

SPILL PREVENTION, CONTROL
AND
COUNTERMEASURE PLAN
(SPCC)

Joint Genome Institute
Production Sequencing Facility
Walnut Creek, California

Prepared by

Robert Fox
Lawrence Berkeley National Laboratory

REVISION 1.0
May 1, 2003

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SPCC PLAN APPROVAL

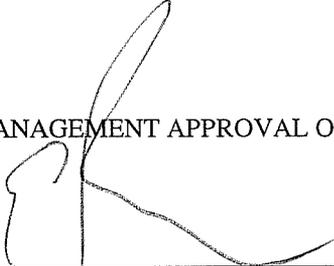
REVISION 1.0

AMENDMENT 0.0

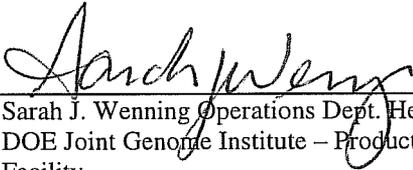
DESCRIPTION OF SPCC PLAN AMENDMENT

Description of Amendment

MANAGEMENT APPROVAL OF SPCC PLAN REVISION/AMENDMENT


Dr. Edward M. Rubin, Director
DOE Joint Genome Institute

3/25/03
Date


Sarah J. Wenning, Operations Dept. Head
DOE Joint Genome Institute – Production Genomics
Facility

3/24/03
Date

PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify that I have examined the facility, and being familiar with the provisions of 40 CFR 112, attest that this SPCC Plan has been prepared or modified in accordance with good engineering practices.


Signature of Registered Professional Engineer

3/31/03
Date

Michael C. DONG
Printed Name of Registered Professional Engineer



SPCC PLAN APPROVAL

REVISION 0.0

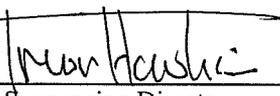
AMENDMENT 0

DESCRIPTION OF SPCC PLAN AMENDMENT

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MANAGEMENT APPROVAL OF SPCC PLAN REVISION/AMENDMENT

 Date 5/25/00
Elbert Branscomb, Director
Joint Genome Institute

 Date 5/25/00
Trevor Hawkins, Sequencing Director
Joint Genome Institute – Production Sequencing Facility

PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify that I have examined the facility, and being familiar with the provisions of 40 CFR 112, attest that this SPCC Plan has been prepared or modified in accordance with good engineering practices.

 Date 5/17/2000
Signature of Registered Professional Engineer

Michael C. Dong
Printed Name of Registered Professional Engineer



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1.0 Introduction

1.1 Purpose

The purpose of this Spill Prevention, Control, and Countermeasure (SPCC) Plan is to provide standards for the storage and usage of oil at the Joint Genome Institute – Production Sequencing Facility (JGI) that will prevent the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines. This SPCC Plan (Plan) has been prepared in accordance with the requirements set forth in Title 40, Part 112 of the Code of Federal Regulations (40 CFR 112); the California Health and Safety Code Chapter 6.67 (H&SC 6.67); and the United States Department of Energy (DOE) Order No. 5400.1. In order to prepare this Plan, the Lawrence Berkeley National Laboratory (Berkeley Laboratory) has analyzed the JGI facility's capability to prevent oil discharges and facilitate safety awareness. By accumulating the information necessary for the Plan, the Berkeley Laboratory promotes the use of appropriate design and operational standards that reduce the likelihood of an oil discharge at the JGI facility. Location maps are found in Appendix B.

1.2 Applicability

Facilities are required to prepare SPCC Plans if they store any form of oil or petroleum product in excess of the minimum quantities defined below, and are located such that the facility could reasonably be expected to discharge harmful quantities of oil into navigable waters. Non-transportation facilities are required to prepare SPCC Plans if they meet the following criteria:

- Have an aboveground storage capacity of more than 660 gallons in a single tank, or
- An aggregate aboveground storage capacity of more than 1,320 gallons, or
- A total underground storage capacity of 42,000 gallons; and
- Could reasonably be expected to discharge oil in harmful quantities into navigable waters of the United States.

