FACT SHEET

BOEING
Rocketdyne Propulsion & Power

Environmental Investigation and Cleanup at the FORMER NEVADA FIELD LABORATORY

Palomino Valley, Washoe County, Nevada

August 2004

At Rocketdyne, we are firmly committed to safety, respect for the environment, and, in particular, the well-being of the communities in which we have operated facilities. This fact sheet is intended to keep community members informed about the status of the environmental investigation and cleanup at the former Nevada Field Laboratory site.

HISTORY

From 1962 to 1970, Rocketdyne, then a division of North American Aviation, operated a rocket engine testing facility known as the Nevada Field Laboratory (NFL), located approximately 20 miles north of the Reno/Sparks area (see Figure 1). Rocketdyne, formerly a division of Rockwell International, is now a part of The Boeing Company.

In the early 1970s, the majority of the 126,000-acre property was sold to McCulloch Properties, Inc. McCulloch subdivided this property and sold parcels to private parties.

The former NFL site consisted of a total of 126,000 acres. Of this total acreage, only one percent—or approximately 1,600 acres—was used for testing or support facilities. These 1,600 acres were made up of five areas, three of which were used for rocket engine testing. The three testing areas are labeled Areas B, C and D.

- Area B was located at the top of Axe Handle Canyon Road
- Area C was located along Right Hand Canyon Road
- Area D was located at the eastern end of Whiskey Springs Road

Engines for the Gemini, Lunar Module, Apollo and Space Shuttle programs were tested at these three sites. As part of the engine testing program, solvents were used

