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6.4.1 Exhibit A – Legal Description

The permit area includes 4 separate parcels of land. The eastern 2 parcels and the western parcel is owned by Randy Kirtright and the middle parcel is owned by The Obrien Living Trust.

The Permit Boundary is more specifically described as:

Beginning the South East corner of Section 15, T5N, R68W 6th PM whose Northing is 1383371.046 and whose Easting is 3123937.256 (CO SPN NAD83) ;
thence bearing S 89-27-28.632 W a distance of 2579.138 ;
thence bearing N 0-8-15.137 E a distance of 1362.569 ;
thence bearing N 7-26-7.770 E a distance of 62.769 ;
thence bearing N 45-0-0.000 E a distance of 491.102 ;
thence bearing N 73-7-30.000 E a distance of 264.455 ;
thence bearing N 90-0-0.000 E a distance of 411.305 ;
thence bearing N 84-22-30.000 E a distance of 300.771 ;
thence bearing N 67-29-60.000 E a distance of 175.338 ;
thence bearing N 61-52-30.000 E a distance of 182.674 ;
thence bearing N 82-15-16.787 E a distance of 477.510 ;
thence bearing S 86-29-43.213 E a distance of 235.335 ;
thence bearing S 71-44-8.825 E a distance of 232.363 ;
thence bearing S 0-8-30.302 E a distance of 628.068 ;
thence bearing S 0-8-24.705 E a distance of 1356.210 to the point of beginning.

The Permit Boundary includes 111.73 **acres** of land

6.4.2 Exhibit B – Index Map

6.4.3 Exhibit C – Pre-mining and Mining Plan Map(s) of Affected Lands

No Change

6.4.4 Exhibit D – Mining Plan

Mining has been completed. Only reclamation activities will occur onsite.

6.4.5 Exhibit E - Reclamation Plan

Description of the Type of Reclamation

Reclamation will include:

- Removal of floodplain sand and gravel from the northern portion of the site to expose topsoil underneath. That material will be used to backfill Ponds 1 &2
- Backfilling Ponds 1 & 2 with previously stockpiled overburden on the western portion of the site
- Topsoil replacement and revegetation of Pond backfill areas
- Revegetation of remaining exposed soil areas

Reclamation Earthwork Sequence and Timetable

Reclamation earthwork will consist of backfilling Pond 1 and Pond 2 with onsite materials and materials imported from the adjacent Stroh Pit to the east as follows:

1) Backfill Pond 1 with 6”-8” of sand and gravel deposited by the 2013 flood on the surface of ground north of Pond 1 as well as with overburden and topsoil located in a stockpile in the western area of the site. Total Volume = ~13,000 yd^3
2) Backfill Pond 2 with materials imported from the Stroh Pit in the amount of approximately 50,000 yd^3
3) Construct a drainage swale (8:1 side slopes and 4ft bottom width) in the north east area of the site to allow for drainage of floodwaters which are know to periodically inundate low lying areas of the site.

The sequence of reclamation activities will occur in the order above. The timetable to complete is approximately 7 years.

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(b) Post Mining Land Use Comparison

Post mining land use will continue as agricultural and residential as it was prior to mining activity.

(c) Description of How the Reclamation Plan will Meet the Requirements of Section 3.1.

The reclamation plan specifications described herein are designed to meet the requirements of Section 3.1 of the Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board. Completion of the reclamation plan as specified shall therefore meet the requirements of Section 3.1

(d) Topsoil Segregation

Topsoil was previously segregated and is located in the Pond 1 backfill borrow area.

(e) Reclamation Sequence and Timetable

An estimate of the sequence and periods of time for each reclamation activity is given above.

(f) Descriptions and Specification of Reclamation activities

(i) Final Grading

Final slopes will be graded to 3H:1V

(ii-v) Seeding, Fertilization, Revegetation, Topsoil Placement

Topsoil Replacement / Revegetation

Topsoil will be replaced to an approximate depth of 8” ft for the areas shown in as topsoil/revegetation areas in Exhibit F. Additional topsoil will be imported from the Stroh Pit as needed.

