

CONCRETE CYLINDER APPLICATION GUIDE

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Logging into the application

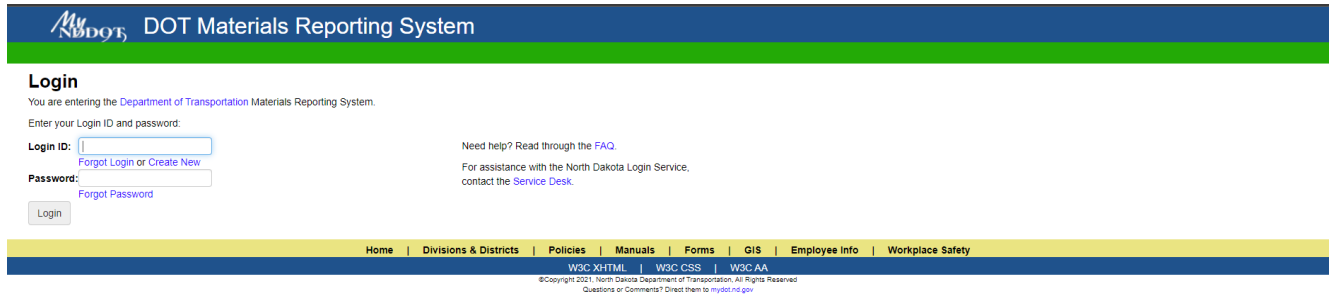


Figure 1- login page

- To log in please visit <https://apps.nd.gov/dot/materialsreporting/Login>
- NDDOT employees will use their nd.gov username and password.
 - Employees are not automatically set up to use this system.
- Non-NDDOT users use an LDAP account. First time users will need to sign up for an LDAP account. <https://apps.nd.gov/itd/ldap/registration.htm?apptype=P>

Landing Page

When first logging into the application the below landing page should be visible. This is only the top of the view.

