ChecklistGuro

Soil Compaction Assessment

Site Preparation & Background Information

Gather necessary information about the site, including history, planned use, and any previous compaction issues. Document existing conditions before assessment.

Project Name/Identifier

Write something...

Assessment Date

Enter date...

Site Coordinates (Latitude/Longitude)

Set My Current Location

Brief Site Description (Land Use, Topography)

Write something...

Previous Land Use (Select all that apply)

- [ ] Cropland
- [ ] Pasture
- [ ] Forest
- [ ] Urban/Developed
- [ ] Other (Specify)

History of Heavy Equipment Use (if any)

Write something...

Elevation (meters/feet)

Enter a number...

Known Compaction Issues or Concerns?

Write something...

Equipment & Tools

Ensure all necessary equipment and tools are available, calibrated, and in working order.

Penetrometer Calibration Value (kg/cm²)

Enter a number...

Penetrometer Type

- [ ] Digital
- [ ] Manual

Penetrometer Calibration Certificate (if applicable)

Upload File

NDG Serial Number (if applicable)

Enter a number...

NDG Moisture Gauge Calibration Status (if applicable)

- [ ] Calibrated
- [ ] Needs Calibration

Soil Core Sampler Type (if used)

Write something...

Other Tools Present (check all that apply)

- [ ] Tape Measure
- [ ] GPS Device
- [ ] Camera
- [ ] Soil Core Sampler

Visual Assessment

Perform a visual inspection of the soil surface to identify signs of compaction.

Observe and select any visible signs of compaction:

- [ ] Cracks in soil surface
- [ ] Standing water on surface
- [ ] Reduced infiltration rate
- [ ] Stunted root growth
- [ ] Uneven soil surface
- [ ] Soil pans (hard layers)
- [ ] None observed

Describe any unusual soil structure observed (e.g., massive, platy, blocky).

Write something...

Record the location of observed compaction symptoms using GPS.

Set My Current Location

Estimate the percentage of the assessed area exhibiting signs of compaction.

Enter a number...

Document any previous land use or activities that may have contributed to compaction (e.g., heavy machinery use, livestock grazing).

Write something...

Upload photos illustrating visible compaction symptoms.

Upload File

Penetrometer Testing

Conduct penetrometer tests at various locations to quantify soil compaction. Record depth and readings.

Penetrometer Reading (Depth: 0-15cm)

Enter a number...

Penetrometer Reading (Depth: 15-30cm)

Enter a number...

Penetrometer Reading (Depth: 30-60cm)

Enter a number...

GPS Coordinates of Test Location

Set My Current Location

Description of Soil Type at Test Location

Write something...

Soil Moisture Content (if measured)

Enter a number...

Method Used for Penetrometer Test (e.g., manual, automated)

- [ ] Manual
- [ ] Automated

Notes on Penetrometer Test (e.g., resistance felt, any unusual observations)

Write something...

Nuclear Density Gauge (NDG) Testing (if applicable)

If NDG testing is being used (ensure proper licensing and training), document procedures and results.

NDG Moisture Content Reading (Initial)

Enter a number...

NDG Density Reading (Dry)

Enter a number...

NDG Density Reading (Wet)

Enter a number...

Gauge Calibration Status

- [ ] Calibrated - Within Date
- [ ] Calibrated - Expired
- [ ] Not Calibrated

Gauge Calibration Expiration Date

Enter date...

NDG Operator Name

Write something...

Notes on Gauge Performance/Issues Observed

Write something...

GPS Coordinates of NDG Testing Location

Set My Current Location

Soil Sampling & Laboratory Testing (if applicable)

Collect soil samples for laboratory analysis to determine soil moisture content and compaction characteristics.

GPS Coordinates of Sample Location

Set My Current Location

Sample Depth (cm)

Enter a number...

Soil Moisture Content (%)

Enter a number...

Dry Density (g/cm³)

Enter a number...

Bulk Density (g/cm³)

Enter a number...

Soil Type

- [ ] Sandy
- [ ] Silty
- [ ] Clay
- [ ] Loamy
- [ ] Other

Laboratory Notes & Observations

Write something...

Laboratory Report (PDF)

Upload File

Data Analysis & Interpretation

Analyze collected data to determine the extent and severity of soil compaction.

Average Penetrometer Reading (N)

Enter a number...

Range of Penetrometer Readings (Minimum - Maximum)

Enter a number...

Soil Moisture Content (%)

Enter a number...

Soil Type (Based on Assessment)

- [ ] Sandy
- [ ] Loamy
- [ ] Clayey
- [ ] Silty
- [ ] Other (Specify)

Qualitative Assessment of Compaction (e.g., Minor, Moderate, Severe)

Write something...

Comparison to Acceptable Limits (if available)

- [ ] Within Acceptable Range
- [ ] Slightly Exceeds Limits
- [ ] Significantly Exceeds Limits
- [ ] No Limits Available

Notes on Potential Impact of Compaction (e.g., Root Growth, Water Infiltration)

Write something...

Bulk Density (g/cm³)

Enter a number...

Reporting & Recommendations

Prepare a detailed report outlining the assessment findings, including recommendations for remediation if needed.

Summary of Findings

Write something...

Overall Compaction Severity Score (1-10)

Enter a number...

Primary Cause of Compaction (if identified)

- [ ] Heavy Machinery
- [ ] Livestock Traffic
- [ ] Tillage Practices
- [ ] Natural Processes
- [ ] Unknown

Recommended Remediation Techniques (Select all that apply)

- [ ] Reduced Tillage
- [ ] Cover Cropping
- [ ] Amendment Application (e.g., compost, gypsum)
- [ ] Controlled Traffic Patterns
- [ ] Aeration
- [ ] Subsoiling

Detailed Remediation Plan

Write something...

Estimated Cost of Remediation (USD)

Enter a number...

Date of Next Assessment

Enter date...

Assessor Signature

Supporting Documentation (maps, photos, calculations)

Upload File

Documentation & Record Keeping

Maintain thorough records of the assessment, including data, photos, and any corrective actions taken.

Assessment Date

Enter date...

Assessment Time

Assessor Name

Write something...

Detailed Notes/Observations

Write something...

Number of Test Locations

Enter a number...

Photos of Assessment Site

Upload File

Equipment Calibration Status

- [ ] Calibrated
- [ ] Not Calibrated
- [ ] Calibration Record Available

Calibration Record Description (if applicable)

Write something...

Assessor Signature

GPS Coordinates of Assessment Area

Set My Current Location