



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

April 5, 2017

Mr. J.C. York
J&T Consulting, Inc.
305 Denver Avenue, Suite D
Fort Lupton, CO 80621

**Re: Northern Colorado Constructors, Inc.; Bennett Pit; File No. M-2016-085;
112c Permit Application Adequacy Review**

Mr. York:

The Division of Reclamation, Mining and Safety (Division/DRMS) reviewed the content of the Northern Colorado Constructors, Inc. (NCCI) 112c permit application for the Bennett Pit, File No. M-2016-085 and submits the following comments. The Division is required to make an approval or denial decision no later than April 30, 2017 therefore; a response to the following adequacy review concerns should be submitted to the Division as soon as possible.

The review consisted of comparing the application content with specific requirements of Rules 1, 3, 6.1, 6.2, 6.3 and 6.5 of the Minerals Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials. Any inadequacies are identified under the respective exhibit heading along with suggested actions to correct them.

1.6 Public Notice

1. As required by Rule 1.6.2(d) and 1.6.5(2), please submit proof of publication in a newspaper of general circulation in the locality of the proposed mining operation.

The Division received proof of publication in the Fort Lupton Press via email from the Applicant on March 8, 2017. No response is required from the Applicant.

2. As required by Rule 1.6.2(e), please submit proof of the notice to all owners of record of surface and mineral rights of the affected land and the owners of record of all land surface within 200 feet of the boundary of the affected land including all easement holders located on the affected land and within 200 feet of the boundary of the affected land. Proof of notice may be return receipts of a Certified Mailing or by proof of personal service.



The Division received copies of the Certified Mail Receipts and Return Receipts via email from the Applicant on April 3, 2017.

- a. The Division did not receive proof of notice to the Owner of Record of the surface and mineral rights of the affected land, Pioneer Land Company, L.L.C., pursuant to Rule 1.6.4(e)(i). Please submit proof of notice to Pioneer Land Company, L.L.C.
- b. The Division did not receive proof of notice to the following Owner of Record of land surface within 200 feet of the boundary of the affected land pursuant to Rule 1.6.4(e)(ii):
 - i. George W. Sagner
 - ii. Patricia A. Sagner
- c. The Division did not receive proof of notice to the following Owner of Record of easements within 200 feet of the boundary of the affected land pursuant to Rule 1.6.4(e)(ii):
 - i. KP Kauffman Company, Inc.
 - ii. Central Weld County Water District
 - iii. Noble Energy, Inc.
 - iv. Weld County
 - v. Kerr McGee Oil and Onshore, LP
 - vi. Xcel Energy
 - vii. Century Link
 - viii. United Power
 - ix. Pioneer Land Company, Inc.

Please submit proof of notice in the form of return receipts of a Certified Mailing or by proof of personal service.

3. The Division received comments from the History Colorado, Division of Water Resources and Army Corps of Engineers. The letters are attached for review. Please address the comments noted in the letters and make any changes to the application as needed.
4. The Division received letters of objection from Veronica Cantrell (2), William M. Lewis, Bradley T Windell Trust and Heidi G Hynes Windell Trust, and Nicole Cantrell and Marcelo Ferreira. Copies of the letters were mailed to the Applicant previously and are attached. Please address the comments noted in the letters and make any changes to the application as needed.

6.4 Specific Exhibit Requirements - Regular 112 Operations

The following items must be addressed by the Applicant in order to satisfy the requirements of C.R.S. 34-32.5-101 et seq. and the Mineral Rules and Regulations of the Mined Land Reclamation Board:

6.4.1 Exhibit A - Legal Description

5. The main entrance to the mine site shall be located based on a USGS Topographic map showing latitude and longitude or Universal Transverse Mercator (UTM). The Operator will need to specify coordinates of latitude and longitude in degrees, minutes and seconds or in decimal degrees to an accuracy of at least five (5) decimal places (e.g., latitude 37.12345 N, longitude 104.45678 W). Please revise Exhibit A to provide the main entrance location in latitude and longitude or Universal Transverse Mercator.

6.4.3 Exhibit C - Pre-mining and Mining Plan Maps of Affected Lands

6. Please update Exhibit C to indicate the Meadow Island Levee Ditch No. 1 pursuant to Rule 6.4.3(b).
7. Please update Exhibit C to indicate the type of present vegetation covering the affected lands pursuant to Rule 6.4.3(e).
8. Please update Exhibit C to show the owner's name, type of structures, and location of all significant, valuable, and permanent man-made structures contained on the area of affected land and within two hundred (200) feet of the affected land pursuant to Rule 6.4.3(g).