The Joint Genome Institute currently has:

- An aboveground storage tank that has a storage capacity of 4000 gallons.

- A storm drain, located 50 yards from the aboveground storage tank, discharges through the storm drain system into a creek named, "Walnut Creek". Walnut Creek flows into Suisun Bay - both are navigable waters of the United States.

The Joint Genome Institute is therefore subject to the requirement to prepare a SPCC Plan.

For the purposes of this Plan:

- Oil is defined in 40 CFR 112.2(a) as "oil (or petroleum products) of any kind or in any form, including but not limited to petroleum, fuel oil, sludge, oil refuse and oil mixed with wastes other than dredged spoil."
- Harmful quantities of oil or petroleum products are defined in 40 CFR 110 as those that "(a) violate applicable water quality standards, or (b) cause a film or sheen upon or discoloration of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines."
- A bulk oil or petroleum storage unit is defined as a storage tank or drum having a capacity of at least 1 barrel, or 42 gallons. Selection of this quantity was based on the minimum quantity that must be reported in the event of a release (H&SC 6.67 §25270.8). This Plan addresses bulk storage of oil or petroleum products only.

1.3 Plan Maintenance and Amendments

The Environment Protection (EP) Group of the Berkeley Laboratory is responsible for maintaining and updating this SPCC Plan. A complete copy of this Plan is maintained at all times at the JGI Facility Maintenance Manager's office, at the EP Group office of the Berkeley Laboratory and at the DOE Oakland Operations Office. This Plan is available to representatives of regulatory agencies for on-site review during normal business hours.

The California State Water Resources Control Board may require amendment to the Plan following spills of harmful quantities of oil to navigable waters. The SPCC Plan will be amended within six months following any change in facility design, construction, operation, or maintenance, which significantly affects the potential for discharges of oil into navigable waters. In addition, the Berkeley Laboratory will review and evaluate the SPCC Plan every three years. Within six months following completion of the review, the Berkeley Laboratory, if necessary, will revise the Plan to include any identified improvements in prevention and control technology. A Professional Engineer registered in the State of California will certify all amendments to the SPCC Plan. Changes in emergency contact names and telephone numbers will be made as they occur and will not require engineering certification. This exception allows for maintaining an emergency contact list and does not affect the technical/engineering aspects of this Plan.

1.4 Designated Responsible Persons

The following individuals are those designated responsible for oil spill prevention at Joint Genome Institute:

Greg Stanley
JGI Facility Maintenance Manager

Ron Pauer
Group Leader, Environmental Protection Group, Lawrence Berkeley National Laboratory

Howard Hatayama
Director, Environment, Health and Safety Division, Lawrence Berkeley National Laboratory

2.0 General Facility Information

Facility Name and Address:	Joint Genome Institute 2800 Mitchell Drive Walnut Creek, CA 94598
Type of Facility:	Research Laboratory [SIC 8733]
Owner Name and Address:	Castle Rock LP. 1855 Olympic Blvd. Suite 250 Walnut Creek, CA 94569
Operator Name and Address:	(1) University of California Lawrence Berkeley National Laboratory 1 Cyclotron Road Berkeley, California 94720 (2) U.S. Department of Energy Oakland Operations Office 1301 Clay Street Oakland, California 94612
Facility Start-up Date:	1998
Location Maps:	Appendix A

3.0 Analysis of Spill Potential

3.1 Spill History

The 4,000 gallon aboveground diesel tank was installed at the Joint Genome Institute in December 1999. Since that time there have been no known oil or petroleum product spills.

Spills at this site are under the jurisdiction of Contra Costa County, a Certified Unified Program Agency (CUPA). The Regional and State Water Quality Resources Control Boards have authority if groundwater or surface water is contaminated.

3.2 Prediction of Potential Spills

The closest storm drain is approximately 50 yards north on a down slope from the 4,000 gallon aboveground storage tank towards the Contra Costa Canal. This storm drain flows into the City of Walnut Creek's storm drain system, which empties into a creek named, "Walnut Creek". The flow from Walnut Creek eventually empties into Suisun Bay.

