Department of Toxic Substances Control

Maureen F. Gorsen, Director
700 Heinz Avenue
Berkeley, California 94710-2721

Linda S.Adams
Secretary for
Environmental Protection

Arnold Schwarzenegger
Governor

Statement of Basis

Proposed Remedy for Redevelopment Property

At

Hitachi Global Storage Technologies, Inc.

5600 Cottle Road
San Jose, California
Santa Clara County

Prepared by

Standardized Permitting and Corrective Action Branch
Hazardous Waste Management Program
Department of Toxic Substances Control
Mohinder S. Sandhu, P. E., Branch Chief

September 8, 2006

Table of Contents

List of Figures

List of Acronyms

bgs	below ground surface
CalEPA	California Environmental Protection Agency
CAO	Corrective Action Objective
CCR	Current Conditions Report
CHHSL	California Human Health Screening Level
CMS	Corrective Measures Study
DCE	1,1-Dichloroethene
DTSC	Department of Toxic Substances Control
GST	Global Storage Technologies
HI	Hazard Index
HWF	Hazardous Waste Facility
IBM	International Business Machines
IPA	Isopropyl Alcohol
kg	kilogram
L	Liter
MEK	Methyl Ethyl Ketone
mg	milligram
NCP	National Contingency Plan
NMP	N-Methyl-1-2-Pyrrolidone
NOA	Naturally Occurring Asbestos
OCP	Organochlorine Pesticide
PCB	Polychlorinated Biphenyl
PRG	Preliminary Remediation Goal
RBTC	Risk Based Target Concentration
RCRA	Resource Conservation and Recovery Act
R&D	Research and Development
RWQCB-SF	Regional Water Quality Control Board – San Francisco Bay Region
SI/SP	Soil Inspection/Sampling Plan

SMP	Soil Management Plan
SVE	Soil Vapor Extraction
TCA	1,1,1-Trichloroethane
TCE	Trichloroethene
TPH	Total Petroleum Hydrocarbon
UCL	Upper Confidence Limit
ug	microgram
US	United States
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

1. Introduction

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this Statement of Basis to discuss the proposed remedy for the Hitachi Global Storage Technologies, Inc. (Hitachi GST) "Redevelopment Property." The Redevelopment Property is an approximately 143-acre portion of the 321-acre Hitachi GST facility, which is located at 5600 Cottle Road, San Jose, California (See Figure 1). The facility was previously owned and operated by International Business Machines (IBM) Corporation and was purchased by Hitachi GST in January 2003. Hitachi GST plans to sell the Redevelopment Property for redevelopment into commercial, retail, residential, and open space uses (See Figure 2).

The proposed remedy is to remove all contaminated soil at the Redevelopment Property above DTSC established cleanup levels and dispose of the soil at an approved landfill. The proposed remedy, if approved, will allow unrestricted use of the Redevelopment Property, except for limited areas under roadways owned by the City of San Jose. The proposed remedy does not apply to the facility property that Hitachi GST will continue to own and operate. The proposed remedy does not address the groundwater contamination at the facility. The groundwater contamination continues to be addressed by IBM through remedies approved by the California Regional Water Quality Control Board, San Francisco Bay Region.

DTSC is issuing this Statement of Basis as part of its public participation responsibilities under the California Health and Safety Code, Chapter 6.5, Hazardous Waste Control. This Statement of Basis summarizes information that can be found in greater detail in the Corrective Measures Study (CMS) Report, revised August 31, 2006. Additional detail can be found in other documents contained in the administrative record for the Hitachi GST facility. DTSC encourages the public to review these documents in order to gain a more comprehensive understanding of the facility and corrective action activities that have been conducted there.

In addition to this Statement of Basis, DTSC has prepared a Fact Sheet that summarizes the proposed remedy and provides a notice of the public comment period.

DTSC may modify the proposed remedy or select another remedy based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy and alternatives. The public can be involved in the remedy selection process by reviewing the documents during the 45-day public comment period which begins September 8, 2006, and ends on October 23, 2006. Also, there will be a public workshop and public hearing starting at 6:30 PM on Thursday, October 12, 2006, at the Southside Community Center, 5585 Cottle Road in San Jose. DTSC will present information and answer public questions about the remedy selection during the public workshop and will accept public comments during

the public hearing. DTSC will select a final remedy only after the public comment period has ended and any information submitted during this time has been reviewed and considered. Once a final decision is issued on the proposed remedy, Hitachi GST would be required to implement the selected remedy under DTSC oversight. Hitachi GST will submit a report when remedy implementation is completed.

2. Proposed Remedy

Hitachi GST is proposing the following remedy for contaminated soil at the Redevelopment Property:

- Excavation of contaminated soil, temporary stockpiling for waste characterization testing, and disposal at an approved off-site facility.

- Confirmation sampling to ensure that all contaminated soil has been removed.

If, after excavating approximately 1,000 cubic yards of soil, chemicals remain at concentrations greater than cleanup goals, then supplemental remedial actions may be evaluated and implemented after approval by DTSC. In addition to additional excavation, other remedial actions to be considered are:

- Soil vapor extraction of volatile organic chemicals.

- Capping residual contamination under publicly-owned property (such as a street or roadway) with deed restrictions.

A more detailed discussion of the proposed remedy is included in Section 7 of this Statement of Basis.

As interim remedial measures, Hitachi GST will reuse road base containing naturally occurring asbestos under public roads, with deed restrictions, and will remove pesticide contaminated soil for off-site disposal. These interim remedial measures are being conducted pursuant to a Corrective Action Consent Agreement issued on June 7, 2006.

3. Facility Background

3.1 Facility Location and Description

Hitachi GST owns a 321-acre facility located at 5600 Cottle Road in San Jose, Santa Clara County, California. The facility is located in a mixed industrial, commercial and residential area near the intersections of Monterey Highway, Blossom Hill Road, and United States (US) Route 101, approximately seven miles southeast of downtown San Jose. (See Figure 1).

Prior to 1955, the facility was an agricultural land, primarily tree orchards, with associated residences. In 1955, IBM purchased the facility, including additional surrounding land. The Storage Technology Division of IBM owned and operated the facility from 1955 through 2002. IBM designed, developed, and manufactured computer storage devices, including hard disk drives, read/write heads, and disk storage media. On or about January 1, 2003, Hitachi GST, a new company formed as a result of a combination of IBM's and Hitachi's storage technology businesses, bought the facility.

