December 1, 2014 Project No. 1301525

Mr. Phil Graham
Recology Yuba Sutter
3001 North Levee Road
Marysville, CA 95901

RE: COMPOST AREA IMPROVEMENT REPORT FOR THE FEATHER RIVER ORGANICS COMPOSTING OPERATION, RECOLOGY YUBA SUTTER FACILITY, MARYSVILLE, CALIFORNIA

Dear Mr. Graham:

This Compost Area Improvement Report for the Feather River Organics (FRO) composting facility has been prepared to comply with Item No. 13 of Cleanup and Abatement Order (CAO) R5-2013-0704 as issued by the Central Valley Regional Water Quality Control Board (CVRWQCB) on August 29, 2013. In accordance with Item No. 13, this Compost Area Improvement Report describes the work completed per the Compost Area Work Plan (Golder, 2013) and the Compost Area Leachate Collection Work Plan (Golder, 2014).

1.0 BACKGROUND

As part of the requirements of the CAO, Golder Associates (Golder) prepared the two above referenced work plans for Recology Yuba Sutter (RYS). These work plans are associated with the FRO composting operations at the RYS facility and are summarized below.

The Compost Area Work Plan (Compost Plan), which was submitted to the CVRWQCB in October 2013, describes in part how the composting activities will be completely separated from the closure cover of Landfill No. 1 (LF-1) through the modification or installation of a compost pad. The Compost Plan establishes minimum requirements for the thickness and grade of the pad, provides inspection frequencies, and establishes a soil sampling program.

The Compost Area Leachate Collection Work Plan (Leachate Plan), which was submitted to the CVRWQCB in January 2014, includes a conceptual permanent containment and control system of compost leachate discharging to the facility surface water management system for a 100-year, 24-hour storm event. Due to the infeasibility of constructing a permanent containment and control system per CAO Order R5-2013-0704, the CVRWQCB approved the construction and operation of an interim compost leachate containment and control system as described in Golder's letter to RYS dated August 13, 2014. This interim system is designed to accommodate a 3.16-inch storm (25-year, 24-hour storm per Department of Water Resources).

Sections 2 of this report describes improvements implemented associated with the compost pad and Section 3 includes a summary of the interim compost leachate management improvements for the FRO compost facility.

Golder Associates Inc.
1000 Enterprise Way, Suite 190
Roseville, CA 95678 USA
Tel: (916) 786-2424 Fax: (916) 786-2434 www.golder.com

2.0 COMPOST PAD IMPROVEMENTS

The Compost Plan established minimum requirements for a compost pad that would help protect the LF-1 closure cover from the composting operations. The Compost Plan requires that the following work items be performed:

- Construct a low-permeability aggregate compost pad to a minimum of nine (9) inches to allow for wearing of the pad thickness over time and graded at a minimum of three (3) percent to promote positive drainage. The low-permeability aggregate shall consist of an aggregate comparable to a Caltrans Class 2 or Class 3 aggregate base with a minimum of 15 percent fines. In addition, this material is required to be compacted to a minimum density of 90 percent relative compaction per ASTM D1557. The compost pad surface is to be installed by September 15, 2014.
- Install thickness markers by October 1, 2014 to verify that the minimum thickness is maintained.

During the summer and fall of 2014, Recology processed recycled concrete to an approximate 1-inch minus particle size material at their nearby Ostrom Road Landfill facility. This material was mixed with silty-clay soil to create a low-permeability aggregate mixture for use in the compost pad at the RYS facility. The aggregate mixture was hauled to RYS where it was placed and compacted to nine (9) inches or greater thickness and the minimum three (3) percent grades were achieved. The intent of the 9-inch compost pad thickness is to meet the minimum requirement of six (6) inches in thickness and provide additional material to allow for wear expected to occur during composting operations. Thickness markers were installed in rows at approximately 200-foot intervals per the requirements of the Compost Plan. Golder provided CQA services which consisted of:

- Performing field density testing for the compost pad surface
- Collecting soil samples for laboratory analysis
- Observing typical thickness marker installation

CQA procedures consisted of measuring the in-situ moisture-density using a nuclear density gauge (ASTM D6938). Golder performed 35 nuclear moisture-density tests, resulting in a testing frequency of one test per 394 cubic yards (cy). This frequency exceeds the Compost Plan requirements (minimum frequency of 1 test per 500 cy. In addition, samples of the in-situ compost pad low-permeability aggregate soils were obtained for laboratory testing for particle-size distribution (ASTM D422) and modified Proctor density (ASTM D1557). Field density test and/or soil samples locations are shown on the attached Figure 1. The results of the in-situ density testing and laboratory results are summarized in Attachment 1. Recology contracted MHM of Yuba City, California to perform a survey of the improved compost pad. The compost pad thickness was verified by comparing the base topography (April 2012) to the improved compost pad surface. The pre-construction and post-construction pad surface elevations are shown on Figure 2.

The above information indicates the following:

- The 9-inch thick compost pad surface exceeds the minimum required thickness of Six (6) inches
- As indicated in Figure 2, the compost pad thickness was actually increased by up to one to two feet to establish minimum drainage grades. The compost pad fill placement occurred primarily in August and September and was initially staked and graded to a minimum three (3) percent grade. The November 18, 2014 survey in Figure 2 was completed two to three months after the additional fill was placed, and therefore reflects some additional minor settlement that has occurred following fill placement. The November 18, 2014 survey shows that the overall surface grades are approximately three (3) percent or greater.

- The compaction of the compost pad surface meets or exceeds the required 90 percent relative compaction.
- The results of the in-situ testing for particle size showed that the southwest and southeast portions of the compost pad meet the minimum fines content requirements set forth in the Compost Plan. Some areas were identified as needing additional fines. These areas are being amended with clayey soils to bring the fines content at or above 15 percent.

3.0 COMPOST PAD LEACHATE MANAGEMENT IMPROVEMENTS

The system was designed to accommodate a 3.16-inch storm. The minimum required improvements to manage a 3.16-inch storm include the following key elements:

- Adding three (3) 21,000-gallon capacity storage tanks to the existing three (3) storage tanks currently in use at FRO
- Extending a 4-inch diameter pipeline along the north end of the compost facility to the publically-owned treatment works (POTW) sewer system discharge point near the RYS truck maintenance facility
- Adding a larger additional concrete vault and four (4), five (5) horsepower (HP) pumps at the Hog Farm area location to convey compost leachate to the storage tanks
- Upsizing the existing pumps in the southern compost leachate collection vaults to convey larger leachate flows

Recology opted to temporarily install additional surface water management infrastructure beyond those required for the design storm. Therefore, the surface water improvements that were installed include:

- The total number of 21,000-gallon capacity storage tanks was increased from two (2) to eight (8) at the northern end of the compost pad near the Hog Farm area
- The total number of 21,000-gallon capacity storage tanks was increased from one (1) to four (4) along the southern end of the compost pad near the Material Recovery Facility (MRF)
- A second vault with an approximate 5,000-gallon capacity was constructed within the Hog Farm area
- Two (2) additional 5-HP pumps were installed into the existing and new vault for a total of four (4) pumps within the Hog Farm area vaults
- A 2-HP pump was installed in each of the southern sumps near the MRF
- A 4-inch diameter discharge pipes was installed from each group of tanks to the POTW sewer connection to allow for direct disposal. These pipes connect to form one discharge pipe near the southwest corner of the compost area.
- A total of eight (8) flow meters were installed at the following locations:
  - On each pipe from the sump/vault pumps to the storage tanks (5 total)
  - On the pipes to each water filling station (J-Stand) (2 total)
  - On the 4-inch diameter pipe to the POTW (1 unit) after the pipes are combined near the south west corner of the site.
- Each of the previously installed 6-inch diameter pipes from the northern compost pad were connected to an 18-inch diameter pipe installed within the western drainage ditch that routes water to the Hog Farm area vaults

Additional improvements include the construction of a diversion berm along the entire southern boundary of the active compost area which connects to the existing diversion berm along the northwest edge and

terminates near the southeast sump to limit surface water run-on. Golder also installed one (1) suction lysimeter near each storage tank group location to monitor any potential contamination within the vadose zone. Figure 3 shows the key drainage improvements and the lysimeter installation locations. Lysimeter installation logs are presented in Attachment 2 and a photograph log illustrating key drainage improvements is included in Attachment 3.

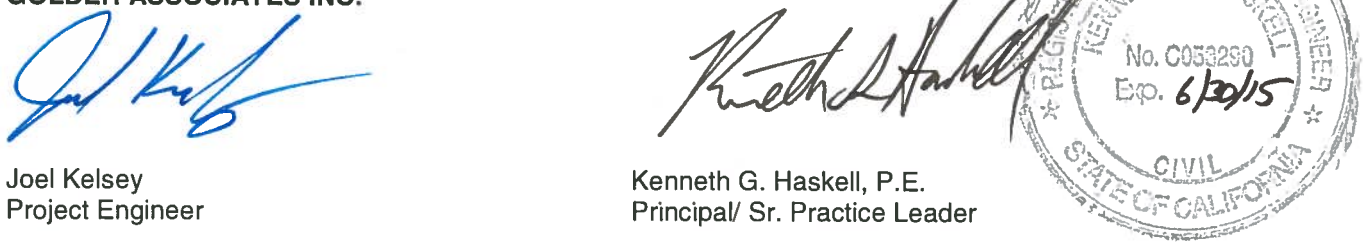
Based on actual measured compost leachate volumes, Recology may reduce, maintain, or increase the tank storage volume to ensure that a 3.16-inch storm can be accommodated without discharge to the Hog Farm area.

