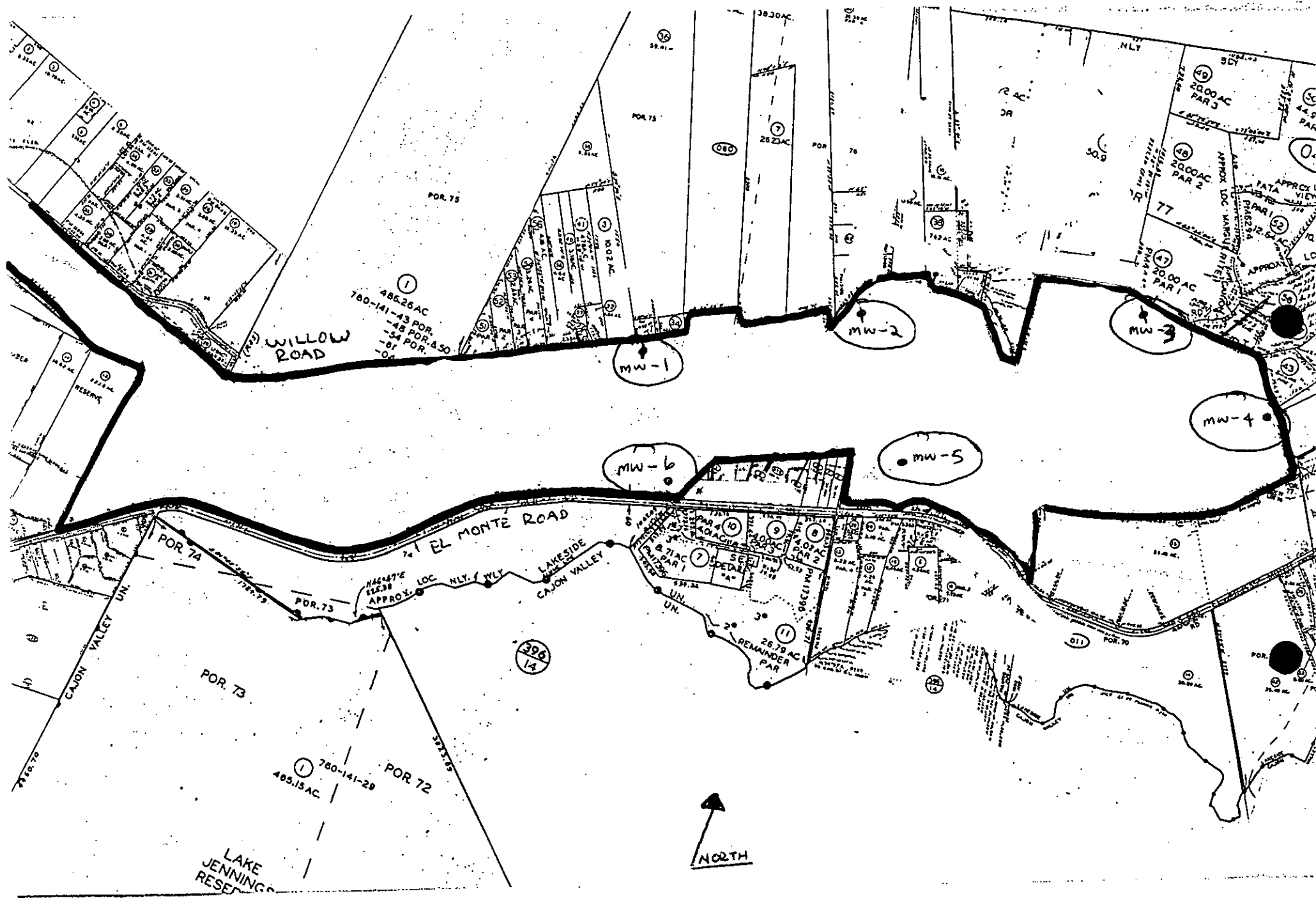


U.S.G.S. 7.5' TOPOGRAPHIC MAP

EL CAJON, CA

EL CAJON MOUNTAIN, CA



County of San Diego

DANIEL J. AMERIA
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH

P.O. BOX 55251, SAN DIEGO, CA 92185-5251
(619) 338-2222 FAX (619) 338-2277

SITE ASSESSMENT AND MITIGATION DIVISION

MAINTENANCE OF MONITORING WELLS

Proposed Location of Monitoring Well(s):

Assessor Parcel Numbers: 390-040-51; 391-061-01
Property Address: 391-071-06; 393-11-01

Property Owner: Helix Water District

Dear Property Owner:

A proposal has been made to install one or more monitoring wells on your property. Monitoring wells are used for monitoring or sampling the conditions of soil or water to gather data for environmental investigations. A boring is used specifically to sample soil and is included in the definition of a monitoring well. This letter is to inform you of the responsibilities for maintenance of monitoring wells installed on your property.

The person who causes to have a monitoring well installed on your property is defined as the "Responsible Party." Section 67.424 of San Diego County Code states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards the responsible party must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the responsible party, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the responsible party does not complete the necessary actions."

If you have any questions or would like additional information please contact the Monitoring Well Program at (619) 338-2339.

I understand the maintenance responsibilities for monitoring wells under the San Diego County Code.

Signature:



Date: April 29, 1998

Print Name:

Donald R. Kaiser, Asst. Gen. Mgr./Chief Engineer

Mail Address:

7811 University Avenue

La Mesa, CA 91941-4927



GARY ERBECK
DIRECTOR

County of San Diego

RICHARD HAAS
ASSISTANT DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH LAND AND WATER QUALITY DIVISION

P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377

March 6, 2003

Shepardson Engineering Associates
Attn: Bryan Miller-Hicks
10035 Prospect Av., Ste 101
Santee, CA 92071-4398

Dear Mr. Miller-Hicks:


WELL PERMIT #W101054 APN: 393-011-01 ESTABLISHMENT # NONE
SITE NAME: EL MONTE GOLF COURSE SITE ADDRESS: 3600 BLK, WILLOW RD., SD
92040

The Site Assessment and Mitigation Division is returning the enclosed 60-day report for the above-referenced site. DEH requires that certain information be provided with each report. The following items were not included:

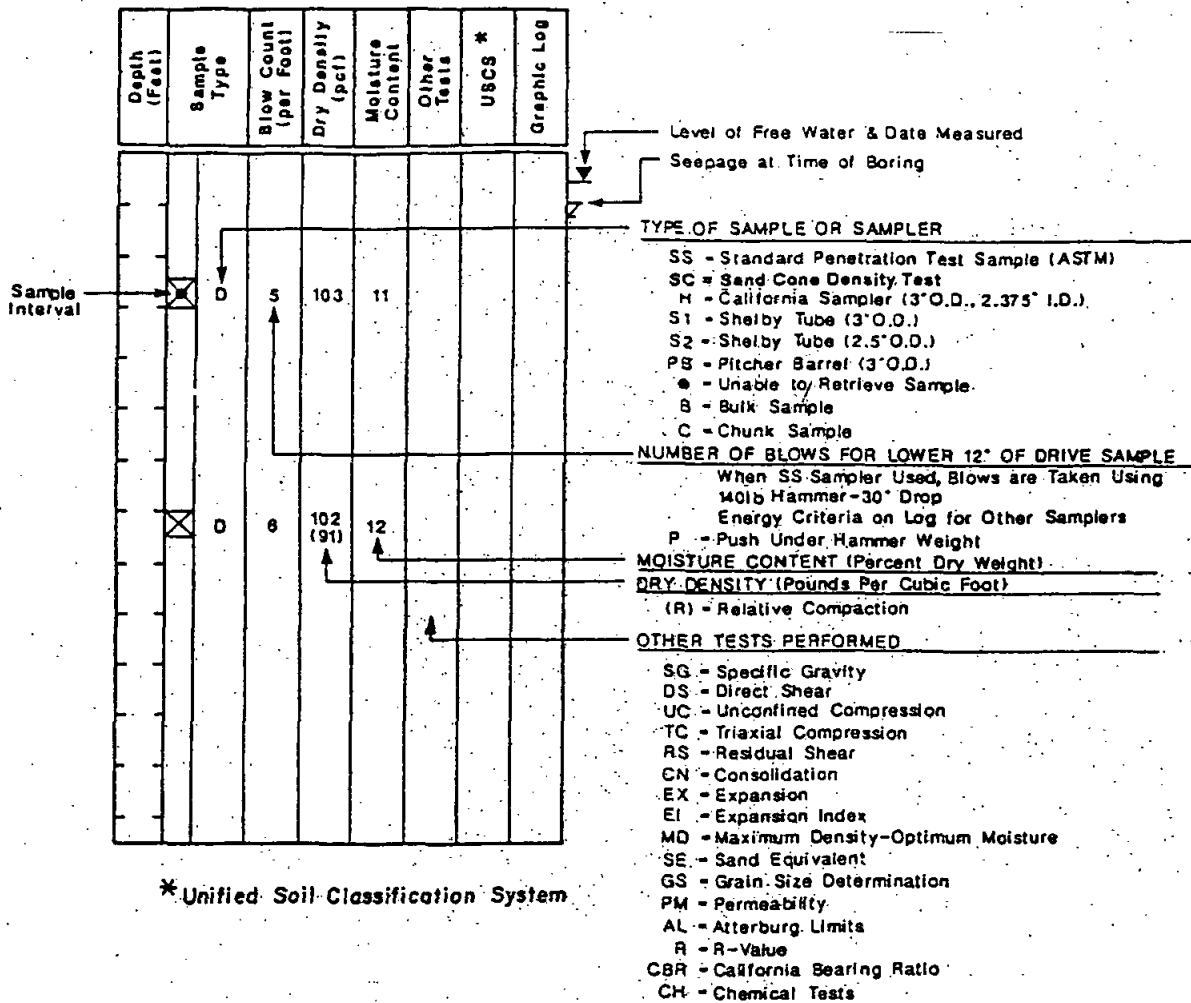
- X 1. Submit written documentation indicating the method used to destroy the monitoring well /boring (s) the type of sealing materials, quantities used, and the date the work was started and date it was completed.
2. Submit a site plan indicating the actual location of the monitoring well/boring (s).
3. Submit all soil and/or groundwater sample analytical results.
4. Submit a letter of explanation stating why the surface construction was not completed per the proposed construction or submit a corrected well construction diagram and letter confirming the corrections made to the resubmitted well construction diagram.
5. Submit a detailed "as built" well construction diagram with the type of casing, screened interval, screen slot size, type of filter pack, depth, location of material used, and type of seals, and quantities of materials used for each monitoring well.
- X 6. Submit a cover letter/monitoring well and or boring logs with signature and official stamp of Registered Geologist, Registered Civil Engineer or Certified Engineering Geologist responsible for the accuracy and completeness of the logs and accompanying data that were submitted.
7. Permit was issued for:
Submit \$ _____ for the following additional work: _____

Please resubmit your report with the above requested information to this department within fifteen (15) working days. If you have any questions regarding this letter, please contact me at (619) 338-2492.

Sincerely,


Ernesto L. Profeta, Environmental Health Technician
Department of Environmental Health
Site Assessment and Mitigation Program

KEY TO LOG



NOTES: These final logs represent Shepardson Engineering Associates' interpretation of the subsurface conditions on the date of exploration based on field logs in combination with the results of laboratory examination and tests of representative field samples. Therefore, these logs contain both factual and interpretative information. The logs represent subsurface conditions on the dates and at the locations indicated and are not necessarily representative of subsurface conditions at other times or locations.

The horizontal lines represent the approximate generic and/or lithologic boundary between types of soils and/or rock material. The actual transition may be gradual.

The logs summarize only a portion of the geotechnical report. They should not be reproduced for distribution while separated from the body of the report and the data contained on the logs should only be used in conjunction with the report.

*Refusal" indicates inability to extend excavation practically or economically with the exploration equipment used.



SHEPARDSON
ENGINEERING ASSOCIATES INC.

**Geotechnical Consultants:
Engineers-Geologists**

Date: February, 2003

Project No: 97157- 03

Plate

Explanation of Logs
Maintenance Facility
El Monte Golf Course

B 1

LOG OF TEST BORING NO. B-26

Drilling Date(s): 2/7/03 Drilling Equipment: B-61 Surface Elevation: -469'
 Logged By: BMH Method/Hole Size: Hollow stem auger/8" Bottom Elevation: -447'

Depth (feet)	Sample Type	Blow Count (foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
2	B				CH	ML		<u>ALLUVIUM (Qal)</u> : sandy silt, loose, damp, medium brown
2	H	31			GS	SW		<u>ALLUVIUM (Qal)</u> : well-graded, medium to coarse sand, medium dense, damp, yellow gray and yellow brown
4								
6	H	16						: loose
8								
10	SS	23						: becomes medium dense
12								
14								
16	SS	30						
18								
20	SS	17						
22								End of boring at 22 feet; no groundwater encountered; boring backfilled with bentonite clay chips
24								
26								
28								
30								

Remarks:

Please refer to symbols and note limitations shown on: "Explanation of Logs"

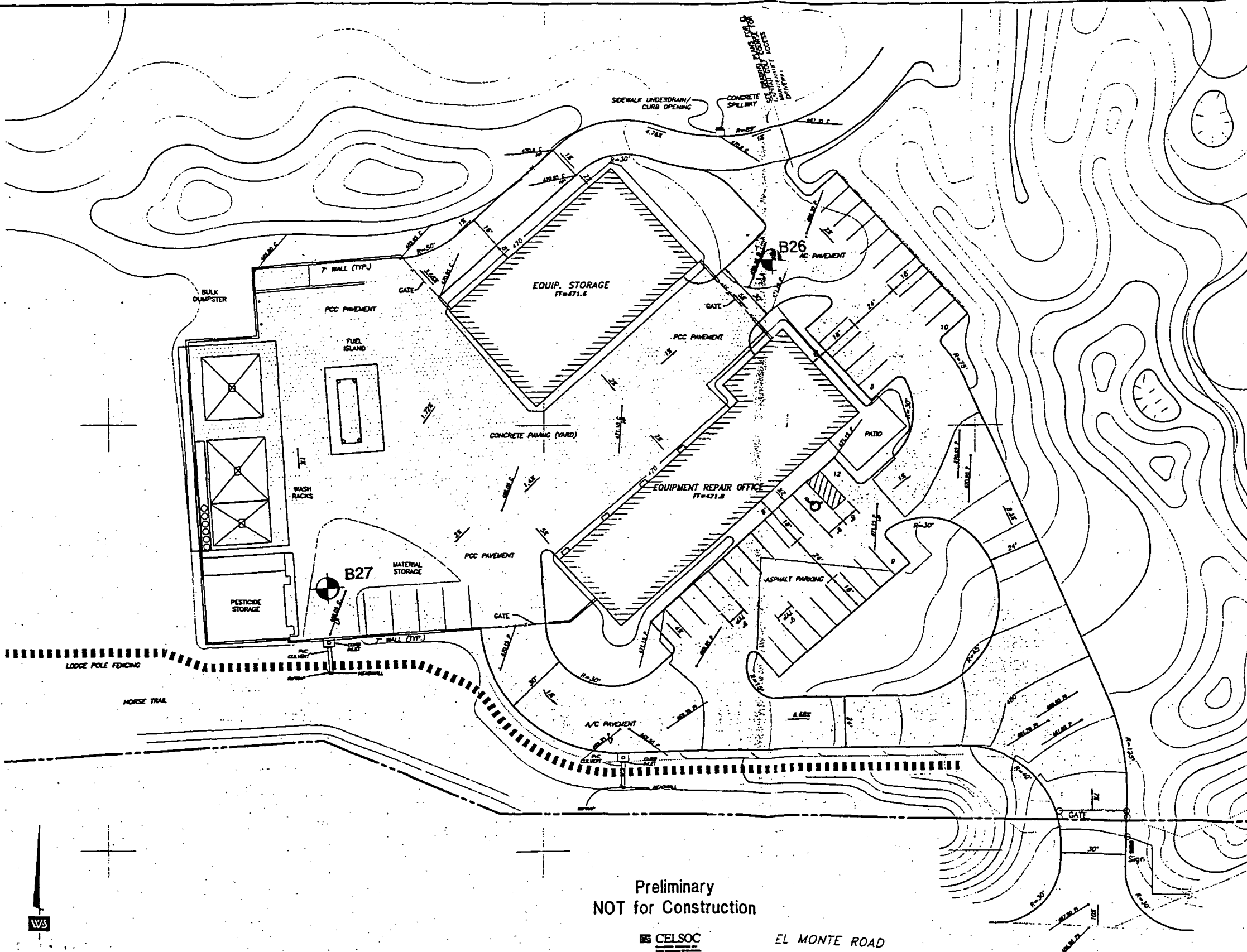
LOG OF TEST BORING NO. B-27

Drilling Date(s): 2/7/03 Drilling Equipment: B-61 Surface Elevation: ~465'
 Logged By: BMH Method/Hole Size: Hollow stem auger/8" Bottom Elevation: ~435'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
0	B				MD DS	SW		<u>ALLUVIUM (Qal)</u> : well-graded sand, medium to coarse-grained, medium dense, moist, medium brown to medium gray
2	H	32	96	8.6				
4								
6	H	16						
8								
10	SS	4						
12								
14								
16	SS	26						
18								
20	SS	25			GS			:cobble layer, approximately one foot thick
22								
24								
26	SS	50/6"				SM		<u>DECOMPOSED GRANITE (Kgr)</u> : bedrock, silty fine to coarse sand, dense to very dense, moist, orange-gray
28								▽ :groundwater at 28 feet
30	SS	50/2"						
30.2								End of boring at 30.2 feet; boring backfilled with bentonite chips

Remarks:

Please refer to symbols and note limitations shown on "Explanation of Logs"



LEGEND	SYMBOL
PROPOSED SPOT ELEVATION	589.83
PROPOSED GRADE	12
6" CURB	
BUILDING LINE	
ASPHALT CONCRETE PAVING	
CONTOUR	470
PCC CONCRETE/SIDEWALK	

 B - Boring Location


Preliminary
NOT for Construction

CELSOC

EL MONTE ROAD

Permit # W101054

The above plan is reproduced from "Preliminary Layout for El Capitan Golf Course, Maintenance Facility" dated 2-06-03, prepared by William A. Steen & Associates, Inc.

 **SHEPARDSON**
ENGINEERING ASSOCIATES INC.
Geotechnical Consultants:
Engineers-Geologists

Date: February, 2003

Project No: 97157-03

Plate

Site Plan
Maintenance Facility
El Monte Golf Course

A2

APN 393-011-01
3600 Block, Willow Rd



SHEPARDSON
ENGINEERING ASSOCIATES INC.

Geotechnical Consultants:
Engineers-Geologists

RECEIVED

2003 MAR 13 AM 8 47

D. E. H.
MAILROOM

10035 Prospect Ave., Suite 101
Santee, CA 92071-4398
619 / 449-9830 FAX 619 / 449-5824
email@shepardson.com

March 10, 2003

S.E.A. 97157-03

County of San Diego
Dept. of Environmental Health
Site Assessment and Mitigation Program
P.O. Box 129261
San Diego, CA 92112-9261

ATTENTION: Mr. Ernesto Profeta

SUBJECT: El Monte Golf Course
APN 393-011-01
#W101054

Dear Mr. Profeta:

In response to your March 6, 2003 memorandum, we submit the following:

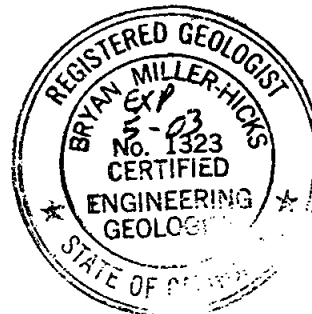
Each boring was destroyed by means of backfilling with Wyo-Ben brand Enviroplug medium bentonite. B-26 (22 feet deep) required approximately eleven 50-lb. bags. Boring B-27 (30 ft.) used approximately 17 50-lb. bags. In each case the clay was brought to within one foot of surface, hydrated with water, and capped with native sand. Work began and ended on February 7, 2003.

If there are any questions, please contact me.

Respectfully submitted,

SHEPARDSON ENGINEERING ASSOCIATES, INC.

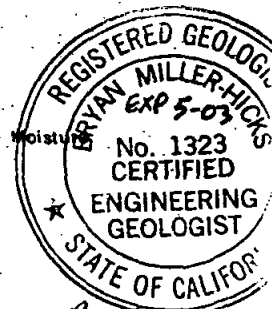
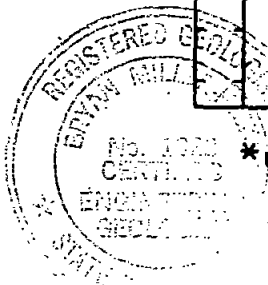
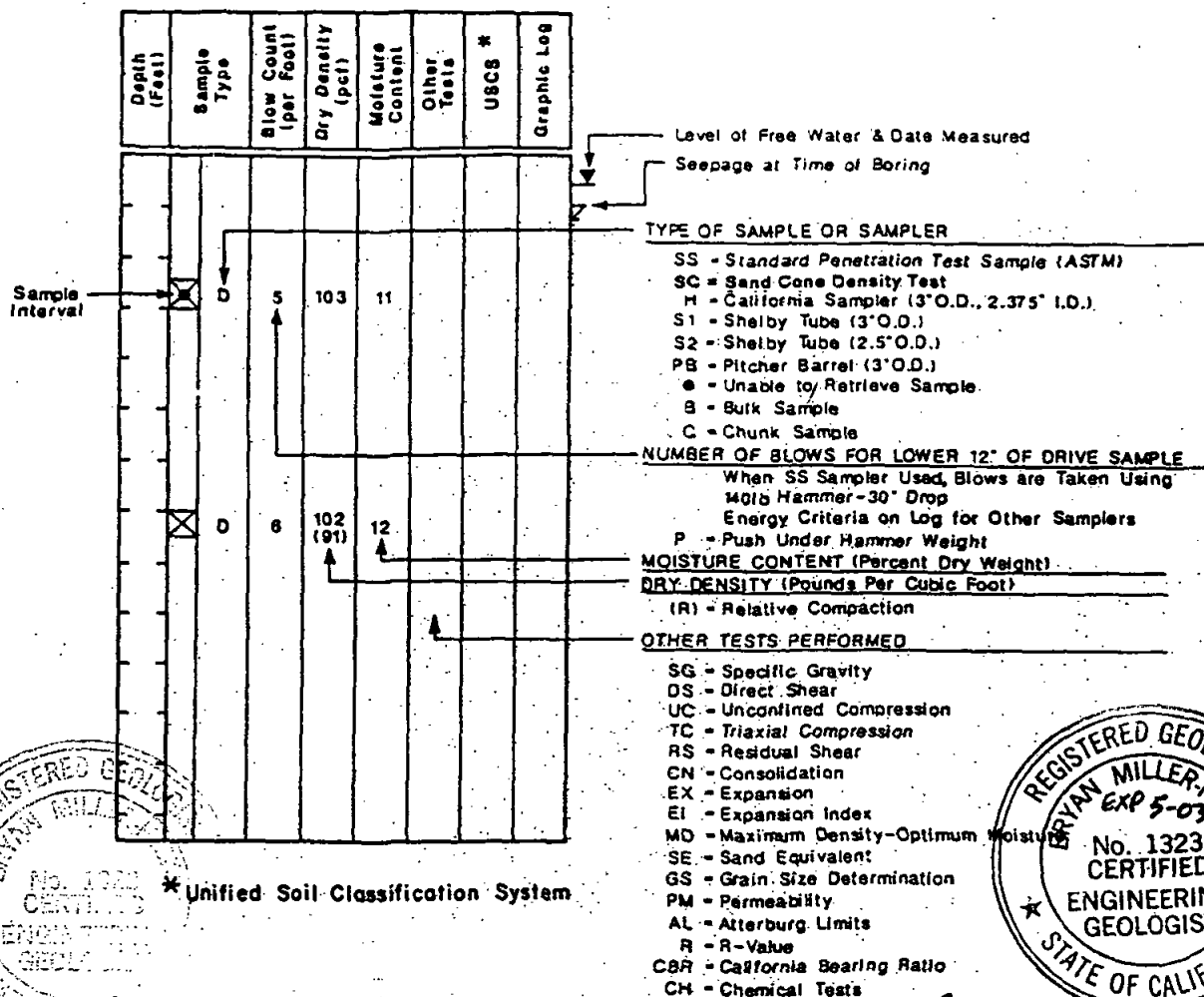
Bryan Miller-Hicks, CEG 1323
Project Geologist



cc: (1) Addressee

Enclosures: Explanation of Logs
Boring Logs
Site Plan

KEY TO LOG



Bryan Miller-Hicks

NOTES: These final logs represent Shepardson Engineering Associates' interpretation of the subsurface conditions on the date of exploration based on field logs in combination with the results of laboratory examination and tests of representative field samples. Therefore, these logs contain both factual and interpretative information. The logs represent subsurface conditions on the dates and at the locations indicated and are not necessarily representative of subsurface conditions at other times or locations.

