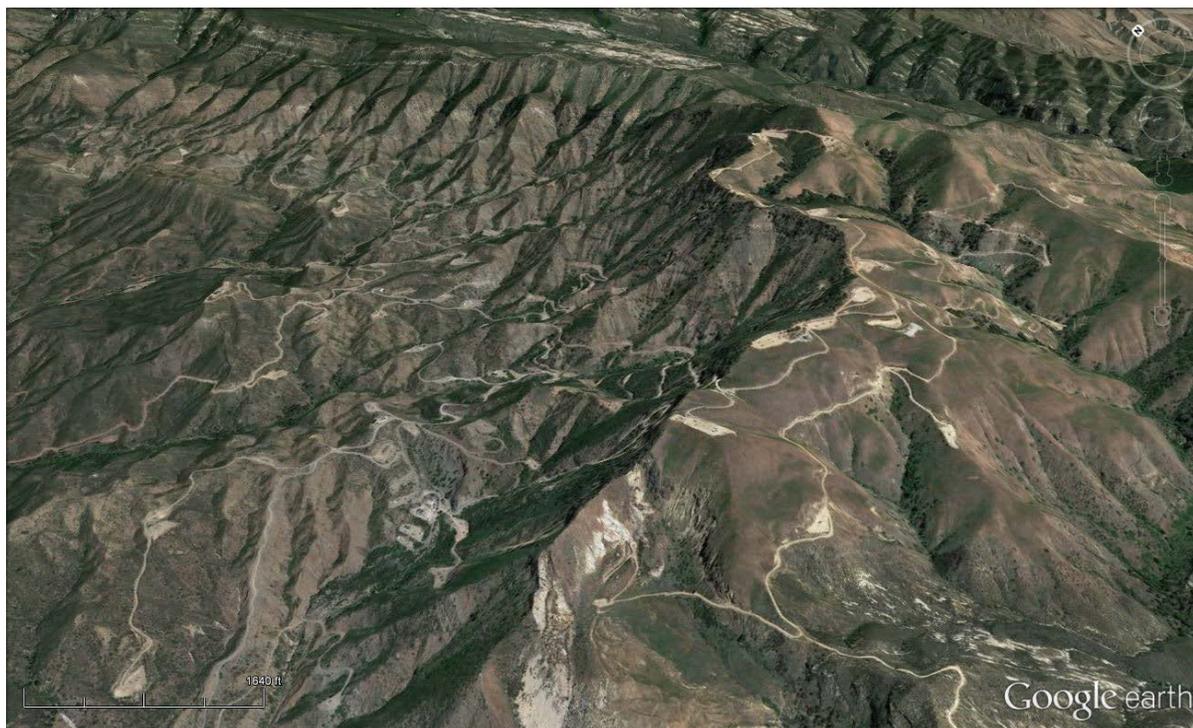
The Sespe Oil Field is a patchwork of private and national forest land. Approximately half of the wells are located in the Los Padres National Forest, and the other half are found on private land that is intermingled with the national forest land. Most (83%) of the active oil wells in the Sespe Oil Field are operated by Seneca Resources, a mid-sized oil company headquartered in Houston, Texas. Four other oil companies also have facilities in the Sespe Oil Field.

While valued for its oil reserves, the Sespe Oil Field is located in one of the most ecologically sensitive areas along California's central coast. The field is drained by several streams that flow into Sespe Creek, which is formally classified as "critical habitat" for endangered southern

steelhead. The Sespe Creek watershed historically supported a large steelhead run. Several other imperiled species are found in Sespe Creek, including arroyo toads, California red-legged frogs, and endangered songbirds like southwestern willow flycatchers and least Bell's vireos.

The Sespe area also provides important habitat for endangered California condors. Recognizing this importance, the Sespe Condor Sanctuary was established in 1947 and includes 53,000 acres that surround the oil field on three sides. The 2,471-acre Hopper Mountain National Wildlife Refuge – a field base of operations for biologists involved with reintroducing condors to the wild – was established in 1974 and is located along the field's southern boundary.