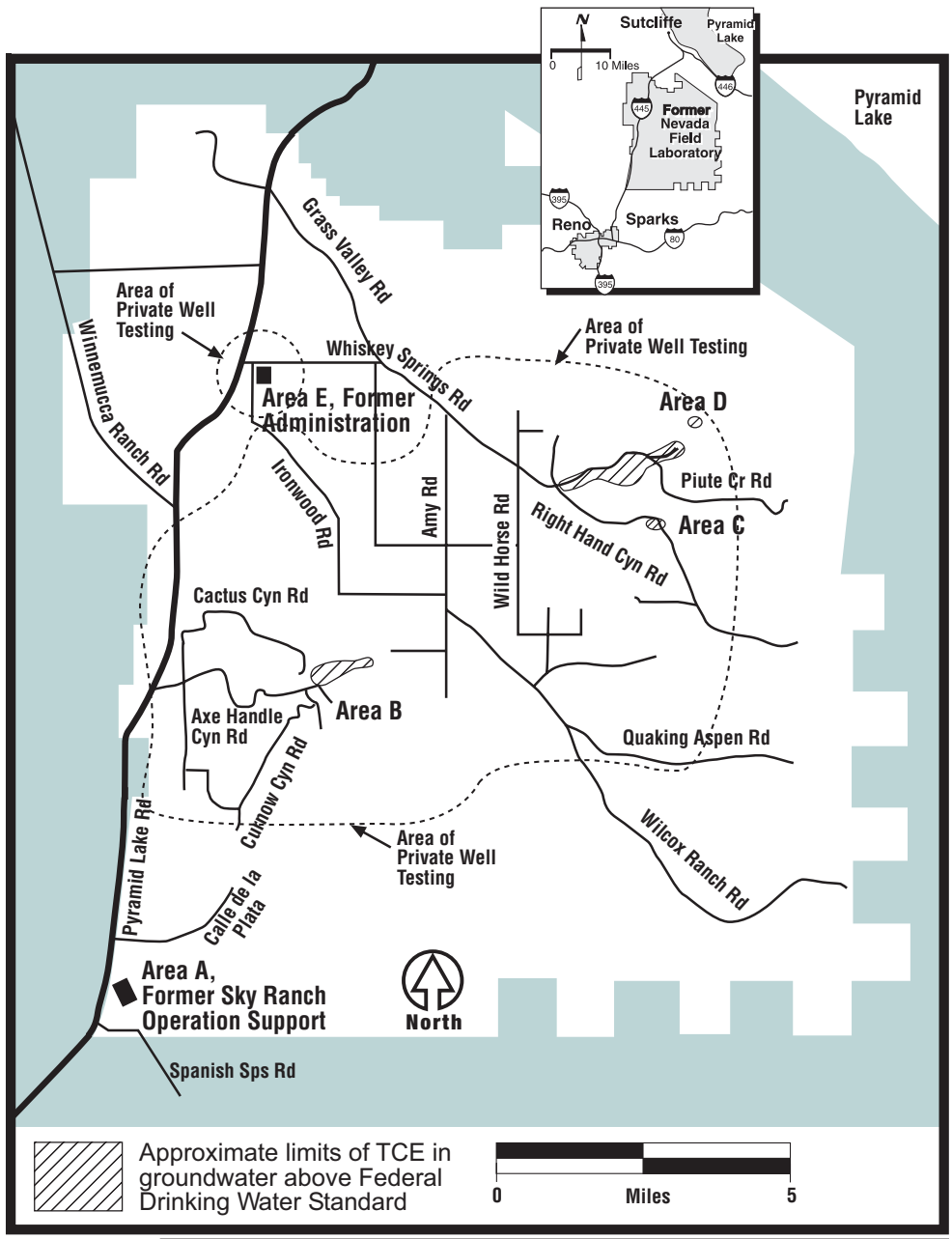

Figure 1

Environmental Investigation and Cleanup

Investigations at Areas A, B, C, D, and E have been completed. Groundwater treatment systems have been installed where required and are working effectively. As a service to the community, we will continue to monitor private wells on a periodic basis.

Area D Bedrock Groundwater Corrective Action Plan Approval

The State of Nevada Division of Environmental Protection (State) has approved the Area D Bedrock Groundwater Final Corrective Action Plan. This plan evaluates potential remedial alternatives and presents a long-term strategy that addresses contaminants present in groundwater beneath the former Area D test facility (figure 5). Collectively, the components of the Corrective Action Plan are designed to prevent exposure to groundwater contamination, remove contaminants, contain and treat contaminant migration from the source area, and monitor effectiveness. The purpose of the Corrective Action Plan is to ensure protection of human health and the environment.

to clean equipment in order to meet the strict specifications required by the space program.

Area A, locally known as Sky Ranch, was located along Highway 445 in the southwest corner of the former NFL site. Previously an airfield, this portion of the property was used as a staging area in the early 1960s during construction of the other NFL areas.

The former NFL operational support facility was located at Area E and included administrative offices, a small laboratory and a machine shop. From approximately 1974 to 1990, a privately-owned company operated a machine shop and warehouse on the premises.

ENVIRONMENTAL INVESTIGATION

In 1980 and again in 1989, the Environmental Protection Agency evaluated the site under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Although the NFL was not recommended for further action under CERCLA, Rocketdyne elected to undertake an investigation of its own to ensure the welfare of area residents and the environment.

In early 1991, Rocketdyne conducted an environmental survey which evaluated water quality in private wells within a half mile radius of Areas B, C, and D. In 1992, a similar survey was conducted within a half mile of Area E. The surveys included testing water for the solvents historically used at the testing areas. The results of the 1991/1992 surveys indicated that private wells on three properties, one at Area B and two near Area D, contained solvents. The primary solvent discovered was trichloroethylene (TCE).

Immediately upon the discovery of solvents in the private wells at the three properties, Rocketdyne notified the affected residents and the Washoe County Health Department (County), and supplied these residents with bottled water for drinking. In addition, treatment systems to remove the solvents from the well water were immediately installed. These wells were later removed from service.

As a result of this discovery, under the direction of the State of Nevada Division of Environmental Protection (State) and the County, Rocketdyne began an environmental investigation and cleanup effort.

At Area A, well testing conducted by the county showed that municipal supply wells have not been impacted by Rocketdyne's previous operations.

PRIVATE WELL SAMPLING

In late 1991, in response to community concerns about the quality of the drinking water, Rocketdyne sampled for solvents in private wells within a three mile radius of each of the three former test areas (Areas B, C and D) and within one-half mile of Area E. Figure 1 shows the area where wells were tested. Over 170 private wells have been sampled to date. The approximate locations of these wells are shown in Figure 2. Private wells located within about one-half mile of Areas B, C, D and E continue to be sampled annually (Areas B, C and D) or on a periodic basis (Area E). Currently, all wells within the testing area meet the drinking water standards for solvents.