4.0 CLOSURE

This submittal summarizes the compost pad and leachate management improvements completed to date at the FRO compost facility located at RYS as required per Item No. 13 of the CAO. Please call if you have any questions or need additional information.

Sincerely,

GOLDER ASSOCIATES INC.



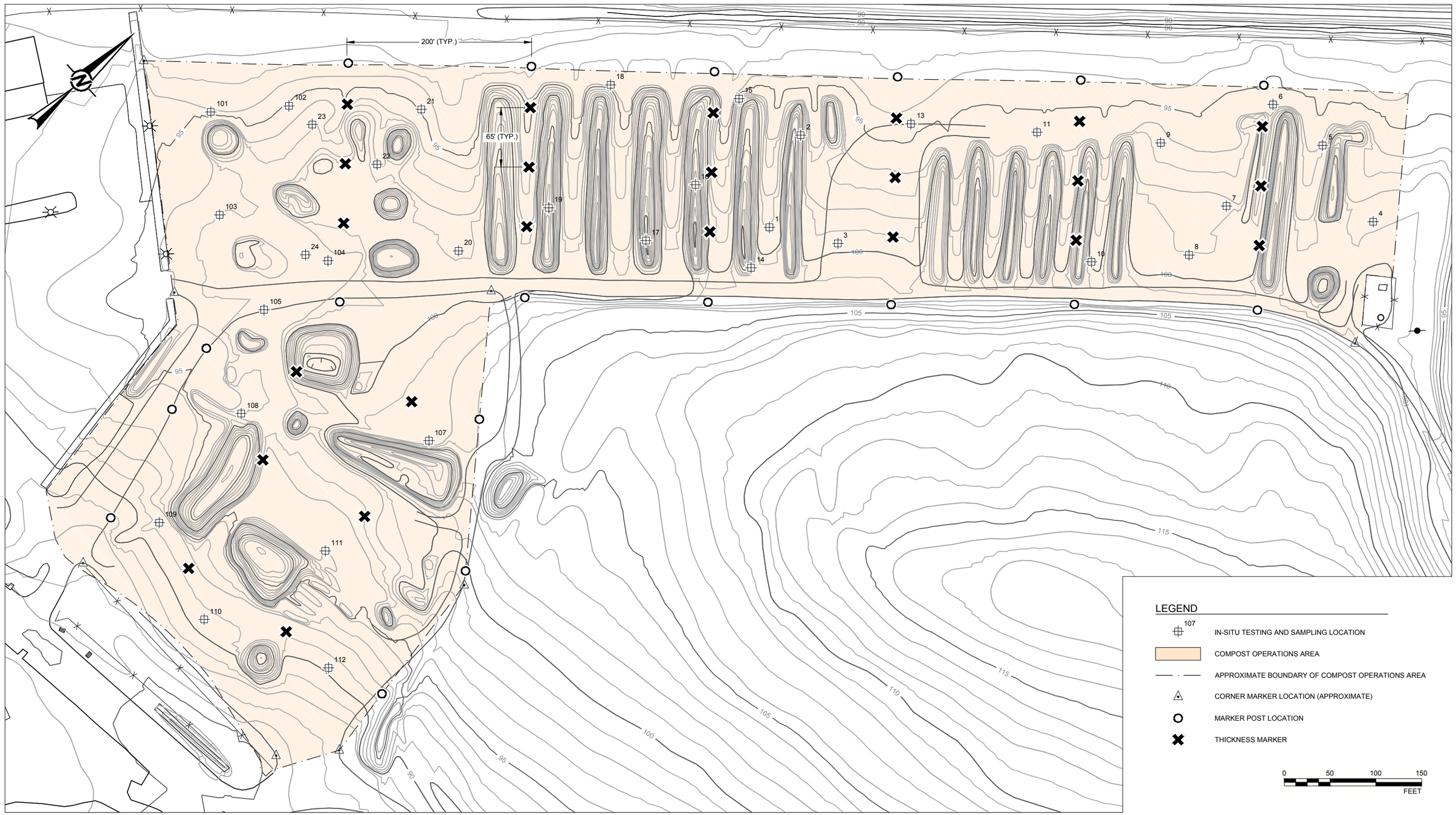
Joel Kelsey
Project Engineer

Kenneth G. Haskell, P.E.
Principal/ Sr. Practice Leader

Figures/Attachments:

- Figure 1: Compost Pad Sample Locations
- Figure 2: Compost Pad Survey Map
- Figure 3: Compost Area Stormwater Improvements
- Attachment 1: Compost Pad Soil Testing
- Attachment 2: Lysimeter Installation Logs
- Attachment 3: Compost Area Improvements Photograph Log

FIGURES



Rev.	YYYY-MM-DD	DESCRIPTION	PREPARED	DESIGN	REVIEW	APPROVED
A	2014-11-11	CURRENT COMPLETED CONSTRUCTION	ABW	JTK	JTK	KGH

CLIENT
RECOLOGY YUBA SUTTER
3001 NORTH LEVEE ROAD
MARYSVILLE, CA 95901

CONSULTANT
Golder Associates
1000 Enterprise Way, Suite 190
Roseville, California
USA
(916) 786-2424
www.golder.com

PROJECT
FEATHER RIVER ORGANICS
RECOLOGY YUBA SUTTER FACILITY
MARYSVILLE, CALIFORNIA

TITLE
COMPOST PAD SAMPLE LOCATIONS

PROJECT No. 1301525 | Rev. A | 1 of 3 | FIGURE 1

Path: \\sacramento\acad\Sites\YSD\ LFG\CIVIL 3D\COMPOST PAD CONSTR CQA\ | File Name: RYS COMPOST PAD SAMPLE LOCATIONS.dwg

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

STORAGE BLDG 1

FRO PARKING

FEATHER RIVER ORGANICS

0 50' 100' 200' 400'

LEGEND

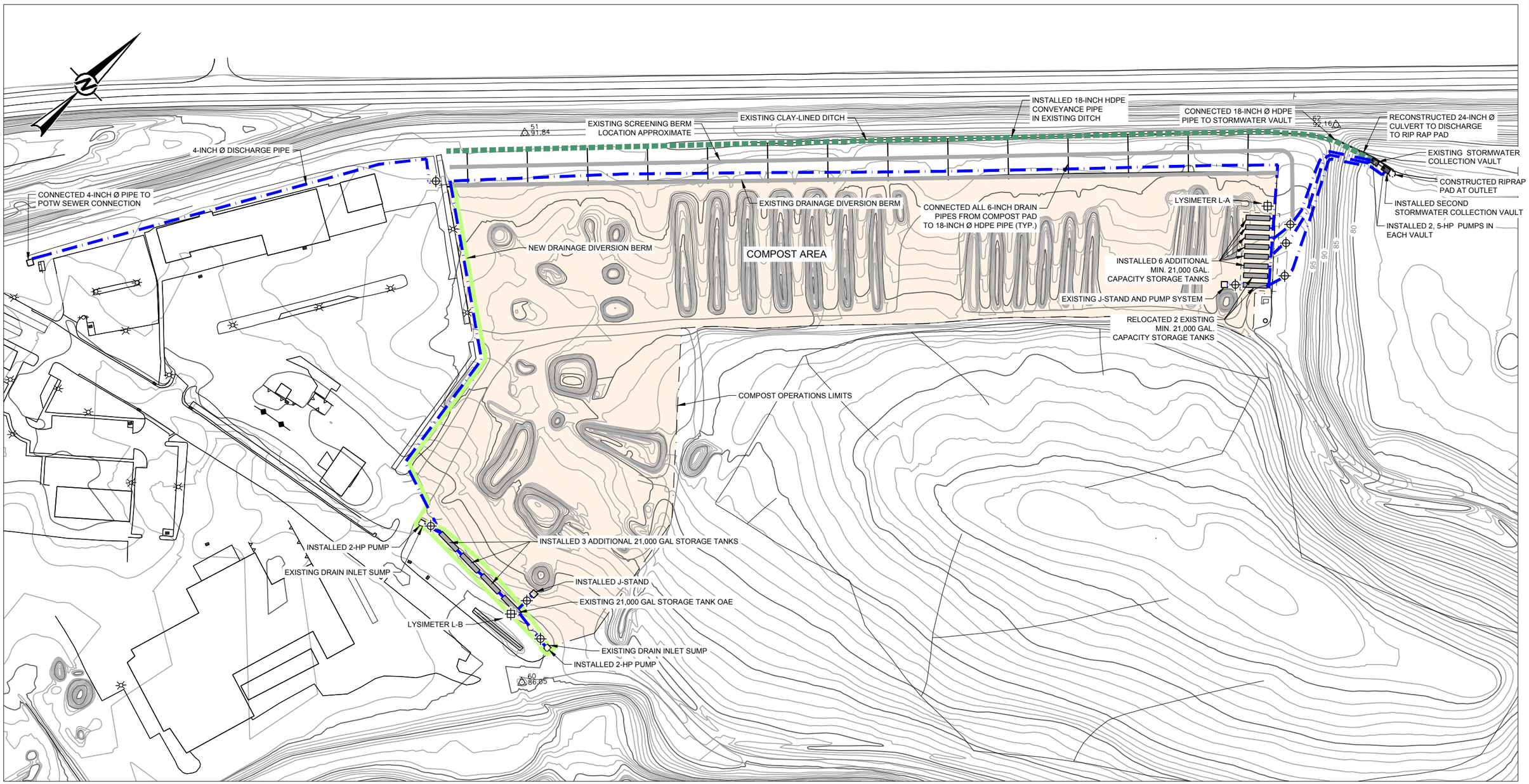
- 4-30-12 AERIAL MAPPING SPOT ELEVATION
- 4-30-12 AERIAL MAPPING CONTOUR
- 11-18-14 SURVEY SPOT ELEVATION