Several government agencies are charged with regulating operations in the Sespe Oil Field. The U.S. Bureau of Land Management (BLM) is charged with managing any oil drilling that occurs on federal land, including the Los Padres National Forest. The U.S. Forest Service retains some oversight authority as well. The California Department of Oil, Gas & Geothermal Resources oversees oil drilling on private lands. The U.S. Fish & Wildlife Service manages the Hopper Mountain National Wildlife Refuge and oversees the California Condor Recovery Program. These agencies all undertake the challenging task of ensuring that oil drilling operations in the Sespe Oil Field do not cause harm to the area's unique and fragile landscape and its wildlife.



*Satellite Image, Sespe Oil Field and Surrounding Federal Lands*

## CONDORS & MICROTRASH

The California condor (*Gymnogyps californianus*) is the largest bird in North America, with a wingspan of up to nine and half feet. It is also one of our country's most imperiled animals. Fewer than two dozen condors remained in the wild in the 1980s when a controversial decision was made to capture all remaining wild condors and breed them in captivity. Now, two decades later, 217 condors command the skies in the wild, including more than 114 free-flying birds in California – approximately half of which nest, roost, and forage in the Sespe Oil Field and surrounding public lands, including the Los Padres National Forest and the Hopper Mountain National Wildlife Refuge.



*The Los Padres National Forest provides prime habitat for the California condor, one of the world's most endangered birds. Photo courtesy Daniel Bianchetta.*

Most condor habitat in California occurs in and adjacent to the Los Padres National Forest, highlighting the importance of protecting these forest lands and ensuring that they remain a safe place for condors to survive. With the ability to fly more than 150 miles in a single day, and a penchant for curiosity, the California condor is particularly susceptible to human development. It depends on large swaths of land for foraging, is exposed to high levels of environmental toxins due to its scavenging behavior, and has life history characteristics that do not allow for rapid recovery from depleted populations. Condors mate for life, have long life spans (up to 60 years by some estimates), and take up to six years to reach maturity. Moreover, a mated pair may only lay a single egg, every two years. Losses incurred at any stage in a condor's life, adult or juvenile, can have a heavy impact on the condor population.



(Left) A radiograph showing microtrash impaction in the digestive tract of a California condor.  
(Right) Microtrash surgically removed from a California condor. Photos courtesy USFWS.

Microtrash is one of the leading causes of injury and death to California condors. These small pieces of trash – broken glass, bottle caps, plastic bits, bullet casings, and other small fragments – are picked up by curious condors, who take them back to their nests and feed to their young. Over time, the small pieces of trash accumulate in the digestive tract of the young chicks, preventing the proper digestion of food. If the trash is not surgically removed, the young condor will eventually die of starvation.

In 2011, biologists with the U.S. Fish & Wildlife Service – the federal agency charged with managing and safeguarding the California condor population – conducted a formal review of the impacts of oil drilling to California condors in and around the Sespe Oil Field. That report states:

*garbage and debris left out by workers at the well pads while conducting project activities could be detrimental to California condors. Such small items include: bottle caps, nails, screws, nuts, washers, rags, electrical components, and wire. California condors have been known to ingest these and similar items. Between 2001 and 2010, of the 29 California condor chicks hatched in the wild, 25 were determined to have micro-trash in their digestive tracts, 10 died as a result, others were removed from the wild for recuperation, and two had emergency surgery and were returned to the wild.*

*The combination of condors and well pads creates a difficult management challenge for the California Condor Recovery Program. Microtrash ingestion is seen as one of the single most threatening challenges to condor recovery.*

In addition, condor biologists note that long sections of loosely-coiled wire can entangle curious condors that might investigate oil pads, and toxic fluids at oil drilling sites can contaminate condors. For example, in 2002, a California condor visited a well pad in the Sespe Oil Field and his head became covered with oil. Other condors have been found with oil on their heads as well, according to a former manager of the Hopper Mountain National Wildlife Refuge.