However, the potential of a discharge of diesel fuel reaching the storm drain is extremely low due to the secondary containment and continuous monitoring design features of this aboveground tank.

3.3 Containment and Continuous Monitoring

The 4000 gallon aboveground tank is a double walled tank manufactured by ConVault. The primary tank is constructed of steel. The secondary containment consists of a 30 mil thick polyethylene membrane that encloses the primary steel tank and insulation material. The primary steel tank and the secondary containment are encased in six inches of monolithic reinforced concrete. A TraceTek leak detector, manufactured by Raychem, continually monitors the interstitial space of the tank.

The supply and return piping for the aboveground tank system is of double wall construction. The primary piping is constructed of schedule 40 carbon steel and the secondary piping is constructed of schedule 80 PVC. The TraceTek leak detector also continuously monitors the interstitial space of the piping.

The TraceTek leak detector has a local audible alarm. A remote audible alarm is also sounded in Building 100 room 110. The Pneumercator fuel level gauge, located on the AST has a high and low level light and audible alarm.

The head of the fuel fill port is enclosed inside of a catch pan that is designed to capture any diesel fuel that might leak out during fuel truck loading operations. The catch pan

has the capacity to hold 27 gallons of fuel. In addition, a spill kit with the capacity to absorb 61 gallons is located within the fenced area at the aboveground storage tank.

3.4 Contingency Plan

Guidance for responding to emergencies may be found in the *Production Sequencing Facility Safety Plan*. The *Sitewide Building Emergency Plan for the Ernest Orlando Lawrence Berkeley National Laboratory* (<http://www.lbl.gov/ehs/ems/BldgEmergPlan/TOC.htm>) provides useful information describing Building Emergency Team and employee responsibilities in an emergency. In all cases, the employee is advised to call **9-911** to reach the Walnut Creek Police Department / Contra Costa Consolidated Fire District.

In the event of a spill of diesel fuel from the aboveground tank, the release must be immediately reported to the Walnut Creek Police Department / Contra Costa Consolidated Fire District **9-911**, and the Berkeley Laboratory EH&S Division (**510**) **486-5251** (during regular hours). During off-hours, contact the phone duty officer at (510) 425-0616 instead of contacting the Berkeley Laboratory EH&S Division.

The following items will be reported: (1) The amount of diesel fuel spilled; (2) Whether the spill was to soil or pavement, and if the spill reached a storm drain; (3) Explain what containment measures were taken (spill kit deployed?); (4) Estimate how much diesel fuel was recovered; (5) Give the time and location of the spill.

4.0 Facility Transfer Operations

4.1 Aboveground Piping

All aboveground piping supports are designed to minimize corrosion and abrasion and to allow for expansion and contraction. Aboveground piping is monitored via continuous leak detection (TraceTek) and visually inspected. All aboveground piping and valves associated with aboveground tank will be inspected as specified in Section 6.2.

The aboveground piping is not exposed to vehicular traffic. Warning signs and barriers will be posted if future pipeline installations result in exposures of pipelines to traffic. No underground piping exists in the tank system.

4.2 Out-of-Service Piping

Aboveground piping that is not in service or is in standby service for an extended time will be capped and blank-flanged when removal is not practical. The JGI has adopted

"Lock Out / Tag Out" procedures to increase safety around the facility and reduce the chance of spills.

5.0 Facility Tank Truck Loading/Unloading

Transportable storage tanks (tank trucks) are exempt from the provisions of the SPCC Plan, but do comply with additional regulatory requirements, which include spill prevention. The commercial tank trucks that deliver diesel gasoline to the Joint Genome Institute adhere to the requirements and regulations of the Department of Transportation (DOT) during unloading of fuels.

6.0 Inspections and Records

6.1 Responsibilities

Procedures for the maintenance of the tank and piping systems are developed and implemented by the Facility Maintenance Manager. The Facility Maintenance Manager oversees leak tests, monitoring, and inspections of the aboveground tank and piping. The Facility Maintenance Manager maintains records of the results. The Facility Maintenance Manager ensures that the fire extinguisher and spill kit are fully serviceable.