On-site operations include designing, developing, and manufacturing computer storage devices, including hard disk drives, read/write heads, and disk storage media. Currently, there are approximately 30 buildings on the facility. These buildings are used for a range of activities, including manufacturing, testing, assembly, research, development, wastewater treatment, reverse osmosis/deionized water production, utilities, chemical storage, other storage, security, offices, and cafeteria. Exterior areas of the facility primarily consist of landscaped areas, orchards, sidewalks, water fountains, asphalt parking lots, and paved private roads. In addition, a man-made lake, Homestead Lake, is located on-site.

The facility is a large quantity generator of hazardous waste and currently operates under a Resource Conservation and Recovery Act (RCRA) equivalent Hazardous Waste Facility (HWF) permit from DTSC.

Hitachi GST is moving its Research & Development (R&D) and headquarters functions to a different location in San Jose. In turn, most of the current R&D and administrative office buildings will be demolished and the land will be re-zoned, sold and redeveloped into a mixed residential, commercial, and recreational open space area. In addition, Hitachi GST will transfer ownership of Endicott Boulevard/Tucson Way to the City of San Jose. This road borders the facility to the north. All this property, termed the "Redevelopment Property", will be characterized and cleaned up as necessary for an unrestricted land use, in an effort to remove it from Hitachi GST's HWF permit. Because DTSC's regulatory authority for corrective action encompasses the entire Hitachi GST property, this work will be conducted under DTSC oversight. The

Redevelopment Property is approximately 143 acres located on the western side of the Hitachi GST facility (See Figure 2).

Hitachi GST plans to continue industrial operations (developing and manufacturing of computer storage devices) on its remaining property. This "Core Area" contains all of the current manufacturing, chemical storage, waste storage, and wastewater treatment buildings/areas on the facility. In addition, all activities currently conducted in the Redevelopment Property will be moved to the Core Area. There are no permitted hazardous waste management units in the Redevelopment Property.

3.2. Environmental Conditions and Land Use

3.2.1. Environmental Conditions

The Redevelopment Property is located in an alluvium-filled valley, the Santa Teresa Basin. Bedrock underlies the Santa Teresa Basin at depth and also forms the surrounding mountains. Most of the bedrock consists of consolidated sandstones, shales, cherts, serpentinite, and ultrabasic rocks. The region is tectonically active and faults are common in the bedrock. The floor of the Santa Teresa Basin is underlain by Quaternary alluvium consisting of unconsolidated clays, silts, sands, and gravels. The maximum thickness of the alluvium is about 400 feet near the center of the basin.

The Redevelopment Property is located within the Guadalupe River watershed, which drains an area of 170 square miles in the central and southern portions of San Jose and adjoining cities and unincorporated areas to the southwest. There are no waterways present on the Redevelopment Property. The nearest waterways include Coyote Creek, Canoas Creek, Arroyo Calero Creek, Alamitos Creek, and the Guadalupe River.

There are several groundwater aquifers beneath the Redevelopment Property. These aquifers are referred to as the A, B, C, D, E, F, and G aquifers, with the A-aquifer being the shallowest. The direction of groundwater flow varies in the different aquifer zones across the Redevelopment Property. Groundwater movement in the A-aquifer zone flows from south to northwest, while the groundwater in the deeper aquifer zones generally flows to the northwest. Measurements indicate that the depth to shallow groundwater is approximately 30 feet or greater. However, the recorded groundwater levels have historically been as shallow as 17 feet. The lowering of groundwater is attributed to additional groundwater extraction in the area, as well as the on-site groundwater extraction for treatment.

The Hitachi GST facility is a non-community, non-transient drinking water supplier and maintains a Water Supply Permit issued by the California Department of Health Services Drinking Water Program. Eleven registered groundwater production wells are located on the facility. Six wells provide drinking and process water for use at the

facility; five wells provide water for irrigation. The drinking water wells, which are located on the Core Area, and the process water wells, which are all located in the landscaping area north of Tucson Way, are screened primarily in the deeper aquifers, in the range of approximately 100 to 350 feet below ground surface (bgs). Existing documentation has indicated that these aquifers have not been impacted by on-site releases and groundwater sampling has indicated that the production wells are upgradient of the documented groundwater impacts.

The groundwater beneath the northwestern portion of the facility is contaminated with volatile organic compounds (VOCs) from previous manufacturing activities. Investigations initiated in 1980 revealed that VOCs used and stored on the IBM facility had impacted the groundwater beneath and in the vicinity of the facility. The Regional Water Quality Control Board – San Francisco Bay Region (RWQCB-SF) assigned a high corrective action priority to the facility, and specified remedial actions in Order 88-157, which was issued to IBM in 1988.

Subsequently, the facility has undergone extensive remedial actions including the remediation of solvent-impacted soil and extraction and treatment of on-site and off-site groundwater. Groundwater remediation is on-going and has resulted in significant reductions of chemical concentrations in soil and water and a reduction in the size of the groundwater contamination plume.

In August 2002, the RWQCB-SF adopted Order R2-2002-0082, which required IBM to continue the groundwater cleanup, rescinded Order 88-157, and established new site cleanup criteria. The new requirements also included the development of deed restrictions to prevent human exposure to contaminated groundwater.

3.2.2. Land Use

The Redevelopment Property is located in a mixed industrial, commercial and residential area near the intersection of Monterey Highway and Blossom Hill Road. The vicinity includes the following:

- Cottle Road is located to the west, with a shopping center, other commercial buildings, a hospital/medical center, and a medium-high density residential area beyond.

- IBM Building 025 (formerly part of the facility), which is still owned by IBM, is located to the northwest. This parcel is the proposed location of a future Lowe's Store.

- The Core Area manufacturing and industrial buildings are located to the east. Beyond the Core Area and north of the facility are the Southern Pacific Railroad

and Caltrain right-of-way, the Blossom Hill Caltrain Station, and Monterey Highway, followed by medium and medium-low density residential and a commercial shopping area beyond.

- Highway 85 and the Cottle Road Light Rail Station are located to the south, with a hospital/medical center, library, day care, and single-family residential area beyond.

Hitachi GST is proposing to move its R&D and administrative office operations to a different location in San Jose (3403 Yerba Buena Road). On the Redevelopment Property, Buildings 010, 012, 018, 026, 028, 028J, and 051 will be demolished. Two buildings, Buildings 009 (office) and 011 (cafeteria) are considered historically significant and will remain intact. The current plan is for the building demolition to start in mid-2006 and be completed by early to mid-2007.