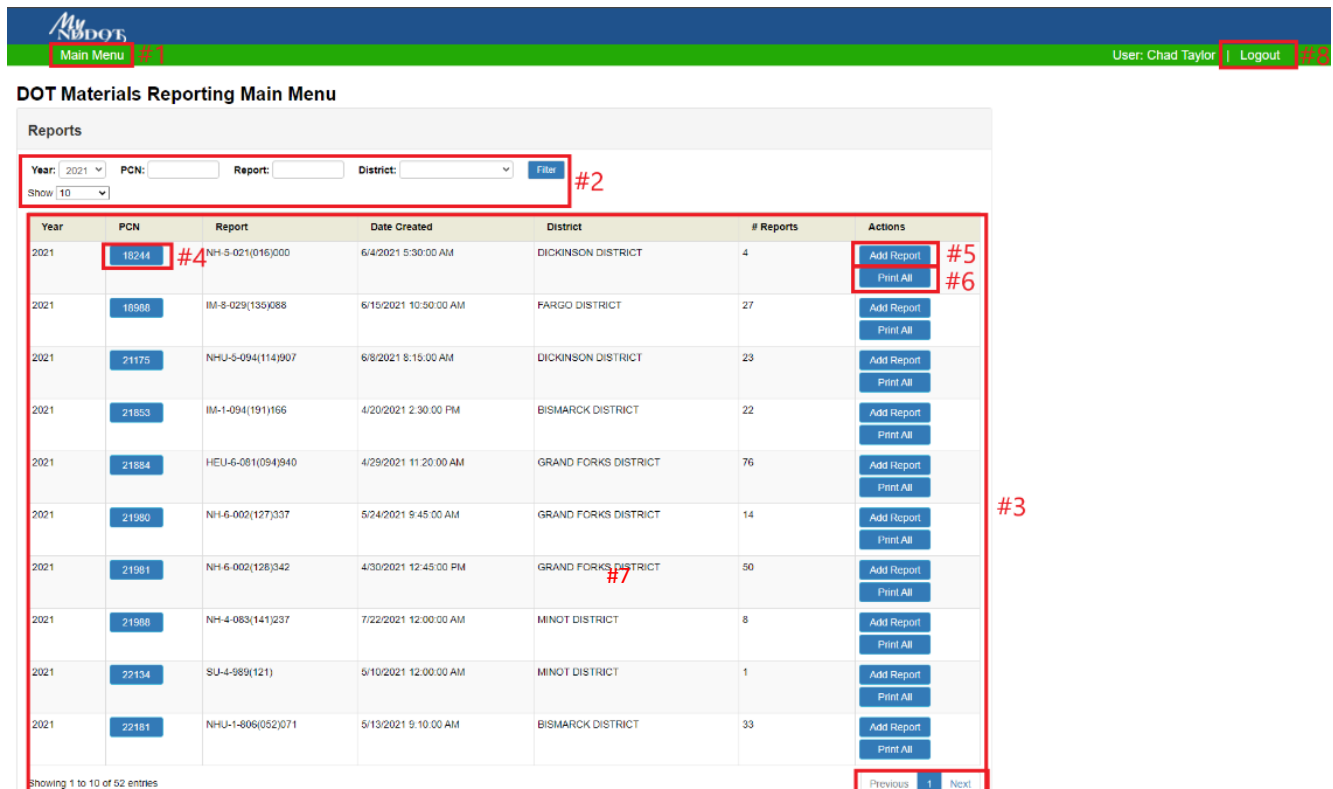


Figure 2 - top landing page

1. Main Menu – will bring the user back to this page.
2. Filter Options – user can filter reports based on the options provided.
3. Record List – user can view project information along with the number of reports.
4. PCN button – when selected will take the user to that project and display all reports within. See **Figure 4**.
5. Add Report – will allow user to create a report for that PCN.
6. Print All – will print all the reports for that PCN.
7. Scroll Buttons – allow user to scroll to the next list of projects.
8. Logout – allow user to logout of the application.

The Bottom of the landing page is as follows.

The screenshot shows a web interface for testing reports. At the top, there are navigation buttons for 'Previous', '1', and 'Next'. Below that is a search area with 'Year:' and 'PCN:' input fields, and an 'Add New Report' button labeled #9. The main section is titled 'Testing' and contains a filter area with 'Start Date' (09/14/2021), 'End Date' (09/15/2021), and a 'District' dropdown menu, with 'Filter' and 'Print' buttons labeled #10. Below the filters is a table of reports. The table has columns for 'Test Date', 'PCN Project', 'Report', 'District', 'Cylinder', and 'Actions'. The 'Cylinder' column has a dropdown menu labeled #13. The 'Report' column has blue buttons with report numbers, some labeled #12. The 'Actions' column has 'Print' buttons, some labeled #15. The table is annotated with #11 on the right side.

Test Date	PCN Project	Report	District	Cylinder	Actions
09/15/21	22181 NHU-1-806(052)071	2539 #12	BISMARCK DISTRICT	30C - 09/15/21 30D - 09/15/21 #14	Print #15
09/14/21	22282 UGP-SU-NHU-1-094(202)915	2544	BISMARCK DISTRICT	45C - 09/14/21 45D - 09/14/21	Print
09/15/21	22318 IM-8-094(099)337	2683	FARGO DISTRICT	3A - 09/15/21 3B - 09/15/21 3D - 09/15/21	Print
09/14/21	22318 IM-8-094(099)337	2634	FARGO DISTRICT	1A - 09/14/21 1B - 09/14/21 1C - 09/15/21 1D - 09/15/21	Print
09/14/21	22495 IM-8-029(186)014	2687	FARGO DISTRICT	32A - 09/14/21 32B - 09/14/21	Print
09/14/21	22495 IM-8-029(186)014	2543	FARGO DISTRICT	0800C - 09/14/2 0800A - 09/14/2	Print
09/14/21	22495 IM-8-029(186)014	2542	FARGO DISTRICT	0715C - 09/14/2 0715D - 09/14/2	Print
09/14/21	22971 NH-3-002(172)252	2680	DEVILS LAKE DISTRICT	2C - 09/14/21 2D - 09/14/21	Print