6.2 Inspections

Leak detection/monitoring system for the aboveground tank and piping is inspected on a periodic basis. The aboveground storage tank, foundation, and tank supports are visually inspected by the Facility Maintenance Manager on a periodic basis for signs of cracks, corrosion, or other structural deterioration. The inspection also includes a visual review of aboveground valves, pipeline joints, catch pans, piping supports, locks, and metal surfaces. An example of Facility Maintenance Manager's inspection form is located in Appendix B. If visual inspection of aboveground equipment indicates that there may be potential problems, corrective actions will be taken including, if necessary, conducting pressure tests, and ultrasonic nondestructive testing or other appropriate testing methods.

6.3 Records

All records required by this SPCC Plan are maintained for a minimum period of three years on site. After three years, the records may be retained or archived. Tank inspection records are maintained by the Facility Maintenance Manager.

7.0 Security

7.1 Barriers to Entry

Six-foot high chain link fencing surrounds the 4000 gallon aboveground storage tank at the Joint Genome Institute. The gate is kept locked. The fuel port cap is also kept locked. The Facility Manager controls access to the aboveground storage tank and the fuel port. The fencing provides the tank and pipe system protection from vehicular traffic.

7.2 Facility Lighting

There are three floodlights located in the fenced area surrounding the aboveground storage tank. These floodlights provide appropriate lighting for the entire fenced area.

8.0 Personnel Training

8.1 Training Programs

Personnel involved with the 4,000 gallon aboveground storage tank at the Joint Genome Institute receive instructions, on the job training, and/or formal classes to ensure adequate understanding in the proper operation and maintenance of equipment and spill prevention. Training may include:

- Discussion regarding applicable pollution control laws, rules, and regulations;
- Introduction of new technology or revised procedures; and
- Familiarization with the SPCC Plan, emphasizing the SPCC Plan as a resource for informing current and new employees to enhance response and pollution awareness.

Training associated with the Plan is considered job-related or required training. Whenever such training occurs, the facility manager(s) and/or the directorate's delegated personnel will record attendance of participants.

8.2 Spill Prevention Briefings

The Environmental Protection (EP) Group representative from the Lawrence Berkeley National Laboratory will, as found necessary, conduct spill prevention briefings, training

sessions, meetings or issue reports/memos to assure adequate understanding of this SPCC Plan. These activities will:

- Highlight and describe known spill events or failures;
- Provide a brief overview of applicable regulations, provide an update on changes or updates to the SPCC Plan or regulations;
- Provide a review of SPCC procedures, and recently developed precautionary measures; and
- Provide an opportunity for comments and discussion.

These activities may also be included as part of the personnel training. The target audience will include both EH&S personnel and Facility personnel responsible for implementation of the SPCC Plan or procedures, and other personnel that may be affected by the requirements in this SPCC Plan.

As much as possible, SPCC awareness will be incorporated into other required EH&S training courses. Periodically, the EP Group will schedule/conduct refresher/training classes for SPCC awareness. The official SPCC training course is EH&S # 680.

9.0 References

9.1 Documents

Joint Genome Institute – Production Sequencing Facility Emergency Procedures

- *Production Sequencing Facility Safety Plan*

Lawrence Berkeley National Laboratory Emergency Procedures

- *Sitewide Building Emergency Plan for the Ernest Orlando Lawrence Berkeley National Laboratory*, Pub 540, January 14, 2000; Web access: <http://www.lbl.gov/ehs/ems/emerg-plan1.html>
- *Master Emergency Plan for the Ernest Orlando Lawrence Berkeley National Laboratory*, Pub 533, rev. 1, April 1, 1999. Web access: <http://www.lbl.gov/ehs/ems/BldgEmergPlan/TOC.htm>
- *Duty Officer Procedure*, EH&S Division Duty Procedures, rev. February 20, 1997.
- *Emergency Management, Chapter 9*, Environment, Health & Safety Manual, Publication 3000, Revision 1997; Web access: <http://ehs.lbl.gov/ehsdiv/pub3000/>
- *LBL Fire Department Hazardous Materials Response Plan*, Fire Services Group Procedure 6-I and EH&S Procedure 3.81, revision August 1995.

