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

MINERALS PROGRAM INSPECTION REPORT
PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

MINE NAME: Bokelman-Walters	**MINE/PROSPECTING ID#:** M-2006-080	**MINERAL:** Sand and gravel	**COUNTY:** Larimer
INSPECTION TYPE: Monitoring	**INSPECTOR(S):** Amy Eschberger	**INSP. DATE:** January 16, 2020	**INSP. TIME:** 11:30
OPERATOR: Loveland Ready-Mix Concrete, Inc.	**OPERATOR REPRESENTATIVE:** Stephanie Fancher	**TYPE OF OPERATION:** 112c - Construction Regular Operation	

REASON FOR INSPECTION: Normal I&E Program	**BOND CALCULATION TYPE:** Complete Bond	**BOND AMOUNT:** $644,075.00
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
WEATHER: Clear	**INSPECTOR'S SIGNATURE:** Amy Eschberger	**SIGNATURE DATE:** February 6, 2020

GENERAL INSPECTION TOPICS

This list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each. No problems or possible violations were noted during the inspection. The mine operation was found to be in full compliance with Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials and/or for Hard Rock, Metal and Designated Mining Operations. Any person engaged in any mining operation shall notify the office of any failure or imminent failure, as soon as reasonably practicable after such person has knowledge of such condition or of any impoundment, embankment, or slope that poses a reasonable potential for danger to any persons or property or to the environment; or any environmental protection facility designed to contain or control chemicals or waste which are acid or toxic-forming, as identified in the permit.

(AR) RECORDS---------- Y	**(FN) FINANCIAL WARRANTY-------- N**	**(RD) ROADS---------- Y**
(HB) HYDROLOGIC BALANCE---------- Y	**(BG) BACKFILL & GRADING---------- Y**	**(EX) EXPLOSIVES--------- N**
(PW) PROCESSING WASTE/TAILING---- N	**(SF) PROCESSING FACILITIES------- N**	**(TS) TOPSOIL---------- Y**
(MP) GENL MINE PLAN COMPLIANCE- Y	**(FW) FISH & WILDLIFE---------- N**	**(RV) REVEGETATION---- N**
(SM) SIGNS AND MARKERS---------- Y	**(SP) STORM WATER MGT PLAN---- Y**	**(RS) RECL PLAN/COMP-- Y**
(ES) OVERBURDEN/DEV. WASTE--------- N	**(SC) EROSION/SEDIMENTATION--- Y**	**(ST) STIPULATIONS------- N**
(AT) ACID OR TOXIC MATERIALS------- N	**(OD) OFF-SITE DAMAGE----------N**	

Y = Inspected and found in compliance / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

OBSERVATIONS

This was a normal monitoring inspection of the Bokelman-Walters site (Permit No. M-2006-080) conducted by Amy Eschberger of the Division of Reclamation, Mining and Safety (Division). The operator was represented by Stephanie Fancher during the inspection. The site is located approximately 8 miles east of Loveland, CO at the eastern edge of Larimer County. The site is situated directly south of the Big Thompson River and north of the Hillsborough Ditch. Access to the site is from the east off South County Line Road. A gravel road was constructed across the property within the permit area (0.6 mile in length) to access the pit area from the county road. **Photos 1-16** taken during the inspection are included with this report.

This is a 112c operation permitted for 162.37 acres (see enclosed Google Earth image of site) to mine sand and gravel. The affected lands are owned by the operator. The approved mining plan (see enclosed mining plan map, revised with AR-1 in 2015) consists of mining the site in two primary phases, with Phase I (west pit) located in the western half of the permit area, and Phase II (east pit) located in the eastern half of the permit area. Phase I disturbances are expected to cover approximately 66 acres, and Phase II disturbances are expected to cover approximately 33 acres. Phase I will be mined in a total of four cells, while Phase II will be mined in a total of three cells. The maximum mining depth will be 30 feet.