Figure 3 - bottom landing page

9. Add new report – user can add new report by entering the year of the project and the PCN of the project.
10. Cylinder filters – user can filter cylinders with the options provided.
11. Cylinder reports – cylinders that are due to be broke based on the filters above. This defaults to the current day and will show the user all cylinders that are due to be broke.
12. Report number – this is the report number created by the cylinder application. This is a unique number and can be used to keep track of cylinders in a cure room or cure tank. If the user clicks on this it will take them to the cylinder data page. See **Figure 7**.
13. Cylinder drop down list – this is to select cylinders or cores depending on what the user is breaking.
14. Cylinder field numbers – this is the field number for the cylinder created by the field technician. This field also has the date in which the cylinders are to be broken. If the user clicks on this it will take them to the cylinder data page. See **Figure 7**.
15. Print – when selected this will print the current report.

Project page

When clicking on a PCN from the landing page the user will be taken to the project page which contains all the reports for that project. See **Figure 4**.

The screenshot shows a web application interface for a project page. At the top, there is a navigation bar with the logo and 'Main Menu' on the left, and 'User: Chad Taylor | Logout' on the right. Below this is a 'Project' information section containing fields for Year (2021), PCN (18244), Project Number (NH-5-021(016)000), Contractor (MARTIN CONSTRUCTION INC), District (DICKINSON DISTRICT), and Project Engineer (Fischer, Jason R; Malacke, Gabriel G; Oyugi, Denis M; Urlacher, Belinda J). A red box labeled #16 encompasses this entire section. Below the project info is a 'Reports' section with a search input field for 'Report Number' and a 'Filter' button, labeled #17. A dropdown menu for 'Show' is set to '25' entries, labeled #18. The main content is a table of reports with columns for Report Number, Date Created, District, Cylinder, Comments, and Actions. The table contains four rows of reports, each with a 'Print' button in the Actions column. A red box labeled #19 highlights the 'Report Number' header. A red box labeled #20 highlights the 'Cylinder' dropdown menu for the first report. A red box labeled #21 highlights a 'Print' button for the first report. A red box labeled #22 highlights the 'Report Number' for the second report. A red box labeled #23 highlights the 'Return' button at the bottom left. A red box labeled #24 highlights the 'Add New Report' button at the bottom left. The footer contains navigation links: Home, Divisions & Districts, Policies, Manuals, Forms, GIS, Employee Info, Workplace Safety, and copyright information for W3C XHTML, W3C CSS, and W3C AA.

Figure 4 - project page

16. Project Information – this is all the project information that is pulled in from RIMS. The user is not able to change anything in this section.
17. Report search – here the user can search for a specific report number.
18. Reports – this is the display for all the reports found within the project.
19. Report headers – selecting one of these headers will sort the reports based on which header the user selects.
20. Cylinder numbers – these are the field cylinder numbers created by the field personal. Selecting one of these will take you to the cylinder data page. See **Figure 7**.
21. Print – will print the current report.
22. Report number – when the user selects this it will take them to the cylinder data page. See **Figure 7**.
23. Return – selecting this will return you to the main menu page (landing page). See **Figure 2 and Figure 3**.
24. Add new report – selecting this will create a new report for the current project. As an example, if the user were to select this from this current screen it would create a report for PCN 18244.

New report page

When the user either enters the year and PCN from the landing page or selects add new report from within the project page it will bring them to the new report page. See **Figure 5**.

The screenshot shows the 'New report page' in the MyNDOT system. The page is titled 'Main Menu' and shows the user 'User: Chad Taylor | Logout'. The form contains the following fields and labels:

- #25: Station/RP Start (required field), Station/RP End (optional field)
- #26: Concrete Class (dropdown), Batch Ticket Proportions (Cement, Flyash, Rock 1, Rock 2, Rock 3, Sand)
- #27: Total Water Gals. Sack (required field)
- #28: Sacks per C.Y. (required field)
- #29: Long/Lat (optional field, with 'Get Location' button)
- #30: Materials Coordinator (Curt Dunn)

Other fields include: Cast By, Part of Structure, Air %, Unit Weight (Yield), Spec (550), Date/Time Cast (09/15/2021), Temperature (F), Slump In, Mold Diameter (4), and Comments. A 'Return' and 'Save' button are at the bottom left. The footer contains navigation links and copyright information.