6.4.4 Exhibit D - Mining Plan

9. The Applicant states a concrete and asphalt batch plant area will be located within the mining area. Please provide the Division with proof of the appropriate Weld County zoning or special use permit allowing the asphalt/concrete plant, the required Air Pollutant Emission Notice (APEN) permit and Hazardous Material and Spill Control permit from the Colorado Department of Public Health and Environment to operate the asphalt/concrete plant at the site or commit to submitting a technical revision to the permit pursuant to Rule 1.9 prior to operating an asphalt/concrete plant.
10. The Applicant states a minimum 150 foot setback from an existing oil/gas facility will be maintained until an executed use agreement is obtained from the oil/gas company. Please commit to a minimum 200 foot offset from the existing oil/gas facilities until a structure agreement is obtained with the owner of the facilities and update the Exhibit C and Exhibit F maps accordingly.

11. The Applicant states gold will be an incidental product produced by the mining activities. Please explain how the Applicant intends to recover gold as part of the mining activities. On Item 5.3 on Page 1 of the Application Form, the Applicant indicated "N/A" as the anticipated end use of incidental commodity to be mined. Please explain this discrepancy and update the Mining Plan and/or Application Form as needed.
12. The Applicant states water from the dewatering ponds will be pumped into either the slough on the west side of the site which discharges into the South Platte River, or directly into the river. Based on review of the Exhibit C - Mining Plan Map, it does not appear the slough is connected to the South Platte River. Please describe how discharged water pumped into the slough will reach the South Platte River. Additionally, please indicate the proposed dewatering discharge points for the slough and the South Platte River on the Exhibit C - Mining Plan Map.
13. The Applicant states water exiting the wash plant will be carried by a trench to a sedimentation pond. Please describe all water diversions and impoundments for the proposed mining operation, pursuant to Rule 6.4.4(c), provide design details for the sedimentation pond and update the Exhibit C - Mining Plan Map to indicate the location of the sedimentation pond.
14. The Applicant states topsoil and overburden stockpiles will be located on the west side of the south cell area. Please update the Exhibit C – Mining Plan Map to indicate the location of the topsoil and overburden stockpiles.
15. Please commit to seeding the topsoil and overburden stockpiles within 180 days of placement with the approved Reclamation Plan seed mixture to stabilize and protect the stockpiles from erosion pursuant to Rule 3.1.9.
16. Please provide a description of the mining and earthmoving methods to be employed in the proposed mining operation pursuant to Rule 6.4.4(a) and (b).
17. The Typical Mining and Reclaimed Section inserts on the Mining and Reclamation Plan Maps indicate a final 3H:1V slope. Please indicate if the final slope will be mined at the final 3H:1V slope or if the Applicant intends to use the cut and fill method of constructing the final slope. If the Applicant intends to use the cut and fill methods, please provide a description of the earthmoving methods to be employed for the slope reclamation.

6.4.5 Exhibit E - Reclamation Plan

18. The Applicant did not provide adequate information to satisfy the requirements of Rule 6.4.5(2). Please provide the following information:

- a. The Applicant states the mine will be reclaimed as a slurry wall lined water storage reservoir with two cells. Please provide a description of why developed water storage was chosen, the amount of acreage of the lined reservoir after final reclamation and a general discussion of methods of reclamation as related to the mechanics of earthmoving to construct the slurry lined reservoir.
- b. Please provide a comparison of the proposed post-mining land use to other land uses in the vicinity and to adopted state and local land use plans and programs.
- c. Please provide a description of how the Reclamation Plan will be implemented to meet each applicable requirement of Section 3.1.
- d. Please provide plans for topsoil segregation, preservation, and replacement; for stabilization, compaction and for revegetation. The revegetation plan shall contain a list of the preferred species of grass, legumes, forbs, shrubs or trees to be planted, the method and rates of seeding and planting, the estimated availability of viable seeds in sufficient quantities of the species proposed to be used, and the proposed time of seeding and planting.
- e. Please provide a plan or schedule indicating how and when reclamation will be implemented. Such plan or schedule shall not be tied to any specific date but shall be tied to implementation or completion of different stages of the mining operation as described in Subparagraph 6.4.4(1)(e). The plan or schedule shall include:
 - i. An estimate of the periods of time which will be required for the various stages or phases of reclamation;
 - ii. A description of the size and location of each area to be reclaimed during each phase; and
 - iii. An outline of the sequence in which each stage or phase of reclamation will be carried out.
- f. Please provide a description of each of the following:
 - i. Final grading - specify maximum anticipated slope gradient or expected ranges thereof.
 - ii. Seeding - specify types, mixtures, quantities, and expected times of seeding and planting.
 - iii. Fertilization - if applicable, specify types, mixtures, quantities and time of application.