The horizontal lines represent the approximate generic and/or lithologic boundary between types of soils and/or rock material. The actual transition may be gradual.

The logs summarize only a portion of the geotechnical report. They should not be reproduced for distribution while separated from the body of the report and the data contained on the logs should only be used in conjunction with the report.

"Refusal" indicates inability to extend excavation practically or economically with the exploration equipment used.



SHEPARDSON
ENGINEERING ASSOCIATES INC.

Geotechnical Consultants:
Engineers-Geologists

Date: February, 2003

Project No: 97157-03

Plate

Explanation of Logs
Maintenance Facility
El Monte Golf Course

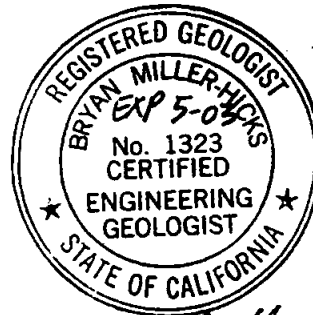
B 1

LOG OF TEST BORING NO. B-26

Drilling Date(s): 2/7/03 Drilling Equipment: B-61 Surface Elevation: ~469'
 Logged By: BMH Method/Hole Size: Hollow stem auger/8" Bottom Elevation: ~447'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
2	B				CH	ML		<u>ALLUVIUM (Qal)</u> : sandy silt, loose, damp, medium brown
2	H	31			GS	SW		<u>ALLUVIUM (Qal)</u> : well-graded, medium to coarse sand, medium dense, damp, yellow gray and yellow brown
4								
6	H	16						: loose
8								
10	SS	23						: becomes medium dense
12								
14								
16	SS	30						
18								
20	SS	17						
22								End of boring at 22 feet; no groundwater encountered; boring backfilled with bentonite clay chips
24								
26								
28								
30								

Remarks:



Bryan Miller-Hicks

Please refer to symbols and note limitations shown on "Explanation of Logs"



SHEPARDSON
ENGINEERING ASSOCIATES INC.

Geotechnical Consultants:
Engineers-Geologists

Date: February, 2003

Project No.: 97157-03

Log of Test Boring No. B-26
EL MONTE GOLF COURSE

Plate

B2

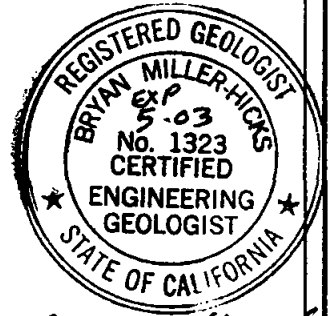
1 of 1

BL103

LOG OF TEST BORING NO. B-27

Drilling Date(s): 2/7/03 Drilling Equipment: B-61 Surface Elevation: ~465'
 Logged By: BMH Method/Hole Size: Hollow stem auger/8" Bottom Elevation: ~435'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
2	B				MD DS	SW		ALLUVIUM (Qal): well-graded sand, medium to coarse-grained, medium dense, moist, medium brown to medium gray
3	H	32	96	8.6				
6	H	16						
10	SS	4						
16	SS	26						
20	SS	25			GS			cobble layer, approximately one foot thick
26	SS	50/16"				SM		DECOMPOSED GRANITE (Kgr): bedrock, silty fine to coarse sand, dense to very dense, moist, orange-gray
28								▽ groundwater at 28 feet
30	SS	50/2"						
End of boring at 30.2 feet; boring backfilled with bentonite chips								



Bryan Miller-Hicks

Remarks:

Please refer to symbols and note limitations shown on "Explanation of Logs"



Date: February, 2003

Project No.: 97157-03

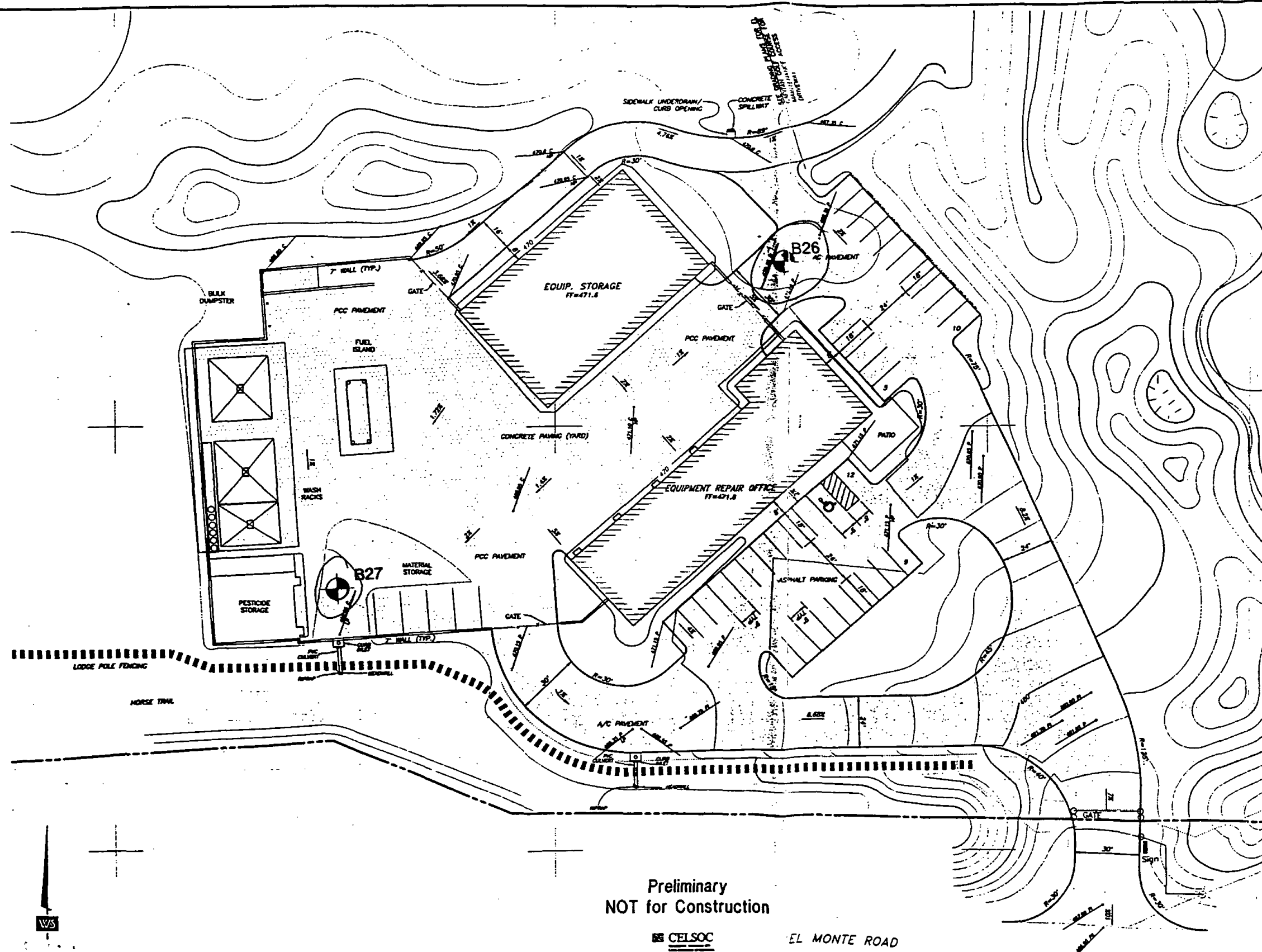
Log of Test Boring No. B-27
EL MONTE GOLF COURSE

Plate

B3

1 of 1

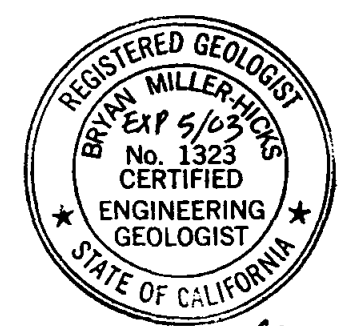
BL103



LEGEND

PROPOSED SPOT ELEVATION	500.01
PROPOSED GRADE	12
6" CURB	
BUILDING LINE	
ASPHALT CONCRETE PAVING	
CONTOUR	470
PCC CONCRETE/SIDEWALK	

B - Boring Location



Bryan Miller-Hicks

Preliminary
NOT for Construction



EL MONTE ROAD

Permit # W101054

The above plan is reproduced from "Preliminary Layout for El Capitan Golf Course, Maintenance Facility" dated 2-06-03, prepared by William A. Steen & Associates, Inc.

SHEPARDSON
ENGINEERING ASSOCIATES INC.
Geotechnical Consultants:
Engineers-Geologists

Date: February, 2003	Project No: 97157-03	Plate
Site Plan Maintenance Facility El Monte Golf Course APN 393-011-01 3600 Block, Willow Rd		A2



PERMIT # W101054

A.P.N. 393-011-01

EST # NONE

**COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION**

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: EL MONTE GOLF COURSE

SITE ADDRESS: 3600 BLOCK, WILLOW RD, SAN DIEGO, CA 92040

PERMIT FOR: **2 BORINGS**

PERMIT APPROVAL DATE: January 29, 2003

PERMIT EXPIRES ON: May 29, 2003

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not acceptable fill material.**
2. Placement of any sealing material at a depth greater than 30-feet must be done using the tremie method.
3. All wash water must be contained and disposed of properly.
4. All water and soil that is placed in drums must be labeled and stored as specified in the SAM Manual in: Section 5, page 7, (5).
5. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.
6. **This office must be given 48 hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact Well Permit Desk at (619) 338-2339.**

NOTE: This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.

APPROVED BY: *Ernesto I. Profeta* DATE: 1/29/03
Ernesto I. Profeta

Notified: *by vma 1/29/03 EP*



PERMIT APPLICATION
GROUNDWATER
AND
VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

RECEIVED

2003 JAN 21 AM 10 05

D. E. H.
MAILROOM

OFFICE USE ONLY
PERMIT #W 101054
SAM CASE Y/N #H NONE
DATE RECEIVED: 1/21/03
FEE PAID: CK 5723-190-
CASH 10
200-

A. RESPONSIBLE PARTY Helix Water District Phone 619-667-6268
Mailing Address 7811 University Av City La Mesa State CA Zip 91941
Contact Person Larry Campbell Phone 619-667-6268 ext. _____

B. SITE ASSESSMENT PROJECT IF APPLICABLE #H _____

REG 01-28-03 13:26 PAUL
CASH

63389
\$10.00

C. CONSULTING FIRM SHEPARDSON ENGINEERING ASSOCIATES
Mailing Address 10035 PROSPECT AV City SANTEE State CA Zip 92071
Registered Professional BRYAN MILLER-HICKS Registration # RG-4130; CEG-1323 (RG, RCE, CEG)
Contact Person BRYAN MILLER-HICKS Phone 619-449-9830 ext. _____

D. DRILLING COMPANY F+C Drilling Co. CS7# 520586 Phone 858-279-7005
Mailing Address 7716 Clairemont Mesa Blvd City San Diego State CA Zip 92117

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/
BORINGS TO BE
CONSTRUCTED

☐ Groundwater
☐ Vadose
☒ Boring 2
☐ Other _____

NUMBER OF WELLS TO
BE DESTROYED # _____

MATERIALS TO BE USED

CASING

Type _____
Gauge _____
Diameter _____
Well Screen Size _____
Filter Pack _____
(Specify)

SEAL

☐ Neat Cement
☐ Cement & B
☐ Sand-Cement
☒ Bentonite
☐ Other _____

Drilling Method

☒ Auger ☐ Air Rotor
☐ Mud Rotary ☐ Other _____
☐ Percussion

COUNTY OF SAN DIEGO
DEPARTMENT OF
ENVIRONMENTAL
HEALTH

REG 01-28-03 13:26
PAUL 63389

9141 141 428W26
\$200.00
ST \$200.00
CHK \$190.00
CASH \$10.00
CG \$0.00

INSTRUCTION
ter depth 15 ft.

_____ to _____
_____ to _____
_____ to _____
_____ to _____

NG DATE 2/4/03

TE:

le completion
ction diagram

I agree to comply with the requirements of the current Site Assessment and Mitigati
of San Diego and the State of California pertaining to well/boring construction and destruction.

and laws of the County

DRILLER'S SIGNATURE Gerald P. Ferguson

DATE 1-9-03

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the
design and construction/or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE Bryan Miller-Hicks

DATE 1/13/03

1/21 - Fee sent to \$10-, will stop by + drop addtl. fee
for Bryan-Miller Hicks.
1/22 - Rec'd \$10.00 addtl. fee. EP

F. SITE INFORMATION

1. ASSESSOR'S PARCEL NUMBER <u>393-011-01</u>			
Site Name <u>El Monte Golf Course</u>			
Site Address <u>3600 Black Willow Rd</u>		City <u>San Diego</u>	Zip _____
PROPERTY OWNER <u>Helix Water District</u>			
Mailing Address <u>7811 University Av</u>		City <u>La Mesa</u>	State <u>CA</u> Zip <u>91941</u>
NUMBER OF WELLS <u>NOT APPLICABLE</u>		TYPE OF WELLS <u>NOT APPLICABLE</u>	
2. ASSESSOR'S PARCEL NUMBER _____			
Site Name _____			
Site Address _____		City _____	Zip _____
PROPERTY OWNER _____			
Mailing Address _____		City _____	State _____ Zip _____
NUMBER OF WELLS _____		TYPE OF WELLS _____	
3. ASSESSOR'S PARCEL NUMBER _____			
Site Name _____			
Site Address _____		City _____	Zip _____
PROPERTY OWNER _____			
Mailing Address _____		City _____	State _____ Zip _____
NUMBER OF WELLS _____		TYPE OF WELLS _____	
4. ASSESSOR'S PARCEL NUMBER _____			
Site Name _____			
Site Address _____		City _____	Zip _____
PROPERTY OWNER _____			
Mailing Address _____		City _____	State _____ Zip _____
NUMBER OF WELLS _____		TYPE OF WELLS _____	

G. FEES:

393-011-01

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells Vadose, Vapor Extraction Wells)	\$150.00 each \$130.00 for each additional well	(x \$150.00) \$ _____ (x \$130.00) \$ _____
Permit for Borings Only (CPT's, Hydropunch, Geoprobos, Temp. Well Points, etc.)	\$150.00 for the first boring \$40.00 for each additional boring	\$ <u>150.00</u> (<u>1</u> x \$ 40.00) \$ <u>40.00</u>
Permit for Well Destructions Only	\$150.00 for the first destruction \$100.00 for each additional destruction	\$ _____ (x \$100.00) \$ _____
Permit for any Combination of Well Installations, Borings & Destructions	The first activity (of any type) will be \$150.00. Additional activities will be as follows: \$130.00 for each well \$40.00 for each boring \$100.00 for each well destruction	\$ _____ (x \$130.00) \$ _____ (x \$ 40.00) \$ _____ (x \$100.00) \$ _____
	TOTAL COST OF PERMIT	\$ <u>\$ 190.00</u>

H. APPLICATION SUBMITTAL, PLAN APPROVAL, PERMIT ISSUANCE, AND REQUIRED INSPECTIONS

Submit one (1) original and two (2) copies of this application package, including plan drawings with the required fee to the Monitoring Well Permit Clerk, Department of Environmental Health, Site Assessment and Mitigation Program (SAM). 1255 Imperial Avenue, San Diego, CA 92101. Or mail to P. O. Box 129261, San Diego, CA 92112-9261. Checks should be made payable to the County of San Diego.

A permit will be issued by SAM upon review and approval of the application and plans. The required fees must be submitted with the application package. Information in addition to that presented in the application package may be needed in order to obtain final approval. No work is to begin on the proposed project until a permit has been issued. The required inspections cannot be scheduled until a permit is issued.

Once the permit has been issued, it is the responsibility of the permittee to notify SAM at least two (2) working days in advance to schedule each required inspection.

USE ONE APPLICATION PACKAGE FOR A SINGLE SITE PROJECT. A SINGLE PERMIT WILL BE ISSUED FOR A SINGLE SITE PROJECT, EVEN IF WELLS/BORINGS ARE COMPLETED ON MORE THAN ONE PROPERTY. FOR MULTIPLE SITE PROJECT'S, USE SEPARATE APPLICATIONS.

PERMIT APPLICATION FOR
GROUND WATER AND VADOSE MONITORING WELLS
EXPLORATORY OR TEST BORINGS

- For well destruction, complete only #1 below.
 - Well design, logging and construction must be supervised by a Geologist, Engineering Geologist or Civil Engineer who is registered or certified by the State of California.
 - Well driller must have an active C-57 License and current \$7,500 bond with the County.
 - Provide a plot plan giving location of property lines, existing improvements such as structures, underground tanks, underground utilities, underground piping, and the proposed monitoring and/or observation wells.
 - If applicable, provide a signed copy of the Property Owner Responsibility form for each property listed in Section "F".
 - If applicable, provide a signed copy of the Property Owner Responsibility form for each property listed in Section "F". Provide encroachment/excavation permit and/or traffic control permit for work to be done in street or public right of way.
1. If wells are to be destroyed, provide a description of method of destruction. NOT APPLICABLE
 2. What is the proposed purpose of the well/boring? To assess foundation conditions for new construction of golf course maintenance center; determine groundwater levels and liquefaction potential at site
 3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction?
Drilling Equipment will be steam-cleaned prior to and between borings
Borings will be backfilled with bentonite chips
 4. What field procedures will be utilized to determine if contamination exists?
visual, "smell" test, and OVM screening
 5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving?
NOT APPLICABLE

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)?

NOT APPLICABLE

7. How will samples be transported and preserved? NOT APPLICABLE

8. What sampling methods will be used? STANDARD PENETRATION TEST

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction of Vadose and Ground Water Monitoring Wells (Current SAM Manual Requirements). If yes, specify these variations.

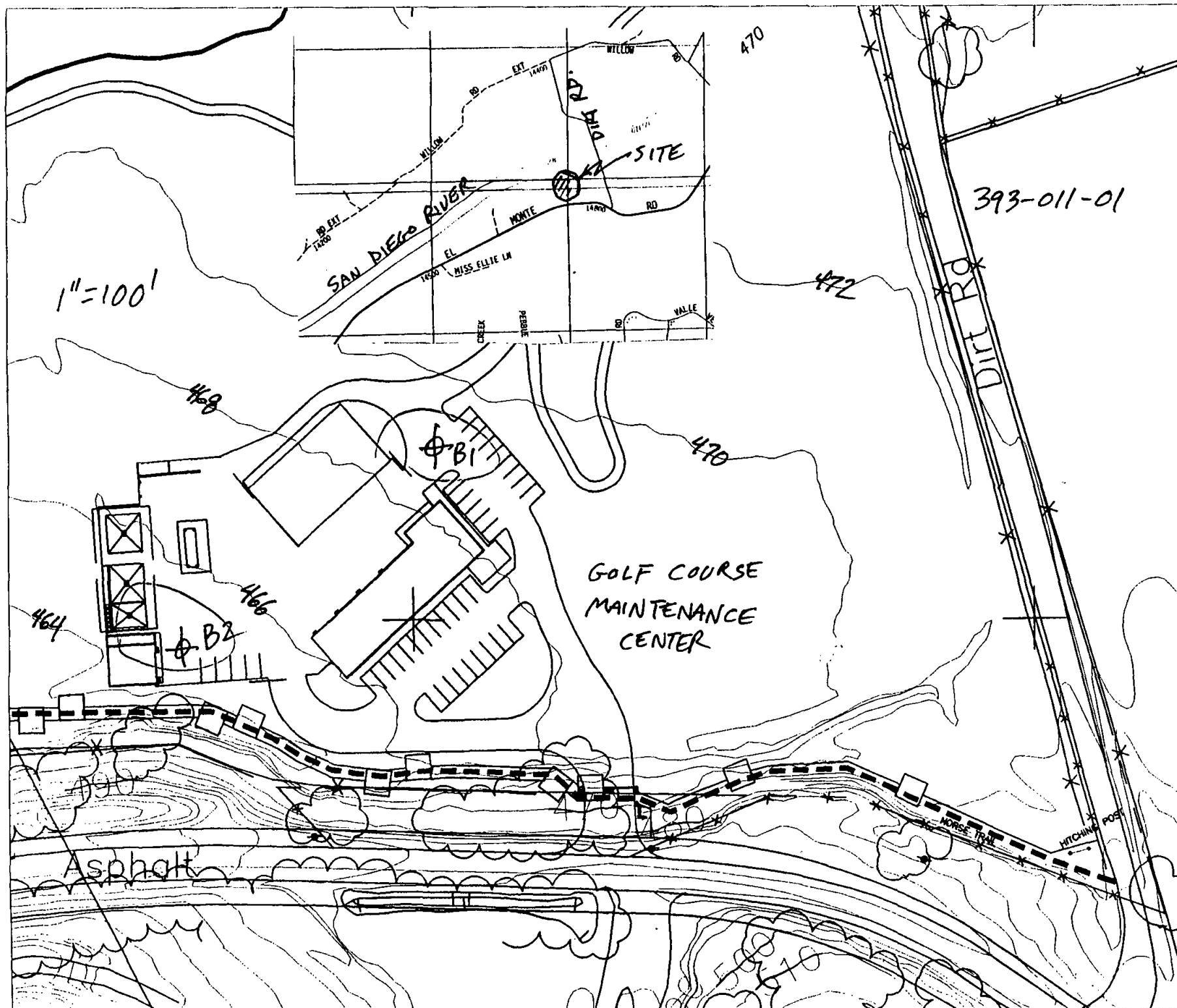
NOT APPLICABLE

10. What procedures will be used to ensure no contamination will be introduced by the drilling equipment?

SEE QUESTION 3

11. What methods will be used to clean sampling equipment? STEAM CLEANING

12. What cleaning method will be used to clean casing and screen prior to installation? NOT APPLICABLE





County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
1255 IMPERIAL AVE., SAN DIEGO, CA 92101-7483
P.O. BOX 120261, SAN DIEGO, CA 92112-0261
(619) 338-2222 FAX (619) 338-2377
1-800-283-9933

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY AGREEMENT

Proposed Location of Well(s):

APN 393-011-01

Property Address:

El Capitan (El Monte) Golf Course
El Monte + Willow Rd
San Diego County

Dear Property Owner:

This letter is to inform you of the responsibilities for the proposed drilling activities on your property. The scope of work covered by this letter will expire one year from the date you sign this form. Any proposed drilling activities beyond this expiration date will require a new Property Owner Responsibility Agreement.