SOIL AND GROUNDWATER

Rocketdyne has performed investigations at each of the three former testing areas (Areas B, C and D) and Area E to determine whether any solvents associated with former operations remain. This effort involved soil sampling, environmental surveys, and

Private Well Sampling Program

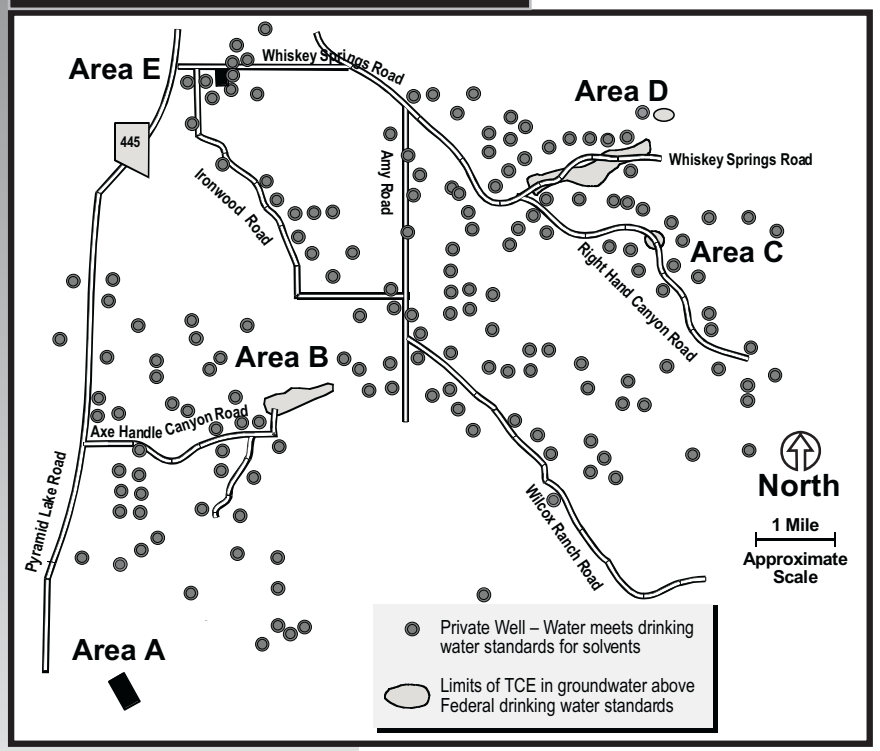

Figure 2

groundwater sampling. These activities provide information about the type and extent of contaminants in soil and groundwater and how to most effectively clean up the chemicals.

Rocketdyne has implemented an extensive groundwater monitoring program to evaluate groundwater conditions. A total of 125 monitoring and extraction wells have been installed at the three former test areas. Many of the monitoring wells are located around the perimeter of the area where contamination has been found and are sampled quarterly. Monitoring performed since 1991 shows that the areas of contamination are not spreading.

As a result of extensive groundwater sampling, the areas of contamination have been identified. At Area B, solvents have been found in groundwater beneath the test facility and in the adjacent canyon to the east (Figure 3). At Area C, solvents have been detected in groundwater in the immediate area of the former test facility (Figure 4). At Area D, solvents have been found beneath a portion of the former test facility and the narrow valley along Whiskey Springs Road east of Right Hand Canyon Road (Figure 5). As can be seen on the map in Figures 1 and 2, the contamination is restricted to localized areas. There is no known impact on the quality of water in other areas of the Palomino Valley from former NFL activities.

CLEANUP

The first step in groundwater cleanup is to determine what types of cleanup systems are most effective for use at the former NFL site. This phase has been completed at Areas B, C and D. The investigation of Area E indicates that no further investigation or cleanup is required. All work performed for the project is conducted under the direction of the regulatory agencies.