To facilitate dry mining, a slurry wall will be constructed around Cells 1-3 of Phase I and around all of Phase II prior to mining below the groundwater table in these areas. Perimeter drains will be installed at or near existing groundwater elevations just outside of the slurry wall for the purpose of mitigating groundwater mounding upgradient of the slurry wall installation. To protect the slurry wall, all areas adjacent to the wall will be mined at 2H:1V slopes with a minimum 10 foot offset. All other slopes will be mined at 0.5H:1V. Water collected in the dewatering process will be pumped to a nearby sediment pond, then discharged to the river via an overflow pipe. A CDPHE discharge permit will be obtained for this activity. Phase II, Cell 3 (which lies within the floodway) will be mined only during the non-flood season (September 15 – April 15), and backfilled prior to the end of each season. Cells 1 and 2 in Phase II will be mined year-round. Stockpiling on site will occur outside of the floodplain during flood season. Salvaged topsoil will be stored along the edges of the pit, outside of the floodplain. Reclamation will occur concurrently with mining as possible.

Seven monitoring wells will be installed upgradient of the Phase I slurry wall and perimeter drain to monitor groundwater levels monthly for one year then quarterly for two additional years following completion of the slurry wall and perimeter drain installations to verify the predicted groundwater impacts have been sufficiently mitigated. Similarly, two monitoring wells will be installed upgradient of the Phase II slurry wall and perimeter drain to monitor groundwater levels monthly for the first year, then quarterly for two additional years following completion of the slurry wall and perimeter drain installations in that phase. The operator provides this water level monitoring data to the Division in the annual report submittal.

In the pre-mining wildlife survey conducted of the site, a red-tailed hawk nest was observed in a tree between the northern edge of the proposed Phase II mining area and the river. To minimize potential effects to the red-tailed hawk, mining and hauling of mined material in the western parcel (Phase I) will start during the non-nesting season (September – February) to promote the use of alternate nesting sites. In the eastern parcel (Phase II), mining within 400 feet of the existing red-tailed hawk nest will be performed only during the non-nesting season. The haul road will be constructed a minimum distance of 900 feet from the nest. The operator also committed to establishing a 100-foot wide, 2.4-acre Preble's meadow jumping mouse (PMJM) buffer area between the pit in the eastern parcel (Phase II) and the trees lining the south side of the river. No mining disturbances will occur in this area. The operation has not yet moved into the eastern Phase II mining area. The only disturbance in this portion of the permit area consists of the haul road which runs east-west across the property from South County Line Road to the pit area in Phase I. The haul road is located a minimum distance

of 900 feet from the trees located south of the river where the nest was observed, per the approved permit.

The approved post-mining land use for the site is developed water resources. The approved reclamation plan (see enclosed reclamation plan map, revised with AR-1 in 2015) consists of backfilling Phase I, Cell 1 above historic grade. Cells 2 and 3, located within the Phase 1 slurry wall, will become two water storage reservoirs with slopes graded to 3H:1V or flatter. Phase I, Cell 4 will remain as an unlined groundwater pond, with slopes also graded to 3H:1V or flatter. In Phase II, Cell 3 will be backfilled close to historic grade. Cells 1 and 2, located within the Phase II slurry wall, will combine to be one storage reservoir with slopes graded to 3H:1V or flatter. All disturbed land will be retopsoiled at a depth of 6 inches and revegetated with a grass seed mixture (revised through Technical Revision No. 2, approved on August 25, 2011). During final reclamation, two drainage swales will be constructed on site to route stormwater around the reservoirs. The west drainage swale will be constructed between the Phase I and II slurry wall enclosures, and the east drainage swale will be constructed around the southeastern and eastern edges of the Phase II slurry wall enclosure. The swales will be trapezoidal grass-lined channels with grouted sloping boulder drop structures. At reclamation, the west Phase I perimeter drain will discharge to the Cell 4 unlined groundwater pond, the south Phase I perimeter drain will discharge into the west drainage swale. The east Phase II perimeter drain will discharge into the east drainage swale. The drain outlets will require riprap erosion protection downstream of the outlets. The main access road will remain after reclamation for continued access to the reservoirs and ponds.