Figure 5 - new report page

25. Station/RP Start/End – this is setup so the user can input a station or an RP of where the test was taken. The Start is a required field, but the end is not. It is setup so if you have a station you are trying to enter the “+” will be replaced by a decimal. An example of this would be Sta. 100+00 = 100.00. RP’s you would enter as you would normally would.
26. Batch ticket proportions – this is broken into all the different materials that are added to the mix. These numbers are found on the trucks batch ticket. See figure 6. To calculate each material the user will take the actual material weight (**Figure 6- #2-5**) divide that by the total CY on the truck (**Figure 6- #1**) then divide all that by the sacks per CY (**Figure 6- #28**). This will be done for each type of material. ([Video – Understanding Batch Tickets](#))
27. Total water gals per sack – this number is calculated based on the batch ticket and how much water was added to the truck. See figure... the user will take water added in gallons (**Figure 6- #6**) add any additional water that was added on site then divide that number by the total CY on the truck (**Figure 6- #1**) then divide by the sacks per CY (**Figure 5- #28**).
28. Sacks per CY – this number is calculated based on the batch ticket actual weights. The user is to take the cement (**Figure 6- #3**) and the fly ash (**Figure 6- #4**) add them together and then divide by the total CY on the truck (**Figure 6- #1**). Then the user will take that number and divide by 94. The 94 comes from 94 lbs. in 1 sack of cement. This number should be around 5-7 in normal concrete mixes.
29. Long/Lat – when selected this will put in the longitude and latitude based on your location. This will only work for iPads and laptops that have locations enabled through the web browser. This should be done as close to the spot the test was taken to represent the actual location of the test.

30. Materials Coordinator – this is automatically filled in based on what district the project is in. This should not require and changes from the user but if there was a change in Materials Coordinator this should be changed to whom ever is in the position at the time of the projects start.