BOTH SURVEYS WERE PERFORMED USING NAVD 1988 VERTICAL DATUM & NAD 1983 HORIVONTAL COORDINATES

PREPARED BY:
M·H·M
1204 E STREET
MARYSVILLE, CA 95901
(530) 742-6485

RECOLOGY YUBA SUTTER FRO PAD SURVEY 11-18-14

FIGURE 2



GENERAL NOTES

1. TOPOGRAPHY PROVIDED BY AERIAL DATA INC. DATE OF TOPOGRAPHY: APRIL 30, 2012.

LEGEND

- 3-INCH OR 4-INCH Ø HDPE PIPE
- 18-INCH Ø HDPE PIPE
- FLOW METER
- LYSIMETER

0 80 160 240
FEET

Rev.	YYYY-MM-DD	DESCRIPTION	PREPARED	DESIGN	REVIEW	APPROVED
A	2014-11-11	CURRENT COMPLETED CONSTRUCTION	CMN	JK	JK	KH

CLIENT
RECOLOGY YUBA SUTTER
3001 NORTH LEVEE ROAD
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PROJECT
FEATHER RIVER ORGANICS
RECOLOGY YUBA SUTTER FACILITY
MARYSVILLE, CALIFORNIA

TITLE
COMPOST AREA STORMWATER IMPROVEMENTS

PROJECT No. 1301525 | Rev. A | 3 of 3 | FIGURE 3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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ATTACHMENT 1
COMPOST PAD SOIL TESTING

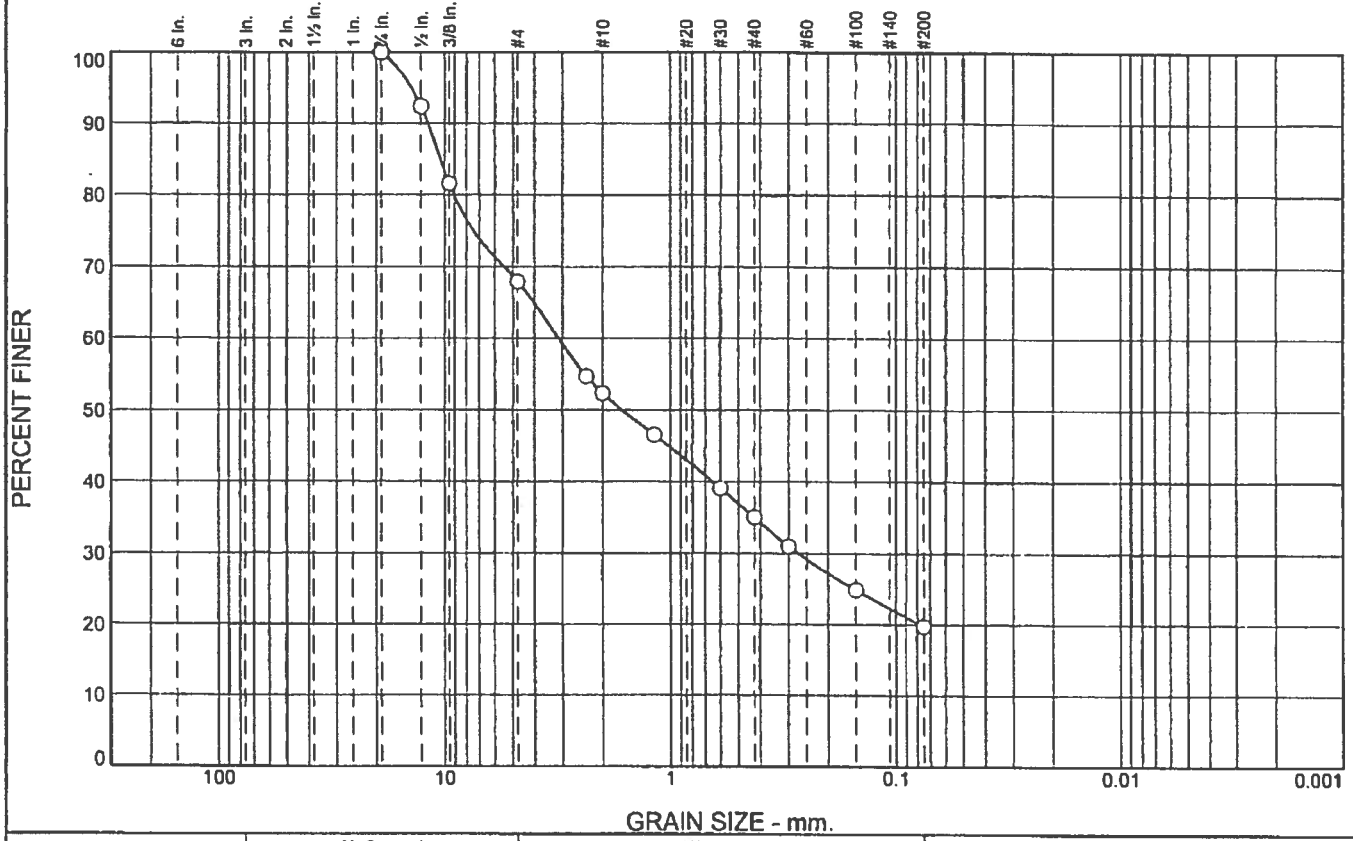
TABLE 1
SUMMARY OF MOISTURE/DENSITY TESTING
LOW-PERMEABILITY AGGREGATE COMPOST PAD
FEATHER RIVER ORGANICS, MARYSVILLE, CALIFORNIA
1301525

Location ID	Test Reference					In-Situ Values			Percent Relative Compaction	Pass/ Fail
	Date	Test Depth (in.)	Reference Curve Number	Maximum Dry Density (pcf)	Optimum Moisture Content	Wet Density (pcf)	Moisture Content	Dry Density (pcf)		
1	8/15/2014	6	1	125.7	11.0%	128.4	8.3%	118.5	94%	Pass
2	8/15/2014	6	1	125.7	11.0%	126.3	8.5%	116.4	93%	Pass
3	8/15/2014	6	1	125.7	11.0%	137.5	6.3%	129.9	103%	Pass
4	8/15/2014	6	1	125.7	11.0%	131.0	6.6%	122.9	98%	Pass
5	8/15/2014	6	1	125.7	11.0%	127.3	5.8%	120.4	96%	Pass
6	8/15/2014	6	1	125.7	11.0%	122.5	5.5%	116.1	92%	Pass
7	8/15/2014	6	1	125.7	11.0%	130.2	6.2%	122.6	98%	Pass
8	8/15/2014	6	1	125.7	11.0%	136.1	7.6%	126.5	101%	Pass
9	8/15/2014	6	1	125.7	11.0%	135.5	7.7%	125.9	100%	Pass
10	8/15/2014	6	1	125.7	11.0%	131.9	6.9%	123.4	98%	Pass
11	8/15/2014	6	1	125.7	11.0%	126.0	5.7%	119.2	95%	Pass
13	8/29/2014	6	1	125.7	11.0%	130.6	6.6%	122.5	97%	Pass
14	8/29/2014	6	1	125.7	11.0%	131.0	5.0%	124.7	99%	Pass
15	8/29/2014	6	1	125.7	11.0%	125.3	6.7%	117.4	93%	Pass
16	8/29/2014	6	1	125.7	11.0%	124.9	6.1%	117.7	94%	Pass
17	8/29/2014	6	1	125.7	11.0%	123.7	7.2%	115.4	92%	Pass
18	8/29/2014	6	22	130.1	8.7%	129.8	7.1%	121.1	93%	Pass
19	8/29/2014	6	22	130.1	8.7%	128.3	6.9%	120.3	92%	Pass
20	8/29/2014	6	22	130.1	8.7%	129.6	8.1%	119.9	92%	Pass
21	8/29/2014	6	22	130.1	8.7%	125.1	6.9%	117.0	90%	Pass
22	8/29/2014	6	22	130.1	8.7%	127.8	7.2%	119.3	92%	Pass
23	8/29/2014	6	22	130.1	8.7%	128.7	6.6%	120.7	93%	Pass
24	8/29/2014	6	22	130.1	8.7%	125.8	7.9%	116.7	90%	Pass
101	10/29/2014	6	105	128.5	10.4%	126.1	6.5%	118.4	92%	Pass
102	10/22/2014	6	105	128.5	10.4%	124.8	7.6%	116.0	90%	Pass
103	10/29/2014	6	105	128.5	10.4%	127.8	7.4%	119.0	93%	Pass
104	10/22/2014	6	105	128.5	10.4%	127.2	9.7%	116.0	90%	Pass
105	10/29/2014	6	105	128.5	10.4%	129.5	6.8%	121.3	94%	Pass
106	10/22/2014	6	105	128.5	10.4%	125.4	8.5%	115.5	90%	Pass
107	10/29/2014	6	105	128.5	10.4%	129.7	6.7%	121.5	95%	Pass
108	10/22/2014	6	105	128.5	10.4%	126.6	8.9%	116.3	91%	Pass
109	10/29/2014	6	105	128.5	10.4%	128.0	7.4%	119.2	93%	Pass
110	10/22/2014	6	105	128.5	10.4%	126.4	8.5%	116.5	91%	Pass
111	10/22/2014	6	105	128.5	10.4%	126.8	7.9%	117.5	91%	Pass
112	10/22/2014	6	105	128.5	10.4%	125.5	8.4%	115.8	90%	Pass