*The oil industry and federal land agencies have placed several signs, like this one, in the Sespe Oil Field to warn against the hazards of leaving microtrash on oil pads.*

In an extraordinary and controversial move, the Service recently shut down all condor feeding sites at the Hopper Mountain National Wildlife Refuge, moving them 45 miles away to the Bitter Creek National Wildlife Refuge in Kern County. Federal biologists hoped that this would lessen the presence of the condors in the Sespe Oil Field. However, it has also served to put additional strain on dwindling budgets and staff, and has reduced condor presence at the most important and highly used nesting area in southern California. Given these constraints, federal biologists question whether all of the condor nesting and roosting sites can be monitored effectively, suggesting that industrial activities in the Sespe Oil Field may be incompatible with the long-term recovery of the California condor.

While federal regulators acknowledge that the oil industry has contributed to the microtrash problem in the past, they currently seem satisfied with Seneca’s commitment to clean up its act. In 2011, the U.S. Fish & Wildlife Service concluded, “Despite inattention to removing microtrash in the past, we are convinced that Seneca more firmly realizes its responsibilities to adhere to these avoidance and minimization measures, and that BLM will strictly enforce them.”

Our inspections, however, tell a different story.

## RUNNING ON EMPTY PROMISES

Beginning in 2005, oil companies operating in the Sespe Oil Field – and the government agencies that regulate them – have proposed numerous measures to prevent the accumulation of microtrash on well pads. These measures include:

- All food items and associated trash will be placed in covered containers to preclude access to or use by California condors. This includes small bits of trash and debris, such as aluminum can pull tabs, electrical connectors, broken glass, and pieces of rubber, plastic, and metal.
- All work areas will be kept free of trash and debris. Particular attention will be paid to micro-trash. All construction debris and trash (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) will be covered, kept in closed containers, and removed from the project site at the end of each day or prior to periods when workers are not present at the site.
- All equipment and work-related materials (including loose-wires, open containers or other supplies or materials) will be contained in closed containers either in the work area or placed inside vehicles. Loose items (e.g., rags, hose, etc.) will be stored within closed containers or enclosed in vehicles.
- All hoses or cords that must be placed on the ground due to drilling operations that are outside of the primary work area (immediate vicinity of the drilling rig) will be covered to prevent California condor access. Covering will take the form of burying or covering with heavy mats, planks, or grating that will preclude access by California condors.
- All liquids will be in closed, covered containers. Any spills of hazardous liquids will not be left unattended until clean-up has been completed. No open drilling mud, water, oil or other liquid storage or retention structures will be allowed. All such structures are required to have some sort of netting or other covering that precludes entry or other use by condors.
- Prior to conducting work on-site, employees and contractors will be made aware of the protected species, and how to avoid and minimize impacts to them. Special emphasis will be placed on keeping the well pad site free of micro-trash and other hazards.

*Source: U.S. Fish & Wildlife Service, 2005. Biological Opinion on the Proposal to Lease Oil and Gas Resources within the Boundaries of the Los Padres National Forest, California (1-8-04-F-32), and 2011 update thereto.*

When properly implemented, these measures would go a long ways towards protecting condors and ensuring that hazards are removed from condor habitat in the Sespe Oil Field. However, our inspections – as detailed in this report – indicate that the oil industry is not adhering to many of these protective measures, placing the lives of dozens of condors at risk and jeopardizing efforts to bring the endangered bird back from the brink of extinction.

## INSPECTION METHODOLOGY

ForestWatch field inspectors conducted visits to twelve pads in the Sespe Oil Field between August 20, 2013 and September 18, 2013 to evaluate them for the presence of microtrash. The pads were selected based on their location on federal public land – no pads on private land were surveyed. Eleven of the inspections were conducted on land managed jointly by the U.S. Forest Service and the U.S. Bureau of Land Management; one additional pad was located on land managed by the U.S. Bureau of Land Management, outside of the national forest boundary.

We requested permission to inspect several pads located inside the boundary of the Hopper Mountain National Wildlife Refuge, where public access is restricted. Unfortunately, those repeated requests were denied.