The Redevelopment Property has been divided into five “outer” parcels (Parcels O-1 through O-5) and includes Endicott Boulevard/Tucson Way. These areas are shown in Figure 2. Following building demolition, rough grading and main utility/roadway installation by Hitachi GST, Parcels O-1 through O-5 will be sold, re-zoned, and redeveloped into a mixed residential, commercial, and recreational open space area. In addition, Hitachi GST will be transferring ownership of Endicott Boulevard/Tucson Way and newly constructed public roadways on Parcels O-1 through O-5 to the City of San Jose. The Redevelopment Property is a part of the current hazardous waste facility permit issued to Hitachi GST. Prior to sale, the Redevelopment Property must be removed from the permit.

4. Facility Investigations

Numerous investigations have been conducted at the Redevelopment Property to characterize the nature and extent of contamination. The results of these previous investigations are presented in the Current Conditions Report (CCR), dated July 2005. The CCR identified potential data gaps in the characterization of the Redevelopment Property. Based on the CCR, a Soil Inspection/Sampling Plan (SI/SP), dated January 31, 2006, was prepared to describe procedures for inspecting and sampling areas of the Redevelopment Property requiring additional characterization. The sampling areas were grouped into nine categories and addressed in the following attachments to the SI/SP:

I. Roads/Parking Lots
II. Above Ground Storage Tanks Associated with Emergency Generators
III. Buried Concrete Trenches, Building 028J, and Former Waste Vaults 02-04
IV. Hydraulic Elevators
V. Former Petroleum Underground Storage Tanks
VI. Former Orchard Areas
VII. Endicott Boulevard/Tucson Way
VIII. Other Remaining Areas
IX. Soil Gas Sampling on Parcels O-1 and O-2

As described in the SI/SP and its attachments, many of these areas will be inspected and sampled after the demolition of the buildings on the Redevelopment Property has been completed. The results of these investigations will be evaluated as described in Section 7 for the proposed remedy.

4.1. Groundwater Investigations

Part of the facility's contaminated groundwater plume is under portions of Parcels O-1 and O-2. Although groundwater contamination is not part of the proposed remedy, the historic investigations provide information about the groundwater and soil conditions at the Redevelopment Property.

IBM initiated a groundwater protection program at the facility in 1978 as part of a corporate-wide review of IBM's environmental protection plan. IBM's groundwater protection program included analysis of existing data on local groundwater quality and movement, identification of chemicals handled on-site, identification of on-site activities that could create a potential groundwater problem, and a review of past on-site chemical handing practices. In October 1980, the presence of chemicals in soil and groundwater at the facility was confirmed during removal of underground storage tanks (USTs) from Tank Farm 001 (on the Core Area). The RWQCG-SF was notified of the discovery of the release. Subsequent to the discovery, a comprehensive site-wide

investigation program was initiated at the request of the RWQCB-SF, which included extensive soil and groundwater sampling both within and outside the boundaries of the facility. The investigation resulted in an extensive groundwater monitoring network consisting of over 400 wells, over 1,000 soil borings being drilled with almost 4,000 soil samples collected and analyzed.

During the facility-wide shallow aquifer characterization, which was conducted from March to August 1982, TCE was identified in groundwater samples up to 560 ug/L in the vicinity of Buildings 010 (Parcel O-1) and 025 (not on Redevelopment Property).

In February to April 1983, a second investigation was conducted to define the areal extent of the TCE in groundwater in the vicinity of Buildings 010 and 025, to identify possible sources, and to recommend remedial measures. TCE was detected in six of 21 soil samples at concentrations up to 3.7 ug/kg. Two groundwater samples were collected from each boring and analyzed for TCE. TCE was detected up to 460 ug/L and three apparently distinct TCE plumes were identified: 1) North of Building 010, which contained TCE concentrations in groundwater greater than 100 ug/L; 2) West of Building 025, which contained TCE concentrations in groundwater greater than 100 ug/L; and 3) Near the corner of Endicott and Boulder Boulevard, which contained TCE concentrations up to 74 ug/L. Extraction wells which were installed in 1983 were expected to contain the three TCE plumes in the vicinity of Buildings 010 and 025. However, by early 1984 these extraction wells could no longer be operated due to low water levels. The source of the TCE plume in the vicinity of Buildings 010 and 025 has not been identified.

In 1988, the off-site groundwater plume from the Core Area extended more than three miles to the northwest, past the intersection of Monterey Road and Capitol Expressway, and exceeded a depth of 180 feet below ground surface (bgs). Currently, in general, the extent of chemicals in the shallow A-aquifer is limited to on-site and near site to the northwest (downgradient). Chemicals in off-site groundwater are primarily present only in the deeper B-aquifer.

No specific events have been identified that caused the release of chemicals to soil and/or groundwater at the facility. IBM determined that the releases to soil and groundwater were due to tank and pipeline fitting failures, tank and sump overflows, spillage from drum handling, and other slow chemical releases to soil and groundwater from a number of source areas over an extended period of time. The primary chemicals in groundwater are four VOCs: Freon 113, TCA, 1,1-DCE, and TCE, although other chemicals have been detected in on-site soil and groundwater including chloroform, tetrachloroethene (PCE), benzene, toluene, xylenes, diesel fuel, Shell Sol 140, petroleum naphtha, acetone, methyl ethyl ketone (MEK), isopropyl alcohol (IPA), and n-methyl-1-2-pyrrolidone (NMP). Based on the results of the soil and groundwater investigations, extensive interim remedial measures were conducted in the early 1980s,

including removal of 65 USTs and excavation and off-site disposal of over 23,000 cubic yard of on-site soil. The majority (over 98%) of the soil excavated on the facility was located on the Core Area.

Currently IBM operates groundwater extraction and treatment systems, which include shallow and deep aquifer extraction wells, conveyance piping, and air stripping via an air-stripping column and through spray nozzles. According to the 2003 Annual Report to the RWQCB-SF for the Groundwater Self-Monitoring Program, dated February 2004 (2003 Annual Report), a total of approximately 11,273 pounds of chemicals have been removed by the groundwater treatment system. In accordance with RWQCB-SF Order R2-2002-0082, a total of 122 groundwater wells are currently sampled on a quarterly, semiannual, or annual basis. Forty-three (43) of these wells are located outside the facility and seventy-nine (79) of these wells are located at the facility.

According to the 2003 Annual Report, 26 A-aquifer wells on and near the facility and one B-aquifer well at the facility currently exceed cleanup standards. Six of these A-aquifer wells (A-30, A-39, A-41, RA-24, RA-27, and RA-30) are located on the Redevelopment Property. The A-aquifer wells exceed the cleanup standards primarily for TCE (5 micrograms per liter, ug/L), as well as 1,1-dichloroethane (1,1-DCA) (5 ug/L), and 1,1-DCE (6 ug/L). The B-aquifer well, which is not located in the Redevelopment Property, exceeds the cleanup standard for Freon 113 (120 ug/L).

