Rosendahl

ITEM NO. 2

Presentation to
Energy and Environment Committee,
LACC on April 4, 2012

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NASA

George C. Marshall Space Flight Center

RECORD OF ENVIRONMENTAL CONSIDERATION

Project: Reporting to General Service Administration that the property on Santa Susana Field Laboratory is excess to NASA

Description and location of proposed action: NASA has conducted research, development, and testing of liquid-propelled rocket engines at SSFL under the Boeing Company, Rocketdyne Propulsion & Power (Rocketdyne) since 1948. On August 2, 2005, Pratt & Whitney purchased Rocketdyne from Boeing, but refused to acquire SSFL as part of the sale. As a result of the purchase, NASA's test operations at SSFL have been discontinued and the property is excess.

NASA has ended engine testing operations at SSFL and followed internal screening procedures to ensure that no NASA program or project could utilize the NASA-owned property on SSFL. After ensuring that NASA has no use for NASA-owned property on SSFL, NASA proposes that GSA dispose of the excess property the property by sending a Report of Excess Real and Related Personal Property (SF118) to the regional GSA office.

See attached Environmental Analysis and Report of Excess Real and Related Personal Property (SF118) for further information.

A. Anticipated date and/or duration of proposed action: FY 2008

B. It has been determined that the above action (choose one):

a. _____ Is adequately covered in an existing EA_____, EIS________, entitled ____________________ and dated ____________.

b. ______ Qualifies for Categorical Exclusion as described by NPR 8580.1 and NASA NEPA Regulations 14 CFR 1216.305, and has no special circumstances which would suggest a need for an Environmental Assessment.

c. _____ Is exempt from NEPA requirements under the provisions of (cite superseding law): ____________________

d. __X__ Has no environmental impact as indicated by the results of an Environmental Analysis Checklist and/or a detailed Environmental Analysis (attach Checklist and/or Environmental Analysis as applicable).

e. _____ Will require an Environmental Assessment or Environmental Impact Statement.

f. _____ Will include mitigation as described below:

Other Environmental Consideration (i.e. permits, hazardous material handling): See attachments. An Environmental Review was prepared to document baseline conditions. Reporting of NASA-owned real property at SSFL to GSA contemplates no significant change in the existing use of the land. NASA will continue RCRA cleanup activities. NASA will lead Natural Historic Preservation Act (NHPA) effort, with GSA coordinating.

Signed: Allen Elliott Date: 11/14/07

Manager, Environmental Engineering and Occupational Health Office (EEOH)

3.4.3 Asbestos, Lead, and PCB's

Buildings at SSFL were constructed when materials such as asbestos insulation, lead-based paint, and light fixtures with PCB-containing ballasts were used. Several buildings at SSFL contain asbestos. If buildings require modification, demolition or other activities that may disturb asbestos the projects are evaluated as they occur, and removal and disposal are performed per the applicable state and federal requirements (NASA, 2007a). The Ventura County Air Pollution Control District regulates asbestos removal projects.

SSFL has implemented a program to replace or retrofill PCB-transformers with non-PCB transformers over time and to manage PCB-related wastes at SSFL. Currently, SSFL has no PCB-containing transformers remaining thatcontain above 50-ppm PCBs.

An LBP survey at SSFL positively identified LBP at numerous buildings at SSFL (NASA, 2007u).

3.5 Soils

The SSFL soils are primarily Quaternary alluvium. The soil depth varies from a few feet to approximately 20 feet. Erosion of the surrounding geological formations created the unconsolidated sand, silt, and clay, which compose the Quaternary alluvium. The thick layer of bedrock underlying most of SSFL is the Chatsworth Formation. Massive, cliff-forming sandstone beds that are at least 6,000 feet thick characterize the Chatsworth. The exposures of Quaternary alluvium and the Chatsworth Formation compose the Simi Hills of SSFL. (ICF, 1993)

3.6 Water Resources

3.6.1 Surface Water

Surface water from the SSFL drains primarily toward the south into Bell Creek and then eastward to the Los Angeles River with its confluence located in the San Fernando Valley. Surface water in the very north portion of the SSFL drains via various drainages into Meier and Black Canyons, which lead to the Arroyo Simi located in Simi Valley (DOE 2007).