Additional Plans and Procedures

- *Berkeley Lab Environmental Monitoring Plan*, October 1997.
- *Chemical Hygiene and Safety Plan*, Pub 5341, EH&S Course 348.

Regulatory

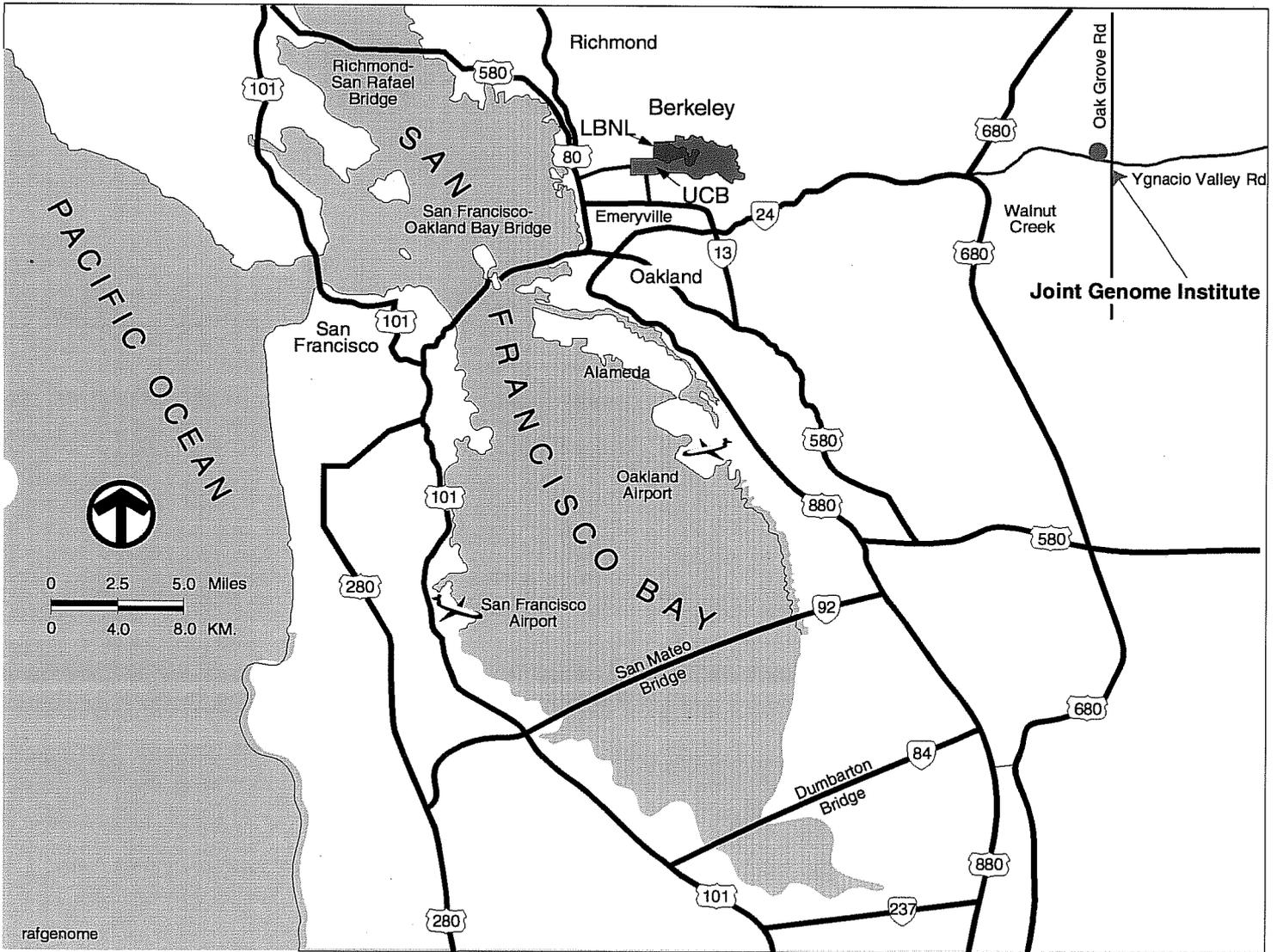
- *California Aboveground Petroleum Storage Act*, Division 20, *section 25270*.
- *Code of Federal Regulations, Part 109 and Part 112*
- *California Health and Safety Code; Chapter 6.67 (H&SC 6.67)*
- *Department of Energy, DOE Order 5400.1*.