4.2. Soil Investigations

As mentioned in Section 4.1, soil investigations conducted in the 1980s for the facility groundwater contamination investigation included the Redevelopment Property. Also, soil investigations and some excavations were conducted in the 1980s at the four identified potential minor source areas on the Redevelopment Property: Building 026, Building 028, Hydraulic Fluid Releases in Elevator Shafts – Building 028, and Diesel Fuel releases Associated with the Hitachi GST Electrical Substation. Additional soil investigations for potential chemical releases have been conducted in other parts of the Redevelopment Area. The CCR describes all these soil investigations in detail for Parcels O-1 through O-5 and for individual buildings.

The additional soil investigations described in the CCR were typically for the following situations:

- Underground storage tanks for diesel fuel for emergency generators plus the fuel pipelines and generator locations.

- Waste vaults, sumps and other releases of chemicals used in product development and photographic laboratories at Building 026.

- Hydraulic fluid releases at elevators and loading docks.
- Concrete trenches and pipelines formerly transferring wastewater.
- Waste vault and other releases of chemicals used in the Building 028 vicinity.
- Waste vault, spill containment tank, solvent tank, and chemical storage room at Building 028J.
- Underground storage tank for gasoline for refueling vehicles at Building 018.
- Diesel fuel spills and rainwater/spill collection vault at the electrical substation.

The SI/SP and attachments were developed based on the evaluations in the CCR of the results of these investigations. Implementation of the SI/SP will provided additional and confirmatory soil results.

One of the areas identified in the SI/SP for further investigation was the location of a release in November 1985 of Shell Sol 140 beneath Tucson Way near Building 110. Shell Sol 140 is a petroleum-based dry cleaning solvent. In October 2005, 30 soil samples collected from six locations along Tucson Way were analyzed for kerosene and diesel. The kerosene was detected in only one sample (1.6 mg/kg) and the highest concentration of diesel was 19 mg/kg. These concentrations are below the cleanup goals and no further investigation of this area is proposed.

4.3. Soil Gas Investigations

Since Parcels O-1 and O-2 overlay portions of the groundwater plume containing VOCs, a soil gas investigation on these two parcels was conducted in October 2004. For Parcel O-1, the soil gas investigation focused on the southeast corner (near monitoring well RA-24) where high variations in detected concentrations of vinyl chloride and TPH-Shell Sol 140 had been identified during recent rounds of groundwater sampling. For Parcel O-2, the soil gas investigation focused on the northwest corner (near monitoring well A-30) where the highest detected concentrations of TCE were found in the Redevelopment Property. Well A-30 is also downgradient of a potential TCE source area.

For both areas (near well RA-24 and near well A-30), soil gas samples were taken every 100 feet, starting at the well of concern and stepping out. At each sampling location, soil gas samples were collected typically from a depth of five and fifteen feet bgs via temporary probes. A total of 39 locations were samples, 28 locations on Parcel O-1 and 11 locations on Parcel O-2. All soil gas samples were analyzed for VOCs

using a mobile laboratory. Ten percent of the samples were analyzed by a fixed-base laboratory.

On Parcel O-1, low concentrations of VOCs were detected in all soil gas samples. The VOCs detected most frequently on Parcel O-1 included 1,1 DCE, Freon 113, 1,1,1-TCE, PCE, benzene, toluene, xylenes, and TPH. These compounds correspond with those detected in groundwater during the 2001 to 2003 time frame. Generally, the concentrations of these VOCs in soil gas increased with depth (i.e. the concentrations at 15 feet bgs were generally higher than the concentrations at 5 feet bgs). The concentrations in soil gas also generally decreased with increasing distance from Monitoring Well RA-24. Vinyl chloride was detected in only one sample on Parcel O-1: at 15 feet bgs at a concentration of 0.017 ug/L.

On Parcel O-2, low concentrations of VOCs were also detected in all soil gas samples. The VOCs detected most frequently on Parcel O-2 included 1,1,1-TCA, TCE, benzene, toluene, xylenes, and TPH. These compounds correspond with those detected in groundwater at the facility, with the exception of xylene, which has not been detected in groundwater during the 2001 to 2003 time frame. As with Parcel O-1, the concentrations of these VOCs in soil gas increased with depth, although the difference was not as pronounced as Parcel O-1. This is primarily because the concentrations of VOCs in soil gas were generally lower on Parcel O-2 compared to Parcel O-1. The concentrations in soil gas also generally decreased with increasing distance from Well A-30. Vinyl chloride was not detected in any samples from Parcel O-2.

5. Interim Remedial Measures

5.1 Naturally Occurring Asbestos

During initial development of the facility, construction-grade fill material, which contained naturally-occurring asbestos (NOA) in the form of serpentine rock, from a local quarry was used as fill beneath buildings, parking lots and roadways. The serpentine-rock-containing soil was identified during soil excavation activities related to the facility cleanup in the early 1980s. Previous investigations have identified NOA-containing material used as road base located beneath several roadways and parking lots located within the Redevelopment Property. DTSC has approved plans for the NOA-containing road base to be excavated and reused as road base under future public roadways within the Redevelopment Property. A deed restriction will be adopted for each of the public roadways that have NOA-containing road base. Any NOA-containing road base not reused on-site will be disposed of at an approved off-site landfill. Additional details concerning this interim remedial measure may be found in the "Naturally Occurring Asbestos (NOA) Management Plan, Redevelopment Property," dated June 27, 2006.

5.2 Pesticides

Prior to 1955, the location of the facility was agricultural land, primarily tree orchards and associated residences. Although much of the facility was built up after 1955, approximately 36 acres of tree orchard were located on the Redevelopment Property (primarily Parcels O-1, O-3, and O-5). The soil in the tree orchards could have been impacted by pesticides and metals used on the fruit trees. In October 2004, soil sampling was conducted in orchard areas on the Redevelopment Property for organochlorine pesticides (OCPs) and metals. Based on the results of the 2004 sampling, no additional investigation or remediation of the current orchard areas appeared warranted. However, because many of the historical orchard areas were covered by roads or parking lots, two sampling events for OCPs and arsenic in the native soil below asphalt in the Redevelopment Property were conducted in 2005. Based on the 2005 sampling results, a localized area was identified where OCP concentrations in soil were present above the RBTCs. Additional step-out sampling was conducted in April 2006 to define the boundary of the area with elevated OCP concentrations. DTSC has approved a plan for removal of the pesticide contaminated soil and disposal at an approved off-site landfill. Additional details concerning this interim remedial measure may be found in the "Pesticide Investigation Results and Soil Removal Plan – Former Orchard Areas Beneath Roads/Parking Lots," dated June 27, 2006.

