

STATE OF MONTANA

JOB DESCRIPTION

Montana state government is an equal opportunity employer. The State shall, upon request, provide reasonable accommodations to otherwise qualified individuals with disabilities.

Job Title: Materials Lab Technician Location: Helena HQ

Position Number: 40014; 40018; 40022; 40052; 40070; 40106; 40109; 40112; aggregate temporary positions 94032.

Department: Transportation

Program Area and Bureau: Project Development & Delivery/Materials Bureau

Section and Unit: Physical Testing Section/Testing Operations Unit

Job Overview: This position is responsible for laboratory testing of a variety of materials used in highway and bridge construction and maintenance to ensure compliance with project specifications and State and Federal regulations. The test results also provide information to design staff, contractors, and project managers on the development and application of materials. Technical testing procedures vary based on the specific section e.g. Bituminous Mix Design or Asphalt Properties. The position reports to the Lab Supervisor in the assigned section.

Essential Functions (Major Duties or Responsibilities):

Materials Testing – 75%

Perform various tests to ensure material complies with established standards, project specifications, and independent assurance and final record requirements. The duties of this position are primarily performed in one of the areas of the Testing Section which include Bituminous Mix Design, Asphalt Binder Properties, Concrete Mix Design, Aggregate Testing, Geo-Textile Testing, pre-cast Concrete Inspection, Nuclear Densometer Gauge Testing, etc. This position is expected to be capable of performing in all these areas. Specific tasks include:

- Gyrotory testing of cylindrical specimens of bituminous paving mix to determine asphalt content, percent air voids and other volumetric mixture properties, including voids in mineral aggregate, voids filled with asphalt, dust-asphalt ratio, and dust proportion.
- Analyzing and interpreting data to identify discrepancies and providing recommendations for mix design alterations. This position is responsible for reporting non-typical sample data to the supervisor along with recommendations as to the cause of the results.

- Verifying properties of Performance Graded Asphalt Binders and Asphalt Emulsions.
- Performing sieve analysis on coarse and fine aggregates to determine particle size distribution.
- Performing R-value, Micro Deval, and Sodium Sulfate testing on a variety of soils and aggregates for special borrow source approval, pit approval, and soils surveys.
- Conducting inspections of seed and fertilizer intended for use on construction projects to ensure compliance with project specifications, State seed laws and fertilizer use regulations.
- Conducting inspections of pre-fabricated
- With appropriate certification, perform compressive strength testing of cementitious materials such as concrete, shotcrete, cement treated base, cement grout, and CLSM.
- Performing other miscellaneous tests on items such as pavement markings, soils, fencing materials, crack sealer, and geo-textiles.
- Performing bridge deck inspection activities using various equipment such as core drills, GPR, chain drag, etc.

Test Procedures and Processes – 15%

Assist in the development and refinement of new test procedures and processes.

Maintenance of Laboratory Equipment – 5%

Maintain and repair laboratory testing equipment to ensure safety, accuracy and proper operation, as well as contain costs and extend life.

Supply Inventory – 5%

Assists the supervisor in ordering supplies and equipment. This involves monitoring supply levels, preparing order forms, and projecting needs based on work load.

This position is covered by the Materials Lab Advancement Policy; therefore, assigned duties, responsibilities, and related pay band/classification levels will be in accordance with an individual's qualifications, education, training, and work experience and Advancement Policy status.

Supervision: The number of employees supervised is: 0

Physical and Environmental Demands:

- Ability to lift 35 pounds repeatedly (concrete cylinders, sample bags, Marshall hammers, etc.)
- Manipulation of testing equipment (Gilson shakers, compaction devices, etc.)
- Bending, lifting, remaining standing or walking (within the lab) for extended periods

- Work with high temperatures (350° F) material and equipment (ovens, molds, liquid asphalt, etc.)
- Work with caustic chemicals and solvents (lime, acids, solvents, etc.)
- Exposure to dust and noise
- Operate electronic equipment (computers, calculators, etc.)

Knowledge, Skills and Abilities (Behaviors):

Knowledge:

The position requires understanding of materials inspection and testing procedures; the properties and characteristics of various materials; laboratory testing protocols and procedures; highway construction methods and techniques; and applicable safety practices

Skills:

The position requires skills in operating a variety of testing equipment; both mechanical and electrical; and analog and digital. It also requires skill in performing calculations, using computer software, interpreting results, maintaining accuracy and precision, attention to detail, time management, flexibility, adaptability, and comprehending plans and specifications.

Minimum Qualifications (Education and Experience):

Level I: The required knowledge and skills are typically acquired through a combination of education and experience equivalent to a high school diploma or equivalent.

Level II: The required knowledge and skills are typically acquired through a combination of education and experience equivalent to a high school diploma or equivalent and one year of materials lab technician related work experience or qualification based upon Helena Materials Lab Advancement Policies.

Level III: The required knowledge and skills are typically acquired through a combination of education and experience equivalent to a high school diploma or equivalent and two years of materials lab technician related work experience or qualification based upon Helena Materials Lab Advancement Policies.

Alternative qualifications include: Combinations of additional related work experience and education equivalent to the minimum qualifications may be considered.

Special Requirements:

Fingerprint check

Background check

MFPE - 035 Union Code

Other; Describe

Valid driver's license

Safety Responsibilities

The specific statements shown in each section of this description are not intended to be all inclusive. They represent typical elements and criteria considered necessary to perform the job successfully.

Signatures

My signature below indicates the statements in the job description are accurate and complete.

Immediate Supervisor	Title	Date
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Administrative Review	Title	Date
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My signature below indicates that I have read this job description.

Employee	Title	Date
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Human Resources Review

Job Code Title: Materials Inspection Tech Job Code Number:

My signature below indicates that Human Resources has reviewed this job description for completeness and has made the following determinations:

- | | |
|---|--|
| <input type="checkbox"/> FLSA Exempt | <input checked="" type="checkbox"/> FLSA Non-Exempt |
| <input type="checkbox"/> Telework Available | <input checked="" type="checkbox"/> Telework Not Available |
| <input checked="" type="checkbox"/> Classification Complete | <input type="checkbox"/> Organizational Chart attached |

Human Resources:

Signature	Title	Date
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