TABLE 2
SUMMARY OF GRAIN SIZE ANALYSIS TESTING
LOW-PERMEABILITY AGGREGATE COMPOST PAD
FEATHER RIVER ORGANICS, MARYSVILLE, CALIFORNIA
1301525

Test No.	Grain Size Analysis				Pass/ Fail
	> 1"	Gravel	Sand	Fines	
101	0%	32.1%	48.1%	19.8%	Pass
103	0%	34.0%	33.1%	32.9%	Pass
105	0%	29.6%	51.9%	18.5%	Pass
107	0%	29.0%	45.4%	25.6%	Pass
111	0%	46.4%	34.8%	18.8%	Pass

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	32.1	15.5	17.4	15.2	19.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 Inch	100.0		
1/2 Inch	92.5		
3/8 Inch	81.6		
#4	67.9		
#8	54.7		
#10	52.4		
#16	46.5		
#30	39.1		
#40	35.0		
#50	31.0		
#100	24.9		
#200	19.8		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 11.8311 D_{85}= 10.4158 D_{60}= 3.1356
D_{50}= 1.6409 D_{30}= 0.2727 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: 101
Sample Number: S43621

Date: 10/22/14

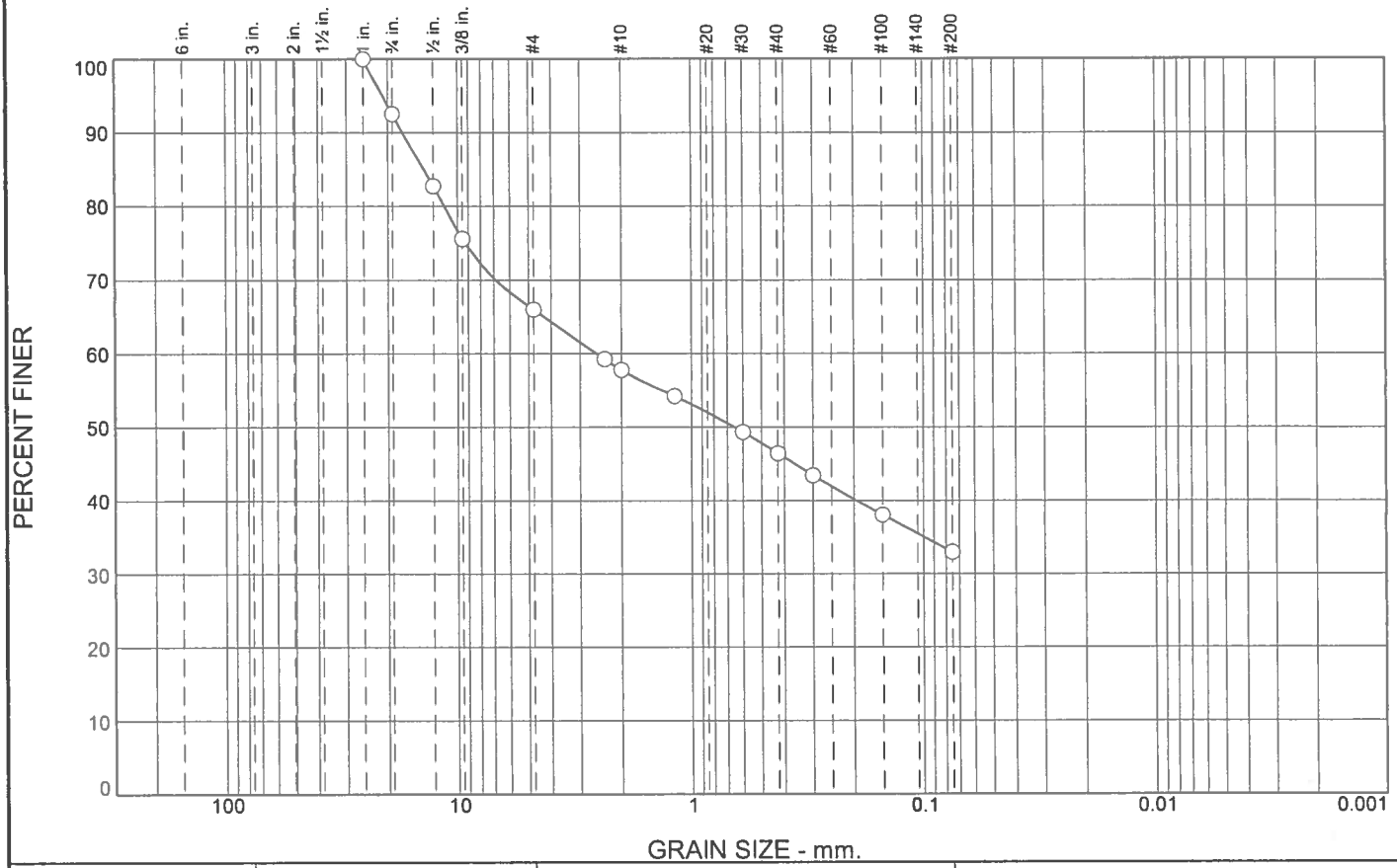
SIERRA TESTING LABS, INC.
El Dorado Hills, CA

Client: Golder Associates
Project: RYS Compost Pad CQA
339-7668
Project No: 14-108

Figure

Tested By: jm **Checked By:** MW

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.5	26.5	8.2	11.3	13.6	32.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
3/4	92.5		
1/2	82.8		
3/8	75.6		
#4	66.0		
#8	59.2		
#10	57.8		
#16	54.2		
#30	49.3		
#40	46.5		
#50	43.4		
#100	38.0		
#200	32.9		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 17.1551 D_{85}= 13.9075 D_{60}= 2.5627
D_{50}= 0.6522 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: ~~114~~ 103
Sample Number: 43636