6. Summary of Facility Risks

The proposed land use for the Redevelopment Property is residential, commercial, and open space (or park) use. Based on this proposed future land use, populations that could potentially be exposed to chemicals remaining in soil include residents (children and adults), commercial workers, and park visitors (children and adults). Additional populations on the Redevelopment Property could include short-term construction/ maintenance workers during redevelopment or other short-term maintenance activities. Risk Based Target Concentrations (RBTCs) were calculated for each of these populations for all chemicals detected in groundwater, soil gas and soil (see Table 1). RBTCs represent the concentration of a chemical that can remain in soil and still be protective of human health for the future land use.

The methodology used to develop the RBTCs is consistent with California and U.S. Environmental Protection Agency (USEPA) risk assessment guidance. The federal National Contingency Plan (NCP) is commonly cited as the basis for calculating target risk and hazard levels. According to the NCP, lifetime incremental cancer risks posed by a site should not exceed one in a million (1×10^{-6}) to one hundred in a million (1×10^{-4}). Also, noncarcinogenic chemicals should not be present at levels expected to cause adverse health effects. Individual chemical exposures that yield a Hazard Index (HI) of less than one are not expected to result in adverse noncancer health effects. As a risk management policy, DTSC generally considers 1×10^{-6} to be a point of departure for purposes of making risk management decisions. The RBTCs listed in Table 1 correspond to a cancer risk of 1×10^{-6}. For noncancer health hazards, a target HI of one is identified.

In some cases, naturally occurring background concentrations for inorganic chemicals are higher than risk-based concentrations. For example, DTSC has previously agreed that the site-specific background concentration for arsenic is a mean concentration of 8 milligrams per kilogram (mg/kg) with a maximum concentration of 12 mg/kg. In cases where the background concentration is higher than the RBTC, the background concentration will be used to evaluate the chemical concentrations detected at the Redevelopment Property.

As a conservative screening evaluation, individual soil samples will be compared directly to the chemical-specific RBTCs (or background concentrations, if applicable). In many cases, if a single point concentration is greater than the RBTC (or background concentration, if applicable), corrective measures will be implemented. In some cases where the single point concentration is above the lowest RBTC, an exposure concentration may be calculated according to California and federal risk assessment guidance.

According to USEPA, the exposure concentration term in the intake equation is the arithmetic average of the concentration that is contacted over the exposure period. Although this concentration does not reflect the maximum concentration that could be contacted at any one time, it is regarded as a reasonable estimate of the concentration likely to be contacted over time, since assuming long-term contact with the maximum concentration is not reasonable. Because of the uncertainty associated with any estimate of exposure concentration, USEPA recommends that the 95 percent upper confidence limit (UCL) on the arithmetic average be used for this variable (USEPA 1989). The 95 percent UCL provides reasonable confidence that the true site average will not be underestimated.

Exposure concentrations below the RBTCs (or background levels, if applicable) would support the conclusion that risks posed by residual chemicals in soil at the Redevelopment Property are within acceptable limits. The presence of exposure concentrations above or at the high end of this risk range may warrant additional remediation or risk management measures.

Once the investigation and remediation of the Redevelopment Property has been completed, a final risk assessment will be prepared. In addition to comparing the residual contaminants to RBTCs, this risk assessment will evaluate cumulative risks in order to ensure that cumulative exposure to multiple chemicals will not result in risks above an acceptable level.

If a chemical is detected during investigation/remediation for which a RBTC has not already been developed, then the chemical concentration will be compared to USEPA Preliminary Remediation Goals (PRGs) and/or California Human Health Screening Levels (CHHSLs). The PRGs are risk-based concentrations that are intended to assist risk assessors and others in initial screening-level evaluations of environmental measurements. The CHHSLs are concentrations of hazardous chemicals in soil that the CalEPA considers to be below thresholds of concern for human health. Both the PRGs and CHHSLs correspond to a cancer risk of 1 x 10^{-6} and a noncancer HI of one.

TABLE 1
Remedial Goals for Soil
Hitachi Global Storage Technologies, Inc.
San Jose, CA

Chemical	Remedial Goal (mg/kg)	Basis (a)
Volatile Organic Compounds (VOCs)		
Acetone	200	Child Resident, Noncancer
Carbon tetrachloride	0.00061	Age-Adjusted Resident, Cancer
Chloroform	0.0073	Age-Adjusted Resident, Cancer
Freon 113 (Trichlorotrifluoroethane)	140	Child Resident, Noncancer
Methylene chloride (Dichloromethane)	0.046	Age-Adjusted Resident, Cancer
Tetrachloroethene	0.005	Age-Adjusted Resident, Cancer
1,1,1-Trichloroethane	3.6	Child Resident, Noncancer
Trichloroethene	0.019	Age-Adjusted Resident, Cancer

Chemical	Remedial Goal (mg/kg)	Basis (a)
Total Petroleum Hydrocarbons (TPH)		
TPH – Diesel	5,200	Child Resident, Noncancer
TPH – Residual (Oil and Grease)	2,300	Child Resident, Noncancer
Semi Volatile Organic Compounds (SVOCs)		
Hydroquinone	8.7	Age-Adjusted Resident, Cancer
Pesticides		
Aldrin	0.029	Age-Adjusted Resident, Cancer
Chlordane	0.44	Age-Adjusted Resident, Cancer
alpha-Chlordane	0.44	Age-Adjusted Resident, Cancer
gamma-Chlordane	0.44	Age-Adjusted Resident, Cancer
Dieldrin	0.03	Age-Adjusted Resident, Cancer
4,4'-DDD	2.4	Age-Adjusted Resident, Cancer
4,4'-DDE	1.7	Age-Adjusted Resident, Cancer
4,4'-DDT	1.7	Age-Adjusted Resident, Cancer
Endosulfan I	370	Child Resident, Noncancer
Endrin	18	Child Resident, Noncancer
Toxaphene	0.4	Age-Adjusted Resident, Cancer
Metals		
Antimony	31	Child Resident, Noncancer
Arsenic	12 (b)	Maximum Site Background
Barium	5,400	Child Resident, Noncancer
Beryllium	150	Child Resident, Noncancer
Cadmium (Soil)	77	Child Resident, Noncancer
Chromium (III)	120,000	Child Resident, Noncancer
Chromium (VI)	17	Age-Adjusted Resident, Cancer
Cobalt	900	Age-Adjusted Resident, Cancer
Copper	3,100	Child Resident, Noncancer
Iron	23,000	Child Resident, Noncancer
Lead	150 (c)	Residual Soil, CHHSL
Mercury	23	Child Resident, Noncancer
Molybdenum	390	Child Resident, Noncancer
Nickel	1,500	Child Resident, Noncancer
Vanadium	78	Child Resident, Noncancer
Zinc	23,000	Child Resident, Noncancer
Anions		
Fluoride	4,700	Child Resident, Noncancer
Nitrate	130,000	Child Resident, Noncancer

Notes:
CHHSL = California Human Health Screening Level
mg/kg = milligram per kilogram

(a) The remedial goal listed is either the minimum residential risk-based target concentration (RBTC) developed in the Current Conditions Report (CCR) or Site background concentration.