Please place a check mark next to the activity which applies to your property:

- ☐ Install one or more monitoring wells
- ☐ Destroy one or more monitoring wells
- ☒ Drill one or more soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on your property is defined as the "Responsible Party." Section 67.424 of San Diego County Code states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards the Responsible Party must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the Responsible Party, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego SAM Manual and the State of California Well Standards Bulletin 74-90.

If you have any questions or would like additional information, please contact the Monitoring Well Program at (619) 338-2339.

I understand the maintenance and construction/destruction responsibilities for monitoring wells and borings under the San Diego County Code.

Property Owner
Signature:

Date:

Print Name:

Title:

Mailing
Address:

Company:

[Signature] 1/15/03
CARLOS V. LUGO DIRECTOR OF ENGINEERING
7811 UNIVERSITY AVE HELIX WATER DISTRICT
LA MESA, CA 92041-4922

DEH-SAM-9503 (Rev. 7/00)



Geotechnical Consultants:
Engineers-Geologists

2003 AUG 11 AM 11:00

10035 Prospect Ave., Suite 101
Santee, CA 92071-4398
619 / 449-9830 FAX 619 / 449-5824
email@shepardson.com

August 6, 2003

S.E.A. 97157-03

Monitoring Well Permit Desk
Site Assessment and Mitigation Program
County of San Diego
Dept. of Environmental Health
PO Box 129261
San Diego
CA 92112-9261

Attention: Ms. Marisue Crystal

SUBJECT: Geotechnical Boring Completion Report
El Monte Golf Course/ San Diego River Bridge Project
14999 Willow Rd. near El Monte Rd., Lakeside, CA
DEH Permit #W101349
APN #391-071-04

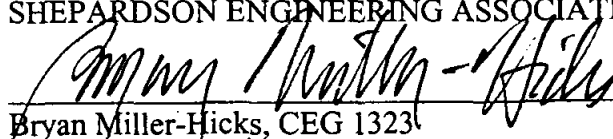
Dear Ms. Crystal:

In accordance with the current SAM Manual, Section 5, we submit this report of completion for 3 borings drilled in the San Diego River Channel at the bridge site for the proposed El Monte (aka El Capitan) Golf Course. These borings were drilled, observed and sampled in order to characterize and evaluate alluvial soil conditions, and make recommendations for pier foundations for the proposed bridge.

Boring logs and a site plan are attached as part of this report. Each boring was advanced by means of a hollow stem auger, using bentonite grout to stabilize the sides of each hole and prevent sand from entering the auger. Each hole required approximately 250 lbs of bentonite grout in 150 gallons of water. The grout was pumped into the hole during drilling, and tremied into the remaining open hole after the auger had been pulled.

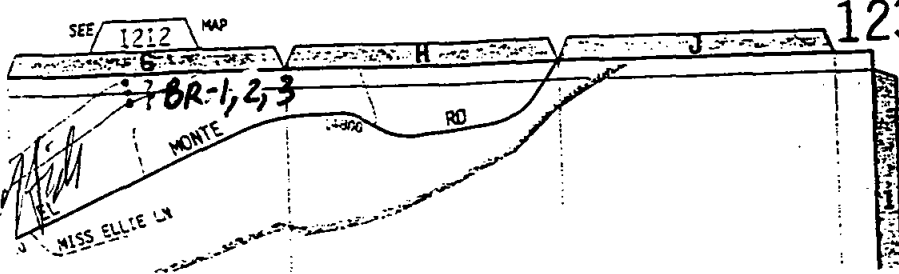
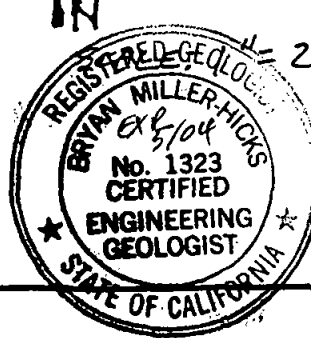
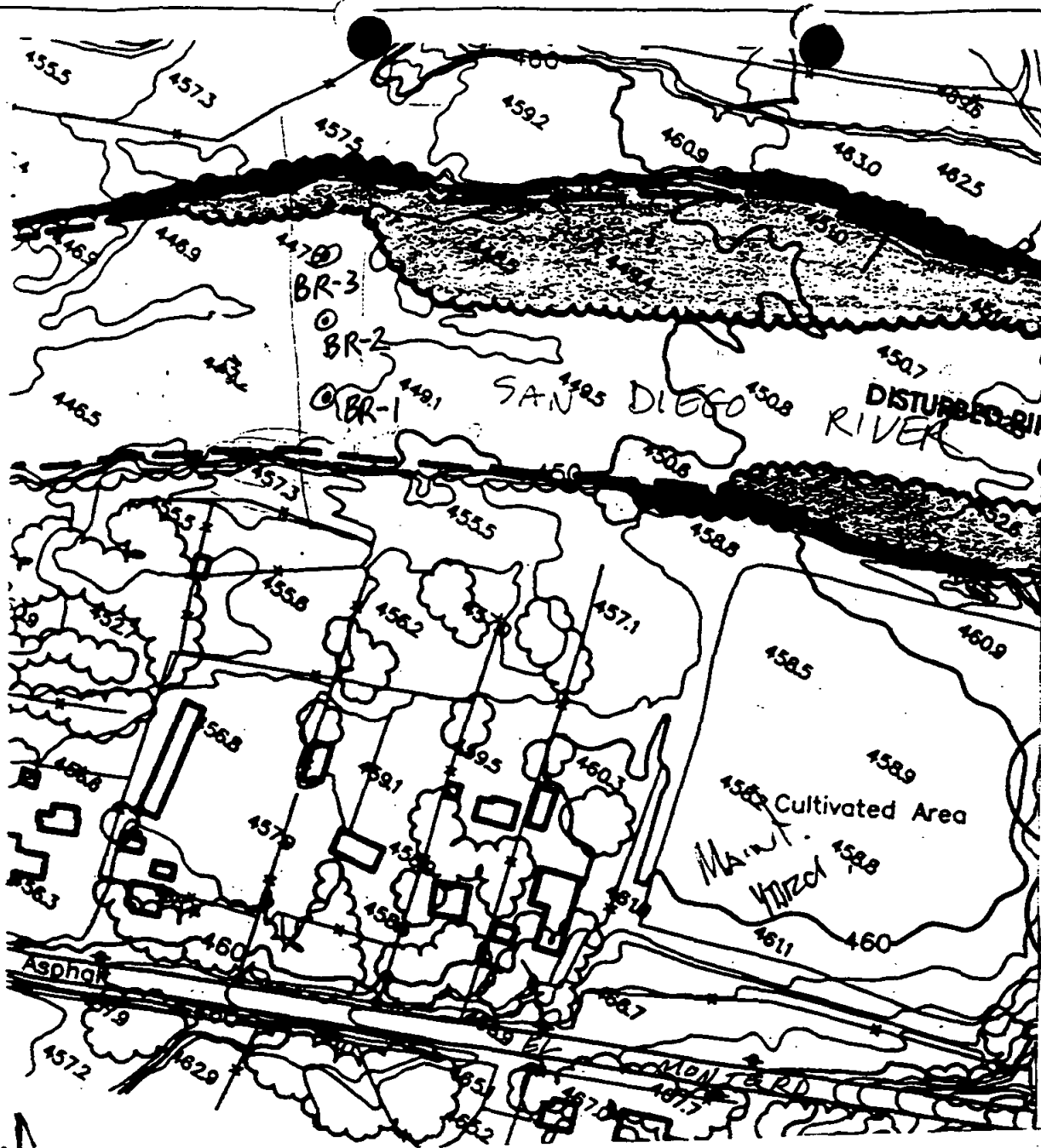
Respectfully Submitted

SHEPARDSON ENGINEERING ASSOCIATES, INC.



Bryan Miller-Hicks, CEG 1323
Project Geologist



cc: (1) Addressee



1232

 <p>SHEPARDSON ENGINEERING ASSOCIATES INC. Geotechnical Consultants: Engineers -Geologist</p>	Date: August 6 2003	Project No: 97157-03	Plate
	<p>EL MONTE GOLF COURSE BORING LOCATIONS BORING PERMIT APPLICATION APN 391-071-04</p>		

A1

LOG OF TEST BORING NO. BR- 1

Drilling Date(s): 6/10/03 Drilling Equipment: CME550 Surface Elevation: ~447'
 Logged By: BMH Method/Hole Size: Hollow/8" Bottom Elevation: ~368'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
2						SW		<u>ALLUVIUM</u> : well-graded sand, loose, moist, gray brown; contains pebbles to 1/2"
4								
6	BH	8			MD			
8								
10								
12								
14								
16	SS	19						<u>ALLUVIUM</u> : interlayered fine and coarse sand, abundant dark mineral, dark gray Water table encountered during drilling
18								
20						SM		<u>ALLUVIUM</u> : silty fine-grained sand, medium dense, saturated, medium brown
22								
24								
26	SS	27			SA	SW		<u>ALLUVIUM</u> : well-graded, slightly silty sand, medium dense, saturated, dark gray
28								
30								
32								
34								
36	SS	28						
38								



Drive Energy Data: Hammer Type Hydraulic
 Weight 140 lbs.
 Drop 30 in.

Bryan Miller-Hicks

Please refer to symbols and note limitations shown on "Explanation of Logs"

SHEPARDSON
 ENGINEERING ASSOCIATES INC.
 Geotechnical Consultants:
 Engineers-Geologists

Date: August, 2003

Project No.: 97157-03

Log of Test Boring No. BR- 1
 EL CAPITAN GOLF COURSE

Plate
B2
 1 of 2

LOG OF TEST BORING NO. BR- 1

Drilling Date(s): 6/10/03 Drilling Equipment: CME550 Surface Elevation: ~447'
 Logged By: BMH Method/Hole Size: Hollow/8" Bottom Elevation: ~368'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
42						SW		<u>ALLUVIUM</u> well graded, slightly silty sand, medium dense, saturated, dark gray
44								
46	SS	10			SA			
48								
50								
52								
54								
56	SS	30						
58								
60								
62								
64								
66	SS	48						
68								
70								
72								
74								
76	SS	29 35/4"				SM		<u>DECOMPOSED GRANITE</u> weathered, dense, saturated, medium gray
78	SS	50/2"				SM		<u>GRANITIC BEDROCK</u> : very dense, saturated, gray, no sample recovery Refusal at 78.5 feet



Drive Energy Data: Hammer Type Hydraulic
 Weight 140 lbs.
 Drop 30 in.

Please refer to symbols and note limitations shown on "Explanation of Logs"

SHEPARDSON
 ENGINEERING ASSOCIATES INC.
 Geotechnical Consultants:
 Engineers-Geologists

Date: August, 2003

Project No.: 97157-03

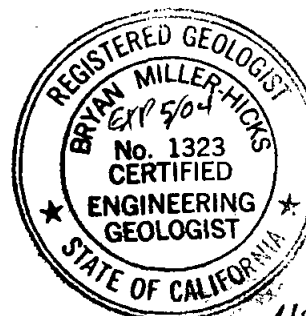
Log of Test Boring No. BR- 1
 EL CAPITAN GOLF COURSE

Plate
B2
 2 of 2

LOG OF TEST BORING NO. BR- 2

Drilling Date(s): 6/11/03 Drilling Equipment: CME550 Surface Elevation: ~447'
 Logged By: BMH Method/Hole Size: Hollow/8" Bottom Elevation: ~361'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
2						SW		<u>ALLUVIUM</u> : well-graded sand, loose, moist, light gray
4								
6								
8								
10	SS	19			SA			medium dense, intermittent thin silt layers
12								
14								
16								Water table encountered during drilling
18								
20	SS	26				ML		<u>ALLUVIUM</u> : silt, stiff, saturated, dark brown
22						SW		<u>ALLUVIUM</u> : well-graded sand, medium dense, saturated, light gray
24								
26						SP		<u>ALLUVIUM</u> : well-graded sand, finely laminated, alternating 1/8" laminae of dark and light colored minerals, fine to medium-grained
28								
30	SS	40						
32								
34								
36						ML		<u>ALLUVIUM</u> : silt, with interlayers of very fine silty sand, soft, saturated, dark gray
38								



Drive Energy Data: Hammer Type Hydraulic
 Weight 140 lbs.
 Drop 30 in.

Please refer to symbols and note limitations shown on "Explanation of Logs"

SHEPARDSON
 ENGINEERING ASSOCIATES INC.
 Geotechnical Consultants:
 Engineers-Geologists

Date: August, 2003

Project No.: 97157-03

Log of Test Boring No. BR- 2
 EL CAPITAN GOLF COURSE

Plate
B3
 1 of 3

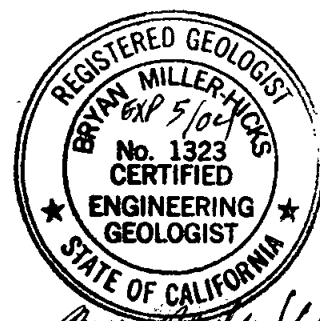
LOG OF TEST BORING NO. BR- 2

Drilling Date(s): 6/11/03 Drilling Equipment: CME550 Surface Elevation: ~447'
 Logged By: BMH Method/Hole Size: Hollow/8" Bottom Elevation: ~361'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
42	SS	17			SA	SM		<u>ALLUVIUM</u> : silty sand, medium dense, saturated, red brown and gray
44								
46								
48						SW		<u>ALLUVIUM</u> : well graded, medium to coarse grained sand, medium dense, saturated, gray brown
50	SS	20			SA			
52								
54								
56								
58								
60	SS	27						contains 1/4" thick layers of dark gray silt
62								
64								
66								
68								
70								
72								
74						GW		<u>ALLUVIUM</u> : sandy gravels, dense, saturated, medium gray
76								
78								

Drive Energy Data: Hammer Type Hydraulic
 Weight 140 lbs.
 Drop 30 in.

Please refer to symbols and note limitations shown on "Explanation of Logs"



SHEPARDSON
 ENGINEERING ASSOCIATES INC.
 Geotechnical Consultants:
 Engineers-Geologists

Date: August, 2003



Project No.: 97157-03

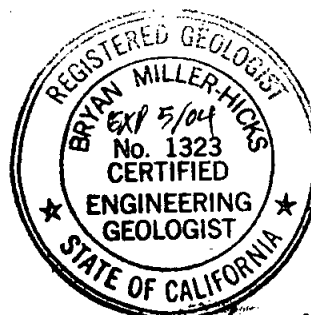
Log of Test Boring No. BR- 2
 EL CAPITAN GOLF COURSE

Plate
B3
 2 of 3

LOG OF TEST BORING NO. BR- 2

Drilling Date(s): 6/11/03 Drilling Equipment: CME550 Surface Elevation: ~447'
 Logged By: BMH Method/Hole Size: Hollow/8" Bottom Elevation: ~361'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
82						SW-GW		<u>ALLUVIUM:</u> gravelly sands, dense, saturated, gray
84								
86						SM		<u>GRANITE BEDROCK:</u> very dense, saturated, olive gray
88								End of boring at 85 feet, refusal on bedrock
90								
92								
94								
96								
98								
100								
102								
104								
106								
108								
110								
112								
114								
116								
118								



Drive Energy Data: Hammer Type Hydraulic
 Weight 140 lbs.
 Drop 30 in.

Please refer to symbols and note limitations shown on "Explanation of Logs"

SHEPARDSON
 ENGINEERING ASSOCIATES INC.
 Geotechnical Consultants:
 Engineers-Geologists

Date: August, 2003

Project No.: 97157-03

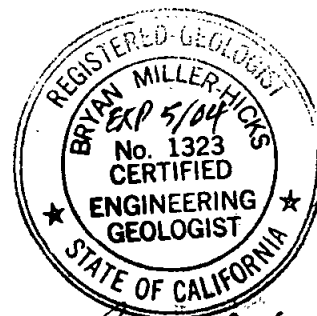
Log of Test Boring No. BR- 2
 EL CAPITAN GOLF COURSE

Plate
B3
 3 of 3

LOG OF TEST BORING NO. BR- 3

Drilling Date(s): 6/10/03 Drilling Equipment: CME550 Surface Elevation: ~447'
 Logged By: BMH Method/Hole Size: Hollow/8" Bottom Elevation: ~362'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
2						SW		<u>ALLUVIUM</u> : well-graded sand, loose, moist, gray
4								
6								
8								
10						SM-ML		<u>ALLUVIUM</u> : silty sand to sandy silt, medium dense, moist, dark brown
12								
14						SW		<u>ALLUVIUM</u> : well graded fine to coarse grained sand, medium dense,
16	SS	24			SA			▽saturated, medium gray Water table encountered during drilling ▽ Stabilized water level
18								
20								
22								
24								
26	SS	27						
28								
30								
32								
34								
36	SS	20			SA			
38								



Bryan Miller-Hicks

Drive Energy Data: Hammer Type Hydraulic
 Weight 140 lbs.
 Drop 30 in.

Please refer to symbols and note limitations shown on "Explanation of Logs"

SHEPARDSON
 ENGINEERING ASSOCIATES INC.
 Geotechnical Consultants:
 Engineers-Geologists

Date: August, 2003

Project No.: 97157-03

Log of Test Boring No. BR- 3
 EL CAPITAN GOLF COURSE

Plate
B4
 1 of 3

LOG OF TEST BORING NO. BR- 3

Drilling Date(s): 6/10/03 Drilling Equipment: CME550 Surface Elevation: ~447'
 Logged By: BMH Method/Hole Size: Hollow/8" Bottom Elevation: ~362'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
42						SP		<u>ALLUVIUM</u> : fine-grained poorly graded sand, medium dense, saturated, gray brown
44								
46	SS	33						
48								
50								
52						SW		<u>ALLUVIUM</u> : medium to coarse, well-graded sand, medium dense, saturated, medium gray
54								
56	SS	12			SA			
58								
60								
62								
64								
66	SS	34						
68								
70	SS	28						
72								
74								
76	SS	31						
78						GW		<u>ALLUVIUM</u> : sandy gravels, heavy, somewhat smaller gravels from 82 feet; dense, saturated, gray

B. Miller-Arden

Drive Energy Data: Hammer Type Hydraulic
 Weight 140 lbs.
 Drop 30 in.

Please refer to symbols and note limitations shown on "Explanation of Logs"



SHEPARDSON
ENGINEERING ASSOCIATES INC.

Geotechnical Consultants:
Engineers-Geologists

Date: August, 2003



Project No.: 97157-03

Log of Test Boring No. BR- 3
EL CAPITAN GOLF COURSE

Plate
B4
2 of 3

LOG OF TEST BORING NO. BR- 3

Drilling Date(s): 6/10/03 Drilling Equipment: CME550 Surface Elevation: ~447'
 Logged By: BMH Method/Hole Size: Hollow/8" Bottom Elevation: ~362'

Depth (feet)	Sample Type	Blow Count (/foot)	Dry Density (pcf)	Moisture Content (%)	Lab Tests	USCS	Graphic Log	MATERIAL DESCRIPTION
82						GW		<u>ALLUVIUM</u> : sandy gravels, heavy, somewhat smaller gravels from 82 feet; dense, saturated, gray <u>GRANITE</u> : decomposed to fresh, very dense, saturated, olive gray
84						SM		
86								End of boring at 86 feet, refusal on bedrock
88								
90								
92								
94								
96								
98								
100								
102								
104								
106								
108								
110								
112								
114								
116								
118								

P. Martin-Hicks

Drive Energy Data: Hammer Type Hydraulic
 Weight 140 lbs.
 Drop 30 in.

Please refer to symbols and note limitations shown on "Explanation of Logs"

 **SHEPARDSON**
 ENGINEERING ASSOCIATES INC.
 Geotechnical Consultants:
 Engineers-Geologists

Date: August, 2003

Project No.: 97157-03

Log of Test Boring No. BR- 3
 EL CAPITAN GOLF COURSE

Plate
B4
 3 of 3



PERMIT #W101349
A.P.N. #391-071-04
EST #NONE

**COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION**

GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: EL MONTE GOLF COURSE / SAN DIEGO RIVER BRIDGE PROJECT

SITE ADDRESS: 14999 WILLOW RD NEAR EL MONTE RD., SAN DIEGO, CA 92040

PERMIT FOR: **3 GEOTECHNICAL BORINGS**

PERMIT APPROVAL DATE: JUNE 4, 2003

PERMIT EXPIRES ON: OCTOBER 2, 2003

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**
2. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.
3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.
4. **This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH.** Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.
5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

NOTE: This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.