Date: 10/31/14

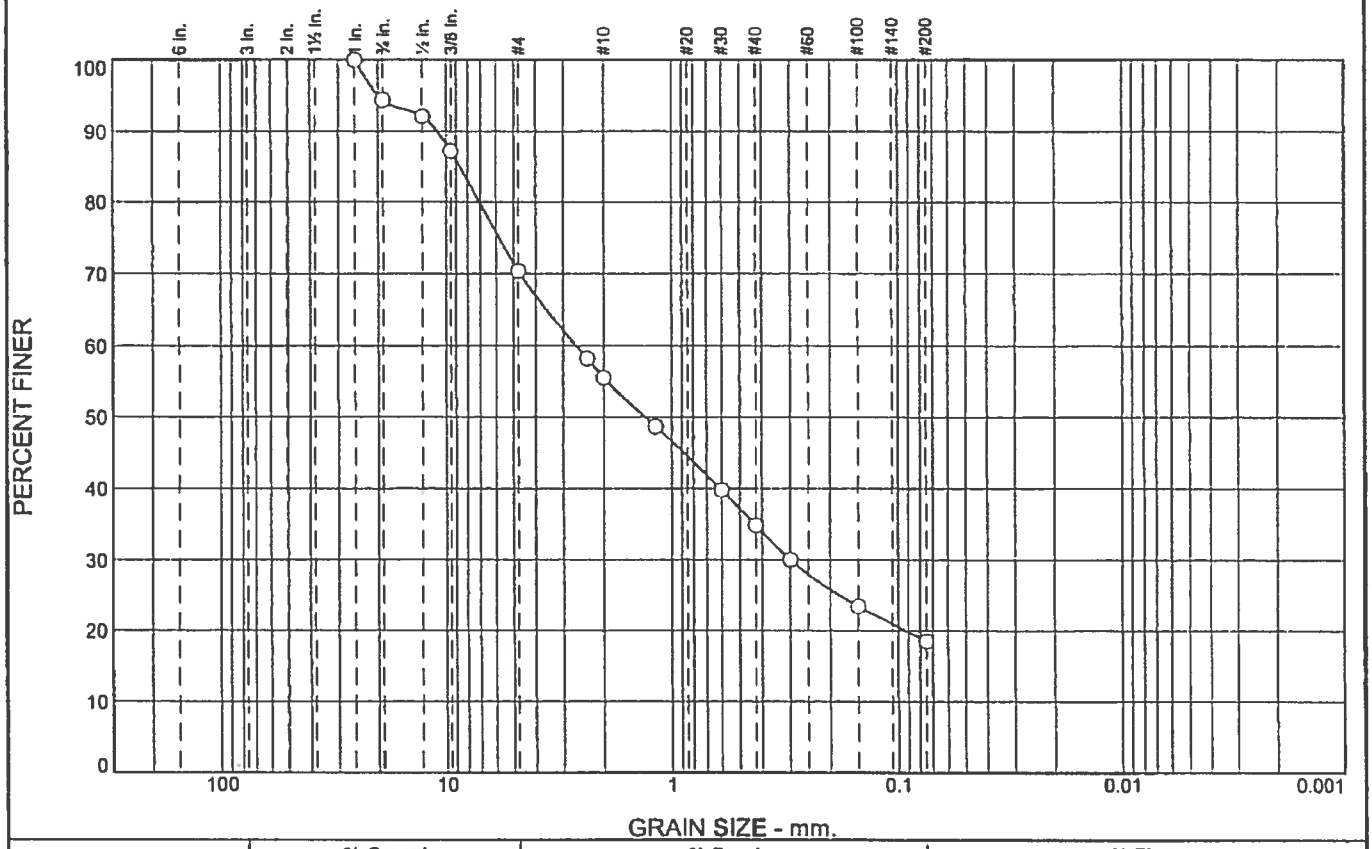
SIERRA TESTING LABS, INC.
El Dorado Hills, CA

Client: Golder Associates
Project: RYS Compost Pad CQA
339-7668
Project No: 14-108

Figure

Tested By: jm **Checked By:** mpw

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.6	24.0	14.9	20.7	16.3	18.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 Inch	100.0		
3/4 Inch	94.4		
1/2 Inch	92.1		
3/8 Inch	87.2		
#4	70.4		
#8	58.2		
#10	55.5		
#16	48.7		
#30	39.8		
#40	34.8		
#50	30.0		
#100	23.5		
#200	18.5		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 10.9182 D_{85}= 8.6526 D_{60}= 2.6378
D_{50}= 1.3181 D_{30}= 0.2990 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: 105
Sample Number: S43623

Date: 10/23/14

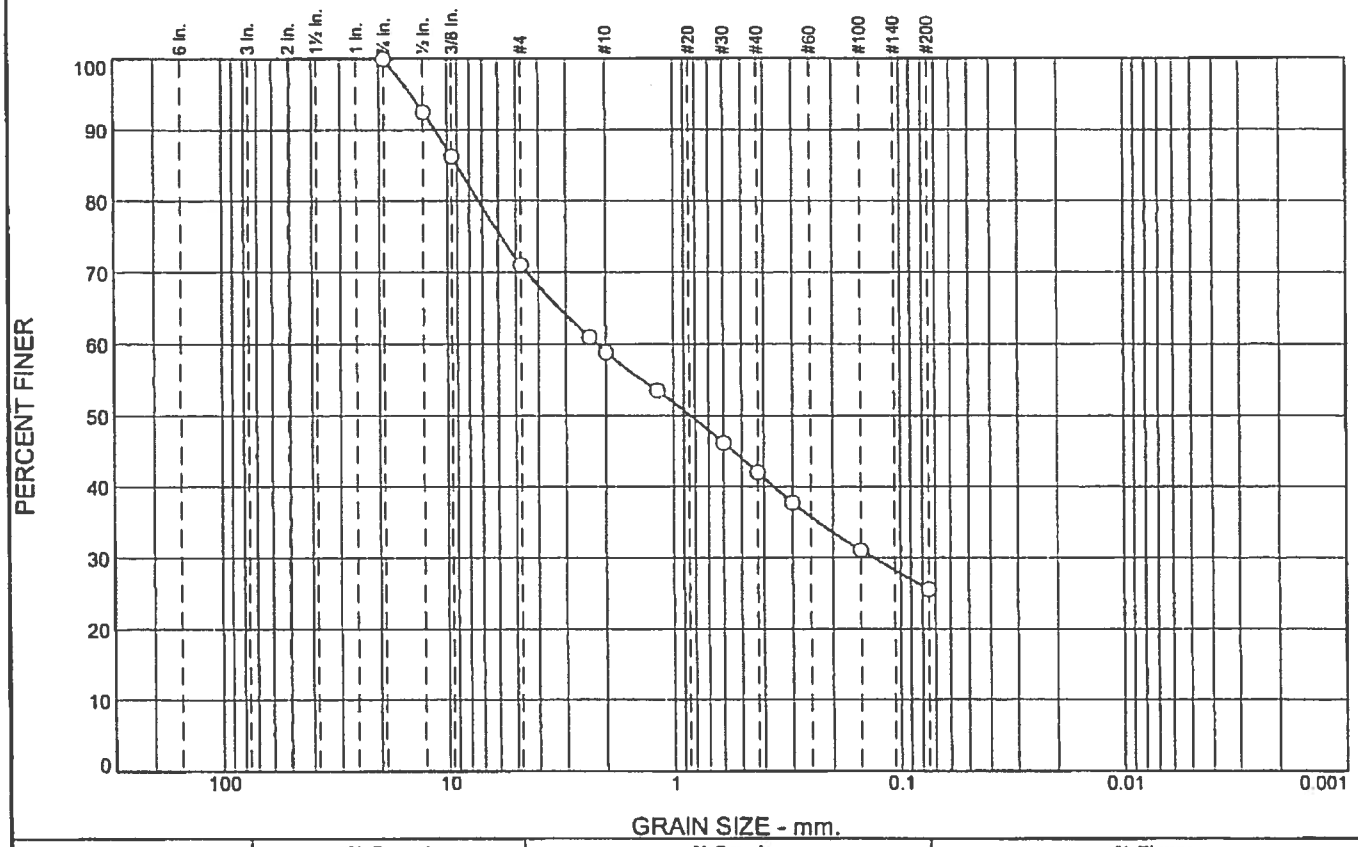
SIERRA TESTING LABS, INC.
El Dorado Hills, CA

Client: Golder Associates
Project: RYS Compost Pad CQA
339-7668
Project No: 14-108

Figure

Tested By: jm **Checked By:** MW

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	29.0	12.2	16.8	16.4	25.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 Inch	100.0		
1/2 Inch	92.5		
3/8 Inch	86.3		
#4	71.0		
#8	61.0		
#10	58.8		
#16	53.5		
#30	46.2		
#40	42.0		
#50	37.7		
#100	31.1		
#200	25.6		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 11.2655 D_{85}= 9.0117 D_{60}= 2.1917
D_{50}= 0.8394 D_{30}= 0.1314 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: 107
Sample Number: S43624