The Division approved the design for the Phase I slurry wall enclosure through Technical Revision No. 1 (TR-1) on December 1, 2007. In its approval of TR-1, the Division required the operator to submit the final construction report for the Phase I slurry wall following completion of the installation. The Phase I slurry wall was completed in June of 2008, and the final report was submitted to the Division on October 8, 2008. This report showed the enclosure to have been installed at a total length of 7,360 feet, with total depths reaching 26-42 feet, averaging 31 feet. It appears the leak test was not performed on the slurry wall until 2016/2017, after which, the Division of Water Resources (DWR) approved the liner as having met the design standard (in a letter dated March 30, 2017). It should be noted, the most recent Substitute Water Supply Plan (SWSP) found in the permit file is from 2010. It is the Division's understanding the operator must continue to maintain a SWSP for the site even after slurry wall installation and approval. If this is the case, a copy of the current SWSP must be provided to the Division.

During the inspection, a permit sign was posted at the main site entrance off South County Line Road. The approved permit boundary was delineated with fencing and metal posts (at corners). The operation was actively mining in Cell 2 of Phase I during the inspection, and hauling the material off site. A water truck was watering the haul road during the inspection. The operation has mined the western half of Cell 2, and is currently mining into the eastern half of this cell. The pit was approximately 20 feet in depth with exterior pit walls at a 2H:1V slope gradient, and near vertical interior pit walls. Salvaged topsoil and overburden was bermed along the outside perimeter of the pit. These stockpiles were stable with good grass cover. Cell 1 (which separates Cells 2 and 3) has already been mined and backfilled. Cells 3 and 4 have not yet been mined. Cell 3 is currently undisturbed pastureland and Cell 4 is undisturbed cropland. An overburden berm delineates the Phase 1 slurry wall alignment around Cells 1-3. Livestock fencing is in place to restrict cattle from the haul road and Phase I mining area. The Division observed the small sediment pond located just north of Cell 3 in Phase I. This pond has very gentle slopes which are well vegetated. The pond was filled with ice-capped water and the outlet/overflow pipe was discharging to the river at a low flow rate. The Phase II area has not yet been disturbed by the operation, and is currently being used for cattle grazing and crop production.

The Division estimates the operation has disturbed approximately 48.3 acres at this time (not including the main access road which will remain after reclamation). This includes 47.9 acres of disturbance in the Phase I mining area and 0.4 acres of disturbance associated with the sediment pond. The operation is currently approved for a

maximum disturbance of 66.3 acres associated with Phase I mining activities. Prior to moving into Phase II, the operator will need to submit a Technical Revision to increase the maximum allowed disturbance, include design specifications for the Phase II slurry wall, and include an updated bond estimate for the site which covers costs for reclaiming proposed disturbances in Phase II (and any disturbances in Phase I that have not yet been fully reclaimed). This estimate must include full (100%) costs for installing the Phase II slurry wall enclosure. Once the Division receives the final construction report for the Phase II liner and demonstration it has been approved by DWR, the operator may submit a Surety Reduction request to remove a portion of the costs associated with installing the liner. The Division must hold no less than 20% of the total installation costs for a slurry wall enclosure until the entire enclosure has been released from the permit area. The currently held financial warranty includes 20% of the installation costs for the Phase I slurry wall enclosure, which has been approved by DWR.

After conducting the inspection, the Division re-evaluated the required financial warranty for the site and found the currently held amount of $644,075.00 to be adequate to complete reclamation of the site in accordance with the approved plan.

This concludes the report.

Any questions or comments regarding this inspection report should be forwarded to Amy Eschberger at the Colorado Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, via telephone at 303-866-3567, ext. 8129, or via email at amy.eschberger@state.co.us.

PHOTOGRAPHS

Photo 1. View looking northwest across undisturbed Phase II mining area in eastern portion of permit area, north of access road.

Photo 2. View looking east across main haul road constructed across property from South County Line Road to Phase I mining area. This road will remain for reclamation.

Photo 3. View looking west across disturbed area between southern edge of Phase I Cell 2 pit and slurry wall enclosure, which will be mined.