During each inspection, ForestWatch staff walked back and forth across the entire pad, picking up all pieces of microtrash and placing them in a sealed, labeled bag for further inspection and inventory at our lab in Santa Barbara. Inspectors also noted the presence of other hazards to condors, photo-documented the site, and recorded its coordinates using a hand-held GPS unit.

Back at the lab, our inspectors spread the trash from each pad and displayed it for photo-documentation. All items were then categorized, counted, recorded, and placed back into their original sealed bags for evidentiary storage.



*Aerial image showing the location of twelve survey locations. One location was surveyed twice. The thirteenth survey was conducted in a separate area, on land administered by the U.S. Bureau of Land Management.*

*Image courtesy Google Earth.*

## INSPECTION RESULTS

Our well pad inspections revealed significant – and potentially lethal – amounts of microtrash at all twelve pads we visited. The “cleanest” pad contained fourteen pieces of microtrash, and four pads had 200 or more pieces of trash each. We collected a total of 1,756 pieces of trash from all pads combined, for an average of 146 pieces per pad. Summaries of each inspection and accompanying photographs are included in Appendix 1 of this report.

**Table 1: Amount of Microtrash Removed During Inspections**

Pad ID	Pad Name	Amount of Microtrash (pieces)	Weight of Microtrash (pounds)
1	Red Rock Fire Water Tank Battery	60	2.1
2	Orcutt Central Tank Battery – 1 <sup>st</sup> Visit	325	10
3	Red Rock Wells 58-29, 67, 68	14	0.4
4	Goodman Tank Battery	389	18
5	Shale Ridge Well 16-28	19	0.2
6	Shale Ridge Well 15-28	23	0.4
7	Shale Ridge Wells 77-29, 75-29, 85-29	24	1.1
8	Goodman Wells 1, 3	59	3.6
9	Shale Ridge Well 18-28	64	1.2
10	Shale Ridge Wells 81-32, 88-29, 78-29	42	3.2
11	Pipeyard, Shale Ridge Well 17-28	158	3.6
12	Orcutt Central Tank Battery – 2 <sup>nd</sup> Visit	207	10
13	Bonebrake A Tank Battery	372	16
<b>TOTALS</b>		<b>1,756</b>	<b>69.8</b>

### Most Common Items

The most common items we discovered on the well pads were small pieces of deteriorated rubber belts that drive the oil well pumps. These rubber belts gradually weaken over time and, if not properly maintained, they disintegrate into dozens of tiny pieces that fall to the ground. While



they were not found on many pads (only three of the twelve pads), the pads where they were found had significant numbers of deteriorated rubber pieces surrounding the well pump.

Bolts and nuts were the second- and third-most common items that we recovered during our inspections, and were found on nearly all pads. These items were typically scattered around tanks used to store crude oil and water on the well pads. Some bolts and nuts were rusted and weathered, while others were new and/or freshly painted.

**Table 2: Top Ten Items Found on Oil Pads**

Microtrash Type	Number of Pieces Removed
<b>Rubber Belt Pieces</b>	192
<b>Bolts</b>	165
<b>Nuts</b>	145
<b>Metal Pieces</b>	135
<b>Rubber Pieces</b>	126
<b>Wire Segments</b>	124
<b>Hard Plastic Pieces</b>	104
<b>Glass Fragments</b>	102
<b>Washers</b>	101
<b>Small Steel Rivets</b>	79

Other common items found at oil pads include small pieces of metal and rubber, segments of wire, small pieces of hard plastic and glass, metal washers, and small round steel rivets. Less-common items included nails, screws, metal or plastic shavings, aluminum foil, pieces of broken PVC pipe, tape, flagging, pieces of paper, dried paint chips, dried caulking strips, hydrogen sulfide test vials, soda can tabs, food wrappers, salsa packets, bullet casings, rags, plastic tubing, and segments of string and rope.