Date: 10/23/14

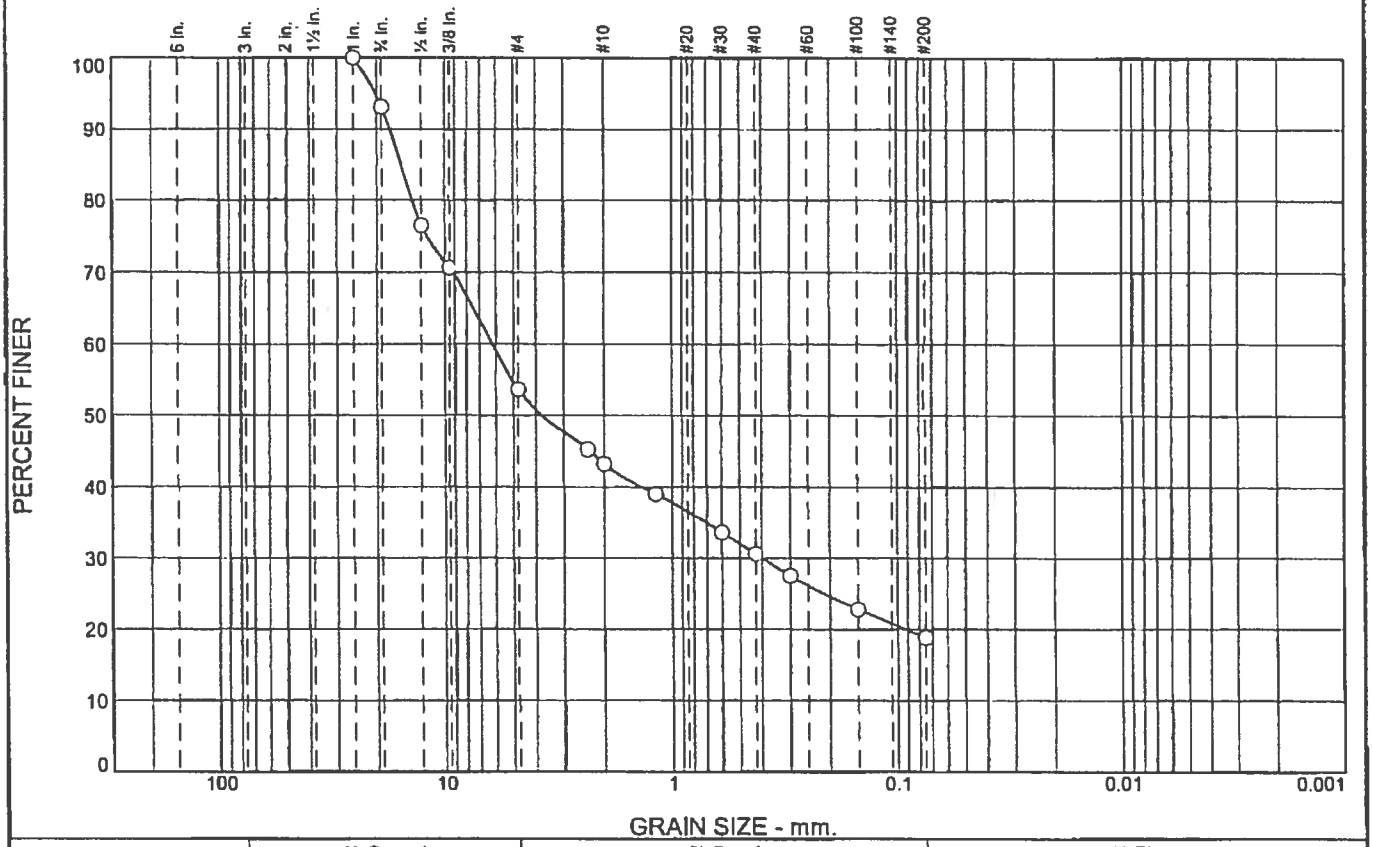
SIERRA TESTING LABS, INC.
El Dorado Hills, CA

Client: Golder Associates
Project: RYS Compost Pad CQA
339-7668
Project No: 14-108

Figure

Tested By: jm **Checked By:** MW

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.8	39.6	10.3	12.7	11.8	18.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 Inch	100.0		
3/4 Inch	93.2		
1/2 Inch	76.5		
3/8 Inch	70.7		
#4	53.6		
#8	45.3		
#10	43.3		
#16	39.0		
#30	33.6		
#40	30.6		
#50	27.5		
#100	22.8		
#200	18.8		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 17.5475 D_{85}= 15.6717 D_{60}= 6.1940
D_{50}= 3.7754 D_{30}= 0.3980 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: 111
Sample Number: S43626

Date: 10/23/14

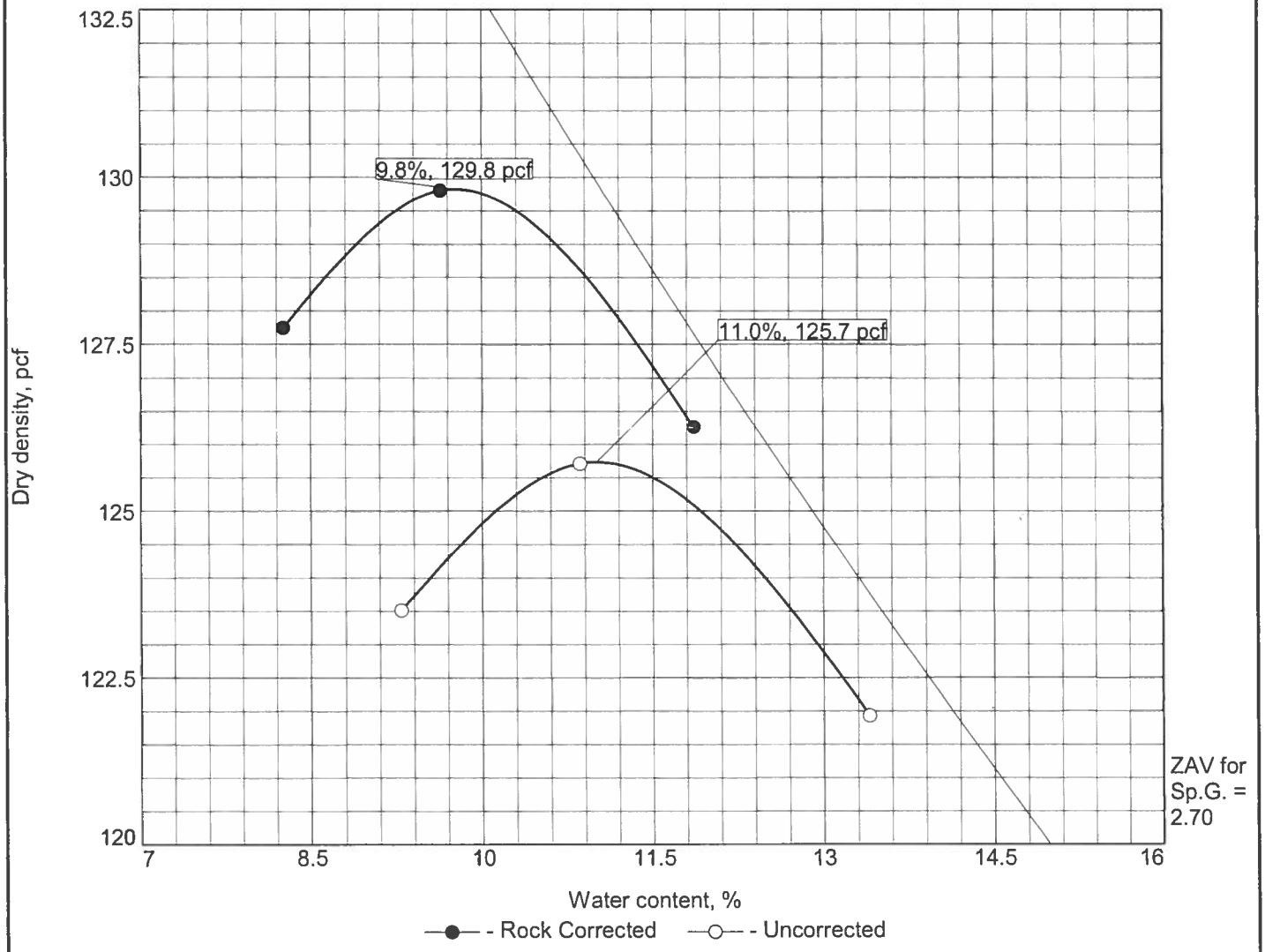
SIERRA TESTING LABS, INC.
El Dorado Hills, CA

Client: Golder Associates
Project: RYS Compost Pad CQA
339-7668
Project No: 14-108

Figure

Tested By: jm **Checked By:** MW

COMPACTION TEST REPORT



Test specification: ASTM D 1557-07 Method C Modified
ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
							12.4	

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 129.8 pcf	125.7 pcf	
Optimum moisture = 9.8 %	11.0 %	