Photo 4. View looking north across southeastern portion of Phase I Cell 2 pit. Internal pit walls (in background) have near vertical slopes.

Photo 5. View looking west across south pit wall of Phase I Cell 2 pit, with slopes of 0.5H:1V to 1H:1V. This is considered an internal pit wall given its distance from the slurry wall, so its slopes can be steeper than 2H:1V.

Photo 6. View looking northeast across Phase I Cell 2 pit, showing current excavation activities near center of pit, mining generally eastward.

Photo 7. View looking northwest across Phase I Cell 2 pit, showing western pit wall in background.

Photo 8. View looking north across western pit wall of Phase I Cell 2 pit, with slopes of 2.5H:1V (except for top 2-3 feet). Note topsoil bermed along top of pit wall.

Photo 9. View looking northeast across Phase I Cell 2 pit, showing current excavation activities near center of pit, mining generally eastward.

Photo 10. View looking west along northern edge of Phase I Cell 2 pit, where water is pumped from pit to sediment pond.

Photo 11. View looking east across sediment pond located between northern edge of undisturbed Phase I Cell 3 and the river. Note pond full of (ice-capped) water during inspection.

Photo 12. View looking east/southeast, showing sediment pond overflow pipe discharging water to river during inspection.

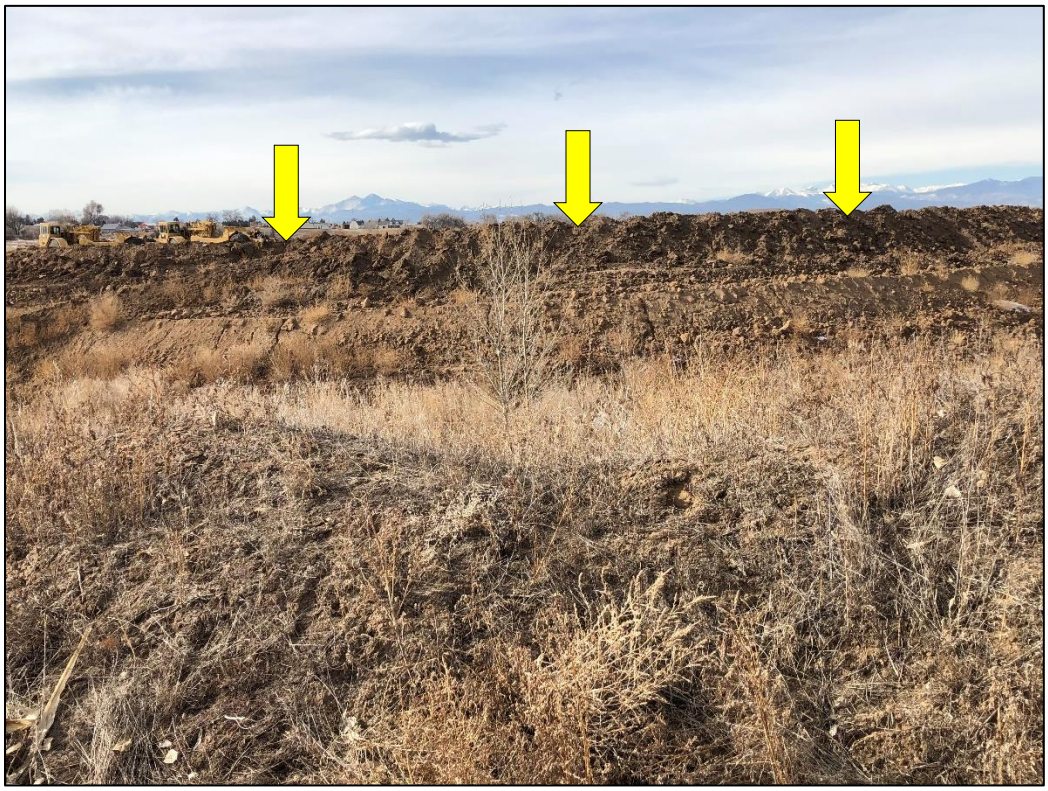


Photo 13. View looking southwest from northern edge of Phase I slurry wall, showing Phase I Cell 1 pit backfilled above historic grade (indicated in background).