(b) Site background level previously agreed to with the Department of Toxic Substances Control (DTSC) - a mean arsenic concentration of 8 mg/kg with a maximum concentration of 12 mg/kg

(c) California Human Health Screening Level (CHHSL) for lead in residential soil was selected as the screening value for inorganic lead.

7. Scope of Corrective Action

7.1 Selected Remedy:

The proposed remedy consists of removing all contaminated soil at the Redevelopment Property above DTSC established cleanup levels and disposing it at an approved landfill. A Soil Management Plan (SMP) has been developed, which contains detailed procedures for removal of contamination above the cleanup goals. If removal of all contaminated soil is not feasible, there are provisions for installing a soil vapor extraction (SVE) system or capping the contaminated soil, subject to DTSC approval. The proposed remedy is only for the Redevelopment Property and not the entire Hitachi GST facility. The remedy also does not address contaminated groundwater at the Hitachi GST facility, which is being remediated by IBM in accordance with an Order from the RWQCB-SF.

In accordance with the approved SI/SP, an Environmental Professional will be on-site to oversee some building demolition, including removal of building slabs, demolition of building foundations and other earthwork activities. During these activities the Environmental Professional will be looking for visual and/or olfactory evidence of contamination. In addition, in certain areas, the Environmental Professional will be inspecting the integrity of pipes, tanks, concrete pads, building foundation floors, etc. as they are removed and/or demolished. If cracks, holes, or any other indication that a release may have occurred are observed, the soil in the vicinity will be sampled in accordance with the SI/SP.

If during demolition, soil is encountered that is visibly stained, discolored, shiny, or oily or has a noticeable solvent-like or hydrocarbon odor that is not in an area specifically described in the SI/SP, a sample of the visibly contaminated or odorous soil ("potential source soil") will be collected and analyzed.

The results of the field or laboratory analyses will be used to identify which chemicals are present in the visibly contaminated or odorous soil. Pursuant to the SMP, if the remedial goals for soil are exceeded for the area where the soils are present, then the soil will be excavated until:

- Visual or olfactory evidence of contamination has been removed;

- Analysis of confirmation soil samples for relevant chemicals indicates that the RBTCs, site-specific background concentrations for inorganic chemicals, PRGs, or CHHSLs (as appropriate) are met; or

- Approximately 1,000 cubic yards of soil has been excavated. If upon reaching his volume of soil, chemicals remain at concentrations above the relevant soil remedial

goals for the area, then additional remedial actions may be necessary and must be evaluated.

Confirmation samples will be collected from in-place soils at the limits of the excavation as follows:

- Sidewall samples will be collected from exposed soil approximately one-half of the excavation depth at an interval of approximately one sample per 100 to 150 linear feet of sidewall excavation face. A single sidewall confirmation sample will consist of four discrete samples that will be composited in the laboratory to result in a single composite analysis.

- If a sidewall face is less than 50 linear feet, a discrete sample will be collected at one-half the excavation depth.

- Bottom confirmation samples will be collected from the excavation bottom at discrete locations on approximately 50-foot centers for areas greater than approximately 2,500 square feet. These samples will not be composited. For areas smaller than 2,500 square feet, one bottom sample will be collected from the center of the excavation.

- A minimum of one bottom sample and one sidewall sample per excavation face will be collected from each excavation.

- If concentrations of chemicals are less than the applicable RBTCs or site-specific background concentrations for inorganic chemicals, then no further excavation will be required.

As soil is excavated, it may be temporarily stored at staging areas on-site before off-site transportation. At the staging areas, excavated soil will be placed on an impermeable barrier and covered to prevent precipitation run-on/run-off and dust generation. The stockpiles will not be higher than six feet. Soil from each excavation area will be stockpiled separately to prevent mixing different types of contamination. Stockpiles will be sampled based on the soil conditions and the requirements of the appropriate receiving facility. After characterization, the stockpiled soil will be transported off-site for disposal at an appropriately permitted or otherwise authorized facility.

7.2 Supplemental Remedial Actions:

If more than 1,000 cubic yards of soil must be excavated, supplemental remedial action may be taken. In addition to continued excavation, other alternatives are SVE and capping with deed restrictions.

Soil Vapor Extraction

If soil has VOCs above remedial goals at depths greater than five feet, installation of a SVE system may be warranted. The exact design of the SVE system will be based on the type and concentration of the VOCs, the areal extent of the VOCs, and the permeability of the soil. If it is determined that SVE is a viable technology for use in a specific portion of the Redevelopment Property in lieu of additional excavation, plans and specifications for the SVE system will be submitted to the DTSC for approval prior to implementation

Capping with Deed-Restrictions

If soil with chemicals above remedial goals is located in a publicly-owned portion of the Redevelopment Property (such as a street or roadway), then the residual contaminated soil area may be capped and deed restrictions implemented. Capping and deed restrictions will only be implemented if the following conditions are met:

- the concentrations of residual chemicals do not pose a risk to future site occupants if they remain buried;
- the concentrations of residual chemicals do not pose a threat to ground water; and
- DTSC approves.

8. Summary and Evaluation of Alternatives

The remedial alternatives identified in the CMS Report are: Alternative 1 - No Action and Alternative 2 - Implementation of a SMP. In the No Action alternative, no cleanup occurs, redevelopment activities proceed, and the presence of contaminated soil is ignored. The Implementation of the SMP alternative consists of identification, management, and off-site disposal of soil contaminated above DTSC approved cleanup goals. If removal of all contaminated soil is not feasible, then deed restrictions will be required for the areas with remaining contaminated soil. DTSC will select the proposed remedy after evaluating the effectiveness and feasibility of the proposed alternatives in light of the corrective action objectives (CAOs) for the Redevelopment Property.

The overall CAO for the Redevelopment Property is to prevent exposure of site workers and future occupants to elevated concentrations of chemicals in environmental media. In addition, elevated concentrations of chemicals must be addressed in order for DTSC to remove the Redevelopment Property from the HWF permit for the Hitachi GST facility.