Cleanup activities completed to date include removal of underground storage tanks, removal of contaminated soils and removal of debris from former landfills at the test facilities. All waste disposal sites and soil contamination have been removed. We have completed the demolition and surface restoration of the former test facilities.

In addition to performing comprehensive investigations of the former test areas, Rocketdyne has been cleaning up solvents in groundwater at Areas B, C and D. Because cleaning groundwater is a difficult task that will take a long time, our goal is to contain the contaminated groundwater while the cleanup proceeds. Efforts are

Area B - Groundwater Sampling Results

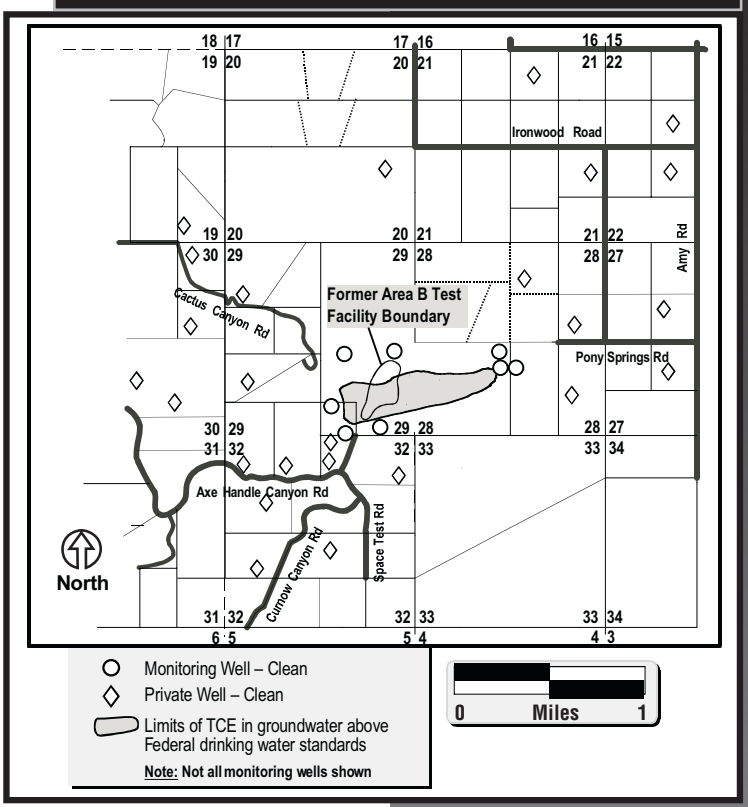

Figure 3

Area C Perchlorate Investigation and Cleanup

Perchlorate, a chemical found in solid rocket propellant, was used at the former Area C testing area. Perchlorate in soil and groundwater has been found in the immediate vicinity of the former Area C test stand area. Perchlorate was not found at Areas B and D in soil or groundwater. Cleanup of perchlorate contaminated soil at Area C was completed by 1994, and in 2003, perchlorate concentrations in the groundwater was reduced to below the current State cleanup level. Private wells surrounding Area C were tested for perchlorate which was not found above laboratory detection level.