APPROVED BY: *M Crystal* DATE: 06/04/2003
MARISUE CRYSTAL

NOTIFIED: 6/4/03 V.M. MS9 MB

4/9/03 faxed VT



PERMIT APPLICATION
GROUNDWATER
AND
VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

RECEIVED

2003 MAY 23 AM 11 22

D. E. H.
MAILROOM

3107
OFFICE USE ONLY
PERMIT #W 101347
SAM CASE YR #H NONE
DATE RECEIVED: 5-23-03
FEE PAID: \$240. - \$5735

A. RESPONSIBLE PARTY HEIX Water District Phone 619-667-6268
Mailing Address 7811 University Av City La Mesa State CA Zip 91941
Contact Person Larry Campbell Phone 619-667-6268 ext. _____

B. SITE ASSESSMENT PROJECT IF APPLICABLE #H _____

C. CONSULTING FIRM

Mailing Address SHEPARDSON ENGINEERING ASSOCIATES 10035 Prospect Av City Santee State CA Zip 92071
Registered Professional BRYAN MILLER-HICKS Registration # RG-4130, CEG-1323 (RG, RCE, CEG)
Contact Person BRYAN MILLER-HICKS Phone 619-449-9830 ext. _____

D. DRILLING COMPANY Tri-County Drilling, Inc. C57# 547737 Phone 858-271-0099
Mailing Address 9631 Candida Street City San Diego State CA Zip 92126

REG 06-05-03 10:41 EDNA 78775
CHK \$240.00

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED	MATERIALS TO BE USED	PROPOSED CONSTRUCTION														
<input type="checkbox"/> Groundwater _____ <input type="checkbox"/> Vadose _____ <input checked="" type="checkbox"/> Boring <u>3</u> <input type="checkbox"/> Other _____	<table border="0"><tr><td>CASING</td><td>SEAL</td></tr><tr><td>Not Applicable _____</td><td><input type="checkbox"/> Neat Cement</td></tr><tr><td>Type _____</td><td><input type="checkbox"/> Cement & Bentonite</td></tr><tr><td>Gauge _____</td><td><input type="checkbox"/> Sand-Cement</td></tr><tr><td>Diameter _____</td><td><input checked="" type="checkbox"/> Bentonite Grout</td></tr><tr><td>Well Screen Size _____</td><td><input type="checkbox"/> Other (Specify) _____</td></tr><tr><td>Filter Pack _____</td><td></td></tr></table>	CASING	SEAL	Not Applicable _____	<input type="checkbox"/> Neat Cement	Type _____	<input type="checkbox"/> Cement & Bentonite	Gauge _____	<input type="checkbox"/> Sand-Cement	Diameter _____	<input checked="" type="checkbox"/> Bentonite Grout	Well Screen Size _____	<input type="checkbox"/> Other (Specify) _____	Filter Pack _____		Estimated ground water depth <u>12</u> ft. CONCRETE SURFACE SEAL _____ to _____ BENTONITE SEAL <u>0</u> to <u>Bottom</u> FILTER PACK _____ to _____ PERFORATION _____ to _____ PROPOSED DRILLING DATE <u>6/3/03</u> <u>6/5/03</u> NOTE: Attach a well construction diagram for wells with multiple completion
CASING	SEAL															
Not Applicable _____	<input type="checkbox"/> Neat Cement															
Type _____	<input type="checkbox"/> Cement & Bentonite															
Gauge _____	<input type="checkbox"/> Sand-Cement															
Diameter _____	<input checked="" type="checkbox"/> Bentonite Grout															
Well Screen Size _____	<input type="checkbox"/> Other (Specify) _____															
Filter Pack _____																
NUMBER OF WELLS TO BE DESTROYED # <input type="checkbox"/> _____	Drilling Method <input type="checkbox"/> Auger <input type="checkbox"/> Air Rotor <input checked="" type="checkbox"/> Mud Rotary <input type="checkbox"/> Percussion <input type="checkbox"/> Other															

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [Signature] DATE 5/21/03

TRI-COUNTY DRILLING

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction/or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE [Signature] DATE 5/22/03

F. SITE INFORMATION

5/20/03

1. ASSESSOR'S PARCEL NUMBER <u>391-071-04</u>			
Site Name <u>El Monte Golf Course</u>			
Site Address <u>El Monte + Willow Rds</u>		City <u>San Diego</u>	Zip _____
PROPERTY OWNER <u>Helix Water District</u>		Phone <u>619-667-6268</u>	
Mailing Address <u>7811 University Av</u>		City <u>La Mesa</u>	State <u>CA</u> Zip <u>91941</u>
NUMBER OF WELLS <u>Not Applicable</u>		TYPE OF WELLS <u>Not Applicable</u>	
2. ASSESSOR'S PARCEL NUMBER _____			
Site Name _____			
Site Address _____		City _____	Zip _____
PROPERTY OWNER _____		Phone _____	
Mailing Address _____		City _____	State _____ Zip _____
NUMBER OF WELLS _____		TYPE OF WELLS _____	
3. ASSESSOR'S PARCEL NUMBER _____			
Site Name _____			
Site Address _____		City _____	Zip _____
PROPERTY OWNER _____		Phone _____	
Mailing Address _____		City _____	State _____ Zip _____
NUMBER OF WELLS _____		TYPE OF WELLS _____	
4. ASSESSOR'S PARCEL NUMBER _____			
Site Name _____			
Site Address _____		City _____	Zip _____
PROPERTY OWNER _____		Phone _____	
Mailing Address _____		City _____	State _____ Zip _____
NUMBER OF WELLS _____		TYPE OF WELLS _____	

G. FEES:

5/29/03

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells Vadose, Vapor Extraction Wells)	\$150.00 each \$130.00 for each additional well	(_____ x \$150.00) \$ _____ (_____ x \$130.00) \$ _____
Permit for Borings Only (CPT's, Hydropunch, Geoprobos, Temp. Well Points, etc.)	160.00 \$150.00 for the first boring \$40.00 for each additional boring	\$ <u>160.00</u> (<u>2</u> x \$ 40.00) \$ <u>80.00</u>
Permit for Well Destructions Only	\$150.00 for the first destruction \$100.00 for each additional destruction	\$ _____ (_____ x \$100.00) \$ _____
Permit for any Combination of Well Installations, Borings & Destructions	The first activity (of any type) will be \$150.00. Additional activities will be as follows: \$130.00 for each well \$40.00 for each boring \$100.00 for each well destruction	\$ _____ (_____ x \$130.00) \$ _____ (_____ x \$ 40.00) \$ _____ (_____ x \$100.00) \$ _____
	TOTAL COST OF PERMIT	\$ <u>240.00</u>

H. APPLICATION SUBMITTAL, PLAN APPROVAL, PERMIT ISSUANCE, AND REQUIRED INSPECTIONS

Submit one (1) original and two (2) copies of this application package, including plan drawings with the required fee to the Monitoring Well Permit Clerk, Department of Environmental Health, Site Assessment and Mitigation Program (SAM). 1255 Imperial Avenue, San Diego, CA 92101. Or mail to P. O. Box 129261, San Diego, CA 92112-9261. Checks should be made payable to the County of San Diego.

A permit will be issued by SAM upon review and approval of the application and plans. The required fees must be submitted with the application package. Information in addition to that presented in the application package may be needed in order to obtain final approval. No work is to begin on the proposed project until a permit has been issued. The required inspections cannot be scheduled until a permit is issued.

Once the permit has been issued, it is the responsibility of the permittee to notify SAM at least two (2) working days in advance to schedule each required inspection.

USE ONE APPLICATION PACKAGE FOR A SINGLE SITE PROJECT. A SINGLE PERMIT WILL BE ISSUED FOR A SINGLE SITE PROJECT, EVEN IF WELLS/BORINGS ARE COMPLETED ON MORE THAN ONE PROPERTY. FOR MULTIPLE SITE PROJECT'S, USE SEPARATE APPLICATIONS.

5/20/03

391-071-04

PERMIT APPLICATION FOR
GROUND WATER AND VADOSE MONITORING WELLS
EXPLORATORY OR TEST BORINGS

- For well destruction, complete only #1 below.
- Well design, logging and construction must be supervised by a Geologist, Engineering Geologist or Civil Engineer who is registered or certified by the State of California.
- Well driller must have an active C-57 License and current \$7,500 bond with the County.
- Provide a plot plan giving location of property lines, existing improvements such as structures, underground tanks, underground utilities, underground piping, and the proposed monitoring and/or observation wells.
- If applicable, provide a signed copy of the Property Owner Responsibility form for each property listed in Section "F".
- If applicable, provide a signed copy of the Property Owner Responsibility form for each property listed in Section "F". Provide encroachment/excavation permit and/or traffic control permit for work to be done in street or public right of way.

1. If wells are to be destroyed, provide a description of method of destruction. Not Applicable

2. What is the proposed purpose of the well/boring? To assess foundation conditions for bridge / Roadway across San Diego River; assess liquefaction potential of river sediments

3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction?

Drilling equipment will be steam-cleaned prior to and between borings
Borings will be back filled with bentonite grout.

4. What field procedures will be utilized to determine if contamination exists?

Visual, "smell" test and ovm screening

5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving?

Not applicable

6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)?

Not applicable

7. How will samples be transported and preserved? Not applicable

8. What sampling methods will be used? Standard Penetration Test (SPT)

9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction of Vadose and Ground Water Monitoring Wells (Current SAM Manual Requirements). If yes, specify these variations.

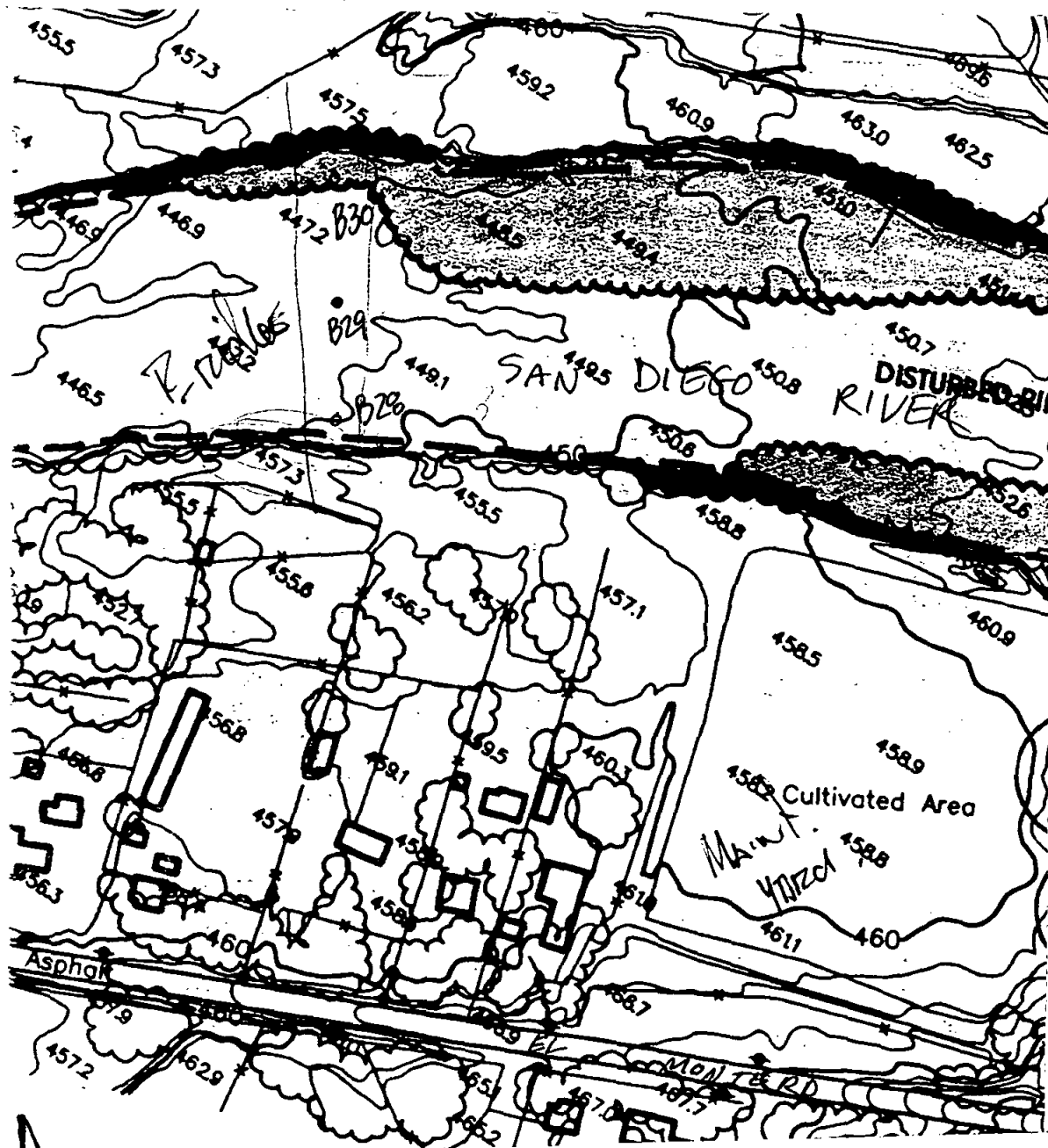
No

10. What procedures will be used to ensure no contamination will be introduced by the drilling equipment?

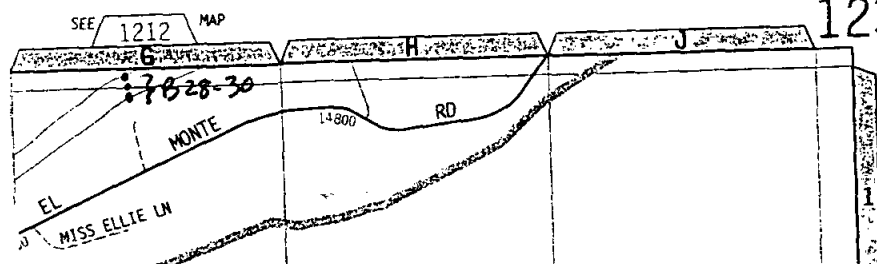
See question 3

11. What methods will be used to clean sampling equipment? Steam cleaning

12. What cleaning method will be used to clean casing and screen prior to installation? Not applicable



SCALE: 1" = 200'



SHEPARDSON
ENGINEERING ASSOCIATES INC.

Geotechnical Consultants:
Engineers - Geologist

Date: May 22, 2003

Project No: 97157-03

Plate

EL MONTE GOLF COURSE
BORING LOCATIONS
BORING PERMIT APPLICATION
APN 391-071-04

A1



County of San Diego

GARY W. FRBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
1255 IMPERIAL AVE., SAN DIEGO, CA 92101-7493
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377
1-800-253-0933

RECEIVED

2003 MAY 23 AM 11 22

D. E. H.
RECEIVED
ASSISTANT TO DIRECTOR

PROPERTY OWNER RESPONSIBILITY AGREEMENT

5/20/03

Proposed Location of Well(s):

391-071-04

Property Address:

El Capitan (El Monte) Golf Course
El Monte + Willow Road
San Diego County

Dear Property Owner:

This letter is to inform you of the responsibilities for the proposed drilling activities on your property. The scope of work covered by this letter will expire one year from the date you sign this form. Any proposed drilling activities beyond this expiration date will require a new Property Owner Responsibility Agreement.

Please place a check mark next to the activity which applies to your property:

- ☐ Install one or more monitoring wells
- ☐ Destroy one or more monitoring wells
- ☒ Drill one or more soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on your property is defined as the "Responsible Party." Section 67.424 of San Diego County Code states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards the Responsible Party must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the Responsible Party, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego SAM Manual and the State of California Well Standards Bulletin 74-90.

If you have any questions or would like additional information, please contact the Monitoring Well Program at (619) 338-2339.

I understand the maintenance and construction/destruction responsibilities for monitoring wells and borings under the San Diego County Code.

Property Owner
Signature:

Carlos V. Lugo

Date: 5/20/03

Print Name:

CARLOS V. LUGO

Title: DIRECTOR OF ENGINEERING

Mailing
Address:

7811 UNIVERSITY AVE
LA MESA, CA 91941

Company: HELIX WATER DISTRICT

orig.
sign.



DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND & WATER QUALITY DIVISION

MONITORING WELL COMPLIANCE INSPECTION REPORT

APN: 390-040-51, 391-061-01, 391-04-00
PERMIT# LMON105330
EST.# NONE
INSPECTION DATE: 09/09/2008

RESPONSIBLE PARTY: BLACK & VEATCH

ATTN: SHIRLEY STODDEN

9820 WILLOW CREEK RD., STE 310

SAN DIEGO, CA 92131

SITE NAME: EL MONTE GROUNDWATER BASIN

SITE ADDRESS: EL MONTE RD. (E OF LAKE
JENNINGS PARK RD.)

LAKESIDE, CA 92040

CONSULTANT: NINYO & MOORE

ATTN: FRANK MORELAND

DRILLER: TRI-COUNTY DRILLING, INC.

NUMBER OF WELLS INSTALLED UNDER THIS PERMIT:

1

NUMBER OF BORINGS DRILLED/PROPERLY DESTROYED UNDER THIS PERMIT:

6

WELL IDENTIFICATION

☒ Place identification on the following monitoring well(s)

MW-1

WELL COVER

- ☐ Replace one or more missing well cover bolt(s):
- ☐ Replace one or more of the stripped or bent well cover bolts:
- ☐ Repair, clean or replace the bolt receptor(s):
- ☐ Replace the broken or substandard well cover:
- ☐ Replace the deteriorated or missing well cover gasket:

CONCRETE SURFACE SEAL

- ☐ Reconstruct the cracked and/or deteriorated concrete surface seal:
- ☐ Reconstruct the concrete surface seal to the required minimum of 12 inches around the perimeter of the security vault (FLUSH STYLE)
- ☐ Reconstruct the concrete surface seal to the required minimum of 24 inches around the perimeter of the security vault (MONUMENT STYLE)
- ☐ Reconstruct the concrete surface seal to drain surface liquids away from the well.

WELL CASING

- ☐ Extend the well casing to the required 3" above the interior surface seal.

CASING VS. BOREHOLE SIZE

- ☐ Well does not meet the minimum standard for the ratio of borehole size to casing diameter.

INNER VAULT CONCRETE SURFACE SEAL

- ☐ Reconstruct the failed interior concrete surface seal:

--

- ☐ Install the missing interior concrete seal

--

WELL VAULT

- ☐ Reinstall the damaged security vault/well box:

--

- ☐ Remove the liquid in the well vault.

--

- ☐ Remove excessive dirt/debris in well vault.

--

WELL CASING CAP

- ☒ Replace the missing lock for the well casing cap:

(MW-1)

- ☐ Replace loose or missing well casing:

--

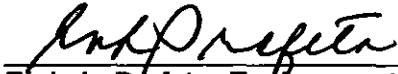
- ☐ Replace the slip cap with a locking well casing cap:

--

COMMENTS:

No major deficiencies were observed at the time of this inspection.

Please fix minor deficiencies noted by the inspector



Ernie L. Profeta, Environmental Health Technician

Phone: (619) 338-2492

Fax: (619) 338-2315

Email: ernie.profeta@sdcounty.ca.gov



MW-1



**SITE NAME: EL MONTE GROUNDWATER BASIN
EL MONTE RD. (EAST OF LAKE JENNINGS PARK RD.),
LAKESIDE, CA 92040
PERMIT# LMON105330**



PERMIT #LMON105330
A.P.N. #390-040-51, 391-
061-01, 391-071-04-00
EST # NONE

**COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM**

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: EL MONTE GROUNDWATER BASIN

**SITE ADDRESS: EL MONTE RD. (EAST OF LAKE JENNINGS PARK RD.),
LAKESIDE, CA 92040**

PERMIT FOR: ONE GROUNDWATER MONITORING WELL AND SIX BORINGS

PERMIT APPROVAL DATE: DECEMBER 11, 2007

PERMIT EXPIRES ON: APRIL 9, 2008

RESPONSIBLE PARTY: BLACK & VEATCH

PERMIT CONDITIONS:

1. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.
2. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**
3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (http://www.sdcountry.ca.gov/deh/lwg/sam/manual_guidelines.html). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.
4. Within 60 days of completing work, submit a well-construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.
5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

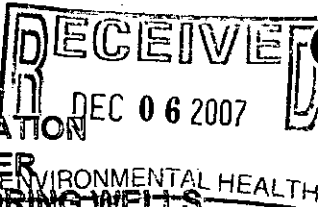
APPROVED BY:  **JAMES CLAY**

DATE: **12/11/2007**

NOTIFIED: *emailed 12/11/07*
DEH:SAM-9075 (3/05)



**PERMIT APPLICATION
GROUNDWATER
AND VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS**



Adm. info
rcvd 12/6

3786

OFFICE USE ONLY	
PERMIT LMON #	<u>105330</u>
SAM CASE YN #	<u>NDNE</u>
DATE RECEIVED	<u>12/6/07</u>
FEE PAID	<u>\$150.00</u>
CHECK #	<u>108605</u>

A. RESPONSIBLE PARTY <u>Black & Veatch</u> (The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.) Mailing Address <u>9820 Willow Creek Rd, Ste 310</u> City <u>San Diego</u> State <u>CA</u> Zip <u>92131</u> Contact Person <u>Shirley Stodden</u> Phone <u>858 566 1936</u> Ext. <u> </u> Fax <u> </u> E-mail <u> </u>		
B. SITE ASSESSMENT PROJECT NUMBER - IF APPLICABLE # <u>N/A</u>		
C. CONSULTING FIRM <u>Ninyo & Moore</u> Mailing Address <u>5710 Ruffin Rd</u> City <u>San Diego</u> State <u>CA</u> Zip <u>92123</u> Registered Professional <u>Frank Moreland</u> Registration # <u>2071</u> (RG) CEG E-mail <u>fmoreland@ninyoandmoore.com</u> Contact Person <u>Frank Moreland</u> Phone <u>858 576 1000</u> Ext. <u>1225</u> Fax <u>858 576 9600</u>		
D. DRILLING COMPANY <u>Tri-County Drilling</u> C57# <u>547737</u> Contact Name <u>Tim Duddle</u> E-mail <u>timd@tcdriilling.com</u> Mailing Address <u>9631 Candida Street</u> City <u>San Diego</u> State <u>CA</u> Zip <u>92126</u> Phone <u>858-271-009</u> Fax <u>271-0233</u>		
E. CONSTRUCTION INFORMATION		
TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED <input checked="" type="checkbox"/> Groundwater <u>1</u> <input type="checkbox"/> Vadoses <u> </u> <input type="checkbox"/> Boring <u> </u> <input type="checkbox"/> Other <u> </u> NUMBER OF WELLS TO BE DESTROYED <input type="checkbox"/> <u>N/A</u>	MATERIALS TO BE USED CASING Not Applicable <u> </u> Type <u> </u> Gauge <u> </u> Diameter <u>2"</u> Well Screen Size <u> </u> Filter Pack <u> </u> SEAL/BORING BACKFILL <input type="checkbox"/> Neat Cement <input checked="" type="checkbox"/> Cement & Bentonite <input type="checkbox"/> Sand-Cement <input type="checkbox"/> Bentonite <input type="checkbox"/> Other Borehole diameter <u>8 1/4"</u> Drilling Method <input checked="" type="checkbox"/> Auger <input type="checkbox"/> Mud Rotary <input type="checkbox"/> Percussion <input type="checkbox"/> Air Rotary <input type="checkbox"/> Other	PROPOSED CONSTRUCTION Estimated groundwater depth: <u>2</u> ft. Estimated depth of boring <u>40</u> ft. Concrete <u>0 to 3</u> surface seal Annular seal <u>3 to 5</u> Bentonite <u>5 to 8</u> transition seal Filter Pack <u>8</u> <u>10</u> to <u>40</u> Perforation <u>10</u> to <u>40</u> NOTE: Attach a well construction diagram for wells with multiple completions
I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.		
DRILLER'S SIGNATURE <u>[Signature]</u> DATE <u>10-03-07</u>		
Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.		
RG/RCE/CEG SIGNATURE <u>Francis O Moreland</u> DATE <u>11/30/07</u>		