The specific CAOs for the Redevelopment Property are as follows:

- Ensure concentrations of contaminants in soil are below the DTSC approved site-specific RBTCs or site-specific background concentrations for inorganic chemicals:, and

- To detail procedures for characterizing and managing contaminated soil encountered during building demolition and/or earthwork activities during Hitachi's redevelopment.

DTSC evaluated the alternatives based on effectiveness factors (1-4) and implementability factors (5-8) listed in Table 2, which summarizes the comparative analysis of the two proposed alternatives. Because the extent of soil contamination on the Redevelopment Property is not known, there was no evaluation of the cost of the alternatives.

Table 2 Comparative Analysis of Remedial Alternatives

	Alternative 1 **No further action**	**Alternative 2** **Implementation of Soil Management Plan**
1) Overall protection of human health and the environment.	Alternative is not protective of human health and the environment.	Alternative provides significant protection of human health and the environment.
2) Reduction of toxicity, mobility, or volume.	Alternative will not reduce toxicity, mobility, or volume of contaminants.	Alternative will achieve significant reduction of volume of contaminated soil at the facility.
3) Long-term effectiveness and permanence	Alternative does not provide long-term effectiveness.	This alternative removes contaminated soil from the facility and therefore has long-term effectiveness.
4) Short-term effectiveness.	Alternative does not provide short-term effectiveness.	In the short-term, this alternative would potentially expose construction workers and public to contaminated soil. A health and safety plan, dust control practices and air monitoring will be employed to protect construction workers and the public.
5) Technical feasibility	Alternative requires no remedial action.	The technical approach is clear and the remedy is easily implementable.
6) Administrative feasibility	Alternative requires no remedial action.	The alternative will require approvals from State and local regulatory agencies.

	Alternative 1 **No further action**	**Alternative 2** **Implementation of Soil Management Plan**
7) State acceptance	Alternative would not be acceptable to State because contamination above health risk based levels would remain on the property.	Alternative will be acceptable to State because it addresses short- and long-term protection of the community.
8) Community acceptance.	Likely to not be acceptable to community because contamination will remain on the property. Community acceptance will be evaluated based on comments received during 45-day public comment period.	Likely to be acceptable to community because contamination will be removed from the property. Community acceptance will be evaluated based on comments received during 45-day public comment period.

9. Public Participation

DTSC is now formally soliciting public comments on these documents during a 45-day comment period. If DTSC approves the CMS Report, Hitachi GST will be authorized to implement the remedies recommended in the document and summarized in this Statement of Basis. The public comment period begins September 8, 2006, and ends October 23, 2006.

A Public Workshop and a Public Hearing will be held on October 12, 2006, starting at 6:30 PM at the Southside Community Center located at 5585 Cottle Road, San Jose, California 95123, (408) 629-3336. DTSC will present the project and answer questions during the Workshop and accept comments during the Hearing.

Public input on the proposed corrective action remedies, and on the information that supports the selection of those remedies, is an important contribution to the selection process. DTSC will consider all public comments received before issuing the final remedy selection decision. The final remedies selected could be different from those that have been proposed, depending on the information that is received through the public participation process.

The CMS Report and other project documents are available for review at:

Santa Theresa Public Library
290 International Circle
San Jose, California 95119
(408) 281-1879

The full administrative record will be available for public review at:

Department of Toxic Substances Control
700 Heinz Avenue
Berkeley, CA 94710
(510) 540-3800 Call for appointment

In addition, this Statement of Basis and the project fact sheet will be available on the DTSC website at:

http://www.dtsc.ca.gov

All written comments on the proposed remedy selection should be postmarked or e-mailed by midnight on October 23, 2006, to the following address:

Mr. Paul Ruffin
Hazardous Substances Engineer
Standardized Permitting and Corrective Action Branch
Department of Toxic Substances Control
8800 Cal Center Drive, 2nd Floor
Sacramento, CA 95826-3200
pruffin@dtsc.ca.gov

To obtain additional information or if you have questions regarding the Redevelopment Property at the Hitachi GST facility, please contact Mr. Paul Ruffin at (916) 255-6677 or pruffin@dtsc.ca.gov.

10. Key References

1) ENVIRON International Corporation. 2005. *Draft Current Conditions Report, Hitachi Global Storage Technologies, Inc., Redevelopment Area and Endicott Boulevard/Tucson Way, 5600 Cottle Road, San Jose, California.* July.

2) ENVIRON International Corporation. 2006. *Soil Inspection/Sampling Plan, Hitachi Global Storage Technologies, Inc., Redevelopment Area and Endicott Boulevard/Tucson Way, 5600 Cottle Road, San Jose, California.* August 22, 2005, revised January 31.

3) ENVIRON International Corporation. 2006. *Naturally Occurring Asbestos (NOA) Management Plan, Redevelopment Property, Hitachi Global Storage Technologies, Inc., 5600 Cottle Road, San Jose, California*. June 27.

4) ENVIRON International Corporation. 2006. *Pesticide Investigation Results and Soil Removal Plan – Former Orchard Areas Beneath Roads/Parking Lots.* June 27.

5) ENVIRON International Corporation. 2006. *Corrective Measures Study (CMS) Report, Redevelopment Property, Hitachi Global Storage Technologies, Inc., 5600 Cottle Road, San Jose, California.* June 28, 2006, revised August 31.