Photo 14. View looking south at topsoil berned along northeastern edge of Phase I Cell 2 pit. This stockpile was stable with good grass cover.

Photo 15. View looking northeast across undisturbed Phase I Cell 3 currently leased out for cattle grazing.

Photo 16. View looking northeast across undisturbed Phase I Cell 4 currently used for crop production.

Inspection Contact Address

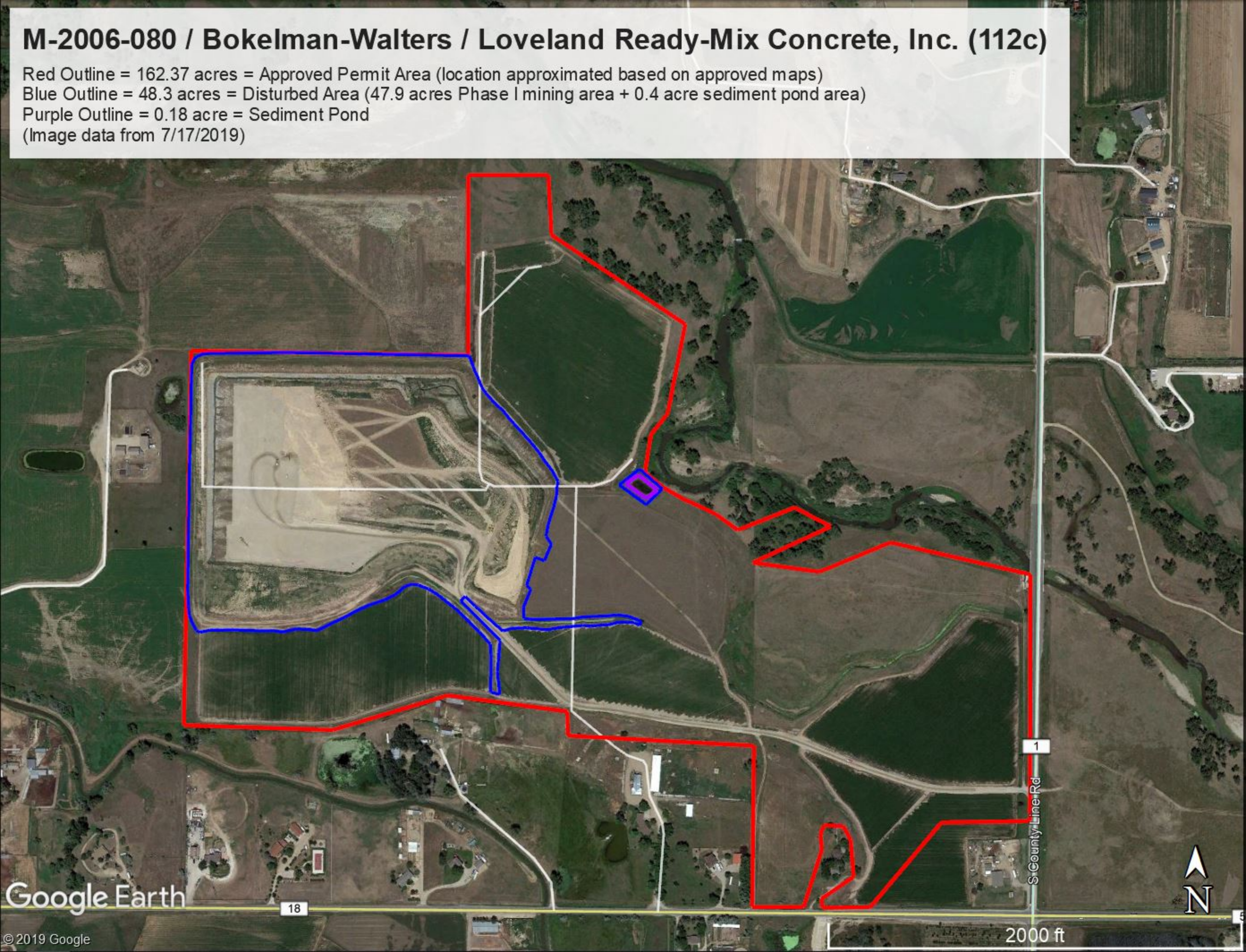
Stephanie Fancher
Loveland Ready-Mix Concrete, Inc.
P.O. Box 299
Loveland, CO 80539