- iv. Revegetation - specify types of trees, shrubs, etc., quantities, size and location.
- v. Topsoiling - specify anticipated minimum depth or range of depths for those areas where topsoil will be replaced.

19. Pursuant to Rule 3.1.10(6), methods of weed control shall be employed for all prohibited noxious weed species, and whenever invasion of a reclaimed area by other weed species seriously threatens the continued development of the desired vegetation.

Please provide a Noxious Weed Management Plan with the following information:

- a. A list of potential noxious weed species (target species).
- b. The control methods and treatment window for each target species.
- c. A monitoring plan and follow-up plan for the site (i.e. when the "local weed control expert" will inspect the property during the year and how follow-up treatments will be implemented following the inspection.)

The Division recommends the Applicant contact the appropriate local weed control authority to assist with the weed control plan.

20. The proposed Reclamation Plan map indicates a 50' pipeline easement (Rec. No. 1571317) bisecting the South Reservoir after final reclamation. Please confirm the location of the easement will remain in its current location after reclamation or if the easement will be relocated as part of the mining and reclamation activities at the proposed site. If the easement is to be relocated, please provide the Division with a copy of the signed agreement with the easement owner for the relocation and indicate the revised easement location on the Exhibit F - Reclamation Plan Map.

21. The proposed Reclamation Plan map indicates a 20' irrigation lateral easement (Rec. No. 2630905) in the South Reservoir after final reclamation. Please confirm the location of the easement will remain in its current location after reclamation or if the easement will be relocated or eliminated as part of the mining and reclamation activities at the proposed site. If the easement is to be relocated or eliminated, please provide the Division with a copy of the signed agreement with the easement owner for the relocation or elimination and indicate the revised easement location or elimination on the Exhibit F - Reclamation Plan Map.

22. The proposed mine site is within the 100-year flood plain of the South Platte River. In the event of a significant flood event (100-year flood) it is likely the proposed pit will be captured by the South Platte River. Wherever mining will occur within 400 feet of the river channel, a flood analysis and flood control plan must be evaluated and submitted for Division review and acceptance.

The flood analysis should quantify the velocity and volume of flows expected on site from a 100-year flood event, as well as the elevation of the 100-year base flood event and its relation to the elevation of any proposed spillways and reservoir embankments. The flood control plan should address mitigation measures including pit side armoring, river side armoring, inflow and outflow channels, or other appropriate measures.

The Applicant shall provide the flood elevations to be expected under a “worst case” flooding scenario and specific mitigation measures that will be implemented to minimize the potential for any offsite impacts.

Riverside and lateral berms are proposed in the Bennett Pit application, which may be prone to erosion during a flood event. The potential for “berms” around gravel pits to be damaged during flooding is discussed in detail in the 1987 Urban Drainage and Flood Control District (UDFCD) Publication “Technical Review Guidelines for Gravel Mining Activities within or Adjacent to 100-year Floodplains.” Strips of native ground or constructed fill between the stream and the gravel pit, and generally aligned with the flow direction of the river are referred to in the UDFCD document as riverside berms. Strips of native ground or constructed fill between the adjacent pits and generally perpendicular to the river are referred to as lateral berms.

Engineered inflow and outflow structures are intended to mitigate possible slope failure during flood events for these berms. The Bennett Pit is outside of the political boundaries of the UDFCD, but the technical floodplain factors that led to the formation of the UDFCD guidance still apply and will be used to review the adequacy of the flood mitigation structures proposed for the site.

Please provide a flood analysis and flood control plan satisfying the requirements of the UDFCD for the expected 100 year flood event during the life of the operation and after final reclamation for the Bennett Pit.

23. The Applicant states a copy of the slurry wall design will be submitted to the Division when it is complete. Please commit to providing the completed slurry wall design as a Technical Revision, pursuant to Rule 1.9 with the appropriate fee, for Division review and acceptance prior to installing the slurry wall.