**PERMIT APPLICATION
GROUNDWATER
AND VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS**

RECEIVED
NOV 20 2007

OFFICE USE ONLY
 PERMIT LMON # 105330
 SAM CASE Y/N # NONE
 DATE RECEIVED: 11/20/07
 FEE PAID: \$436.00
 CHECK # 108389

A. RESPONSIBLE PARTY BLACK & VEATCH

(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)

Mailing Address 9820 Willow Creek Road City SAN DIEGO State CA Zip 92131
 Contact Person SHIRLEY STODDEN Phone 858-566-1936 Ext. Fax

B. SITE ASSESSMENT PROJECT NUMBER - IF APPLICABLE #

C. CONSULTING FIRM NINYO & MOORE

Mailing Address 5710 RUFFIN ROAD City SAN DIEGO State CA Zip 92123
 Registered Professional FRANK MORELAND Registration # 2071 (R) CEG
 E-mail FMORELAND@NINYOANDMOORE.COM
 Contact Person FRANK MORELAND Phone 858-576-1000 Ext. 1225 Fax 858-576-9600

D. DRILLING COMPANY Tri-County Drilling

C57# 547737

Contact Name Tim Duddle E-mail timd@tcdriilling.com
 Mailing Address 9631 Candida Street City San Diego State CA Zip 92126
 Phone 858-271-009 Fax 271-0233

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED	MATERIALS TO BE USED		PROPOSED CONSTRUCTION
	CASING	SEAL/BORING BACKFILL	
#			
<input type="checkbox"/> Groundwater	Not Applicable <u>X</u>	<input type="checkbox"/> Neat Cement	Estimated groundwater depth: <u>20</u> ft.
<input type="checkbox"/> Vadose	Type <u> </u>	<input checked="" type="checkbox"/> Cement & Bentonite	Estimated depth of boring <u>100</u> ft.
<input checked="" type="checkbox"/> Boring <u>6</u>	Gauge <u> </u>	<input type="checkbox"/> Sand-Cement	Concrete <u>0</u> to <u>3</u>
<input type="checkbox"/> Other	Diameter <u> </u>	<input type="checkbox"/> Bentonite	surface seal
	Well Screen Size <u> </u>	<input type="checkbox"/> Other	Annular seal <u>3'</u> to <u>T.D.</u>
	Filter Pack <u>NA</u>	Borehole diameter <u>8 1/4</u> ✓	Bentonite <u>3'</u> to <u>T.D.</u>
NUMBER OF WELLS TO BE DESTROYED		Drilling Method	Bentonite transition seal
<input type="checkbox"/>	<input checked="" type="checkbox"/> Auger ✓	<input type="checkbox"/> Air Rotary	Filter Pack <u> </u> to <u> </u>
	<input type="checkbox"/> Mud Rotary	<input type="checkbox"/> Other	Perforation <u> </u> to <u> </u>
	<input type="checkbox"/> Percussion		

NOTE:

**Attach a well construction diagram
for wells with multiple completions**

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE [Signature] DATE 10-03-07

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

RG/RCE/CEG SIGNATURE Francis Moreland DATE 11-15-07

F. SITE INFORMATION

1. ASSESSOR'S PARCEL NUMBER 3910610100, 3910710400, 3900403100
Site Name EL MONTE GROUNDWATER BASIN
Site Address EL MONTE ROAD City LAKE SIDE Zip 92040
EAST OF LAKE JENNINGS PARK ROAD
PROPERTY OWNER Helix Water District
Phone (619) 466-0585 Ext. _____ Fax (619) 466-1823
Mailing Address 7811 University Ave. City La Mesa State CA Zip 91941
NUMBER OF WELLS 6 TYPE OF WELLS SOIL BORINGS

2. ASSESSOR'S PARCEL NUMBER _____
Site Name _____
Site Address _____ City _____ Zip _____
PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State _____ Zip _____
NUMBER OF WELLS _____ TYPE OF WELLS _____

3. ASSESSOR'S PARCEL NUMBER _____
Site Name _____
Site Address _____ City _____ Zip _____
PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State _____ Zip _____
NUMBER OF WELLS _____ TYPE OF WELLS _____

4. ASSESSOR'S PARCEL NUMBER _____
Site Name _____
Site Address _____ City _____ Zip _____
PROPERTY OWNER _____
Phone _____ Ext. _____ Fax _____
Mailing Address _____ City _____ State _____ Zip _____
NUMBER OF WELLS _____ TYPE OF WELLS _____

G. FEES (in effect beginning July 1, 2007, through June 30, 2008)

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	\$186.00 for the first monitoring well	/ \$186.00
Permit for Well Maintenance Inspection (Valid for three years)	\$100.00 for first well maintenance inspection	/ \$100.00
Each Additional New Well	\$160.00 for each additional well installation \$30.00 for each additional well maintenance inspection	___ x \$160.00 ___ x \$30.00
Permit for Borings Only (CPT's, Hydropunch, Geoprobos, Temporary Well Points, etc.)	\$186.00 for the first boring \$50.00 for each additional boring	1 x \$186.00 186.00 68 x \$50.00 250.00 300.00
Permit for Well Destructions Only	\$186.00 for the first destruction \$120.00 for each additional destruction ...	___ x \$186.00 ___ x \$120.00
Permit for any Combination of Well Installations, Borings, & Destructions (except UST backfill permit)	The first activity will be \$186.00 Additional activities will be as follows: \$160.00 for each additional well \$100.00 for first well maintenance inspection \$ 30.00 for each additional well maintenance inspection \$120.00 for each well destruction \$ 50.00 for each additional boring	___ x \$186.00 ___ x \$160.00 ___ x \$100.00 ___ x \$ 30.00 ___ x \$120.00 ___ x \$ 50.00
Permit for Underground Storage Tank Monitoring System in Backfill (i.e. Enhanced Leak Detection)	\$320.00 (Flat Fee)	\$ _____
	TOTAL COST OF PERMIT	\$ 436.00 \$ 586.00

H. **QUESTIONNAIRE:** Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.

1. If wells are to be destroyed, provide a description of method of destruction N/A
2. What is the purpose of the well/boring investigation?
 - ☐ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.
 - ☐ b. Part of a Phase I investigation for property ownership transfer or: _____
 - ☒ c. Geotechnical investigation for proposed construction, land stabilization or:
 - ☐ d. Other: _____
3. What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Drilling equipment will be cleaned prior to advancing auger. The borings will be abandoned in accordance with SAM guidelines.
4. What field procedures will be utilized to determine if contamination exists? Soil will be visually observed for contamination.
5. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Visual observations
6. What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? N/A An environmental evaluation is not a part of this study.
7. How will samples be transported and preserved? N/A See above.
8. What sampling methods will be used? California modified and standard penetration test split spoon samplers.
9. Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www.sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). : No wells are to be installed in this study.
10. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. N/A
11. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Drilling equipment will be cleaned prior to drilling
12. What methods will be used to clean sampling equipment? N/A
13. What cleaning method will be used to clean casing and screen prior to installation? N/A

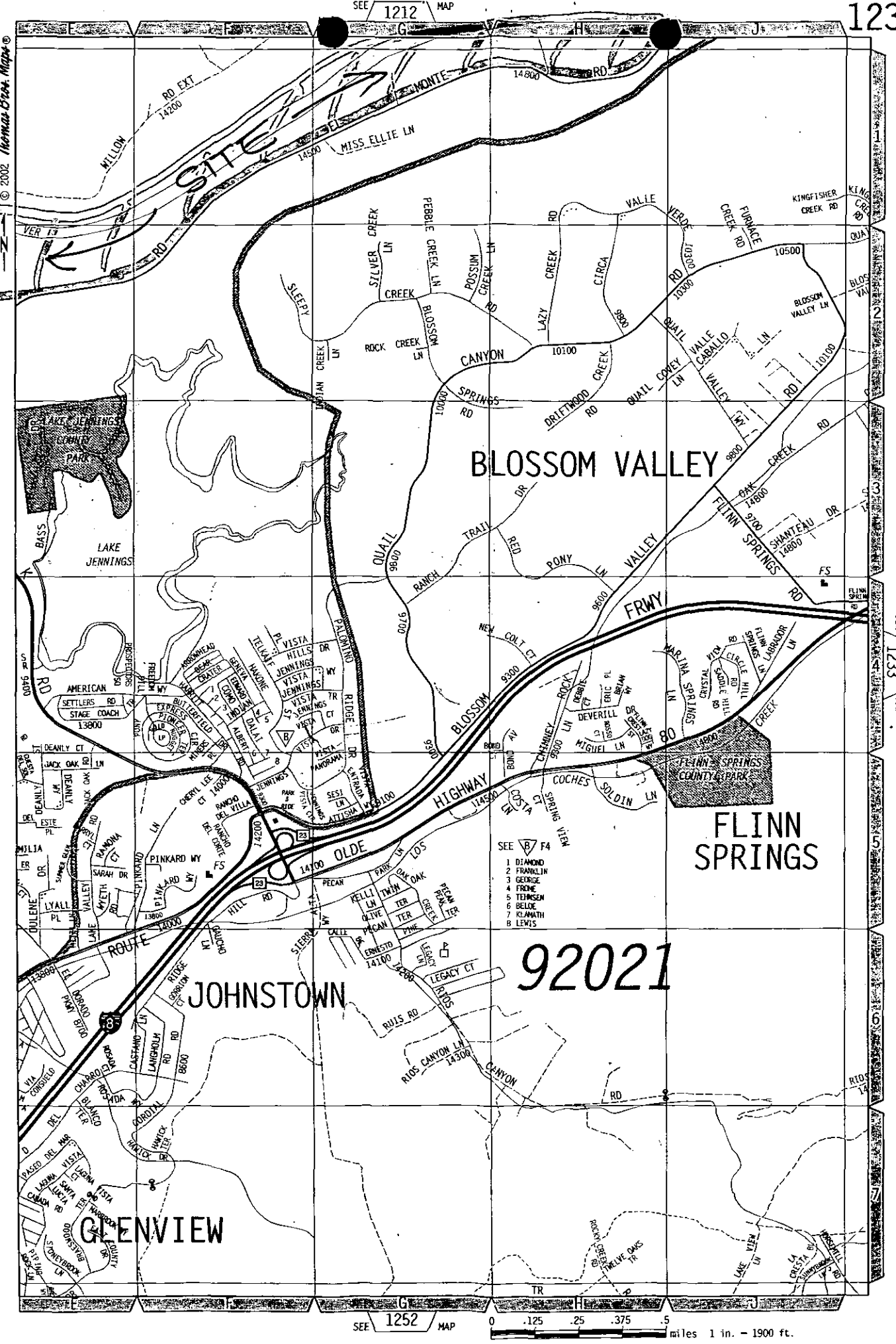
14. A property owner consent agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties. If a consent agreement is required, how has the property owner been notified of the proposed work? _____

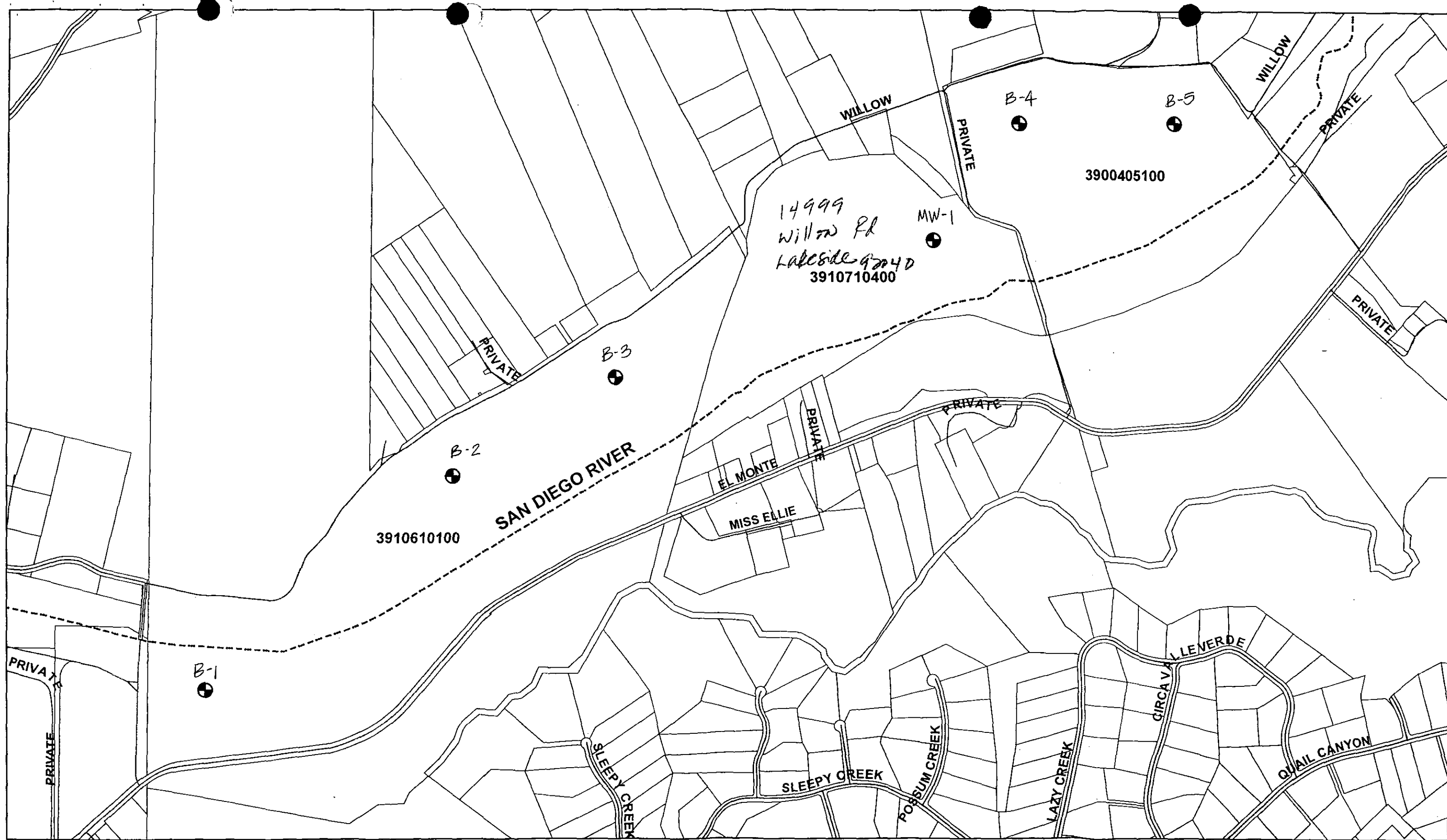
- A. ☒ The attached Property Owner Consent letter.
- B. ☐ The attached consent agreement between the responsible party and the property owner with a cover letter signed by the registered professional who signed the permit application.

SAN DIEGO CO.

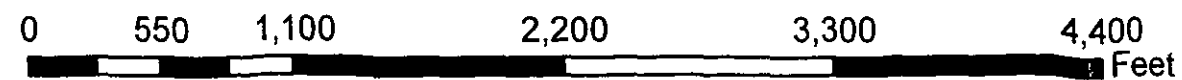


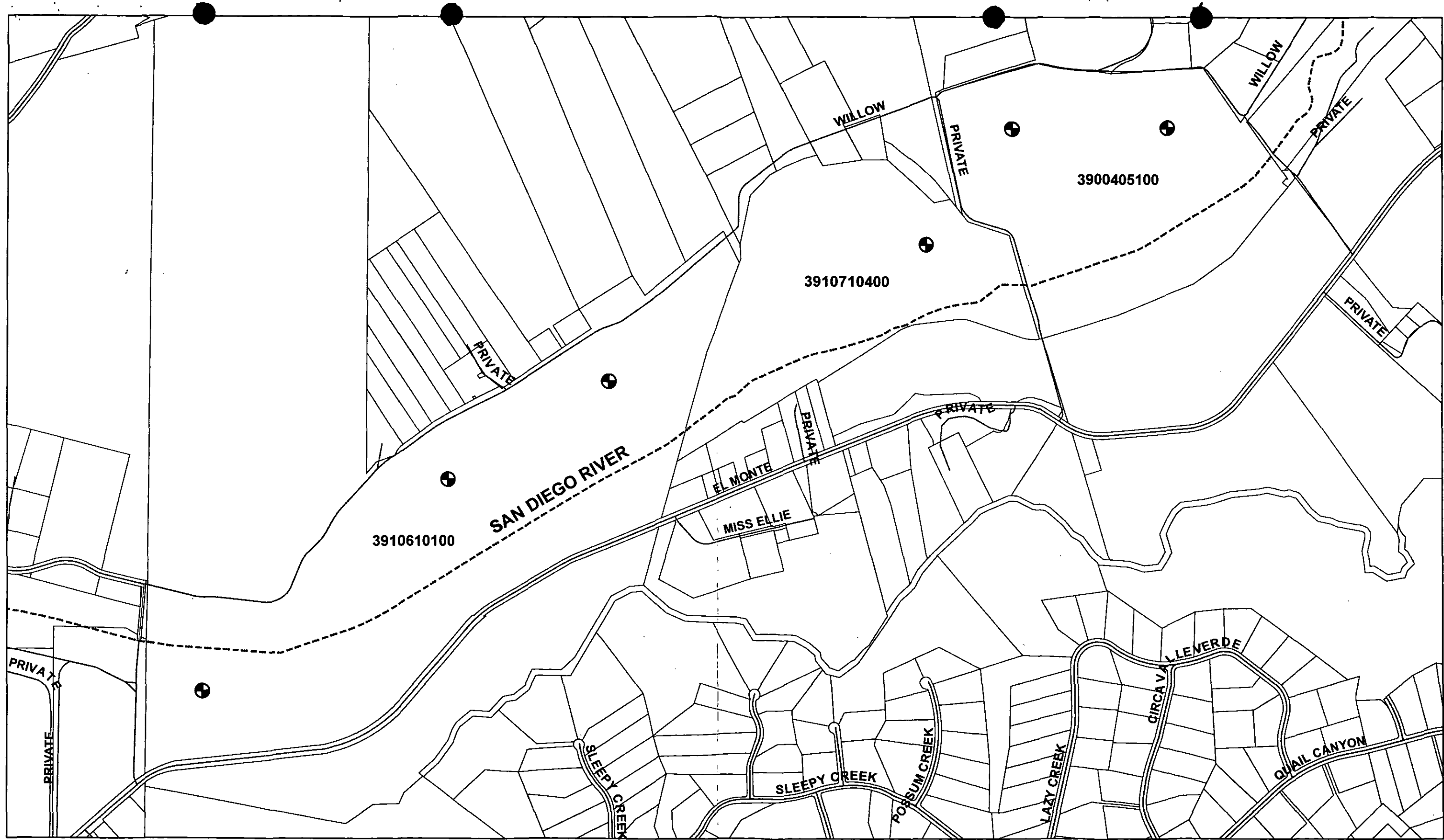
SAN DIEGO CO.



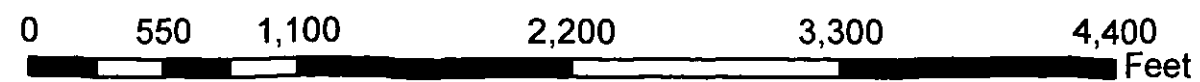


PROPOSED BORING LOCATION MAP
EL MONTE ROAD
LAKESIDE, CALIFORNIA
92040





PROPOSED BORING LOCATION MAP
EL MONTE ROAD
LAKESIDE, CALIFORNIA
92040



5710 Ruffin Road, San Diego, CA 92123

◆ Phone 858/576-1000

◆ Fax 858/576-9600

◆ www.ninyoandmoore.com

To: Monitoring Well Permit Desk

Date: November 30, 2007

Firm: County of San Diego Department of Environmental Health

Fax No: 619 338 2315

Address: 1255 Imperial Avenue, San Diego, CA 92101

Telephone No: 619 388 2339

From: Christina Tretinjak for Frank Moreland

Total Pages Including Transmittal:

Subject: Request for modification to permit

Project No: 106200001

<input type="checkbox"/> Urgent	<input type="checkbox"/> For Approval	<input checked="" type="checkbox"/> For Your Use	<input type="checkbox"/> Please Reply	<input checked="" type="checkbox"/> As Requested
Original Document:	<input type="checkbox"/> Will Not Follow	<input type="checkbox"/> Will Follow	<input type="checkbox"/> By U.S. Mail	<input type="checkbox"/> By Other

To whom it may concern:

We are submitting this request for modification to an already submitted permit. We are changing the scope of work by the addition of one monitoring well. Please find attached a revised permit page 1, a new map showing the location of the proposed well, a new property owner consent form, a proposed well construction diagram, and a check for \$150 for additional permit fees.

We hope this is sufficient information to process this permit application, please call us with any questions.

Thank you.

Christina Tretinjak

- Geotechnical Engineering
- Engineering Geology
- Materials Testing and Inspection
- Construction Management
- Engineering Design
- Environmental Engineering
- Environmental Site Assessments
- Regulatory Compliance and Permitting
- Water Quality and Resource Evaluations
- Hazardous Waste Management
- Soil and Groundwater Remediation
- Asbestos and Lead-Based Paint Surveys
- Geophysical Studies
- Mineral Resource Evaluations
- Value Engineering
- Forensic Studies
- Expert Witness Testimony



County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

P.O. BOX 129281, SAN DIEGO, CA 92112-9281
619-338-2222/FAX 619-338-2318/1-800-753-9933
www.sdcounty.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:

Assessor's Parcel Number (APN):

El Monte Rd (E of Lake Jennings Park Rd)

391-071-0400

Lakeside, CA 92040

I, Helix Water District, owner of the property/properties listed above, give my permission to Ninyo & Moore (consulting company, contractor) to conduct the following work at the locations stated above.