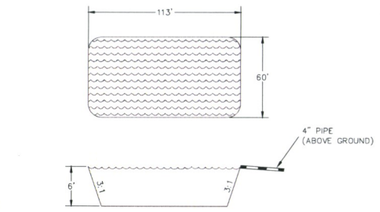
Encl(s): Google Earth image of site
Mining plan map, revised with AR-1 in 2015
Reclamation plan map, revised with AR-1 in 2015

CC: Michael Cunningham, DRMS

M-2006-080 / Bokelman-Walters / Loveland Ready-Mix Concrete, Inc. (112c)

Red Outline = 162.37 acres = Approved Permit Area (location approximated based on approved maps)
Blue Outline = 48.3 acres = Disturbed Area (47.9 acres Phase I mining area + 0.4 acre sediment pond area)
Purple Outline = 0.18 acre = Sediment Pond
(Image data from 7/17/2019)





NOTE: MAINTAIN POND AS NEEDED BY EXCAVATING ACCUMULATED SEDIMENT

B 1 1 SEDIMENT POND DETAIL
NOT TO SCALE

PERMIT BOUNDARY
PERMIT BOUNDARY
CELL 4
13.1 ACRES
TEMPORARY DITCH
DEWATERING TRENCH
R64'
2:1
0.5:1
PHASE I
WEST PIT 67 ACRES
CELL 2
29.9 ACRES
CELL 1
9.4 ACRES
CELL 3
13.7 ACRES
OW-1
OW-2
OW-3
OW-4
OW-5
OW-6
OW-7
OW-8
OW-9
258'
JOHNSTOWN WASTE WATER TREATMENT PLANT
PHASE I - WEST DRAIN
PHASE I - SOUTH DRAIN
SLURRY WALL
1000
4764.01
FND CAP RED/LS20676
N=383159.58
E=2152840.45
1004
4755.22
SET POST
N=383041.38
E=2153557.37
21
4754.23
SET POST
N=382945.23
E=2153685.37
100'S
4759.93
SET POST
N=382806.22
E=2153398.01
B
B1C
THOMPSON RIVER
ANADARCO LEASE AREA (APPROX.)
370'
400'
COUNTY LINE ROAD (LCR 90 / WCR13)
PERMIT BOUNDARY
159'
120'
81'
96'
70' HALF RIGHT OF WAY (LCR 901)
122'
112'
18"CMP CULVERT
PROPOSED SITE ACCESS
TEMPORARY DITCH
200'
331'
18" CMP CULVERT
PROPOSED HAUL ROAD
ONSITE IRRIGATION DITCH (CONCRETE LINED)
CELL 2
9.1 ACRES
CELL 1
12.2 ACRES
PHASE II
EAST PIT 33 ACRES
PHASE II - WEST DRAIN
PHASE II - EAST DRAIN
LCR 18
WCR 54
0' 200' 400' 500' 600'
SCALE: 1" = 200'

MAP LEGEND

- EXISTING RESIDENTIAL/COMMERCIAL STRUCTURES
- PERMIT BOUNDARY (WHERE NON-COINCIDENTAL WITH PROPERTY BOUNDARY)
- AREA REMOVED FROM PERMIT BOUNDARY
- EXISTING RIGHT OF WAY
- EXISTING BARBED WIRE FENCE
- EXISTING WATER UTILITY
- EXISTING GAS UTILITY
- EXISTING UTILITY POLE
- PROPOSED PIT BOUNDARY
- PROPOSED MINING CELL BOUNDARY
- SEASONAL MINING AREA - TO BE MINED AND BACKFILLED PRIOR TO FLOOD SEASON
- PROPOSED TOPSOIL/OVERBURDEN STOCKPILE AREA
- DIRECTION OF MINING
- SLURRY WALL (TO BE OWNED BY LOVELAND READY MIX CONCRETE CO., INC.)
- PERIMETER DRAIN
- OW-1 WATER TABLE OBSERVATION WELLS