6.4.7 Exhibit G - Water Information

24. The Applicant states NCCI will not expose groundwater until approval of the Substitute Water Supply Plan (SWSP) for the Bennett Pit is obtained from the State Engineer. Please commit to providing the Division a copy of the approved SWSP when available.

25. The Applicant states clean water will be discharged to the slough on the west side of the site. If water is discharged into an unlined slough, it may be prone to erosion if the discharge rates exceed the carrying capacity of the slough. The Operator must submit documentation to the Division for review for the proposed maximum discharge rate into the slough and specifications as to how much water the slough can carry without experiencing erosion.
26. Please commit to obtaining a Gravel Pit Well Permit from the Colorado Division of Water Resources for the Bennett Pit prior to exposing groundwater and to providing the Division a copy of the approved well permit when available.
27. The Applicant states an application for a National Pollutant Discharge Elimination System (NPDES) Permit will be submitted to the Water Quality Control Division at the Colorado Department of Public Health & Environment for the Bennett Pit. Please commit to providing the Division a copy of the approved NPDES when available.
28. The Applicant states Figure G-1 shows the permitted wells within 600 feet of the site. Please state if the Applicant is pursuing agreements with the existing well owners within 600 feet of the site. Please provide signed copies of the agreements, if available or provide evidence the appropriate notice was provided to the well owners.
29. The Applicant states NCCI will monitor the groundwater levels surrounding the site. Please submit a map indicating the location of monitoring wells.
30. Please submit the drilling and well completion data for the monitoring wells to the Division.
31. Please commit to provide the Division with monthly monitoring well data as part of the annual report for the site.
32. Please provide proof of monitoring well installation permits from the Office of State Engineer to the Division.
33. The Applicant states if monitoring well readings indicate that a significant change in groundwater levels outside the mine occurs, a perimeter drain pipe will be designed and installed to mitigate the changes in groundwater levels. The Applicant must explain all mitigation measures to be implemented and trigger points which would put mitigation measures into effect. Typically, a trigger point of a 2 feet change from historic ground water levels is acceptable.

34. Please submit a groundwater impact analysis predicting the potential shadowing and mounding effects of the proposed slurry walls at the proposed Bennett Pit.

6.4.8 Exhibit H - Wildlife Information

35. As recommended in the Ecological Resource Consultants, Inc. report titled "Screening Report for Federal and State Listed Threatened and Endangered Species" for the Bennett Property dated September 23, 2016, please commit to performing and providing the results of the western burrowing owl survey conducted between March 15 and October 31 to verify the presence or absence of the owl species at the site.

6.4.10 Exhibit J - Vegetation Information

36. The Applicant states NCCI is applying for and will comply with an Army Corps of Engineers Nationwide Permit for the disturbance to any jurisdictional wetlands resulting from the construction of an access road to the site. Please commit to providing the Division a copy of the approved Army Corps of Engineers 404 or other permits when available.

6.4.12 Exhibit L - Reclamation Costs

37. The Division reviewed and will accept the reclamation cost estimate provided by the Applicant. The Division will set the required financial warranty at \$1,005,627.00 for Phase 1 upon approval of the permit application. The total required financial warranty amount for the site will be set at \$1,988,744.00 upon approval. An additional financial warranty in the amount of \$993,116.00 for Phase 2 will be required to be provided to the Division prior to disturbing the second phase.

6.4.18 Exhibit R - Proof of Filing with County Clerk and Recorder

38. Please provided an affidavit or receipt indicating the date on which the revised application information required to address this adequacy letter was placed with the Weld County Clerk and Recorder for public review, pursuant to Subparagraph 1.6.2(1)(c).

6.4.19 Exhibit S - Permanent Man-made Structures

Where the mining operation will adversely affect the stability of any significant, valuable and permanent man-made structure located within two hundred (200) feet of the affected land, the Applicant may either:

- a. provide a notarized agreement between the Applicant and the person(s) having an interest in the structure, that the Applicant is to provide compensation for any damage to the structure; or

- b. where such an agreement cannot be reached, the Applicant shall provide an appropriate engineering evaluation that demonstrates that such structure shall not be damaged by activities occurring at the mining operation; or.
 - c. where such structure is a utility, the Applicant may supply a notarized letter, on utility letterhead, from the owner(s) of the utility that the mining and reclamation activities, as proposed, will have "no negative effect" on their utility.
39. Please provide the Division with copies of the notarized structure agreements with all owners of the structures on and within 200 feet of the affected area of the proposed mine site.

The Applicant emailed the Division a copy a completed structure agreement with Central Weld County Water District.