Two parallel and interconnected pond and drainage systems comprise the SSFL watershed. Twenty-four ponds were at one time included in this system, however several of these ponds have been closed and filled. Many of the ponds and drainages are man-made features used to store water for the rocket testing facilities. (Hargis, 1985) This system makes up the site-wide water reclamation system (EPA, 1989)

A pond and channel system drains a large portion of Area I. The water reclamation system is designed to recycle settled water from the R-1 Reservoir (R-1). As the supply for water exceeds the demand, R-1 overflows to the Perimeter Pond. (SAIC, 1994)

The pond and channel system for Areas II, III, and IV consists of two retention ponds, the R-2A and R-2B in Area II and the Silvernale Reservoir in Area III. (SAIC, 1994)

Past surface water contamination occurred in Areas I, II, and III due to TCE engine flushing operations in the 1950s and 1960s. Waste TCE was discharged directly to surface impoundments (SWMUs 4.14, 4.15, 5.11, 5.12, 5.15, 5.19, 5.24, 6.6, and 6.7) that were part of the SSFL surface water reclamation system. It is not known if any of this contamination migrated off-site through the Bell Creek drainage. Currently, the SSFL water reclamation system discharge is regulated by an NPDES permit granted in the late 1970s. (EAE, 1989) Table 3-3 gives NPDES permit requirements for monitoring of the discharge ponds prior to any batch discharge to off-site for the following constituents:

Table 3-3 NPDES Maximum Discharge Limitations

Constituents	*Concentrations (mg/L)*	*Quantity* (lbs/day)*
Total Dissolved Solids	950	1,267,680
BOD_5@20°C	30	40,035
Oil and Grease	15	20,020
Chloride	150	200,160
Sulfate	300	400,320
Fluoride	1.0	1,340
Boron	1.0	1,340
Surfactants (as MBAS)	0.5	667
Residual Chlorine	0.1	---

**Based on a total waste flow of 160 million pgd (CRWGCB)*

In 1987, Rockwell sampled surface runoff water that drains north of the facility and is not part of the water reclamation system. The sample results were compared to the maximum contaminants levels (MCLs) for drinking water, although the runoff from the site is not used for drinking water purposes. The MCL for arsenic was exceeded at several sample locations. Methylene chloride levels exceeded the DHS action level of 40 µg/L in two samples. Although samples indicated contaminated surface water runoff exists in the north part of the SSFL, it is not known if these contaminants were released to any off-site surface water bodies. The drainages north of the facility are ephemeral channels;

therefore, a potential exists for surface water runoff to have percolated into the soil before reaching a surface water body or to have been discharged into the channels. (EAE, 1989)

3.6.2 Groundwater

Two groundwater systems exist at SSFL: 1) a shallow groundwater system in the surficial alluvium and the underlying zones of weathered sandstones and siltstones, and 2) a deeper groundwater system in the fractured Chatsworth Formation. Surface runoff may be stored and transmitted from the shallow groundwater system to the underlying Chatsworth Formation. (GRC, 1986)

The shallow zone is composed of unconsolidated sand, silt and clay eroded from the surrounding formations and the underlying weathered in-place portion of the Chatsworth Formation. The shallow zone is discontinuous and subject to seasonal variations throughout the SSFL. It is saturated along ephemeral channels and in the southern part of Burro Flats. The saturated portion of the shallow zone may be as thick as 10 feet at SSFL. Shallow zone water level data indicates that the piezometric surface mimics the topographic surface. Depth to water has ranged from 2 feet to a maximum of 35 feet. This variation is season and location dependent. In general, water level highs occur in late winter and dearly spring. Groundwater moves laterally and downward in the shallow zone.

