



ATLAS

GRAVEL QUALITY ANALYSIS

PROPOSED GRAVEL PIT

Power Road

Ontario, OR

PREPARED FOR:

Mr. Darren Lee
4 Lee's Excavation
515 Noble Road
Ontario, OR 97914

PREPARED BY:

Atlas Technical Consultants, LLC
2791 South Victory View Way
Boise, ID 83709

January 5, 2021
B201982g

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Atlas No. B201982g

Mr. Darren Lee
4 Lee's Excavation
515 Noble Road
Ontario, OR 97914


**Subject: Gravel Quality Analysis
Proposed Gravel Pit
Power Road
Ontario, OR**

Dear Mr. Lee:

In compliance with your instructions, Atlas has conducted a gravel quality analysis for the above referenced development. Mr. Darren Lee with 4 Lee's Excavation requested rock quality testing to achieve Goal 5 Inventory per the Oregon Department of Land Conservation and Development. To achieve this, it was requested that three tests be conducted. The tests conducted include Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine – AASHTO T 96, Soundness of Aggregate by Use of Sodium Sulfate – AASHTO T 104, and Oregon Air Aggregate Degradation – ODOT TM 208. The results of these tests are presented in the **Appendix**. Atlas met Mr. Darren Lee onsite on December 3, 2020 to collect the samples from the requested area. This report does not include gravel quantity calculations.

If you have any questions, please call us at (208) 376-4748.

Respectfully submitted,


Jacob Schlador, PE
Geotechnical Engineer

Elizabeth Brown, PE
Geotechnical Services Manager

Appendix I WARRANTY AND LIMITING CONDITIONS

Exclusive Use

This report was prepared for exclusive use of the property owner(s), at the time of the report, and their retained design consultants (“Client”). Results presented in this report are based on the agreed-upon scope of work outlined in this report together with the Contract for Professional Services between the Client and Materials Testing and Inspection (“Consultant”). Use or misuse of this report, or reliance upon findings hereof, by parties other than the Client is at their own risk. Neither Client nor Consultant make representation of warranty to such other parties as to accuracy or completeness of this report or suitability of its use by such other parties for purposes whatsoever, known or unknown, to Client or Consultant. Neither Client nor Consultant shall have liability to indemnify or hold harmless third parties for losses incurred by actual or purported use or misuse of this report. No other warranties are implied or expressed.

This report is also limited to information available at the time it was prepared. In the event additional information is provided to Atlas following publication of our report, it will be forwarded to the client for evaluation in the form received.

Appendix II LA ABRASION TEST RESULTS – AASHTO T96

| | | | | | | | | |
|----------------------------------|--|--|-------------|---|------------|--|-------------|---|
| Source: | Power Road, Ontario, 3-inch-minus Poorly Graded Gravel with Sand | | | | | | | |
| Date Obtained: | December 3, 2020 | | | | | | | |
| Sample ID: | 20-5245 | | | | | | | |
| Sampling and Preparation: | ASTM D75: | | AASHTO T2: | X | ASTM D421: | | AASHTO T87: | X |
| Test Standard: | ASTM C131: | | AASHTO T96: | X | | | | |

| | |
|-----------------------------------|----|
| Nominal Maximum Size of Aggregate | 3" |
| Grading Designation | A |
| Loss by Abrasion (%) | 20 |

Specification: 35% Maximum

Appendix III SOUNDNESS TEST RESULTS – AASHTO T104

| | | | | | | |
|----------------------------------|--|---|--------------|---|------------------|-------------|
| Source: | Power Road, Ontario, 3-inch-minus Poorly Graded Gravel with Sand | | | | | |
| Date Obtained: | December 3, 2020 | | | | | |
| Sample ID: | 20-5245 | | | | | |
| Sampling and Preparation: | ASTM D75: | | AASHTO T2: | X | ASTM D421: | AASHTO T87: |
| Test Standard: | ASTM C88: | | AASHTO T104: | X | | |
| Solution: | Sodium: | X | Magnesium: | | Fresh Prepared: | X |
| | | | | | Previously Used: | |

Coarse Aggregate

| Sieve Size | | Weight of Test Fraction Before Test | % Passing Designated Sieve After Test | Weighted % Loss |
|------------|----------|-------------------------------------|---------------------------------------|-----------------|
| Passing | Retained | | | |
| 2.5" | 2.0" | 2751.1 | 0.1 | 0.0 |
| 2.0" | 1.5" | 2012.8 | | |
| 1.5" | 1.0" | 1007.5 | 0.2 | 0.1 |
| 1.0" | ¾" | 511.0 | | |
| ¾" | ½" | 670.4 | 1.6 | 0.3 |
| ½" | 3/8" | 330.9 | | |
| 3/8" | #4 | 300.2 | 1.7 | 0.2 |
| | | | Total | 0.6 |

Specification: 12% Maximum

**Appendix IV OREGON AIR AGGREGATE DEGRADATION – ODOT
TM 208**

| | | | | | | | | |
|----------------------------------|--|--|-------------|---|------------|--|-------------|---|
| Source: | Power Road, Ontario, 3-inch-minus Poorly Graded Gravel with Sand | | | | | | | |
| Date Obtained: | December 3, 2020 | | | | | | | |
| Sample ID: | 20-5245 | | | | | | | |
| Sampling and Preparation: | ASTM D75: | | AASHTO T2: | X | ASTM D421: | | AASHTO T87: | X |
| Test Standard: | ASTM C131: | | AASHTO T96: | X | | | | |

| | | |
|-----------------|-----------------|------|
| No. 20 Sieve | Percent Passing | 2.6 |
| Sand Equivalent | Sediment Height | 0.1" |

Specification: 30% maximum passing, and 3" maximum