Area C - Groundwater Sampling Results

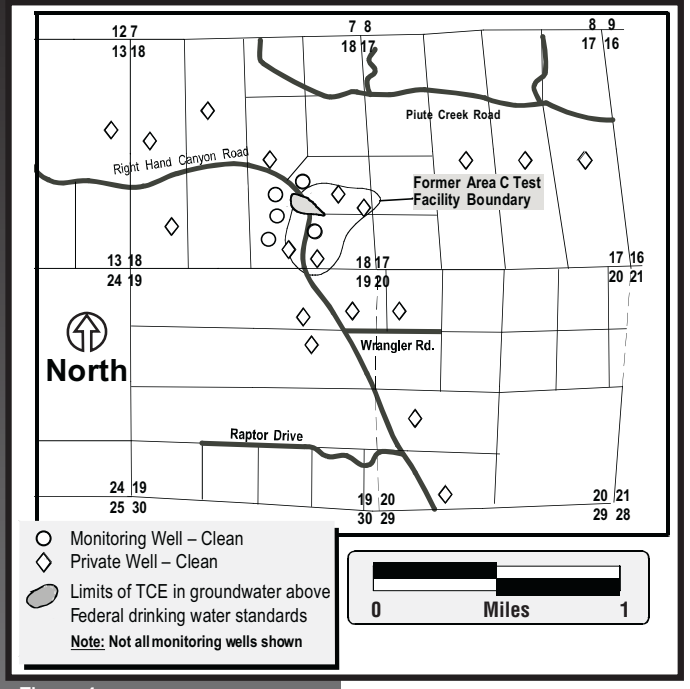

Figure 4

Area D - Groundwater Sampling Results

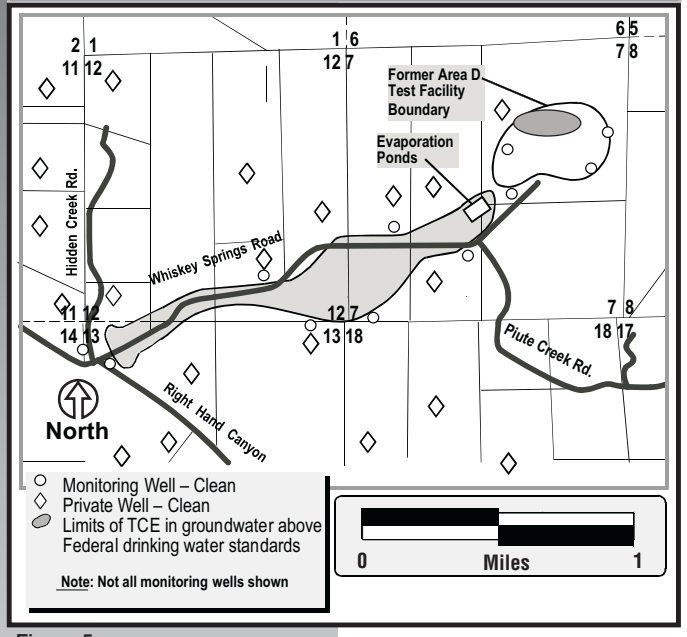

Figure 5

directed at reducing concentrations and protecting the surrounding drinking water supplies.

Groundwater cleanup has been underway since 1994. Cleanup systems are designed to prevent contaminated groundwater from spreading any further while the cleanup is completed. Operation of the systems will not affect use of surrounding drinking water wells. Data from the Area B, C and D sites have shown the systems are effectively cleaning up and containing the contaminants.

FUTURE WORK

Rocketdyne will continue to perform environmental monitoring at the former NFL site. At Areas B, C and D we will continue to operate groundwater cleanup systems and monitor their performance.

At areas requiring groundwater cleanup, operations will be directed at reducing solvent concentrations in groundwater and protecting existing drinking water supplies while the cleanup proceeds. The effect of these cleanup systems on both the containment and cleanup of the groundwater will continue to be tracked through the groundwater monitoring program.

COMMUNITY INVOLVEMENT

Since this project began, Rocketdyne has been committed to keeping the community informed. Our ongoing community involvement activities include periodic community meetings, newsletters and fact sheets and a repository for project documents. The purpose of this effort is to provide open communication between Rocketdyne, the public and the regulatory community so that concerns can be addressed and individuals can receive information on the investigation and cleanup.

In conjunction with the County and the State, Rocketdyne has been giving community briefings since 1991. Progress reports are distributed to homeowner associations, repositories and regulatory agencies on a quarterly basis. All of the reports and work plans prepared during this investigation are available for review at the Washoe County Public Library on Center Street in downtown Reno or the State and County Environmental offices.

ADDITIONAL INFORMATION

The State and the County oversee all aspects of the NFL cleanup project.

Additional information on the project can be obtained from Jennifer Carr at the State, (775) 687-9373, and Bob Sack at the County, (775) 328-2400.

Rocketdyne welcomes community input on this project and recognizes the need to respond to community concerns. If you have any questions, please feel free to call Steve Shestag, Environmental Remediation Manager, at Rocketdyne (800) 626-3843 or (818) 586-6014 outside Nevada.

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