CERTIFICATE OF COMPLIANCE																																																																																																	
BISMARCK PLANT 1																																																																																																	
Ticket#: 193413 Date / Time: 9/14/21 15:32 Truck #: 34034302 Driver: COREY MOCK Mix ID: 34AE3ST29 Mix Desc: DOT CLASS AE3 HAND 29% FLY	Load Size: 8.25 CYDS #1 Cumulative QTY: 8.25 CYDS Loads Del: 1 Customer: NDDOT JOB #5 MANDAN MAIN ST S.P.# or Bridge#:																																																																																																
MATERIAL DETAILS SAND : ASTM C33 SAND 3/4 ROCK : ASTM C33 GRANITE : ASTM C33 WATER : City CEMENT : ASTM C150 FLYASH: ASTM 618 AIR ENT: GRT PO SA REDUCER : WR																																																																																																	
FIELD TEST & COMMENTS Air Content _____ Slump _____ Concrete Temp _____ Location <u>3rd NW Reinforced Sidewalk</u> Cylinder# _____ Time Discharged _____ Air Temp _____ <u>West K</u>																																																																																																	
PLANT TEST & COMMENTS Air Content _____ Slump _____ Concrete Temp _____																																																																																																	
Water Added @ Plant _____ gl Water Added @ Jobsite _____ gl Total Actual Water _____ gl																																																																																																	
Producers Signature _____ Knife River NCR Inspectors Signature _____																																																																																																	
Load Total: 32091 lb Num Batches: 1 Actual Slump: 3.00 in Design W/C: 0.417 Water/Cement: 0.417 T Water in Truck: 0.0 gl Adjust Water: 0.0 gl / Load Trim Water: -1.0 gl / CYDS Design Water: 226.9 gl Total Water: 219.1 gl To Add: 8 gl																																																																																																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Ingredient</th> <th>Source</th> <th>MCFac</th> <th>AbsFac</th> <th>OD</th> <th>ABS</th> <th>SSD</th> <th>Free Mst</th> <th>CYDS TARG</th> <th>Target</th> <th>Actual</th> <th>Actual Water</th> </tr> </thead> <tbody> <tr> <td>ROCK</td> <td>ROCK</td> <td>0.020</td> <td>M 0.013</td> <td>1805 lb</td> <td></td> <td>1805</td> <td>1.62</td> <td>1819</td> <td>15003 #2</td> <td>14860</td> <td>13 gl</td> </tr> <tr> <td>SAND</td> <td>SAND</td> <td>0.037</td> <td>M 0.012</td> <td>1330 lb</td> <td></td> <td>1330</td> <td>3.98</td> <td>1363</td> <td>11247 #3</td> <td>11230</td> <td>33 gl</td> </tr> <tr> <td>S1TYPEGC</td> <td>CEMENT TYPE III GC</td> <td></td> <td></td> <td>390.0 lb</td> <td></td> <td>390.0</td> <td></td> <td>390.0</td> <td>3217.5 #4</td> <td>3225.0</td> <td></td> </tr> <tr> <td>CCTYPECF</td> <td>FLYASH</td> <td></td> <td></td> <td>160.0 lb</td> <td></td> <td>160.0</td> <td></td> <td>160.0</td> <td>1320.0 #5</td> <td>1320.0</td> <td></td> </tr> <tr> <td>COLD</td> <td>COLD</td> <td></td> <td></td> <td>27.50 gl</td> <td></td> <td>27.50</td> <td></td> <td>20.89</td> <td>172.37 gl</td> <td>173.00</td> <td>173.00 gl</td> </tr> <tr> <td>AIR</td> <td>AIR</td> <td></td> <td></td> <td>2.20 oz</td> <td></td> <td>2.20</td> <td></td> <td>2.34</td> <td>19.31 oz</td> <td>19.00</td> <td></td> </tr> <tr> <td>WR</td> <td>WR</td> <td></td> <td></td> <td>22.00 oz</td> <td></td> <td>22.00</td> <td></td> <td>22.00</td> <td>181.50 oz</td> <td>183.00</td> <td></td> </tr> </tbody> </table>		Ingredient	Source	MCFac	AbsFac	OD	ABS	SSD	Free Mst	CYDS TARG	Target	Actual	Actual Water	ROCK	ROCK	0.020	M 0.013	1805 lb		1805	1.62	1819	15003 #2	14860	13 gl	SAND	SAND	0.037	M 0.012	1330 lb		1330	3.98	1363	11247 #3	11230	33 gl	S1TYPEGC	CEMENT TYPE III GC			390.0 lb		390.0		390.0	3217.5 #4	3225.0		CCTYPECF	FLYASH			160.0 lb		160.0		160.0	1320.0 #5	1320.0		COLD	COLD			27.50 gl		27.50		20.89	172.37 gl	173.00	173.00 gl	AIR	AIR			2.20 oz		2.20		2.34	19.31 oz	19.00		WR	WR			22.00 oz		22.00		22.00	181.50 oz	183.00	
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Figure 6 - example batch ticket

Cylinder data page

This page is to enter cylinder break data. The field technician will be the first one to add the number of cylinders, cylinder number (**Figure 7- #33**) and what days they need to break (**Figure 7- #35**).

View Cylinder Report Details

Year: 2021
 PCN: 22181
 Project Number: NHU-1-806(052)071
 Contractor: KNIFE RIVER CORPORATION - NORTH CENTRAL
 District: BISMARCK DISTRICT
 Project Engineer: Southam, Bernie J

Report Number: 21-547
 Station/RP Start: 3819 600
 Station/RP End: Kenny Boos 4068
 Cast By: Sidewalk concrete
 Part of Structure: 6.9
 Air %: 143.3
 Unit Weight (Yield): 3.71
 Total Water Gals. Sack: 550
 Spec: Concrete Class: AE-3
 Batch Ticket Proportions: 390-160-1805-...-1330
 Temperature: (F°) 88
 Slump In: 3.75
 Date/Time Cast: 8/18/2021 10:37 AM
 Mold Diameter: 4
 Sacks per C.Y.: 5.9
 Comments:
 Long/Lat:

Cylinders

#33 Cyl #	#34 PSI	#35 Age	#36 Diameter	#37 Total Load	#38 Cross-Sectional Area	#39 Fracture Type	#40 Date Tested	#41 Corrected PSI	#42 Cap Type	#43 Tested By	#44 Meets Spec	Actions
30A	2900	5	4.00	37461	12.57	d - shear	08/23/2021	2740	Unbonded	Chad Tayl	Informational	Report Delete
30B	3142	7	4.00	39495	12.57	d - shear	08/25/2021	2890	Unbonded	Chad Tayl	Informational	Report Delete
30C	4238	28	4.00	53270	12.57	d - shear	09/15/2021	4120	Unbonded	Chad Tayl	Informational	Report Delete
30D	4720	28	4.00	59335	12.57	d - shear	09/15/2021	4120	Unbonded	Chad Tayl	Informational	Report Delete
		0	4.00	0	0.00		mm/dd/yyyy		Unbonded			Add

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W3C XHTML | W3C CSS | W3CA

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Figure 7- cylinder data page

31. Edit – this is for editing the field data and adding comments to the report.
32. Report – this is for printing the report.
33. Cylinder Number – this is the field number and is created by the filed technician.
34. PSI – this is the uncorrected PSI and is automatically calculated.
35. Age – this is for entering what the age of the break that is desired. This can be entered as days or hours depending on what is required. For example, in figure... you can see that 30A is set for 5 Days. If there was a break for 30 hours, then the user would change the 5 to a 30 and the “D” to an “H” in the drop down next to the 5. Also, by entering the day or hour it will automatically calculate the date tested.
36. Diameter – this is to enter the diameter of the cylinder.
37. Total Load – this is where you enter the total uncorrected load in pounds.
38. Cross-sectional area – this is the area of the cylinder and is automatically calculated based on the diameter.
39. Fracture type – this is where you enter the fracture type of the cylinder. Please refer to AASHTO T 22 for the explanation of the fracture types.
40. Date tested – this is the date that the cylinder is to be broken. This can be set by the user or it will automatically be calculated based on the Age.
41. Corrected PSI – this is the corrected PSI for 4X8 cylinders. The correction applies a 0.92 reduction to the strength.
42. Cap type – this is to indicate what type of cap was used to break the cylinder. The neoprene pads with the retainer rings are unbound and a capping compound that adheres to the cylinder is a bounded cap.

43. Tested by – this is for the person that broke the cylinder. This list is for anyone that has been certified to break cylinders.
44. Meets Specification – this is for whether the cylinder made specified strength or not. This is more for structures that call out a specific strength at so many days and not what the mix design was designed to. Opening the road strength does not apply here due to the 550 specification that uses the cores for acceptance.
45. Report/Save – this is another place that you can print the report from. When making changes to a cylinder the report button will change to a save button. The user must save the record for any changes to take effect.
46. Delete – this is only available on cylinders that you have created. If you are not the original person and need cylinders deleted, you will have to reach out to the District Materials Coordinator to get those removed.
47. Add – this is to add a cylinder to the report. To add a cylinder the user must enter the cylinder number and age of the cylinder before clicking this button. The user may also enter more data if the cylinder has already been broken but at a minimum cylinder number and age are required.
48. Return – this will take you back to the project page not the previous page you were on. If the user wishes to go back to the main menu then they must use the main menu button at the top of the page.

Report

When all cylinders are broken, and a report is generated by pressing the report button the user then will be required to save the report as a PDF and upload to FileNet. The user can add the report to CARS material drop box. DOT district employees can use the materials drop box or Record Crawler (RC). The naming convention for the PDF should be like this: PCN_CYreportnumberyear_district. *(Example is 22145_CY422022_Devils Lake)*