9.2 SPCC Plan Compliance Reference Table

Reg. 40 CFR 112	Requirement	SPCC Plan Section
112.3 (d)	P.E. certification	After Title Page
112.3 (c)	Plan Maintenance	1.3
112.4 (a)	Agency review and amendment	1.3
112.5	Amendments by owner/operator	1.3
112.7	Management approval	After title page
112.7 (a)	Spill history	3.1
112.7 (b)	Prediction of spills	3.2
112.7 (c)	Containment and diversionary structures	3.3
112.7 (d)	Oil spill contingency plan	3.4
112.7 (e) (1)	Facility drainage	3.2
112.7 (e) (2)	Bulk storage	3.3
112.7 (e) (2) (i)	Materials of construction	3.3
112.7 (e) (2) (ii)	Secondary containment on storage unit	3.3
112.7 (e) (2) (iii)	Rainwater drainage	Not applicable
112.7 (e) (2) (iv)	Underground tanks	Not applicable
112.7 (e) (2) (v)	Partially buried tanks	Not applicable
112.7 (e) (2) (vi)	Aboveground tank inspections	5.2
112.7 (e) (2) (vii)	Internal heating coils	Not applicable
112.7 (e) (2) (viii)	Overfill protection	3.3
112.7 (e) (2) (ix)	Plant effluents	Not applicable
112.7 (e) (2) (x)	Visible oil leaks	5.2
112.7 (e) (2) (xi)	Portable storage tanks	Not applicable
112.7 (e) (3)	Transfer operations	4.0
112.7 (e) (3) (i)	Underground piping	Not applicable
112.7 (e) (3) (ii)	Out-of-service piping	4.2
112.7 (e) (3) (iii)	Piping supports	4.1
112.7 (e) (3) (iv)	Piping inspections	6.2
112.7 (e) (3) (v)	Traffic warnings	7.1
112.7 (c) (4)	Facility tank car loading/unloading	5.0
112.7 (c) (5)	Onshore oil production	Not applicable
112.7 (c) (6)	Onshore oil drilling	Not applicable
112.7 (c) (7)	Offshore oil production/drilling	Not applicable
112.7 (c) (8)	Inspection and records	6.0
112.7 (c) (9)	Security	7.0
112.77 (c) (10)	Personnel Training	8.0