NOTES

1. INITIAL STOCKPILE FROM UNEARTHING EAST HALF OF CELL 1 - APPROXIMATELY 53,000 CY AND MAXIMUM OVERBURDEN STOCKPILE OCCURRING AT ANY ONE TIME DURING PHASE I
2. ALL PUMPING EFFLUENT TO BE COLLECTED IN THE SEDIMENT POND. SEE SEDIMENT POND DETAIL.
3. STOCKPILE FROM PHASE II - APPROXIMATELY 52,000 CY AND MAXIMUM OVERBURDEN STOCKPILE OCCURING AT ANY ONE TIME DURING PHASE II
4. MINING AND SUBSEQUENT BACKFILLING TO APPROXIMATE HISTORIC GRADE DURING NON-FLOOD SEASON (SEPT 15 - APRIL 15). NO STOCKPILES SHALL OCCUR IN THIS AREA DURING THE FLOOD SEASON (APRIL 16 - SEPT 14)
5. TOTAL MINING PERMIT AREA = 166.66 ACRES±.

PERMANENT MAN-MADE STRUCTURES WITHIN 200' OF AFFECTED AREA

1. POUDRE VALLEY REA UTILITY POLE
2. POUDRE VALLEY REA UTILITY POLE
3. LITTLE THOMPSON WATER DISTRICT UNDERGROUND WATER LINE
4. POUDRE VALLEY REA UTILITY POLE
5. POUDRE VALLEY REA UTILITY POLE
6. XCEL ENERGY GAS LINE
7. DUKE ENERGY GAS LINE
8. WELD COUNTY/LARIMER COUNTY - COUNTY LINE ROAD (WCR13/LCR901)

WILDLIFE LEGEND

- PREBLES MEADOW JUMPING MOUSE BUFFER ZONE - NO MINING
- RED-TAILED HAWK BUFFER ZONE

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
1	ADJUSTED PIT BOUNDARY, REMOVED AREAS TO ACCOMMODATE ANADARCO LEASE. ADDED FENCE SURVEY	4/16/15	SF

Weiland, Inc.
Environmental & Engineering
PO Box 1921
Lyons, CO 80540
ph 303-823-0951
fax 303-823-0958