☒ Install 1 monitoring wells ☐ Destroy monitoring wells ☐ Drill soil borings

I understand that Frank Moriana (registered professional) of Ninyo & Moore (consulting company) and an authorized signer for Tri-County (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: [Signature]

Date: 12/3/07

Print Name: CARLOS LUGO

Title: DIRECTOR OF ENGINEERING/
CHIEF ENGINEER

Company: HELIX WATER DISTRICT

Mailing Address: 7811 UNIVERSITY AVE., LA MESA, CA 91941

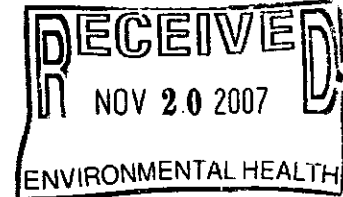


County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
619-338-2222/FAX 619-338-2315/1-800-253-0933
www.sdcountry.ca.gov/deh/lwq

JACK MILLER
ASSISTANT DIRECTOR



PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:

Assessor's Parcel Number (APN):

EL MONTE ROAD (EAST OF LAKE JENNINGS PARK RD)

3910610100, 3910710400

LAKEVIEW, CA 92040

3900405100

I, HELIUM WATER DISTRICT, owner of the property/properties listed above, give my permission to NINYO & MOORE (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells

☐ Destroy _____ monitoring wells

☒ Drill 6 soil borings

I understand that FRANK MORELAND (registered professional) of NINYO & MOORE (consulting company) and an authorized signer for TRI-COUNTY (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according to the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: _____

Date: 11/19/07

Print Name: CARLOS LUGO

Title: DIRECTOR OF ENGINEERING/ CHIEF ENGINEER

Company: HELIUM WATER DISTRICT

Mailing Address: 7811 UNIVERSITY AVE., LA MESA, CA 91941

MS

May 24, 2011
Project No. 106200005

Permit Clerk
Site Assessment and Mitigation Division, Environmental Health Services
P.O. Box 129261
San Diego, California 92112-9261


Subject: Boring Construction Report
El Monte Valley Recharge Project
Lakeside, California
Permit No. LMON107648

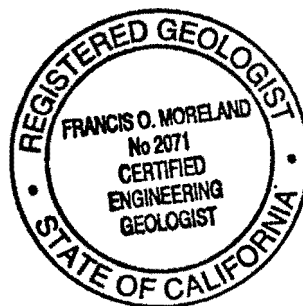
Dear Sir or Madam:

Ninyo & Moore is submitting the attached documents in fulfillment of the conditions of the referenced boring permit. Ninyo & Moore observed Tri-County Drilling drill 30 borings for this geotechnical evaluation. The borings were backfilled in accordance with state and local guidelines.

The attached documents include copies of the approved boring permit, site location and boring location maps, and boring logs. Please contact the undersigned with any questions regarding this permit.

Respectfully submitted,
NINYO & MOORE


Francis O. Moreland, C.E.G.
Senior Geologist



FOM/

Attachments: Approved Boring Permit
Site Location and Boring Location Maps
Boring Logs

Distribution: (1) Addressee



PERMIT #LMON107648

A.P.N. #392-050-43; 392-060-29;
392-150-17; 391-061-01; 391-071-
04; 393-011-01; 390-040-51

EST #NONE

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM
GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: EL MONTE VALLEY

SITE ADDRESS: 13950, 14403, 15480 EL MONTE RD., 10815 ASHWOOD ST., 13315,
14999 WILLOW RD., LAKESIDE CA 92040

PERMIT FOR: **30 GEOTECHNICAL BORINGS**

PERMIT APPROVAL DATE: FEBRUARY 17, 2011

PERMIT EXPIRES ON: JUNE 17, 2011

RESPONSIBLE PARTY: HELIX WATER DISTRICT

PERMIT CONDITIONS:

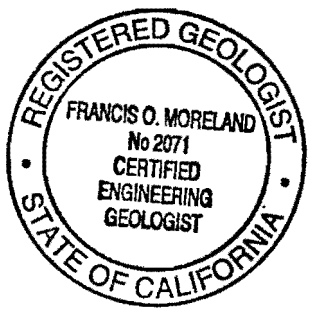
1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**
2. All borings must be properly destroyed within 24 hours of drilling.
3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.
4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (http://www.sdcountry.ca.gov/deh/lwq/sam/manual_guidelines.html). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.
5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.
6. **This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 858) 505-6688.**


APPROVED BY: _____


AMELIA OESENA

DATE: 2.17.2011

NOTIFIED: _____

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/22/11</u> BORING NO. <u>B-1</u> GROUND ELEVATION <u>423' ± (MSL)</u> SHEET <u>2</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MJB</u> LOGGED BY <u>MJB</u> REVIEWED BY <u>GTF</u> DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
20			12				SW	<u>ALLUVIUM: (Continued)</u> Gray to grayish brown, damp, medium dense, well-graded, fine to medium SAND with silt.		
25			15	7.5	101.7		SP	Gray to grayish brown, damp, medium dense, poorly-graded, fine SAND; micaceous.		
30								Total Depth = 26.5 feet. Groundwater not encountered. Backfilled with approximately 9 cubic feet of bentonite grout shortly after drilling on 2/22/11. <u>Note:</u> Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.		
35										
40										



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-2

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/24/11</u> BORING NO. <u>B-2</u> GROUND ELEVATION <u>438' ± (MSL)</u> SHEET <u>1</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
0							SM	ALLUVIUM: Light brown, damp, loose, silty fine SAND.
5			15				SP-SM	Grayish brown, damp, medium dense, poorly-graded, medium SAND with silt.
10			2					Brown, moist, very loose; trace coarse sand.
15			8				SW-SM	Gray, moist, medium dense, well-graded, fine to coarse SAND with silt.
20								

Ninyo & Moore

BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.

106200005


DATE

5/11

FIGURE

A-3

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/24/11</u> BORING NO. <u>B-2</u> GROUND ELEVATION <u>438' ± (MSL)</u> SHEET <u>2</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
20			17				SP	<u>ALLUVIUM: (Continued)</u> Grayish brown, moist, medium dense, poorly-graded, fine to coarse SAND; few gravel.		
25			12				SP-SM	Grayish brown, moist, medium dense, poorly-graded, fine to medium SAND with silt.		
30			18				SM	Light brown, moist, medium dense, silty fine to medium SAND.		
35			25					Fine to coarse, silty sand.		
40										



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-4

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.				
	Bulk	Driven						2/24/11	B-2				
								GROUND ELEVATION	438' ± (MSL)	SHEET	3	OF	5
								METHOD OF DRILLING 8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)					
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"		
								SAMPLED BY	MBG	LOGGED BY	MBG	REVIEWED BY	
								DESCRIPTION/INTERPRETATION					
40			8	11			SM	ALLUVIUM: (Continued) Light brown, saturated, medium dense, silty fine to coarse SAND.					
45			67/10"				SP	Light brown, saturated, very dense, poorly-graded, medium SAND.					
50			18				SW-SM	Light brown, saturated, medium dense, well-graded, fine to coarse SAND with silt; trace fine gravel.					
55			25					Dense with fine gravel.					
60													

Ninyo & Moore

BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.

106200005


DATE

5/11

FIGURE

A-5

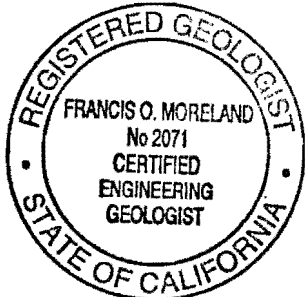
DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/24/11</u> BORING NO. <u>B-2</u>	
	Bulk	Driven						GROUND ELEVATION <u>438' ± (MSL)</u>	SHEET <u>4</u> OF <u>5</u>
								METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u>	
								DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u>	
								SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____	
								DESCRIPTION/INTERPRETATION	
60			15				SW-SM	ALLUVIUM: (Continued) Light brown, saturated, medium dense, well-graded, fine to medium SAND with silt.	
65			49				SP-SM	Light brown, saturated, dense, poorly-graded, fine SAND with silt.	
70			21				SW-SM	Gray, saturated, dense, well-graded, fine to medium SAND with silt.	
75			23					Dark gray; fine to coarse sand; trace fine gravel.	
80									




BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.	DATE	FIGURE
106200005	5/11	A-6

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.		
	Bulk	Driven						2/24/11	B-2		
								GROUND ELEVATION	SHEET	OF	
								METHOD OF DRILLING	8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)		
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"
								SAMPLED BY	MBG	LOGGED BY	MBG
								REVIEWED BY			
								DESCRIPTION/INTERPRETATION			
80			25				SM	<u>ALLUVIUM:</u> (Continued) Brownish black, saturated, medium dense, silty fine SAND.			
								Gray; very dense; fine to medium sand.			
85			50/1"					Refusal to further drilling.			
								Total Depth = 85.5 feet. Groundwater encountered at approximately 41 feet during drilling. Backfilled with approximately 30 cubic feet of bentonite grout shortly after drilling on 2/24/11.			
								<u>Note:</u> Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.			
90								<div style="text-align: center;">  </div>			
95											
100											



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-7

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/11/11</u> BORING NO. <u>B-3</u> GROUND ELEVATION <u>440' ± (MSL)</u> SHEET <u>2</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
20			14				SW-SM	ALLUVIUM: (Continued) Light brown, moist, medium dense, well-graded, fine to medium SAND with silt.		
25			9				ML	Dark brown, moist, medium dense, fine sandy SILT.		
30			28				SM	Light brown, moist, medium dense, silty fine SAND.		
35			5				ML	Dark brown, wet, loose, fine sandy SILT.		
40								Saturated.		

Ninyo & Moore

BORING LOG


EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.
106200005


DATE
5/11


FIGURE
A-9

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/11/11</u> BORING NO. <u>B-3</u> GROUND ELEVATION <u>440' ± (MSL)</u> SHEET <u>3</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
40			9				SM	ALLUVIUM: (Continued) Dark brown, saturated, medium dense, silty fine SAND; trace fine gravel.		
45			26				SP-SM	Gray, saturated, medium dense, poorly-graded, fine to medium SAND with silt; few fine gravel.		
50			30				SM	Dark brown, saturated, dense, silty fine to medium SAND.		
55			26					Becomes finer.		
60										



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-10

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/11/11</u> BORING NO. <u>B-3</u> GROUND ELEVATION <u>440' ± (MSL)</u> SHEET <u>4</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____		
	Bulk	Driven						DESCRIPTION/INTERPRETATION		
60			46				SP	<u>ALLUVIUM: (Continued)</u> Brown, saturated, dense, poorly-graded, fine to medium SAND.		
65								Total Depth = 61.5 feet. Groundwater encountered at approximately 39 feet during drilling. Backfilled with approximately 21 cubic feet of bentonite grout on shortly after drilling on 3/11/11. <u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.		
70										
75										
80										



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-11

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/11/11 and 3/14/11</u> BORING NO. <u>B-4</u> GROUND ELEVATION <u>442' ± (MSL)</u> SHEET <u>1</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
0							SP	<u>ALLUVIUM:</u> Light brown, moist, loose, poorly-graded, fine to medium SAND.		
5			7					Loose to medium dense.		
10			18					Gray; medium dense; fine to coarse sand.		
15			25				SW-SM	Grayish brown, moist, dense, well graded, fine to medium SAND with silt; few coarse sand.		
20										

Ninyo & Moore

BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.

106200005

DATE

5/11

FIGURE

A-12

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/11/11 and 3/14/11</u> BORING NO. <u>B-4</u> GROUND ELEVATION <u>442' ± (MSL)</u> SHEET <u>2</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
20			17				SP-SM	<u>ALLUVIUM:</u> (Continued) Gray, moist, medium dense, poorly-graded, fine to coarse SAND; with few fine gravel.		
25			25							
30			9			SM	Dark brown, moist, medium dense, silty fine SAND.			
35			5				ML	Dark brown, moist, medium dense, fine sandy SILT.		
40								Saturated; loose.		

Ninyo & Moore

BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.

106200005

DATE

5/11

FIGURE

A-13

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/11/11 and 3/14/11</u> BORING NO. <u>B-4</u> GROUND ELEVATION <u>442' ± (MSL)</u> SHEET <u>3</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
40			21				SM	<u>ALLUVIUM: (Continued)</u> Brown, saturated, medium dense, silty fine to medium SAND.
45			17				SP-SM	Brown, saturated, medium dense, poorly-graded, fine to coarse SAND with silt.
50			29				SM	Brown, saturated, medium dense, silty fine to coarse SAND.
55			15				SW-SM	Brown, saturated, medium dense, well-graded, fine to coarse SAND with silt.
60								

Ninyo & Moore

BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.

106200005

DATE

5/11

FIGURE

A-14

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/11/11 and 3/14/11</u> BORING NO. <u>B-4</u> GROUND ELEVATION <u>442' ± (MSL)</u> SHEET <u>4</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
60			77/9"	127			SP-SM	<u>ALLUVIUM: (Continued)</u> Grayish brown, saturated, very dense, poorly-graded, fine SAND with silt Total Depth = 61.5 feet. Groundwater encountered at approximately 35 feet during drilling. Backfilled with approximately 21 cubic feet of bentonite grout shortly after drilling on 3/14/11. <u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.
65								
70								
75								
80								



Ninyo & Moore

BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.

106200005

DATE

5/11

FIGURE

A-15

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/14/11</u> BORING NO. <u>B-5</u> GROUND ELEVATION <u>450' ± (MSL)</u> SHEET <u>1</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
0							SM	<u>ALLUVIUM:</u> Dark brown, moist, loose, silty fine SAND; trace roots.		
5			8				SP-SM	Grayish brown, moist, loose, poorly-graded, fine to medium SAND with silt.		
10			5				SM	Dark brown, moist, loose, silty fine SAND.		
15			16				SP-SM	Gray, moist, medium dense, poorly-graded, fine to medium SAND with silt; trace coarse sand.		
20										

Ninyo & Moore

BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.

106200005

DATE

5/11

FIGURE

A-16

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/14/11</u> BORING NO. <u>B-5</u> GROUND ELEVATION <u>450' ± (MSL)</u> SHEET <u>2</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
20			20				SP	<u>ALLUVIUM: (Continued)</u> Gray, moist, medium dense, poorly-graded, fine to medium SAND.
25			11				SW-SM	Gray, moist, medium dense, well-graded, fine to coarse SAND with silt; trace angular gravel.
30			7				ML	Dark brown, moist, loose to medium dense, fine sandy SILT.
35			16				SM	Dark brown, moist, medium dense, silty fine SAND.
40								

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BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

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FIGURE
A-17

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/14/11</u> BORING NO. <u>B-5</u>	
	Bulk	Driven						GROUND ELEVATION <u>450' ± (MSL)</u> SHEET <u>3</u> OF <u>4</u>	METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u>
								DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u>	
								SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____	
									DESCRIPTION/INTERPRETATION
40			6				ML	<u>ALLUVIUM: (Continued)</u> Dark brown, moist, loose, fine sandy SILT. Saturated.	
45			20				SM	Dark brown, saturated, medium dense to dense, silty fine SAND.	
50			22				SP-SM	Dark brown, saturated, medium dense, poorly-graded, fine SAND with silt.	
55			23				SW-SM	Brown, saturated, dense, well-graded, fine to medium SAND with silt.	
60									

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FIGURE


A-18

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/14/11</u> BORING NO. <u>B-5</u> GROUND ELEVATION <u>450' ± (MSL)</u> SHEET <u>4</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
60			39				SP-SM	<u>ALLUVIUM:</u> (Continued) Dark brown, saturated, medium dense, poorly-graded, fine to medium SAND with silt; trace coarse sand.		
65								Total Depth = 61.5 feet. Groundwater encountered at approximately 43 feet during drilling. Backfilled with approximately 21 cubic feet of bentonite grout shortly after drilling on 3/14/11. <u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.		
70										
75										
80										



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PROJECT NO. 106200005	DATE 5/11	FIGURE A-19

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/25/11</u> BORING NO. <u>B-6</u> GROUND ELEVATION <u>455' ± (MSL)</u> SHEET <u>1</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
0							SM	ALLUVIUM: Light brown, damp, loose, silty, fine to medium SAND.		
5			9				SW	Grayish brown, damp, loose, well-graded, medium to coarse SAND.		
10			12				SM	Brown, moist, loose, silty SAND; trace roots.		
15			13				SW-SM	Gray, damp, loose, well-graded, fine to medium SAND with silt.		
20							SP-SM	Gray and light brown, moist, medium dense, poorly-graded, fine to medium SAND with silt.		



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PROJECT NO. 106200005	DATE 5/11	FIGURE A-20
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DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/25/11</u> BORING NO. <u>B-6</u> GROUND ELEVATION <u>455' ± (MSL)</u> SHEET <u>2</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
20			19				SW-SM	ALLUVIUM: (Continued) Dark brown, moist, medium dense, well-graded, fine to coarse SAND with silt and gravel.
25			20				SP-SM	Grayish brown, moist, medium dense to dense, poorly-graded, fine to medium SAND with silt.
30			16					Medium dense.
35			10					Saturated.
40								

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FIGURE
A-21


DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/25/11</u> BORING NO. <u>B-6</u> GROUND ELEVATION <u>455' ± (MSL)</u> SHEET <u>3</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
40			8				ML	<u>ALLUVIUM: (Continued)</u> Dark brown, saturated, loose, fine sandy SILT.		
45			50/2"					Very dense.		
50			50/2"					<u>METAVOLCANIC ROCK:</u> Dark brown, saturated, soft, weathered METAVOLCANIC ROCK.		
55			50/5"					Light brown and gray.		
60										



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PROJECT NO.	DATE	FIGURE
106200005	5/11	A-22

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/25/11</u> BORING NO. <u>B-6</u> GROUND ELEVATION <u>455' ± (MSL)</u> SHEET <u>4</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____		
	Bulk	Driven						DESCRIPTION/INTERPRETATION		
60			50/4"					<p>METAVOLCANIC ROCK: (Continued) Light brown and gray, saturated, soft, weathered METAVOLCANIC ROCK. Total Depth = 60.3 feet. Groundwater encountered at approximately 35 feet during drilling. Backfilled with approximately 21 cubic feet of bentonite grout shortly after drilling on 2/25/11.</p> <p><u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.</p> <div style="text-align: center; margin-top: 100px;">  </div>		
65										
70										
75										
80										



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PROJECT NO.	DATE	FIGURE
106200005	5/11	A-23

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/1/11</u> BORING NO. <u>B-7</u> GROUND ELEVATION <u>453' ± (MSL)</u> SHEET <u>1</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
0							SM	ALLUVIUM: Brown, moist, loose, silty fine to medium SAND.
5			15				SP	Grayish brown, damp, medium dense, poorly-graded, fine to coarse SAND with fine gravel.
10			15				SP-SM	Light brown, moist, medium dense, poorly-graded, fine to medium SAND with silt; trace roots.
15			11				SW-SM	Gray to light brown, moist, medium dense, well-graded, fine to medium SAND with silt.
20								

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FIGURE
A-24

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/1/11</u> BORING NO. <u>B-7</u> GROUND ELEVATION <u>453' ± (MSL)</u> SHEET <u>2</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
20			18				SW-SM	ALLUVIUM: (Continued) Gray to light brown, moist, medium dense, well-graded, fine to coarse SAND with silt.		
25			19							
30			17				SP-SM	Gray to light brown, saturated, medium dense, poorly-graded, fine to medium SAND with silt; micaceous		
35			17				ML	Brown, saturated, medium dense, fine sandy SILT; micaceous.		
40										



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-25

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/1/11</u> BORING NO. <u>B-7</u> GROUND ELEVATION <u>453' ± (MSL)</u> SHEET <u>3</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
40			25				ML SP-SM	<u>ALLUVIUM: (Continued)</u> Brown, saturated, medium dense, fine sandy SILT; micaceous. Brown, saturated, dense, poorly-graded, fine to medium SAND with silt.		
45			22				SM	Brown, saturate, dense, silty fine SAND; micaceous.		
50							SP	Light brown, saturated, medium dense, poorly-graded, fine to coarse SAND.		
55			27				SW-SM	Light brown, saturated, dense, well-graded, fine to coarse SAND with silt.		
60										



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-26

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/1/11</u> BORING NO. <u>B-7</u> GROUND ELEVATION <u>453' ± (MSL)</u> SHEET <u>4</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____		
	Bulk	Driven						DESCRIPTION/INTERPRETATION		
60			26				SM	<u>ALLUVIUM: (Continued)</u> Reddish brown, saturated, dense, silty fine to coarse SAND; few gravel.		
65			19				ML	Reddish brown, saturated, medium dense, fine sandy SILT.		
70			18				SM	Reddish brown, saturated, medium dense, silty fine to coarse SAND with fine gravel.		
75			23					Dense; no gravel.		
80										

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BORING LOG


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FIGURE
A-27

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/1/11</u> BORING NO. <u>B-7</u> GROUND ELEVATION <u>453' ± (MSL)</u> SHEET <u>5</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
80			89/11"				SM	ALLUVIUM: (Continued) Dark brown, saturated, very dense, silty fine to medium SAND; with fine gravel.
85			76					METAVOLCANIC ROCK: Yellow and brown, saturated, soft, weathered METAVOLCANIC ROCK.
90								Total Depth = 86.5 feet. Groundwater encountered at approximately 30 feet during drilling. Backfilled with approximately 30 cubic feet of bentonite grout shortly after drilling on 3/1/11. <u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.
95								
100								



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-28

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/3/11</u> BORING NO. <u>B-8</u> GROUND ELEVATION <u>456' ± (MSL)</u> SHEET <u>1</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto, Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
0							SM	<u>ALLUVIUM:</u> Brown, moist, loose, silty fine SAND.		
5			22				SP	Gray, moist, medium dense, poorly-graded, fine to medium SAND; trace coarse sand and gravel (up to ½ inch).		
10			12				SP-SM	Gray, moist, medium dense, poorly-graded, fine to medium SAND with silt.		
15			20					Medium dense to dense.		
20										

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FIGURE

A-29

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/3/11</u> BORING NO. <u>B-8</u> GROUND ELEVATION <u>456' ± (MSL)</u> SHEET <u>2</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
20			27				SP	ALLUVIUM: (Continued) Gray, moist, medium dense, poorly-graded, fine to medium SAND. Reddish brown; fine to coarse sand.
25			36				SM	Brown, wet, dense to very dense, silty fine SAND; with gravel.
							SW	Gray, moist, very dense, well-graded, fine to coarse SAND with some gravel (up to 1 inch).
							ML	Reddish brown, wet, dense, fine sandy SILT; micaceous.
30			29					
35			51					
40								

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FIGURE

A-30

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/3/11</u> BORING NO. <u>B-8</u> GROUND ELEVATION <u>456' ± (MSL)</u> SHEET <u>3</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION	
	Bulk	Driven							
40			15				ML	<u>ALLUVIUM: (Continued)</u> Reddish brown, saturated, medium dense, fine sandy SILT.	
45			27				SM	Grayish brown, saturated, dense, silty fine to coarse SAND. Trace gravel (up to ½ inch). Reddish brown; silty fine sand.	
50			55						
55			79/8"						
60								<u>METAVOLCANIC ROCK:</u> Dark gray, saturated, soft, weathered METAVOLCANIC ROCK.	