Appendix A

Location Maps

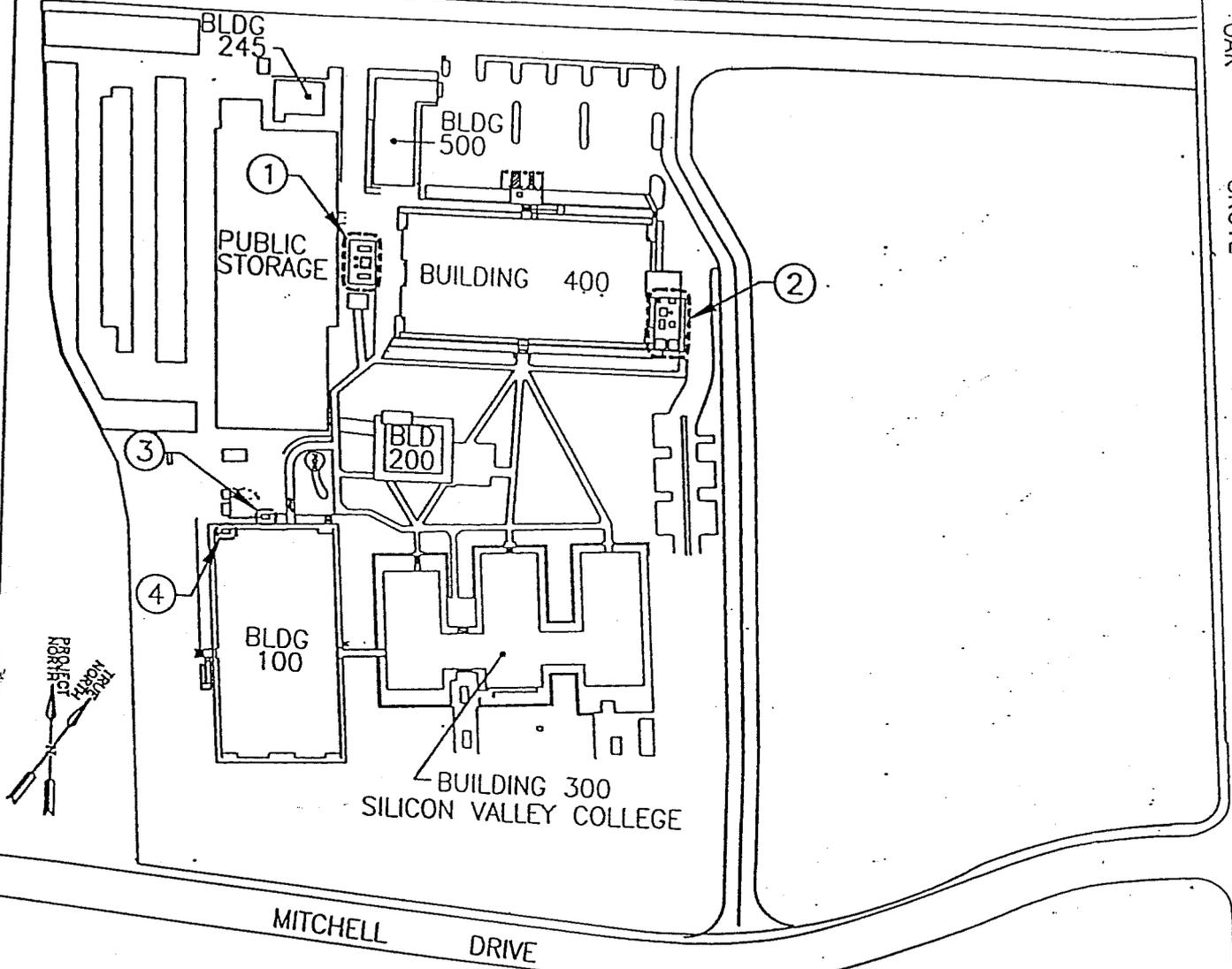


Map 2.0 San Francisco Bay Area

SITE MAP

CONTRA COSTA CANAL

OAK GROVE ROAD



LEGEND

- ① 4,000 gallon aboveground storage tank containing diesel fuel

Appendix B

Tank Inspection Form

DIESEL STORAGE TANK QUARTERLY INSPECTION FORM

Location: JGI-400

TANK No.: TK-001- JGI

Tank Manufacturer: ConVault

Serial No: M851307

Model No.: RN4000 3SF

Date Installed: Dec-99

COMPONENT	INSPECT FOR	REMARKS
Foundation	Corrosion	
	Cracks	
Structural Support	Corrosion	
	Cracks	
	Distortion	
Tank Walls & Casing	Corrosion	
	Cracks	
	Leaks	
Pipelines, Plumbing, & Valves	Corrosion	
	Cracks	
	Leaks	
Seals & Gaskets	Leaks	
	Damage	
Containment Area	Accumulated Liquids	
	Cracks	
	Damage	
	Corrosion	
Leak Detection System	Damage	
	Power	
	Certification	

Is re-certification of Leak Detections System required? Yes

No

WRC Numbers: _____

If Yes, provide date for recertification: _____

Comments: _____

Signature: _____

Date: _____

Print Name: _____