### **Cigarette Butts**

We collected forty cigarette butts from eight of the pads we inspected. Nearly half of these cigarette butts were found on one pad (Orcutt Central Tank Battery) where active work was occurring. This pad was clearly marked with “NO SMOKING” signs, and is located on national forest land subject to Level IV fire restrictions. These restrictions state, “Smoking is prohibited in all areas of the national forest except within an enclosed vehicle, building, or designated Campfire Use Site.”





Orcutt Central Tank Battery (1<sup>st</sup> Visit): 325 pieces of microtrash totalling more than 10 pounds.



Orcutt Central Tank Battery (2<sup>nd</sup> Visit): 207 pieces of microtrash totalling more than 10 pounds.

## Uncovered Containers

Two of the pads we inspected were active work sites (though work was not occurring on the days we visited). On these pads, we observed several uncovered containers containing bolts, nuts, and other items within easy reach of condors. These pads also contained wood pallets with cardboard boxes, many of which were opened and contained small items. The boxes on the pallets were wrapped in thin plastic, which was decomposing from being exposed to the elements. This decomposing plastic presented another source of microtrash.



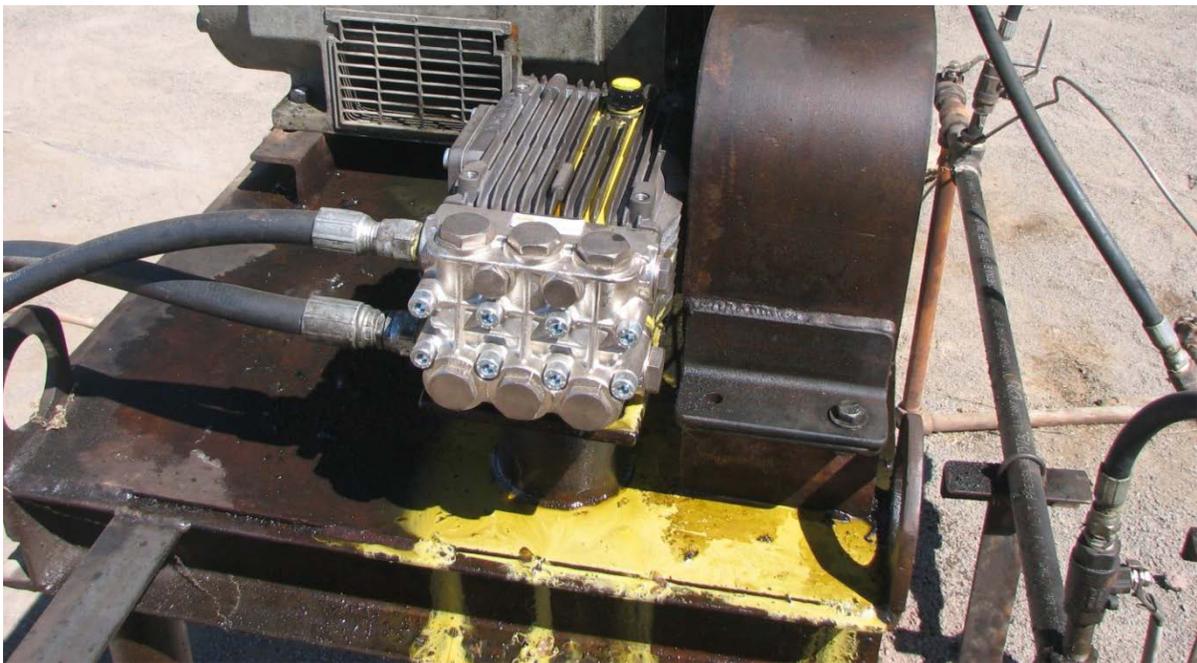
## Hazardous Materials

In addition, we observed several open containers containing crude oil, chemicals, and other hazardous substances accessible by condors and other wildlife, along with leaking pipelines, tubes, tanks, well heads, and other equipment. Other hazards observed include segments of string, rope, hoses, cables, and wires that present a stangulation risk to condors. Finally, we observed eleven small pieces of melted solder at the Goodman Tank Battery and two other pads. Certain types of solder contain lead, which can be harmful or fatal to condors if ingested.