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FIGURE

A-31

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.		
	Bulk	Driven						3/3/11	B-8		
								GROUND ELEVATION	SHEET	OF	
								METHOD OF DRILLING	8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)		
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"
								SAMPLED BY	MBG	LOGGED BY	MBG
										REVIEWED BY	
								DESCRIPTION/INTERPRETATION			
60			50/5"					METAVOLCANIC ROCK: (Continued) Dark gray, saturated, soft, weathered METAVOLCANIC ROCK.			
								Total Depth = 61.0 feet. Groundwater encountered at approximately 40 feet during drilling. Backfilled with approximately 21 cubic feet of bentonite grout shortly after drilling on 3/3/11.			
								Note: Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.			
65											
70											
75											
80											

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FIGURE
A-32


DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/2/11</u> BORING NO. <u>B-9</u> GROUND ELEVATION <u>460' ± (MSL)</u> SHEET <u>1</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
0							SP	<u>ALLUVIUM:</u> Brown, moist, loose, silty fine to medium SAND.		
5			18				SP	Gray, moist, medium dense, poorly-graded, fine to medium SAND; trace fine to coarse gravel.		
10			22				SW-SM	Gray, moist, dense, well-graded, fine to coarse SAND with silt.		
15			16					Medium dense.		
20										



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PROJECT NO.	DATE	FIGURE
106200005	5/11	A-33


DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/2/11</u> BORING NO. <u>B-9</u> GROUND ELEVATION <u>460' ± (MSL)</u> SHEET <u>2</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
20			6				ML	ALLUVIUM: (Continued) Dark brown, wet, loose, fine sandy SILT; micaceous.		
25			17				SM	Grayish brown, moist, medium dense, silty, fine to medium SAND.		
30			24				SW-SM	Yellowish brown, dense, well-graded, fine to coarse SAND with silt.		
35			28				SP-SM	Gray to dark brown, saturated, medium dense, poorly-graded, fine SAND with silt; micaceous.		
40							SW-SM	Gray, saturated, very dense, well-graded, fine to coarse SAND with silt.		



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PROJECT NO. 106200005	DATE 5/11	FIGURE A-34
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DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/2/11</u> BORING NO. <u>B-9</u> GROUND ELEVATION <u>460' ± (MSL)</u> SHEET <u>3</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
40			51				SW-SM	<u>ALLUVIUM: (Continued)</u> Gray, saturated, very dense, well-graded, fine to coarse SAND with silt; trace fine to coarse gravel.
45			23				SM	Reddish brown, saturated, dense, silty fine SAND; micaceous.
50			59					
55			31				ML	Reddish brown, saturated, dense, fine sandy SILT.
60								



BORING LOG
 EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
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PROJECT NO. 106200005	DATE 5/11	FIGURE A-35
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DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.				
	Bulk	Driven						3/2/11	B-9				
								GROUND ELEVATION	460' ± (MSL)	SHEET	4	OF	4
								METHOD OF DRILLING 8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)					
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"		
								SAMPLED BY	MBG	LOGGED BY	MBG	REVIEWED BY	
								DESCRIPTION/INTERPRETATION					
60			18				ML	ALLUVIUM: (Continued) Reddish brown, saturated, medium dense, fine sandy SILT.					
65			50/6"				SP-SM	Brown, saturated, very dense, poorly-graded, fine to medium SAND with silt; some fine to coarse gravel.					
70			65				SM	Brown, saturated, dense, silty fine SAND.					
75			53					METAVOLCANIC ROCK: Yellow and gray, saturated, soft, weathered METAVOLCANIC ROCK. <div style="text-align: center;">  </div>					
80								Total Depth = 76.5 feet. Groundwater encountered at approximately 35 feet during drilling. Backfilled with approximately 27 cubic feet of bentonite grout shortly after drilling on 3/2/11. <u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.					

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BORING LOG

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FIGURE

A-36

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/9/11 - 3/10/11</u> BORING NO. <u>B-10</u> GROUND ELEVATION <u>475' ± (MSL)</u> SHEET <u>1</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
0							SM	<u>ALLUVIUM:</u> Grayish brown, moist, loose, silty fine SAND.
5			6					
10			16				SW	Medium dense; few coarse sand. Gray, moist, medium dense, well-graded, fine to coarse SAND.
15			8				SM	Brown, moist, medium dense, silty fine SAND.
20							ML	Dark brown, moist, medium dense, fine sandy SILT.

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FIGURE

A-37

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/9/11 - 3/10/11</u> BORING NO. <u>B-10</u> GROUND ELEVATION <u>475' ± (MSL)</u> SHEET <u>2</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
20			7				ML	<u>ALLUVIUM: (Continued)</u> Dark brown, moist, loose to medium dense, fine sandy SILT.
25			29				SM	Light brown, moist, medium dense, silty fine SAND.
30			21					Dense; trace medium to coarse sand. Boring terminated on 3/9/11. Boring resumed on 3/10/11.
35			16				SW-SM	Light brown, moist, medium dense, well-graded, fine to medium SAND with silt; little coarse sand.
40							SM	Grayish brown, moist, medium dense, silty fine to coarse SAND.

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FIGURE

A-38

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.				
	Bulk	Driven						3/9/11 - 3/10/11	B-10				
								GROUND ELEVATION	475' ± (MSL)	SHEET	3	OF	4
								METHOD OF DRILLING 8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)					
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"		
								SAMPLED BY	MBG	LOGGED BY	MBG	REVIEWED BY	
								DESCRIPTION/INTERPRETATION					
40			15				SM	<u>ALLUVIUM:</u> (Continued) Grayish brown to dark brown, wet, medium dense, silty fine SAND.					
45			20					Brown, saturated, medium dense to dense, silty fine to medium SAND; trace coarse sand.					
50			26				SW-SM	Brown, saturated, dense, well-graded, fine to medium SAND with silt.					
55			50/3"				SM	Dark brown, saturated, very dense, silty fine SAND; trace gravel (up to 1 1/4 inches).					
60													

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FIGURE

A-39

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.	
	Bulk	Driven						3/9/11 - 3/10/11	B-10	
								GROUND ELEVATION	SHEET	OF
								METHOD OF DRILLING	8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)	
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP
								SAMPLED BY	MBG	LOGGED BY
									MBG	REVIEWED BY
								DESCRIPTION/INTERPRETATION		
60			34				SM	<u>ALLUVIUM:</u> (Continued) Dark brown, saturated, very dense, silty fine SAND.		
65								Total Depth = 61.5 feet. Groundwater encountered at approximately 44 feet during drilling. Backfilled with approximately 21 cubic feet of bentonite grout shortly after drilling on 3/10/11. <u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.		
70										
75										
80										

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FIGURE


A-40

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/9/11</u> BORING NO. <u>B-11</u> GROUND ELEVATION <u>490' ± (MSL)</u> SHEET <u>1</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
0							SP-SM	ALLUVIUM: Light brown, damp, loose, poorly-graded, fine SAND with silt.		
5			10					Medium dense.		
10			5					Dark brown, moist, loose sand.		
15			16				SW	Light brown, moist, medium dense, well-graded, fine to medium SAND.		
20										




BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
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DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/9/11</u> BORING NO. <u>B-11</u> GROUND ELEVATION <u>490' ± (MSL)</u> SHEET <u>2</u> OF <u>4</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
20			18				SW-SM	ALLUVIUM: (Continued) Light brown, moist, medium dense, well-graded, fine to medium SAND with silt.		
25			22				SM	Light brown, moist, medium dense, silty fine to medium SAND. Dense.		
30			26					Medium dense; trace coarse sand.		
35			22					Dense.		
40										



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-42

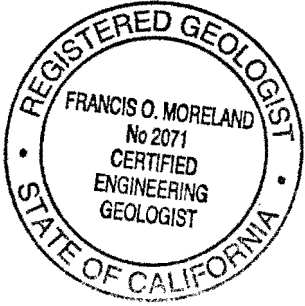
DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/9/11</u> BORING NO. <u>B-11</u>	
	Bulk	Driven						GROUND ELEVATION <u>490' ± (MSL)</u>	SHEET <u>3</u> OF <u>4</u>
METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u>								DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u>	
SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____								DESCRIPTION/INTERPRETATION	
40			22				SP-SM	<u>ALLUVIUM: (Continued)</u> Light brown, moist, dense, poorly-graded, fine to medium SAND with silt; trace coarse sand.	
45			58					Saturated.	
50			21				SM	Dark brown, saturated, dense, silty fine SAND.	
55			17				SP-SM	Dark brown, saturated, medium dense, poorly-graded, fine SAND with silt.	
60									



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PROJECT NO.	DATE	FIGURE
106200005	5/11	A-43

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.		
	Bulk	Driven						3/9/11	B-11		
								GROUND ELEVATION	SHEET	OF	
								METHOD OF DRILLING	8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)		
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"
								SAMPLED BY	MBG	LOGGED BY	MBG
								REVIEWED BY			
								DESCRIPTION/INTERPRETATION			
60			74				SP-SM	<u>ALLUVIUM:</u> (Continued) Brown, saturated, very dense, poorly-graded, fine SAND with silt.			
								Total Depth = 61.5 feet. Groundwater encountered at approximately 47 feet during drilling. Backfilled with approximately 21 cubic feet of bentonite grout shortly after drilling on 3/9/11. <u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.			
65											
70											
75											
80											

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BORING LOG

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FIGURE

A-44

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FIGURE
A-45

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/22/11</u> BORING NO. <u>B-12</u> GROUND ELEVATION <u>421' ± (MSL)</u> SHEET <u>2</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MJB</u> LOGGED BY <u>MJB</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
20				☒			SW-SM	ALLUVIUM: (Continued) Gray to grayish brown, moist, medium dense, well-graded, fine to coarse SAND with silt; micaceous.		
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40				☒			SP-SM	Gray to grayish brown, saturated, medium dense, poorly-graded, fine to medium SAND with silt; micaceous.		

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FIGURE
A-46

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/22/11</u> BORING NO. <u>B-12</u> GROUND ELEVATION <u>421' ± (MSL)</u> SHEET <u>4</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MJB</u> LOGGED BY <u>MJB</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
60			79/10"				SP	<u>ALLUVIUM: (Continued)</u> Gray to grayish brown, saturated, very dense, poorly-graded, medium SAND; micaceous.		
65			11				SM	Dark gray, saturated, loose, silty fine to medium SAND; micaceous. Very dense; silty fine sand; few fine to coarse gravel. Gray; silty fine to coarse sand; some fine to coarse gravel.		
70			79/10"							
75			50/2"					<u>GRANITIC ROCK:</u> Gray, saturated, soft, weathered GRANITIC ROCK.		
80										



BORING LOG
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PROJECT NO.	DATE	FIGURE
106200005	5/11	A-48

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.	
	Bulk	Driven						2/22/11	B-12	
								GROUND ELEVATION	SHEET	OF
								421' ± (MSL)	5	5
								METHOD OF DRILLING		
								8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)		
								DRIVE WEIGHT	DROP	
								140 lbs. (Auto. Trip Hammer)	30"	
								SAMPLED BY	LOGGED BY	REVIEWED BY
								MJB	MJB	
								DESCRIPTION/INTERPRETATION		
80			50/5"					GRANITIC ROCK: (Continued) Gray, saturated, soft, weathered GRANITIC ROCK. Total Depth = 80.9 feet. Groundwater measured at approximately 37 feet during drilling and measured at approximately 21 feet shortly after drilling. Backfilled with approximately 28 cubic feet of bentonite grout shortly after drilling on 2/22/11. Note: Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.		
85										
90										
95										
100										

BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.	DATE	FIGURE
106200005	5/11	A-49

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/22/11</u> BORING NO. <u>B-13</u> GROUND ELEVATION <u>429' ± (MSL)</u> SHEET <u>1</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MJB</u> LOGGED BY <u>MJB</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
0							SW	<u>ALLUVIUM:</u> Yellowish brown, dry to damp, loose to medium dense, well-graded, fine to coarse SAND; micaceous.
5			20	3.9	82.6			Medium dense.
10			22					
15			12					Trace silt.
20								

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EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
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FIGURE
A-50

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/22/11</u> BORING NO. <u>B-13</u> GROUND ELEVATION <u>429' ± (MSL)</u> SHEET <u>2</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MJB</u> LOGGED BY <u>MJB</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
20			20	6.6	112.6		SW ML	<u>ALLUVIUM: (Continued)</u> Yellowish brown, damp, medium dense, well-graded, fine to coarse SAND; trace silt; micaceous. Brown, damp, medium dense, fine sandy SILT; scattered medium sand; micaceous.
25			20				SW-SM	Gray to grayish brown, damp, medium dense, well-graded, fine to coarse SAND with silt; micaceous.
30								Total Depth = 26.5 feet. Groundwater not encountered. Backfilled with approximately 9 cubic feet of bentonite grout shortly after drilling on 2/22/11. <u>Note:</u> Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
35								
40								

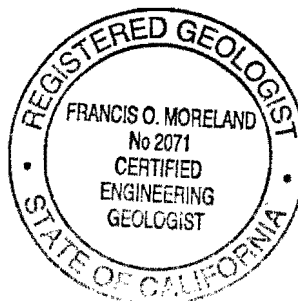
BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-51

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/23/11</u> BORING NO. <u>B-14</u>	
	Bulk	Driven						GROUND ELEVATION <u>431' ± (MSL)</u>	SHEET <u>1</u> OF <u>2</u>
								METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u>	
								DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u>	
								SAMPLED BY <u>MJB</u> LOGGED BY <u>MJB</u> REVIEWED BY _____	
								DESCRIPTION/INTERPRETATION	
0							SW	ALLUVIUM: Grayish and yellowish brown, damp, loose, well-graded, fine to medium SAND; trace silt; micaceous.	
5			11	10.6	91.1				
10			7					Loose to medium dense; well-graded, fine to coarse SAND; fewer silt.	
15			17	3.2	103.3			Dry to damp; medium dense.	
20									



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
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DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/23/11</u> BORING NO. <u>B-14</u> GROUND ELEVATION <u>431' ± (MSL)</u> SHEET <u>2</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MJB</u> LOGGED BY <u>MJB</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
20			7				SM	<u>ALLUVIUM: (Continued)</u> Dark brown, damp to moist, loose to medium dense, silty fine SAND; micaceous.
25			28	4.1	100.7		SW	Grayish brown, dry to damp, medium dense, well-graded, fine to coarse SAND; micaceous.
30								Total Depth = 26.5 feet. Groundwater not encountered. Backfilled with approximately 9 cubic feet of bentonite grout shortly after drilling on 2/23/11. <u>Note:</u> Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
35								
40								



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BORING LOG

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FIGURE
A-53

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FIGURE

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A-54

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FIGURE
A-55

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/23/11</u> BORING NO. <u>B-15</u> GROUND ELEVATION <u>436' ± (MSL)</u> SHEET <u>3</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MJB</u> LOGGED BY <u>MJB</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
40							SM	<u>ALLUVIUM: (Continued)</u> Brown, damp, medium dense, silty fine SAND; some medium to coarse sand; micaceous.
45							SW	Grayish brown, saturated, medium dense to dense, well-graded, fine to coarse SAND; micaceous.
50								
55								
60								

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FIGURE

A-56

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/23/11</u> BORING NO. <u>B-15</u> GROUND ELEVATION <u>436' ± (MSL)</u> SHEET <u>4</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MJB</u> LOGGED BY <u>MJB</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
60			20				SW-SM	ALLUVIUM: (Continued) Grayish brown, saturated, medium dense to dense, well-graded, fine to coarse SAND with silt; micaceous.
65			51					Dense.
70			21					
75			39					Medium dense.
80							SW+GW	Gray to grayish brown, saturated, very dense, well-graded, fine to coarse SAND and GRAVEL; micaceous.

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BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.

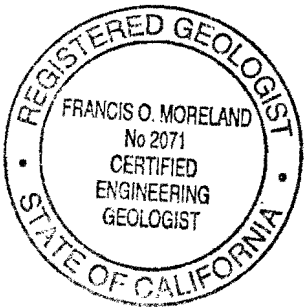
106200005

DATE

5/11

FIGURE

A-57

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/23/11</u> BORING NO. <u>B-15</u> GROUND ELEVATION <u>436' ± (MSL)</u> SHEET <u>5</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MJB</u> LOGGED BY <u>MJB</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
80			38				SW+GW	<u>ALLUVIUM: (Continued)</u> Gray to grayish brown, saturated, very dense, well-graded, fine to coarse SAND and GRAVEL; micaceous.		
85			50/4"				SP	Gray to grayish brown, saturated, very dense, poorly-graded, medium SAND; scattered gravel; micaceous.		
90			50/4"				GP-GM	Gray, saturated, very dense, poorly-graded, fine to coarse GRAVEL with silt; some cobbles. Refusal to further drilling. Total Depth = 91.0 feet. Groundwater encountered at approximately 45 feet during drilling. Backfilled with approximately 32 cubic feet of bentonite grout shortly after drilling on 2/23/11. <u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.		
95								<div style="text-align: center;">  </div>		
100										

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EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
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FIGURE

A-58

[illegible]

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/14/11</u> BORING NO. <u>B-16</u> GROUND ELEVATION <u>444' ± (MSL)</u> SHEET <u>2</u> OF <u>3</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
20			12				SP-SM	ALLUVIUM: (Continued) Gray, damp, medium dense, fine sandy SILT; trace medium sand.
25			9				SM	Brown to gray, moist, medium dense, silty fine SAND.
30			16				SP	Gray, moist, medium dense, poorly-graded, fine SAND.
35			9				SM	Gray to brown, moist, medium dense, silty fine SAND.
40								METAVOLCANIC ROCK: Yellow, moist, soft, weathered METAVOLCANIC ROCK.

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FIGURE

A-60

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RECHARGE PROJECT, LAKESIDE, CALIFORNIA

FIGURE

A-61

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
	Bulk	Driven						
DATE DRILLED <u>2/25/11</u> BORING NO. <u>B-17</u> GROUND ELEVATION <u>443' ± (MSL)</u> SHEET <u>1</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____								
0							SM	<u>ALLUVIUM:</u> Grayish brown, damp, loose to medium dense, silty SAND.
5			9	3.8	100.0		SW	Gray, dry to damp, loose, well-graded, fine to coarse SAND.
10			14	15.2	97.4		SM	Light brown, moist, medium dense, silty, fine to coarse SAND; trace roots.
15			14	15.2	97.4			Brown.
20								

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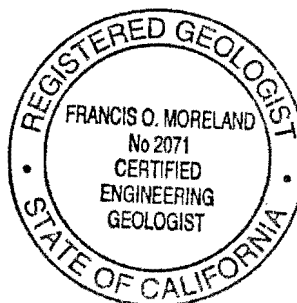
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.
106200005

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FIGURE
A-62

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/25/11</u> BORING NO. <u>B-17</u> GROUND ELEVATION <u>443' ± (MSL)</u> SHEET <u>2</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
20			8				SM	<u>ALLUVIUM:</u> (Continued) Brown, moist, medium dense, silty fine to coarse SAND. Gray, dry to damp, medium dense, well-graded, fine to medium SAND. Brown, moist, medium dense, silty SAND. Total Depth = 26.5 feet. Groundwater not encountered. Backfilled with approximately 9 cubic feet of bentonite grout shortly after drilling on 2/25/11. <u>Note:</u> Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
							SW	
25			22	3.2	101.0		SM	
30								
35								
40								



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FIGURE
A-63

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/23/11</u> BORING NO. <u>B-18</u>	
	Bulk	Driven						GROUND ELEVATION <u>446' ± (MSL)</u>	SHEET <u>1</u> OF <u>2</u>
								METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u>	
								DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u>	
								SAMPLED BY <u>MJB</u> LOGGED BY <u>MJB</u> REVIEWED BY _____	
								DESCRIPTION/INTERPRETATION	
0							SM	<u>ALLUVIUM:</u> Dark brown, damp, loose, silty fine SAND; few clay; micaceous.	
5			8	4.5	112.0				
10			7				SW	Gray to grayish brown, dry to damp, loose to medium dense, well-graded, fine to coarse SAND; micaceous.	
15			18	1.7	105.6			Medium dense.	
20									

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RECHARGE PROJECT, LAKESIDE, CALIFORNIA

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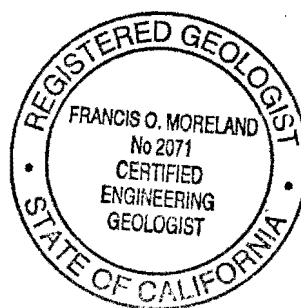
DATE

5/11

FIGURE

A-64

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/23/11</u> BORING NO. <u>B-18</u> GROUND ELEVATION <u>446' ± (MSL)</u> SHEET <u>2</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MJB</u> LOGGED BY <u>MJB</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
20			13				SW	<u>ALLUVIUM: (Continued)</u> Gray to grayish brown, damp, medium dense, well-graded, fine to coarse, medium SAND; micaceous.
25			31					
30								Total Depth = 26.5 feet. Groundwater not encountered. Backfilled with approximately 9 cubic feet of bentonite grout shortly after drilling on 2/23/11. <u>Note:</u> Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
35								
40								



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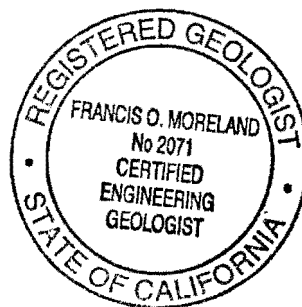
FIGURE
A-65

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/10/11 - 3/11/11</u> BORING NO. <u>B-19</u>	
	Bulk	Driven						GROUND ELEVATION <u>444' ± (MSL)</u> SHEET <u>2</u> OF <u>3</u>	METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u>
								DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u>	
								SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____	
								DESCRIPTION/INTERPRETATION	
20			7				SM	<u>ALLUVIUM: (Continued)</u> Dark brown, moist, loose to medium dense, silty fine SAND.	
25			27				SW-SM	Grayish brown, moist, medium dense, well-graded, fine to medium SAND with silt. Boring terminated on 3/10/11. Boring resumed on 3/11/11.	
30			4				SM	Grayish brown, moist, loose, silty fine to medium SAND.	
35			17				SP	Grayish brown, saturated, medium dense, poorly-graded, fine to medium SAND.	
40									



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
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DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/10/11 - 3/11/11</u> BORING NO. <u>B-19</u> GROUND ELEVATION <u>444' ± (MSL)</u> SHEET <u>3</u> OF <u>3</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
40			19				SP	<u>ALLUVIUM: (Continued)</u> Dark brown, saturated, medium dense, poorly-graded, fine to medium SAND; little coarse sand.
45			9				SM	Dark brown, saturated, medium dense, silty fine SAND.
50			10					Loose.
55			21					Dense.
57.1			50/1"					Refusal on gravel and cobbles. Total Depth = 57.1 feet. Groundwater encountered at approximately 35 feet during drilling. Backfilled with approximately 20 cubic feet of bentonite grout shortly after drilling on 3/11/11. <u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.