The shallow zone aquifer appears to be separate and distinct from the Chatsworth Aquifer; however, water levels and water quality data from some sections of SSFL indicate there may be a hydraulic connection between the two systems. (Hargis, 1985)

The Chatsworth Formation system is primarily a fracture controlled aquifer composed of bedded sandstone with interbeds of siltstones and claystone. The Chatsworth is highly fractured in the SSFL area. (The California Department of Health Services (DHS) believes that the formation might not be highly fractured. (EPA, 1990) Aquifer tests indicate highly varying degrees of permeability of the Chatsworth Formation. This may be attributed to the fractured nature of the Chatsworth. The estimated ranges or permeabilities are from approximately 10^{-2} gallons per day per square foot (gpd/ft^2) to approximately 10^3 gpd/ft^2. (Hargis, 1985)

Current water level contours of the Chatsworth system indicate that groundwater in the central and northeast portion of the site appears to be migrating toward the site's pumping cone of depression. This cone of depression has been maintained in the northeast quarter of the facility by the pumping of water supply wells since the late 1950s. In the northwestern section of the site, water level data suggests the presence of a northeast to southwest groundwater divide accompanied by a northwesterly groundwater flow component. A southerly component of groundwater flow is indicated by water level contours in the southwest portion of the site. (Hargis, 1985)

Groundwater pumpage has had a significant impact on water levels and groundwater movement at the site. Vertical groundwater movement may be induced by prolonged pumping with a consequent reduction in hydraulic head. In fractured systems such as the

Chatsworth, this effect may be quite dramatic. In 1988, the pumping from extraction well WS-9A induced 30 feet of drawdown in an observation well 1,600 feet away. (GRC, 1989)

Depth to groundwater is seasonally variable in the Chatsworth system. In general, high water levels occur during winter and spring months and low water levels occur in summer and fall. (GRC, 1989)

The most widespread and prevalent groundwater chemical contaminants at the site are VOCs. TCE and trans-1,2-dichloroethylene (trans-1,2-DCE) are the most frequently detected contaminants in groundwater samples. Sources for the VOCs are widely distributed throughout the site and include the engine and rocket testing areas, pavement washdown areas, laboratory solvent use areas, surface impoundments, spills, cleaning operations, and tanks used for the storage of hazardous materials and hazardous waste. Groundwater investigations indicate extensive VOC contamination in groundwater underlying these areas. (EAE, 1989)

Rockwell initiated a hydrogeological study of the Alfa/Bravo Area in 1984. As part of that study, existing water supply wells were sampled. TCE and trans-1,2-DCE were detected in the water supply well samples. The groundwater contamination was investigated further, along with the probable sources. Surface impoundments were used for spill containment, and hazardous waste storage and treatment were determined to be the likely sources of VOC contamination. (SAIC, 1994)

SSFL's groundwater monitoring system included approximately 163 wells and springs of which 147 are on-site wells. These wells were constructed as part of the groundwater contamination investigation that followed the discovery of VOC contamination in water supply wells. Rockwell constructed seven groundwater treatment systems to remediate VOC contaminated groundwater. Five of the treatment systems are dual air stripping towers with vapor phase carbon treatment, one is an ultraviolet/hydrogen peroxide (UV/H_2O_2) system, and one is a four tower air stripping system. (DHS, 1990) The systems are connected to extraction wells to treat pumped, contaminated groundwater. Each system is designed to reduce the organic contaminants in the pumped groundwater to below the DHS action levels. Treated groundwater is discharged to the site-wide water reclamation system. (EPA, 1989)

On- and off-site wells have shown low concentrations of toluene and other organic compounds. (EPA, 1989) These wells are not used as a source of drinking water but for other purposes, such as irrigation.

Rockwell believes that the historical pumpage of groundwater in the northeast section of the facility has created a large cone of depression that may have prevented the migration of contaminants off-site. However, the movement of groundwater and contaminants in a highly fractured system is very difficult to predict. (GRC, 1989) Additional placement and monitoring of off-site wells will be necessary to confirm Rockwell's theory.