*Crude oil is exposed in this open container accesible to condors and other wildlife.*



*Unknown yellow fluid leaking from equipment and contaminating the soil below.*



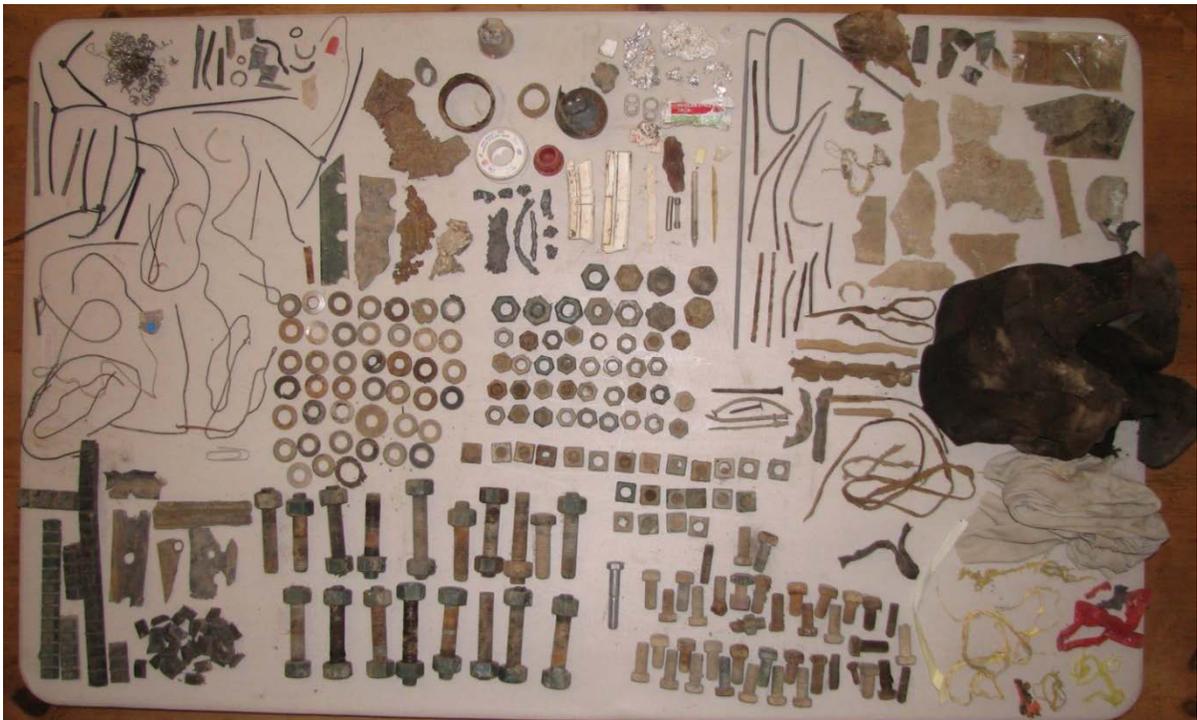
*This coiled cable presents a strangulation hazard to condors.*



*Bonebrake A Tank Battery: 372 pieces of microtrash totalling more than 16 pounds.*



*Leaking chemicals and strangulation hazard.*



*Goodman Tank Battery: 389 pieces of microtrash totalling more than 18 pounds.*

## RECOMMENDATIONS

Microtrash is one of the leading threats to the endangered California condor, and one of the biggest challenges to the recovery of condors to the wild. While condor biologists and wildlife officials have long suspected that some of this microtrash is sourced in the Sespe Oil Field, no comprehensive study on the presence of microtrash in the oil field has been undertaken until now.

For the first time, we now know that microtrash is pervasive throughout the Sespe Oil Field. Every well pad we visited contained microtrash, and we observed numerous examples of the oil industry failing to comply with its own measures to reduce hazards to wildlife.