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FIGURE
A-68

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/10/11</u> BORING NO. <u>B-20</u>	
	Bulk	Driven						GROUND ELEVATION <u>445' ± (MSL)</u>	SHEET <u>1</u> OF <u>2</u>
								METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u>	
								DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u>	
								SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____	
								DESCRIPTION/INTERPRETATION	
0							SM	ALLUVIUM: Light brown, moist, loose, silty fine to medium SAND.	
5			10	7.0	95.3			Silty fine to coarse sand.	
10			6						
15			22	6.2	101.4			Medium dense; silty fine sand.	
20									



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-69

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/10/11</u> BORING NO. <u>B-20</u> GROUND ELEVATION <u>445' ± (MSL)</u> SHEET <u>2</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
20			21				SM	<u>ALLUVIUM:</u> (Continued) Light brown, moist, dense, silty fine SAND.
25			12				ML	Dark brown, moist, loose, fine sandy SILT; some fine to medium sand.
30								Total Depth = 26.5 feet. Groundwater not encountered. Backfilled with approximately 9 cubic feet of bentonite grout shortly after drilling on 3/10/11. <u>Note:</u> Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
35								
40								



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EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
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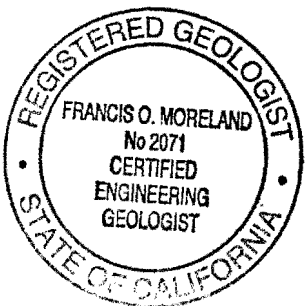
FIGURE


A-70

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/10/11</u> BORING NO. <u>B-21</u> GROUND ELEVATION <u>450' ± (MSL)</u> SHEET <u>1</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
0							SM	<u>ALLUVIUM:</u> Brown, moist, loose, silty fine SAND.		
5								Trace coarse sand; trace roots.		
10								Trace gravel (up to ¾ inch); micaceous.		
15								Silty fine to medium sand; little coarse sand.		
20										



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
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DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/10/11</u> BORING NO. <u>B-21</u> GROUND ELEVATION <u>450' ± (MSL)</u> SHEET <u>2</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____		
	Bulk	Driven						DESCRIPTION/INTERPRETATION		
20						SM	<u>ALLUVIUM:</u> (Continued) Brown, moist, loose to medium dense, silty fine SAND; trace roots.			
25							<u>METAVOLCANIC ROCK:</u> Gray, dry, soft, weathered METAVOLCANIC ROCK.			
30			50/4"				Refusal to further drilling. Total Depth = 30.3 feet. Groundwater not encountered. Backfilled with approximately 10 cubic feet of bentonite grout shortly after drilling on 3/10/11.			
35							<u>Note:</u> Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.			
40							<div style="text-align: center;">  </div>			



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PROJECT NO.	DATE	FIGURE
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DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.				
	Bulk	Driven						2/24/11	B-22				
								GROUND ELEVATION	454' ± (MSL)	SHEET	1	OF	2
								METHOD OF DRILLING 8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)					
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"		
								SAMPLED BY	MBG	LOGGED BY	MBG	REVIEWED BY	
								DESCRIPTION/INTERPRETATION					
0							SM	<u>ALLUVIUM:</u> Brown, moist, loose, silty, fine to medium SAND.					
5			18				SW	Gray, moist, medium dense, well-graded, fine to coarse SAND.					
10			9					Loose.					
15			24	3.6	103.7			Dry to damp; medium dense.					
20													

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BORING LOG

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RECHARGE PROJECT, LAKESIDE, CALIFORNIA

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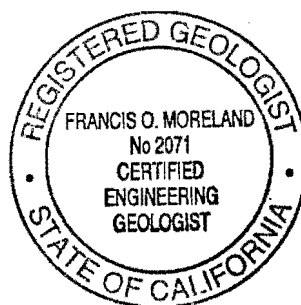
DATE

5/11

FIGURE

A-73

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.		
	Bulk	Driven						2/24/11	B-22		
								GROUND ELEVATION	SHEET	OF	
								METHOD OF DRILLING	8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)		
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"
								SAMPLED BY	MBG	LOGGED BY	MBG
								REVIEWED BY			
								DESCRIPTION/INTERPRETATION			
20			18				ML	ALLUVIUM: (Continued) Gray to grayish brown, moist, medium dense, fine sandy SILT.			
25			19				SC	Brown, moist, stiff, clayey fine SAND.			
30								Total Depth = 26.5 feet. Groundwater not encountered. Backfilled with approximately 9 cubic feet of bentonite grout shortly after drilling on 2/24/11.			
35								<u>Note:</u> Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.			
40											



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FIGURE

A-74

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/28/11 and 3/1/11</u> BORING NO. <u>B-23</u> GROUND ELEVATION <u>455' ± (MSL)</u> SHEET <u>1</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
0							SM	<u>ALLUVIUM:</u> Brown, damp, loose, silty fine to medium SAND.		
5										
10										
15								Medium dense; scattered coarse sand.		
20								Micaceous.		



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-75

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/28/11 and 3/1/11</u> BORING NO. <u>B-23</u> GROUND ELEVATION <u>455' ± (MSL)</u> SHEET <u>2</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
20							SM	ALLUVIUM: (Continued) Brown, damp, medium dense, silty fine to medium SAND.		
25								Scattered fine to coarse gravel.		
30										
35								Saturated.		
40										

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FIGURE
A-76

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RECHARGE PROJECT, LAKESIDE, CALIFORNIA

FIGURE

A-77

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>2/28/11 and 3/1/11</u> BORING NO. <u>B-23</u> GROUND ELEVATION <u>455' ± (MSL)</u> SHEET <u>4</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
60			43				SP-SM	<u>ALLUVIUM: (Continued)</u> Brown to grayish brown, saturated, dense, poorly-graded, fine to medium SAND with silt.		
65			41					Very dense; fine to coarse sand; scattered gravel; trace roots.		
70			50				SW-SM	Brown to grayish brown, saturated, very dense, well-graded, fine to coarse SAND with silt.		
75			34					Gray.		
80										

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RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.

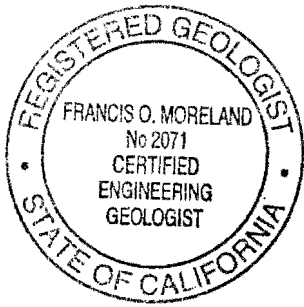
106200005

DATE

5/11

FIGURE

A-78

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.		
	Bulk	Driven						2/28/11 and 3/1/11	B-23		
								GROUND ELEVATION	SHEET	OF	
								METHOD OF DRILLING	8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)		
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"
								SAMPLED BY	MBG	LOGGED BY	MBG
								REVIEWED BY			
								DESCRIPTION/INTERPRETATION			
80			59				SP	<u>ALLUVIUM: (Continued)</u> Gray, saturated, very dense, poorly-graded, fine to medium SAND. Boring terminated on 2/28/11. Boring resumed on 3/1/11.			
85			61				SW-SM	Gray, saturated, very dense, well-graded, fine to coarse SAND with silt. Trace cobbles. Refusal to further drilling.			
90								Total Depth = 88.0 feet. Groundwater encountered at approximately 35 feet during drilling. Backfilled with approximately 31 cubic feet of bentonite grout shortly after drilling on 3/1/11. <u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.			
95											
100											

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BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

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FIGURE

A-79


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RECHARGE PROJECT, LAKESIDE, CALIFORNIA

FIGURE

A-80

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/3/11</u> BORING NO. <u>B-24</u> GROUND ELEVATION <u>453' ± (MSL)</u> SHEET <u>2</u> OF <u>5</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
20							SM	ALLUVIUM: (Continued) Light brown, moist, medium dense, silty fine SAND; little medium to coarse sand; trace gravel (up to ½ inch); trace roots.		
25								Brown; wet.		
30								Fine to medium sand; little coarse sand; trace roots.		
								Dense.		
35							SW	Brown, moist, dense, well-graded, fine to coarse SAND.		
40										



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-81

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EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

FIGURE

A-83

A circular professional seal for Francis O. Moreland. The outer ring contains the text "REGISTERED GEOLOGIST" at the top and "STATE OF CALIFORNIA" at the bottom, separated by two small dots. The center of the seal contains the text "FRANCIS O. MORELAND", "No 2071", and "CERTIFIED ENGINEERING GEOLOGIST" in three lines.

A-84

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/4/11</u> BORING NO. <u>B-25</u> GROUND ELEVATION <u>465' ± (MSL)</u> SHEET <u>1</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
0							SM	<u>ALLUVIUM:</u> Gray, damp, loose, silty fine to medium SAND.
5			19	3.5	110.5		SW-SM	Gray, damp, medium dense, well-graded, fine to coarse SAND with silt.
10			16					
15			45	6.2	100.0			Dense.
20								

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BORING LOG

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RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.

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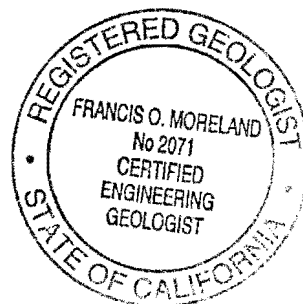
DATE

5/11

FIGURE

A-85

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/4/11</u> BORING NO. <u>B-25</u> GROUND ELEVATION <u>465' ± (MSL)</u> SHEET <u>2</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
20			13				SM	ALLUVIUM: (Continued) Gray, damp, medium dense, silty fine SAND.
							ML	Brown, moist, medium dense, fine sandy SILT.
25			6					Loose.
30								Total Depth = 26.5 feet. Groundwater not encountered. Backfilled with approximately 9 cubic feet of bentonite grout shortly after drilling on 3/4/11. <u>Note:</u> Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
35								
40								



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FIGURE

A-86

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.				
	Bulk	Driven						3/4/11	B-26				
								GROUND ELEVATION	469' ± (MSL)	SHEET	1	OF	6
								METHOD OF DRILLING 8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)					
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"		
								SAMPLED BY	MBG	LOGGED BY	MBG	REVIEWED BY	
								DESCRIPTION/INTERPRETATION					
0							ML	ALLUVIUM: Brown, moist, loose, fine sandy SILT.					
5													
							SM	Brown, moist, loose to medium dense, silty fine SAND.					
10													
15								Trace coarse sand.					
20													

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BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
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FIGURE

A-87

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/4/11</u> BORING NO. <u>B-26</u> GROUND ELEVATION <u>469' ± (MSL)</u> SHEET <u>2</u> OF <u>6</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____		
	Bulk	Driven						DESCRIPTION/INTERPRETATION		
20							SM	<u>ALLUVIUM: (Continued)</u> Light brown, moist, loose to medium dense, silty fine SAND; few coarse sand. Medium dense. Silty fine to medium sand. Some coarse sand. Silty fine to coarse sand.		
25										
30										
35										
40										



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-88

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/4/11</u> BORING NO. <u>B-26</u> GROUND ELEVATION <u>469' ± (MSL)</u> SHEET <u>4</u> OF <u>6</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
60			20				SM	ALLUVIUM: (Continued) Dark brown, saturated, medium dense, silty fine SAND.
							SW	Dark gray, saturated, medium dense to dense, well-graded, fine to coarse SAND.
65			23				SM	Grayish brown, saturated, dense, silty fine SAND.
70			55				SW-SM	Grayish brown, saturated, dense, well-graded, fine to coarse SAND with silt.
75			42					Very dense; few gravel up to (1½ inch).
80								

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FIGURE

A-90

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.				
	Bulk	Driven						3/4/11	B-26				
								GROUND ELEVATION	469' ± (MSL)	SHEET	5	OF	6
								METHOD OF DRILLING 8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)					
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"		
								SAMPLED BY	MBG	LOGGED BY	MBG	REVIEWED BY	
								DESCRIPTION/INTERPRETATION					
80			38				SP-SM	ALLUVIUM: (Continued) Grayish brown, saturated, very dense, poorly-graded, fine to medium SAND with silt; micaceous.					
85			50/4"				SW-SM	Gray, saturated, very dense, well-graded, fine to coarse SAND with silt.					
90			78/10"				SM	Grayish brown, saturated, very dense, silty fine to medium SAND.					
95			24					Fine to coarse sand.					
								Dense.					
								Dark brown; silty fine sand.					
100													

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RECHARGE PROJECT, LAKESIDE, CALIFORNIA

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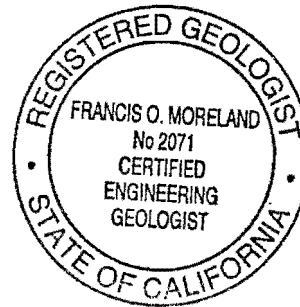
DATE

5/11

FIGURE

A-91

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/4/11</u> BORING NO. <u>B-26</u> GROUND ELEVATION <u>469' ± (MSL)</u> SHEET <u>6</u> OF <u>6</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____		
	Bulk	Driven						DESCRIPTION/INTERPRETATION		
100			50/3"				SM	<p>ALLUVIUM: (Continued) Dark brown, saturated, very dense, silty fine SAND; some gravel (up to 2 inches). Refusal to further drilling. Total Depth = 101.0 feet. Groundwater encountered at approximately 45 feet during drilling. Backfilled with approximately 35 cubic feet of bentonite grout shortly after drilling on 3/4/11.</p> <p><u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.</p>		
105										
110										
115										
120										



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FIGURE
A-92

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.
	Bulk	Driven							
								2/25/11	B-27
								GROUND ELEVATION 477' ± (MSL)	SHEET 1 OF 2
								METHOD OF DRILLING 8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)	
								DRIVE WEIGHT 140 lbs. (Auto. Trip Hammer)	DROP 30"
								SAMPLED BY MBG	LOGGED BY MBG
								REVIEWED BY	
								DESCRIPTION/INTERPRETATION	
0							SM	ALLUVIUM: Brown, damp, medium dense, silty SAND.	
5			52	6.0	121.2			Scattered gravel (up to 1 inch).	
10			20					Dense; trace gravel (up to 1 inch).	
15			34					Medium dense to dense; trace roots; few gravel.	
20								Medium dense.	

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FIGURE

A-93

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.				
	Bulk	Driven						2/25/11	B-27				
								GROUND ELEVATION	477' ± (MSL)	SHEET	2	OF	2
								METHOD OF DRILLING 8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)					
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"		
								SAMPLED BY	MBG	LOGGED BY	MBG	REVIEWED BY	
								DESCRIPTION/INTERPRETATION					
20			24	3.1	103.1		SW	<u>ALLUVIUM:</u> (Continued) Gray, dry to damp, medium dense, well-graded, fine to coarse SAND.					
25			22				SM	Grayish brown, damp, dense, silty fine to coarse SAND.					
30								Total Depth = 26.5 feet. Groundwater not encountered. Backfilled with approximately 9 cubic feet of bentonite grout shortly after drilling on 2/25/11.					
35								<u>Note:</u> Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.					
40													

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FIGURE

A-94

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/8/11 - 3/9/11</u> BORING NO. <u>B-28</u> GROUND ELEVATION <u>471' ± (MSL)</u> SHEET <u>1</u> OF <u>6</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
0							SM	ALLUVIUM: Light brown, moist, loose, silty fine to medium SAND; trace coarse sand.		
5										
10										
15								Micaceous.		
20								Few coarse sand.		

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FIGURE

A-95

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED	BORING NO.				
	Bulk	Driven						3/8/11 - 3/9/11	B-28				
								GROUND ELEVATION	471' ± (MSL)	SHEET	3	OF	6
								METHOD OF DRILLING 8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)					
								DRIVE WEIGHT	140 lbs. (Auto. Trip Hammer)	DROP	30"		
								SAMPLED BY	MBG	LOGGED BY	MBG	REVIEWED BY	
								DESCRIPTION/INTERPRETATION					
40							SM	<u>ALLUVIUM:</u> (Continued) Brown, saturated, loose, silty fine SAND; little medium sand.					
45								Trace gravel (up to ½ inch).					
50													
55								Medium dense; trace coarse sand.					
60							SP	Grayish brown, saturated, medium dense, poorly-graded, medium SAND.					

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BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
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FIGURE
A-97

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/8/11 - 3/9/11</u> BORING NO. <u>B-28</u>	
	Bulk	Driven						GROUND ELEVATION <u>471' ± (MSL)</u> SHEET <u>4</u> OF <u>6</u>	METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u>
								DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u>	
								SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____	
									DESCRIPTION/INTERPRETATION
60			13				SM	<u>ALLUVIUM: (Continued)</u> Grayish brown to dark brown, saturated, medium dense, silty fine to medium SAND.	
65			17					Dark brown; silty fine sand.	
70			22					Dense.	
75			56					Grayish brown; trace medium sand.	
80									

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FIGURE
A-98

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/8/11 - 3/9/11</u> BORING NO. <u>B-28</u>	
	Bulk	Driven						GROUND ELEVATION <u>471' ± (MSL)</u>	SHEET <u>5</u> OF <u>6</u>
								METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u>	
								DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u>	
								SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____	
								DESCRIPTION/INTERPRETATION	
80			19				SP-SM	<u>ALLUVIUM:</u> (Continued) Grayish brown, saturated, medium dense, poorly-graded, fine SAND with silt; trace medium sand.	
							SW	Gray, saturated, medium dense, well-graded, fine to coarse SAND.	
							SW-SM	Brown, saturated, dense, well-graded, fine to medium SAND with silt.	
85			25						
								Very dense; fine to coarse sand.	
90			50/3"				SM	Dark brown, saturated, very dense, silty fine SAND.	
							SW	Dark gray, saturated, very dense, well-graded, fine to coarse SAND.	
95			70						
100								Gravel and cobbles.	

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EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

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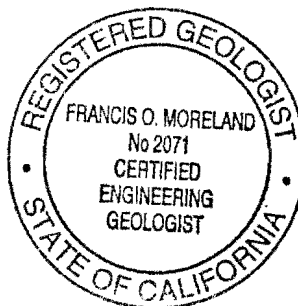
DATE

5/11

FIGURE

A-99

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/8/11 - 3/9/11</u> BORING NO. <u>B-28</u> GROUND ELEVATION <u>471' ± (MSL)</u> SHEET <u>6</u> OF <u>6</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
100			50/4"				SM	<u>ALLUVIUM: (Continued)</u> Dark gray, saturated, very dense, silty fine to medium SAND with gravel (up to 1 inch). Boring terminated on 3/8/11. Boring resumed on 3/9/11. Refusal to further drilling. Total Depth = 103 feet. Groundwater encountered at approximately 35 feet during drilling. Backfilled with approximately 36 cubic feet of bentonite grout shortly after drilling on 3/9/11. <u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.
105								
110								
115								
120								



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BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
RECHARGE PROJECT, LAKESIDE, CALIFORNIA

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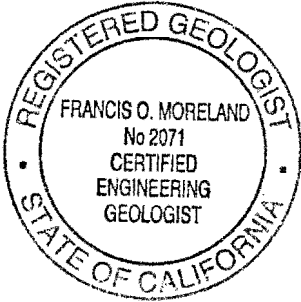
FIGURE


A-100

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/9/11</u> BORING NO. <u>B-29</u> GROUND ELEVATION <u>479' ± (MSL)</u> SHEET <u>1</u> OF <u>2</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
0							SM	ALLUVIUM: Gray, moist, loose, silty fine to medium SAND.		
5			38	5.4	107.2			Medium dense.		
10			25					Dense; silty fine to coarse sand; trace gravel (up to 1 inch).		
15			24				SP	Grayish brown, wet, medium dense, poorly-graded, medium SAND; trace silt and coarse sand. Trace gravel (up to ½ inch).		
20										



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-101

DEPTH (feet)	SAMPLES	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/9/11</u> BORING NO. <u>B-29</u>		
							GROUND ELEVATION <u>479' ± (MSL)</u> SHEET <u>2</u> OF <u>2</u>		
							METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u>		
							DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u>		
							SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____		
							DESCRIPTION/INTERPRETATION		
20		24				SM	ALLUVIUM: (Continued) Grayish brown, wet, dense, silty fine to medium SAND.		
25		9	8.4	96.7			Loose; trace roots.		
30							Total Depth = 26.5 feet. Groundwater not encountered. Backfilled with approximately 9 cubic feet of bentonite grout shortly after drilling on 3/9/11.		
35							Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.		
40									



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-102

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/7/11 - 3/8/11</u> BORING NO. <u>B-30</u> GROUND ELEVATION <u>479' ± (MSL)</u> SHEET <u>1</u> OF <u>6</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION
	Bulk	Driven						
0							SM	<u>ALLUVIUM:</u> Brown, moist, loose, silty fine SAND.
5								Micaceous.
10								
15								Light brown; trace coarse sand.
20								

Ninyo & Moore


BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER
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FIGURE
A-103


	BORING LOG		
	EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
	PROJECT NO. 106200005	DATE 5/11	FIGURE A-104

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/7/11 - 3/8/11</u> BORING NO. <u>B-30</u> GROUND ELEVATION <u>479' ± (MSL)</u> SHEET <u>3</u> OF <u>6</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
40							SM	ALLUVIUM: (Continued) Brown, moist, medium dense, silty fine SAND; some medium sand; trace coarse sand.		
45								Saturated.		
50										
55								Trace medium sand.		
60										




BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-105

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/7/11 - 3/8/11</u> BORING NO. <u>B-30</u> GROUND ELEVATION <u>479' ± (MSL)</u> SHEET <u>4</u> OF <u>6</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
	Bulk	Driven								
60			36				SP-SM	ALLUVIUM: (Continued) Brown, saturated, medium dense, poorly-graded, fine to medium SAND with silt; trace coarse sand.		
65			24				SW-SM	Brown, saturated, dense, well-graded, fine to coarse SAND with silt.		
70			25				SM	Dark brown, saturated, dense, silty fine SAND.		
75			24				SP-SM	Dark brown, saturated, dense, poorly-graded, fine to medium SAND with silt.		
80							SM	Grayish brown, saturated, very dense, silty fine to coarse SAND.		





BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-106

DEPTH (feet)	SAMPLES Bulk Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/7/11 - 3/8/11</u> BORING NO. <u>B-30</u> GROUND ELEVATION <u>479' ± (MSL)</u> SHEET <u>5</u> OF <u>6</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____ DESCRIPTION/INTERPRETATION		
							80		37
85		40				Medium dense.			
90		48				Very dense; trace gravel (up to ¾ inch).			
95		29				Dense.			
100						Begin gravel and cobbles. End gravel and cobbles.			



BORING LOG		
EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA		
PROJECT NO. 106200005	DATE 5/11	FIGURE A-107

DEPTH (feet)	SAMPLES		BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED <u>3/7/11 - 3/8/11</u> BORING NO. <u>B-30</u> GROUND ELEVATION <u>479' ± (MSL)</u> SHEET <u>6</u> OF <u>6</u> METHOD OF DRILLING <u>8" Hollow-Stem Auger (Diedrich D-120) (Tri-County Drilling)</u> DRIVE WEIGHT <u>140 lbs. (Auto. Trip Hammer)</u> DROP <u>30"</u> SAMPLED BY <u>MBG</u> LOGGED BY <u>MBG</u> REVIEWED BY _____	
	Bulk	Driven						DESCRIPTION/INTERPRETATION	
100			100				SW-SM	<u>ALLUVIUM: (Continued)</u> Grayish brown, saturated, very dense, well-graded, fine to coarse SAND with silt; little gravel (up to 2 inches). Boring terminated on 3/7/11. Boring resumed on 3/18/11.	
105			50/4"				SP-SM	Dark brown, saturated, very dense, poorly-graded SAND with silt; little gravel (up to 2 inches). Refusal to further drilling. Total Depth = 106.5 feet. Groundwater encountered at approximately 45 feet during drilling. Backfilled with approximately 37 cubic feet of bentonite grout shortly after drilling on 3/8/11. <u>Note:</u> Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.	
110									
115									
120									



BORING LOG

EL MONTE VALLEY MINING, RECLAMATION, AND GROUNDWATER RECHARGE PROJECT, LAKESIDE, CALIFORNIA

PROJECT NO.	DATE	FIGURE
106200005	5/11	A-108