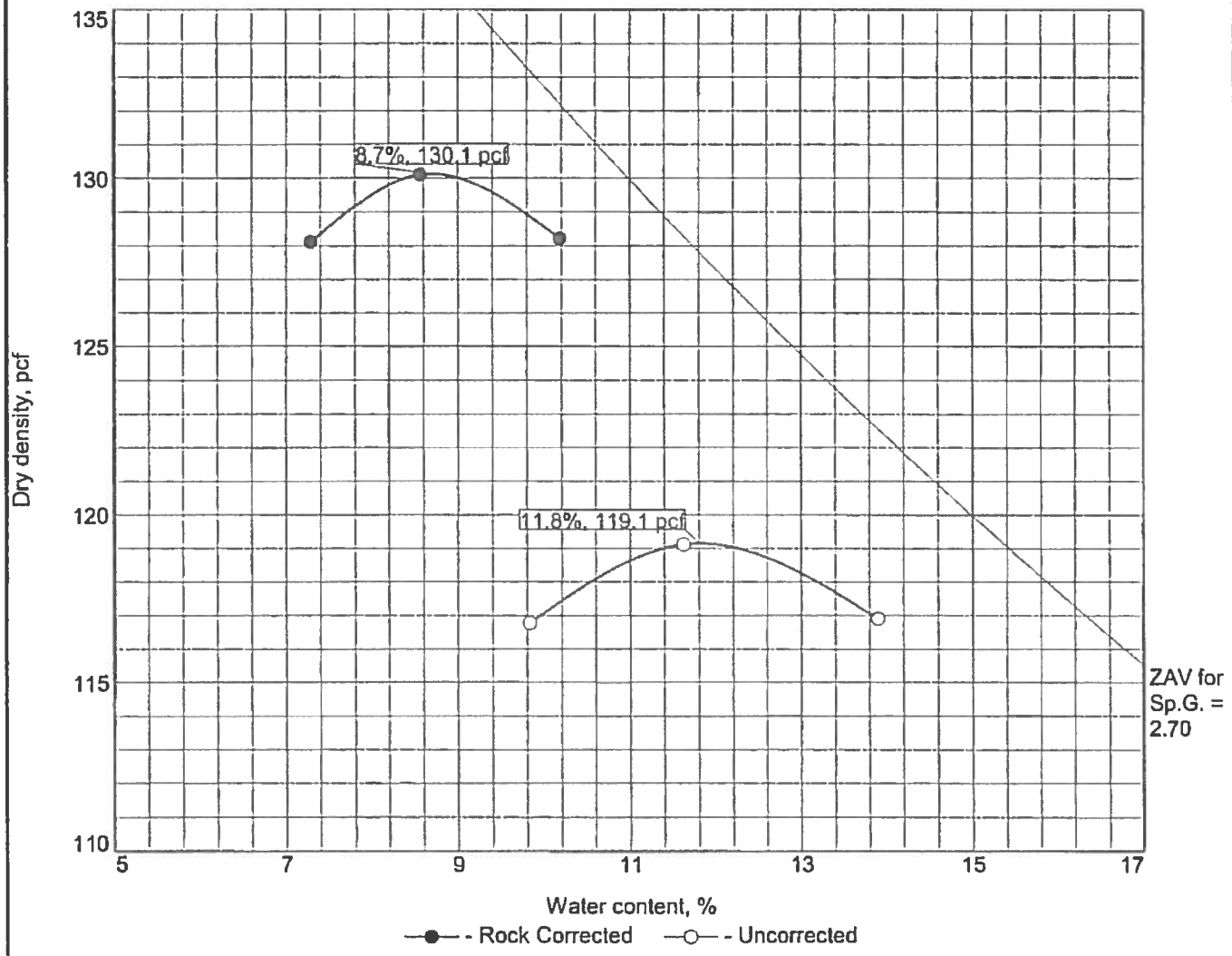
Project No. 14-092 **Client:** Golder Associates Inc
Project: Recology Yuba - Sutter
339-7668
○ **Location:** ~~Pit~~ **Sample Number:** S43301
Location No.1 **SIERRA TESTING LABS, INC.**
El Dorado Hills, CA

Remarks:

Figure

Tested By: jm **Checked By:** MW

COMPACTION TEST REPORT



Test specification: ASTM D 1557-07 Method B Modified
ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
							28.8	9.9

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 130.1 pcf	119.1 pcf	
Optimum moisture = 8.7 %	11.8 %	

Project No. 14-092 **Client:** Golder Associates Inc
Project: Recology Yuba - Sutter
339-7668
o **Location:** Location 22 **Sample Number:** S43407

SIERRA TESTING LABS, INC.

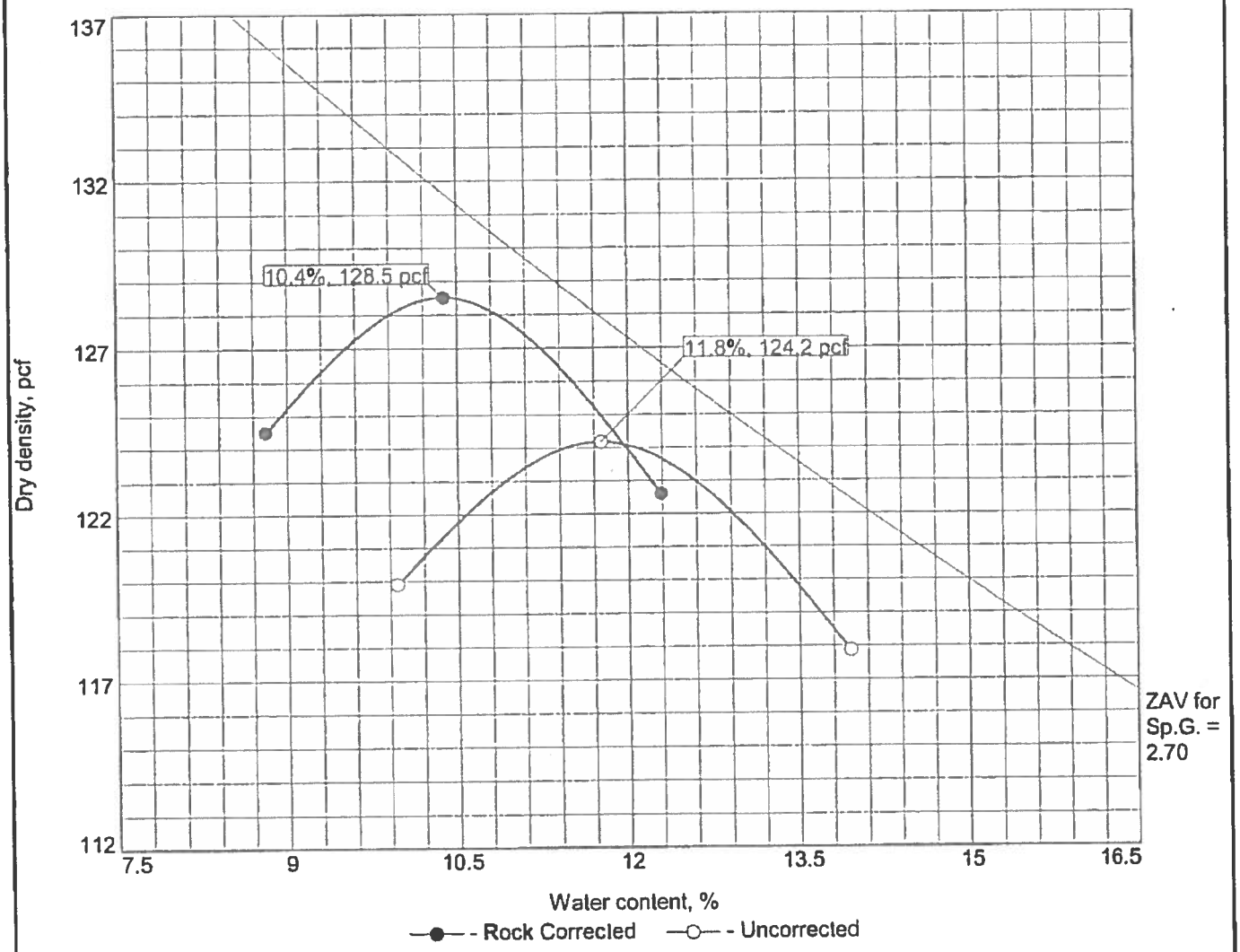
El Dorado Hills, CA

Remarks:

Figure

Tested By: jm **Checked By:** MW

COMPACTION TEST REPORT



Test specification: ASTM D 1557-07 Method B Modified
ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
							12.8	18.5

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 128.5 pcf	124.2 pcf	
Optimum moisture = 10.4 %	11.8 %	

Project No. 14-108 **Client:** Golder Associates
Project: RYS Compost Pad CQA
339-7668
o **Location:** 105 **Sample Number:** S43623

SIERRA TESTING LABS, INC.

El Dorado Hills, CA

Remarks:

Figure

Tested By: jf **Checked By:** MW

ATTACHMENT 2
LYSIMETER INSTALLATION LOGS

Lysimeter Construction Diagram

PROJECT NAME: RYS Lysimeter Install **DATE:** 9/22/2014

PROJECT #: 1411765

Drilling

L-A	WELL NUMBER OR NAME
4.5	LINEAR FEET OF DRILLING
4.0	LINEAR FEET OF COMPLETION
NA	LINEAR FEET OF ABANDONMENT

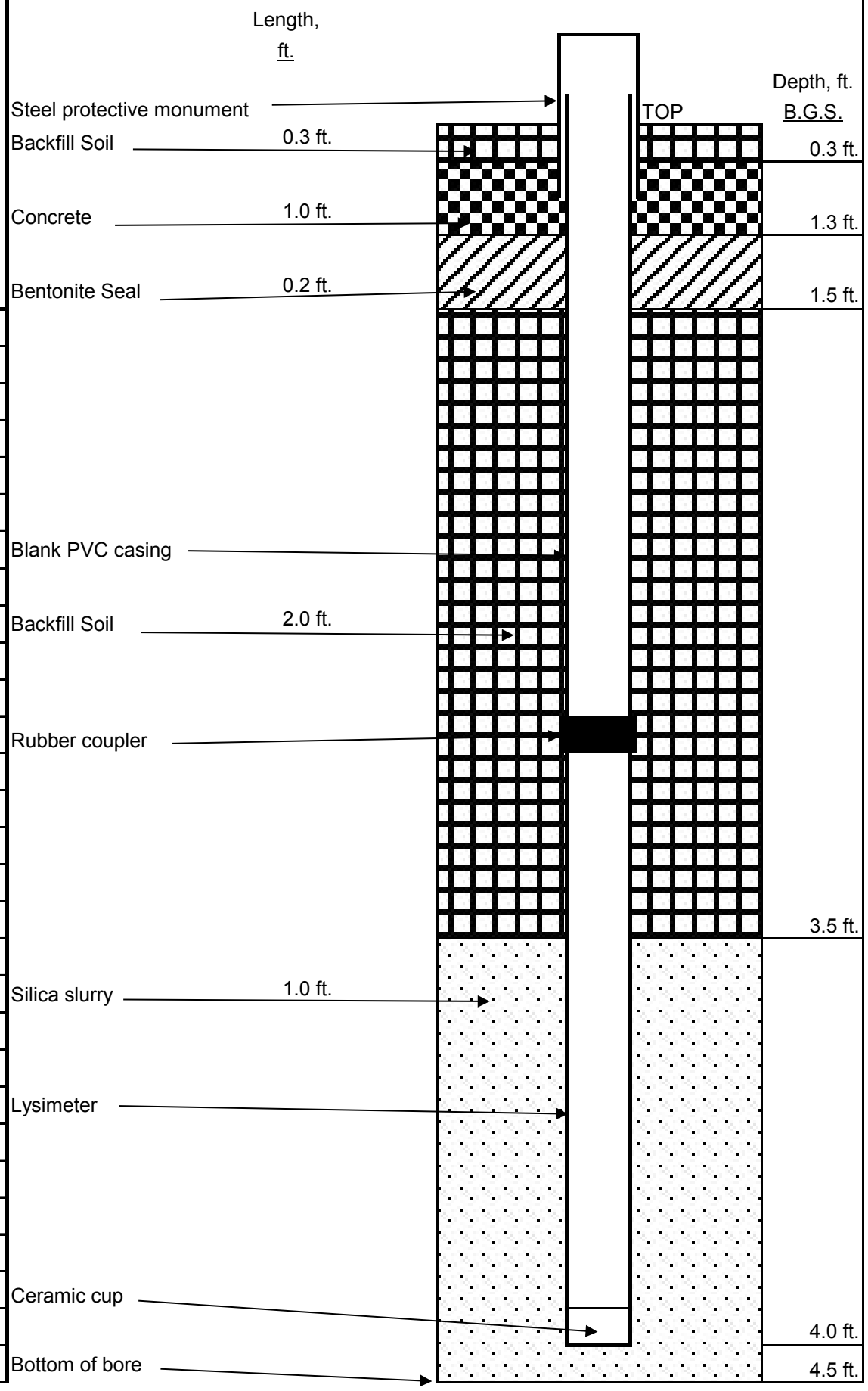
NOTES:

Borehole hand-augered. Lysimeter is a SoilMoisture 1920F1 Pressure-Vacuum Soil Water Sampler.

Silica slurry is 200 mesh silica flour mixed with water.

2-inch PVC blank casing attached to lysimeter with cinched rubber coupler.

Lysimeter Construction As-Built



Maxwell Todi 9/22/2014

GOLDER PERSONNEL DATE

Senior Field Technician

TITLE

Lysimeter Construction Diagram

PROJECT NAME: RYS Lysimeter Install **DATE:** 9/22/2014

PROJECT #: 1411765

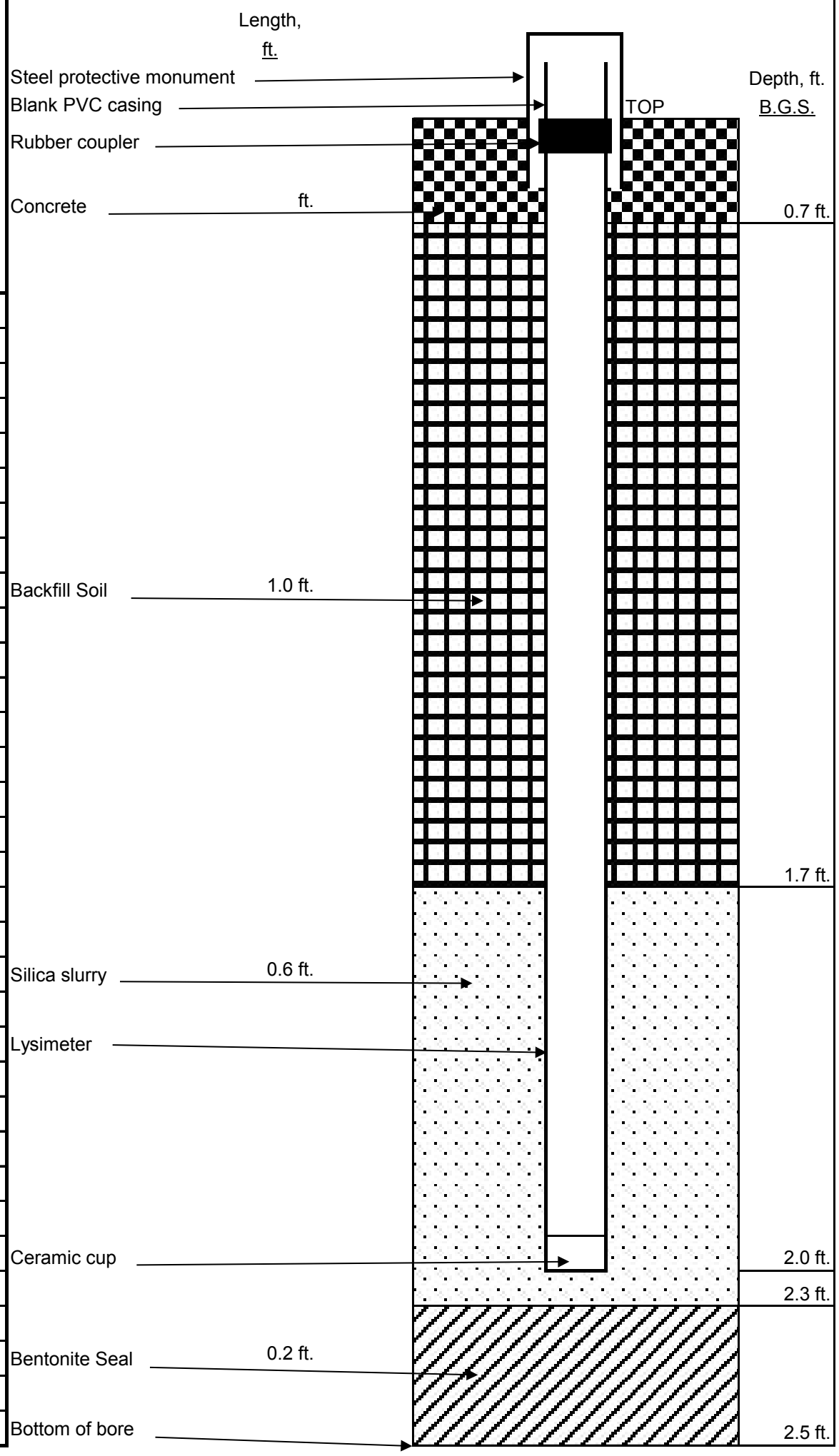
Drilling

L-B	WELL NUMBER OR NAME
2.5	LINEAR FEET OF DRILLING
2.0	LINEAR FEET OF COMPLETION
NA	LINEAR FEET OF ABANDONMENT

NOTES:

Borehole hand-augered. Lysimeter is a SoilMoisture 1920F1 Pressure-Vacuum Soil Water Sampler. Silica slurry is 200 mesh silica flour mixed with water. 2-inch PVC blank casing attached to lysimeter with cinched rubber coupler. Waste encountered at 2.5 feet below ground surface.

Lysimeter Construction As-Built



Maxwell Todi 9/22/2014

GOLDER PERSONNEL DATE

Senior Field Technician

TITLE

ATTACHMENT 3
COMPOST AREA IMPROVEMENTS PHOTOGRAPH LOG

Photo 1: Operator compacting compost pad. Low-permeability aggregate.

Photo 2: Operator excavating compost pad to install thickness marker.

FIGURE **A-1**

PROJECT PHOTOGRAPHS

Recology Yuba Sutter Compost Area Improvements

Photo 3: Laborer installs thickness marker.

Photo 4: View of improved compost pad in the southern area of compost operations.

FIGURE **A-2**
PROJECT PHOTOGRAPHS
Recology Yuba Sutter Compost Area Improvements

Photo 5: Diversion berm along southern perimeter of compost operations area.

Photo 6: Diversion berm along western perimeter of compost operations area.

FIGURE **A-3**

PROJECT PHOTOGRAPHS

Recology Yuba Sutter Compost Area Improvements

Photo 7: Typical installed Lysimeter.

Photo 8: Typical installed flow meter.

FIGURE **A-4**

PROJECT PHOTOGRAPHS

Recology Yuba Sutter Compost Area Improvements

Photo 9: View of northern pumps and piping associated with POTW discharge and J-stand fill station.

Photo 10: View of four Baker tanks located in the southern portion of the compost operations area.

FIGURE **A-5**

PROJECT PHOTOGRAPHS

Recology Yuba Sutter Compost Area Improvements

Photo 11: View of a portion of the 8 tanks located near the Hog farm .

Photo 12: View of the second vault and associated pipes.

FIGURE **A-6**

PROJECT PHOTOGRAPHS

Recology Yuba Sutter Compost Area Improvements