The Sespe Oil Field contains more than 150 pads, and our results suggest that all, or nearly all, of them contain significant amounts of microtrash and present significant hazards to condors and other wildlife. The magnitude of this problem is staggering, and must be remedied immediately to ensure that condors are not harmed by ongoing activities in the Sespe Oil Field. Given the threat posed to condors by microtrash ingestion and contamination, current practices in the Sespe Oil Field are placing the entire California Condor Recovery Program at risk.

We recommend that the oil industry, land managers, regulators, and nonprofit organizations work immediately and collaboratively to inspect all pads in the Sespe Oil Field, to remove all microtrash that is currently present, and to quickly enact best management practices that will eliminate microtrash and other hazards from the area. The oil industry must take immediate steps to comply with the wildlife protection measures that the industry itself put forward in 2005. Without these measures in place, the oil industry will continue to jeopardize the success of ongoing efforts to bring the California condor back from the brink of extinction. We cannot underscore the urgency of taking immediate action.

Specifically, the following steps should be taken to eliminate microtrash and other hazards throughout the Sespe Oil Field:

1. Conduct regular and thorough inspections of all pads in the Sespe Oil Field, and immediately remove and properly dispose of any trash found.
2. Train employees and contractors to properly dispose of all trash, and educate them on the importance of keeping the pads clean of all microtrash at all times.
3. Properly cover all cables and hoses that present a strangulation hazard to condors.
4. Properly cover or remove open buckets of oil and other hazardous fluids.
5. Properly cover and contain equipment on wooden pallets, including those at the Orcutt Central Tank Battery and Goodman Tank Battery and any others currently present on the well pads. Instruct employees and contractors to cover all boxes and containers, especially those containing small parts such as bolts and nuts.
6. Train employees and contractors on the importance of complying with smoking prohibitions and other fire restrictions issued by forest officers.

7. Require employees and contractors to use non-lead solder to protect condors and other wildlife from lead poisoning.
8. Regularly maintain and inspect belts on well pumps, and replace them before breakage occurs.
9. Repair leaking equipment and pipes and properly remediate any contaminated soil, including:
  - a. Goodman Tank Battery –oil leaking from storage tank
  - b. Pipeyard – oil leaking from utility pole
  - c. Orcutt Central Tank Battery – chemicals leaking from tubing, oil leaking from pipeline, and contaminated soil stockpiled
  - d. Goodman Wells 1, 3 – unknown yellow fluid leaking from equipment
  - e. Shale Ridge Well 18-28 – oil leaking from wellhead
10. Remove the following items on the wellpads to prevent hazards to condors and other wildlife:
  - a. Bonebrake A Tank Battery – remove cables near utility pole
  - b. Orcutt Central Tank Battery – remove coiled tubing beneath chemicals, and remove coiled steel cable near rollaway tanks
  - c. Pipeyard – remove all plastic straps, rope, rags, and open trash can
  - d. Shale Ridge 81-32, 88-29, 78-29 – remove bag of concrete, metal table, equipment, and empty uncovered bucket.
  - e. Orcutt Central Tank Battery – remove rag containing nuts and bolts
  - f. Red Rock Well 58-29, 67, and 68 – remove empty chemical drums
11. Grant independent nonprofit organizations reasonable access to pads on private lands in the Sespe Oil Field, as well as those lands in and surrounding the Sespe Oil Field that are administered by the U.S. Fish & Wildlife Service as part of the national wildlife refuge system. Such access is necessary to ensure future compliance with these recommendations and other best management practices to protect condors and other wildlife.
12. Hire a qualified condor biologist, approved by the U.S. Fish & Wildlife Service’s Condor Recovery Program, to inspect pads, instruct employees/contractors, and report any condor sightings to federal biologists. This should be a full-time position.
13. Prepare a field-wide Surface Use Plan of Operations to establish effective policies for the disposal of waste and the protection of surface resources in the Sespe Oil Field. Currently, no such plan exists, even though one is required under 43 C.F.R. § 3162.3-1.
14. Prepare a Habitat Conservation Plan in cooperation with the U.S. Fish & Wildlife Service to ensure that all ongoing oilfield operations are consistent with the Endangered Species Act.