Figure 1

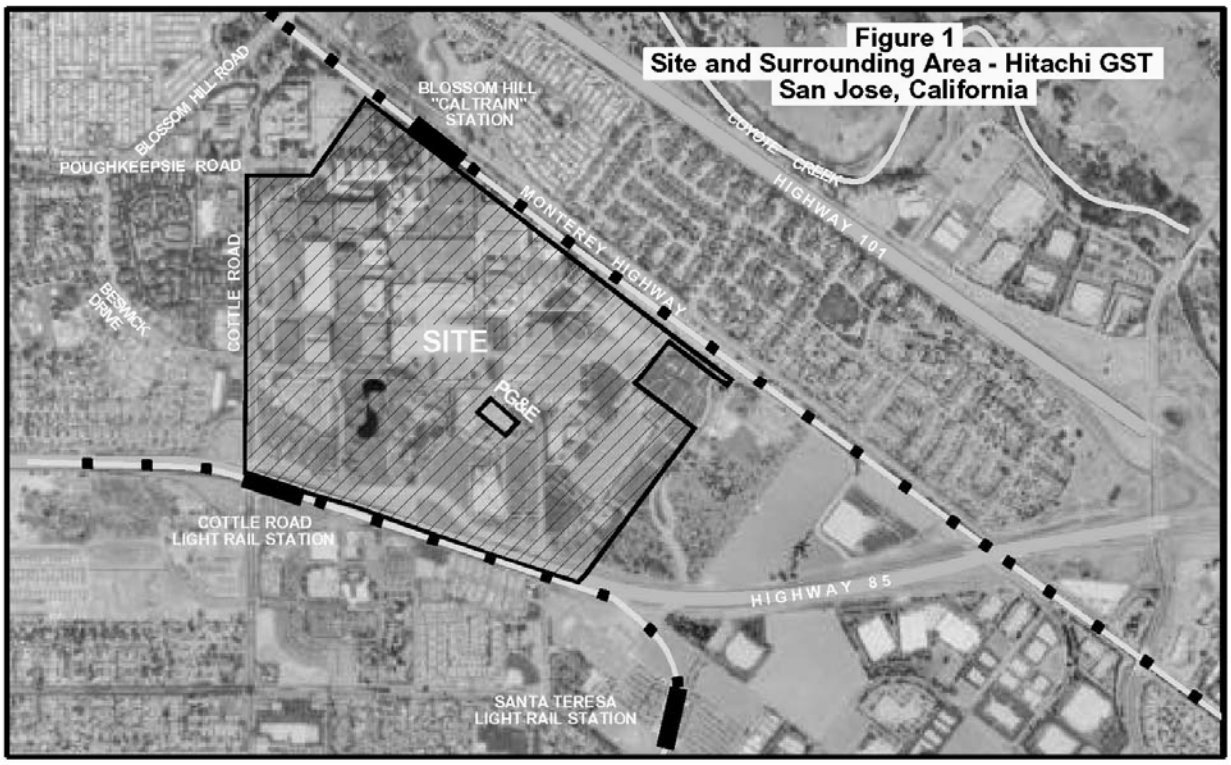
Figure 1
Site and Surrounding Area - Hitachi GST
San Jose, California
BLOSSOM HILL ROAD
BLOSSOM HILL "CALTRAIN" STATION
POUGHKEEPSIE ROAD
COYOTE CREEK
HIGHWAY 101
MONTEREY HIGHWAY
COTTLE ROAD
BESMCK DRIVE
SITE
PG&E
COTTLE ROAD LIGHT RAIL STATION
HIGHWAY 85
SANTA TERESA LIGHT RAIL STATION

Figure 2

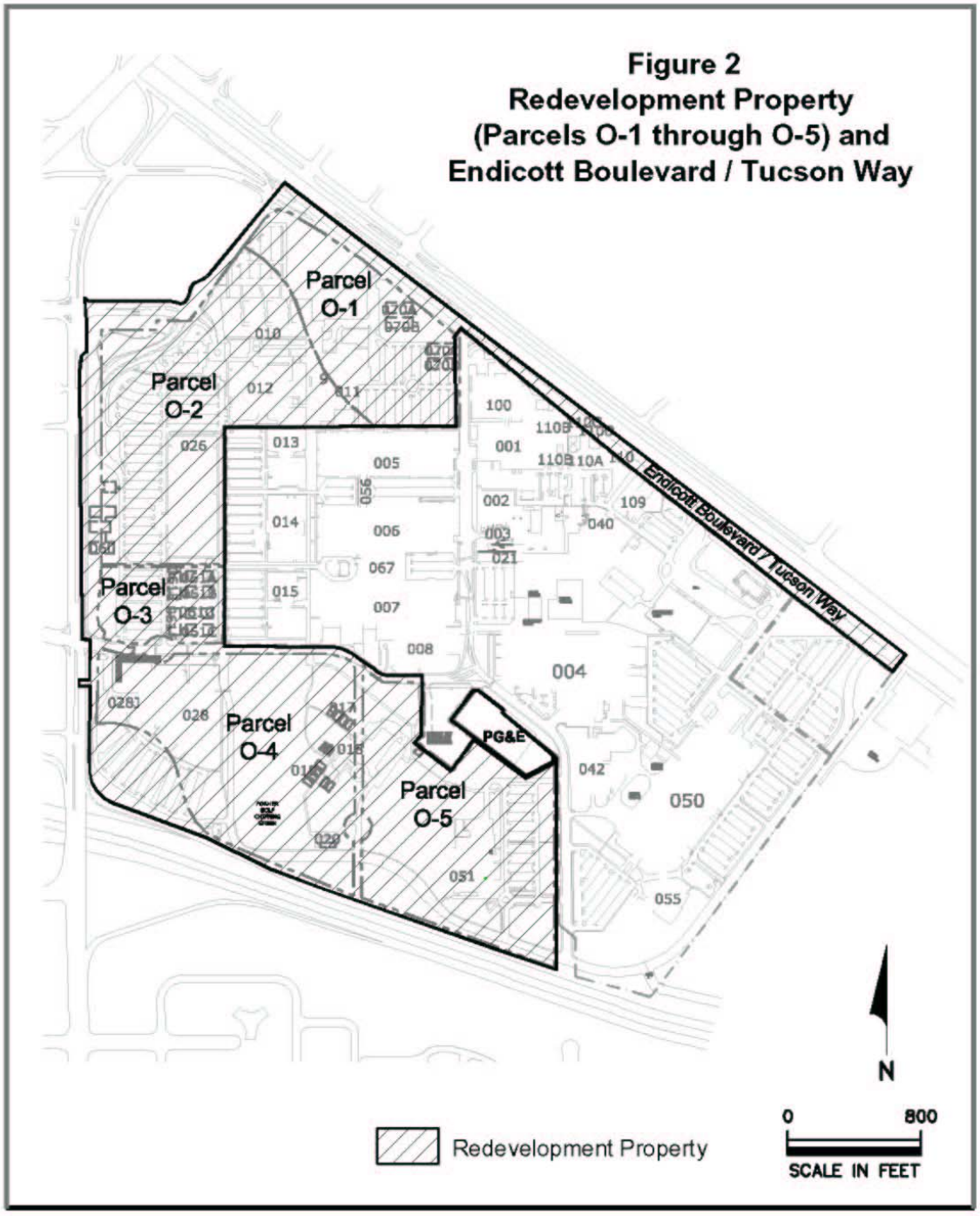
Figure 2
Redevelopment Property
(Parcels O-1 through O-5) and
Endicott Boulevard / Tucson Way
Parcel O-1
Parcel O-2
Parcel O-3
Parcel O-4
Parcel O-5
PG&E
Endicott Boulevard / Tucson Way
N
0
800
SCALE IN FEET
Redevelopment Property