Appendix I. Compaction Testing Results

THE GALLI GROUP
GEOTECHNICAL CONSULTING
612 NW Third Street
Grants Pass, Oregon 97526

FIELD COMPACTION TESTS

Project: BLUE LEDGE MINE
Job Number: 4633
Project Location: ROGUE RIVER NATIONAL FOREST
Nuclear Gauge No.: ☒ 6525 (1) ☐ 7464 (2) ☐ 5875 (3)
Client: ERRG
Test Specification: ___% of ASTM D-698 (Standard)
90 % of ASTM D-1557 (Modified)
Date: 9/8/11
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TEST DATA

Test No.	Elevation ABOVE LINER	Soil / Rock Type	Maximum Lab Dry Density	Probe Depth (in)	Wet Density	Water - % Dry Weight	Dry Density	% Compaction	Moisture Bias
1	1'	BROWN SILTY	138.0	8"	134.0	8.5	123.5	90%	
2	1'	SAND W/	"	"	141.0	7.2	131.6	95%	
3	1'	GRAVEL	"	"	146.3	7.8	135.7	98%	

TEST LOCATION & COMMENTS:

1	100' SOUTH OF ENTRANCE RAMP MIDWAY UP SLOPE
2	CENTER OF TOP DECK
3	SOUTH END OF TOP DECK

REMARKS:

By: AARON REESER
ODOT# 44543

612 NW 3rd Street Grants Pass, Oregon Phone: (541) 955-1611 Fax: (541) 955-9150

THE GALLI GROUP
Geotechnical Consulting
612 NW Third Street
Grants Pass, OR 97526
Office: 541-955-1611 Fax: 541-955-8150

DAILY FIELD REPORT

Project:	Blue Ledge Mine	Project No.	02-4633-01
Date:	October 24, 2011	Time of Site Visit:	8:30 a.m.
Feature:	Nuclear Density Testing	Weather:	Cloudy/Cool
Client:	Engineering/Remediation Resources Group	Contractor:	ERRG
Building Permit No.:		**Address:**	Applegate, OR

At the request of Kim Jones (ERRG), the Galli Group was onsite to perform nuclear density testing of the soil "cap" (brown, silty Sand w/gravel) on the disposal cell at the Blue Ledge Mine removal project on 1060 Road in the Rogue River National Forest.

A total of six density tests were conducted. Three tests in the "cap" fill section (85% plus or minus 2 % compaction specification), and three tests in the road sub base (95% compaction specification) along the east side of the disposal cell. A sample of the fill material was collected for lab testing (ASTM D 1557 Method C). Based on the maximum laboratory dry density of 134.2 pcf, the test results indicated that the fill material for the "cap" was compacted to between 86 and 92 percent and the road subbase was compacted to 93 percent. Kim was informed of the test results. Please see the attached Field Compaction Tests sheet for specific test locations and results.

Aaron Reeser,
Technician
ODOT #44543

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THE GALLI GROUP
GEOTECHNICAL CONSULTING
612 NW Third Street
Grants Pass, Oregon 97526

FIELD COMPACTION TESTS

Project: BLUE LEDGE MINE

Job Number: 4633

Project Location: APPLEGATE, OR

Nuclear Gauge No.: ☐ 6525 (1) ☑ 7464 (2) ☐ 5875 (3)

Client: ERRG

Test Specification: * % of ASTM D-698 (Standard)
___ % of ASTM D-1557 (Modified)

Date: 10/24/11

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TEST DATA

Test No.	Elevation AT FINISH GRADE	Soil / Rock Type BROWN	Maximum Lab Dry Density	Probe Depth (in)	Wet Density	Water - % Dry Weight	Dry Density	% Compaction	Moisture Bias
1		SILTY SAND	134.2	12"	131.1	13.2	115.9	86%	
2		W/GRAVEL			138.9	11.4	124.7	93%	
3					138.7	11.2	124.7	93%	
4					139.4	11.4	125.1	93%	
5					139.4	13.2	123.2	92%	
6					132.3	14.9	115.2	86%	

TEST LOCATION & COMMENTS:

1	SOUTH SECTION 30' EAST OF WEST END, MID SLOPE
2	ROAD SUBBASE ON EAST EDGE OF TOP MID SECTION OF ROAD
3	" " 60' NORTH OF TEST #2
4	" " 160' NORTH OF TEST 2
5	TOP SECTION, CENTER
6	WEST SECTION CENTER, MID SLOPE

REMARKS: * TEST SPECS 85% ± 2% ON SLOPES & TOP
95% UNDER ROADWAY

By: AARON REESER ODOT
#44543

THE GALLI GROUP
Geotechnical Consulting

MOISTURE-DENSITY WORK SHEET

Client: Engineering/Remediation Resources Group
Project: Blue Ledge Mine
Job No: 02-4633-01
Date of Test: 10/26/11
Test Standard: ASTM D-1557 C
Visual Classification: Brown, silty Sand with gravel
Sample Date: 10/26/11
Sample Location: Road sub base fill section

Maximum Dry Density (PCF): **130.0** (without rock correction)
Optimum Moisture Content: **8.7%** (without rock correction)

volume of mold (cu. ft.)	0.0750				
wet weight of soil + mold (lb)	23.06	23.05	22.67	22.78	22.46
weight of mold (lb)	12.40	12.40	12.40	12.40	12.40
wet weight of compacted soil (lb)	10.66	10.65	10.27	10.38	10.06
wet density (lbs/cu. ft.)	142.1	142.0	136.9	138.4	134.1
dry density (lbs/cu. ft.)	129.8	127.5	120.9	129.3	127.0

can no.	C-5	A-3	A-2	A-1	X-4
wet weight of soil + can (g)	1497.9	1537.1	1488.6	1420.4	1606.7
dry weight of soil + can (g)	1391.3	1400.8	1337.4	1340.1	1534.6
weight of can (g)	267.4	203.3	193.6	201.4	253.5
weight of dry soil (g)	1123.9	1197.5	1143.8	1138.7	1281.1
weight of water (g)	106.6	136.3	151.2	80.3	72.1
moisture content (%)	9.5	11.4	13.2	7.1	5.6

Oversize Correction:

Total Weight of Sample (lb): 102.06

Weight Retained on No. 4 Sieve (lb):	0.00	Percent Retained on No. 4 Sieve:	0.0%
Weight Retained on 3/8" Sieve (lb):	0.00	Percent Retained on 3/8" Sieve:	0.0%
Weight Retained on 3/4" Sieve (lb):	15.05	Percent Retained on 3/4" Sieve:	14.7%

Corrected Maximum Dry Density (PCF): **134.2**

Corrected Moisture (%): **7.6%**

By: Aaron Reeser

THE GALLI GROUP
Geotechnical Consulting

Client: Engineering/Remediation Resources Group
Project: Blue Ledge Mine
Job No: 02-4633-01
Date of Test 10/26/2011
Method of Test: ASTM D-1557 C
Visual Classification: Brown, silty Sand with gravel
Sample Date: 10/26/2011
Sample Location: Road sub base fill section

Maximum Dry Density (PCF): 134.2
Optimum Moisture Content: 7.6%