The Division received copies of the Certified Mail Receipts and Return Receipts via email from the Applicant on February 17, 2017 as proof of the Applicant mailing the structure agreements.

The Division did not receive proof of the Applicant mailing structure agreements for the following structure owners within 200 feet of the boundary of the affected land:

- a. George W. Sagner
- b. Patricia A. Sagner
- c. Pioneer Land Company, LLC

Please submit proof of mailing the structure agreements in the form of return receipts of a Certified Mailing or by proof of personal service.

6.5 Geotechnical Stability Exhibit

40. The Applicant submitted a Slope Stability Report prepared by J&T Consulting, Inc. dated November 2016 with the permit application package. The Applicant must demonstrate they attempted to obtain notarized structure agreements with all owners of the structures on and within 200 feet of the affected area of the proposed mine site pursuant to Rule 6.4.19 prior to the Division consideration and acceptance of the slope stability analysis report.
41. The Applicant used a horizontal earthquake loading coefficient of 0.070 in the stability analysis. Please provide justification for the use of the coefficient in the models.

42. The Applicant applied two 20,000 psf loads above the top of slope and inside the slurry wall in the stability analysis. The loads appear to be for truck traffic loading. Please provide justification for the value and locations for the loads. Typically, truck traffic is not anticipated inside of the slurry wall due to the risk of damaging the slurry wall.
43. Case 2 of the stability analysis states the proposed mining setback from the oil and gas battery is 132 feet. The proposed mine and reclamation plans state the proposed setback from the oil and gas facilities as 150 feet. Please explain this discrepancy and revise the application and/or stability analysis as required.
44. The Division duplicated the Applicant slope stability analysis using Clover Technologies Galena Slope Stability Analysis System, Version 6.10. A table of the Applicant's and the Division's analysis results are below:

Slope analysis results under the DRMS required 1.3 factor of safety for stable conditions and 1.0 factor of safety for earthquake conditions are indicated in bold red font.

	Applicant's XSTABL Results	DRMS Galena Results
Case 1 Rapid Drawdown	2.408	1.32
Case 1 Rapid Drawdown EQ	1.570	1.00
Case 1 Full	7.262	4.06
Case 1 Full EQ	2.841	2.54
Case 2 Rapid Drawdown	2.944	1.78
Case 2 Rapid Drawdown EQ	1.776	1.23
Case 2 Full	8.069	4.18
Case 2	2.909	2.09
Case 3 Rapid Drawdown	4.578	1.67
Case 3 Rapid Drawdown EQ	2.356	3.05
Case 3 Full	12.622	2.07
Case 3 Full EQ	5.679	1.30
Case 4 Rapid Drawdown	2.653	1.25
Case 4 Rapid Drawdown EQ	1.689	0.97
Case 4 Full	3.472	2.60
Case 4 Full EQ	9.276	1.71
Case 5 Rapid Drawdown	2.044	1.14
Case 5 Rapid Drawdown EQ	1.407	0.89
Case 5 Full	6.173	2.35
Case 5 Full EQ	2.680	1.55

Based on the results of the Division's analysis, the Applicant must revise the proposed mining and reclamation plans to increase the offset from the pipeline easement for critical cross-sections 4 (south side of South Cell adjacent to WCR 22.5) and 5 (east side of South Cell adjacent to the South Platte River) or obtain a signed structure agreement with the easement owner. Copies of the Division's Galena stability analysis results are attached.

Please be advised the Bennett Pit application may be deemed inadequate, and the application may be denied on April 30, 2017, unless the above mentioned adequacy review items are addressed to the satisfaction of the Division. If more time is needed to complete the reply, the Division can grant an extension to the decision date. This will be done upon receipt of a written waiver of the Applicant's right to a decision by April 30, 2017 and request for additional time. This must be received no later than the deadline date.

If you have any questions, please contact me at peter.hays@state.co.us or (303) 866-3567 Ext. 8124.

Sincerely,



Peter S. Hays
Environmental Protection Specialist

Enclosures – History Colorado, Division of Water Resources and Army Corps of Engineers comment letters, objection letters from Veronica Cantrell (2), William M. Lewis, Bradley T Windell Trust and Heidi G Hynes Windell Trust and Nicole Cantrell and Marcelo Ferreira, Galena stability analysis results

Ec: Wally Erickson; Division of Reclamation, Mining & Safety
Chris Zadel; Northern Colorado Constructors, Inc.