d2CAD Consulting
720.722.2396
http://d2cad.com

LOVELAND READY-MIX CONCRETE
970.667.2680

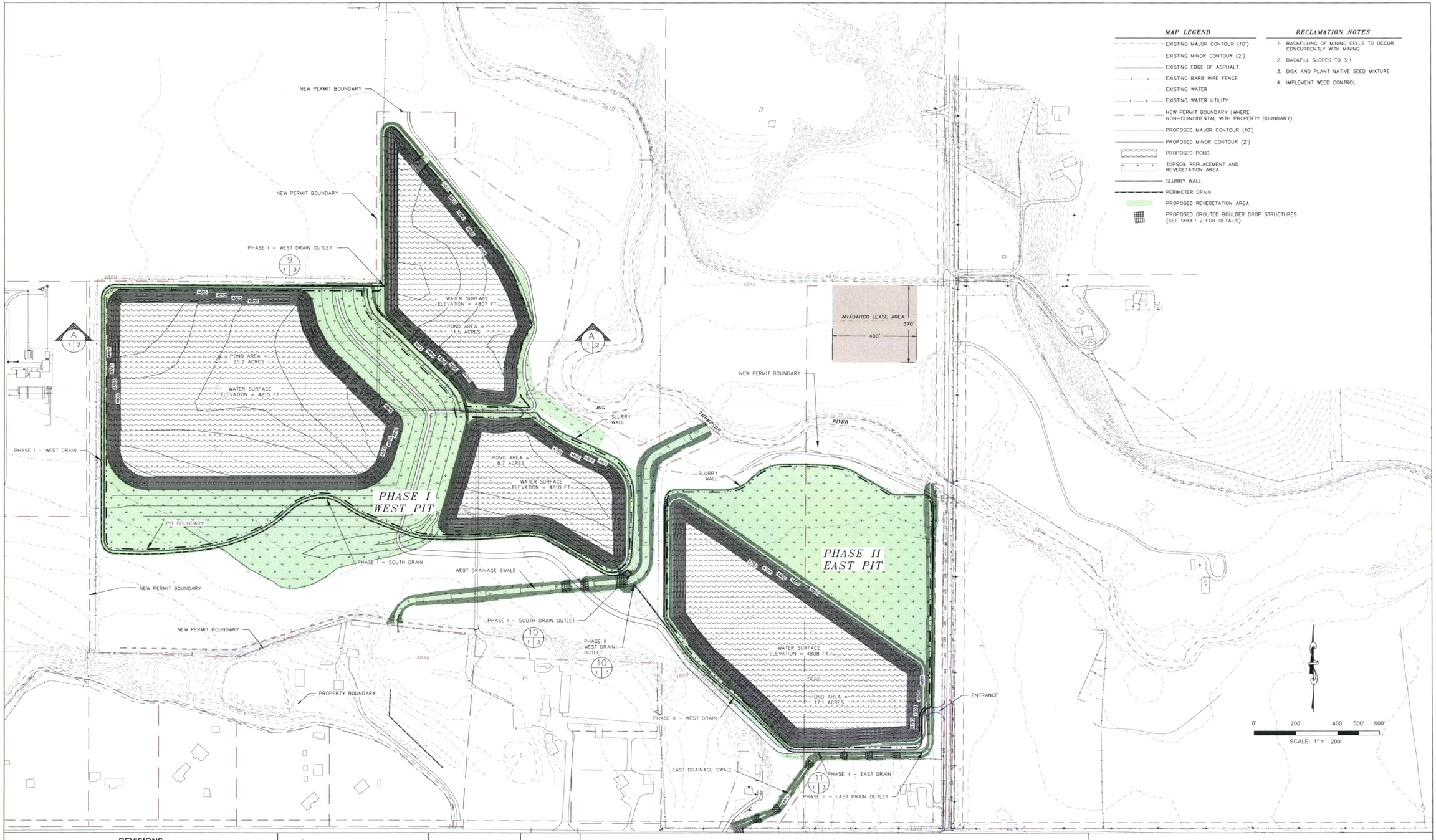
BOKELMAN/WALTERS PIT
M-2006-080 REVISION 1
LARIMER COUNTY

PREPARED FOR: LOVELAND READY MIX CONCRETE CO., INC.

EXHIBIT C-2 - SHEET 1
REVISED MINE PLAN

SCALE	DWG NO.	REV.
1"=200'	c2 R1.dwg	1

DRAWN BY:	CHECKED BY:	DATE:	SHEET
CTW/D2	PFW/SF	02/16/07	1 OF 3



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	ADJUSTED PIT BOUNDARY, REMOVED AREAS TO ACCOMMODATE ANADARCO LEASE. ADDED FENCE SURVEY	4/16/15	SF

Weiland, Inc.
Environmental & Engineering
PO Box 1921
Lyons, CO 80540
ph 303-823-0951
fax 303-823-0958

d2CAD Consulting
720.722.2396
http://d2cad.com

LOVELAND READY-MIX CONCRETE
970.667.2680

BOKELMAN/WALTERS PIT

M-2006-080 REVISION 1

LARIMER COUNTY

PREPARED FOR: LOVELAND READY MIX CONCRETE CO., INC.

EXHIBIT F - SHEET 1
REVISED RECLAMATION PLAN MAP

SCALE	DWG NO.	REV.
1"=200'	f R1.dwg	1

DRAWN BY	CHECKED BY	DATE	SHEET
CTW/D2	PFW/SF	02/16/07	1 OF 3