Seeding and Fertilizing

The proposed seeding areas are shown on Exhibit F – Reclamation Plan Map, Sheet 1. The recommended seeding method is by drill and seeding rates assume this method. The species composition of the seed mixture recommended for reclamation is shown in **Table 6.4.5-2. Recommended Seed Mixture**

Table 6.4.5-2. Recommended Seed Mixture

Species (Variety)	***Rate – pure live seed (PLS) lbs/ac***	***Native/ Introduced***	***W/C Season***
Thickspike wheatgrass (Critana)	8.0 to 10.0	Native	Cool
Sideoats grama (Vaughn)	5.0 to 7.0	Native	Warm

Switchgrass (Nebraska-28)	4.0 to 6.0	Native	Warm
Alfalfa (Nomad)	3.0 to 5.0	Introduced	NA
TOTAL	20.0 to 28.0		

Based on this seed mixture, an application rate of approximately 20.0 to 28.0 lbs PLS/ac will be used. Topsoil should be disked prior to seeding. It is recommended that fertilizer be utilized for reclamation. A standard application of fertilizer will be used and applied at a rate of 250 lbs/ac as shown in **Table 6.4.5-3. Fertilizer Application**

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Table 6.4.5-3. Fertilizer Application

Fertilizer	***Standard rate lbs/acre***
Diammonium phosphate (18-46-0) (46-53% available P_2O_5 with 18-21% N)	250

Fertilizer will not be used near the edge of the reservoir, since the possibility of nitrate contamination in the pond water exists. The total disturbed area to be seeded is approximately 39.4 acres. The total area to be fertilized is approximately 39.4 acres. Seeding and fertilizing will be completed after the overburden and topsoil is replaced, smoothed to conform to the existing topography and disked. Optimal periods of seeding are in the fall (after November 1st) or in the spring from late March up to April 30th. Mulching will not be completed as the quality soils and availability of water should facilitate the rapid establishment of perennial grasses.

Following revegetation, weed management strategies will be implemented to facilitate and achieve native grassland. Years 1 thru 5 following revegetation will include an aggressive mowing program to prevent the growth and establishment of weeds, specifically, eight noxious weeds including: Canada thistle (*Cirsium arvense*), Dalmation toadflax (*Linaria dalmatica*), diffuse knapweed (*Centaurea diffusa*), leafy spurge (*Euphorbia esula*), musk thistle (*Carduus nutans*), Russian knapweed (*Centaurea repens*), spotted knapweed (*Centaurea maculosa*) and Yellow toadflax (*Linaria vulgaris*) as mandated by Colorado State Law (35-5.5CRS1990, 1996). If needed, herbicide application will be applied as needed to further control these weeds. Herbicides will also be used to control salt cedar (*Tamarix* spp.) if it becomes established in the reclaimed area. **Table 6.4.5-4 Recommended Herbicide Application** defines recommended herbicides, application rate, and time of application for each of the 9 species. It may be necessary to replant treated areas.

Table 6.4.5-4 Recommended Herbicide Application

Weed Species	*Herbicide*	*Application Rate*	*Application Time*
Canada thistle	Curtail	2-3 qt/ac	October or 1 mo after last mowing
	Clopyralid	2/3 - 1 pint/ac	Spring or fall, during rosette to bud growth stages in spring
	2,4-D	1lb ai/ac	Spring prebud to early early bud growth stages
	picloram	1lb ai/ac	Spring prebud to early early bud growth stages
Dalmation toadflax	picloram	0.5 - 1 lb ai/ac	Fall
	picloram + 2,4-D		Pre-bloom or fall
Diffuse knapweed	Tordon	1 pint/ac	Spring rosette to early-bolt growth stages
	Banvel/Vanquish/ Clarity + 2,4-D	0.5 + 1 qt/ac	Spring rosette to early-bolt growth stages
	Curtail	2-3 qt/ac	Spring rosette to early-bolt growth stages
	Transline	2/3 - 1 pint/ac	Spring rosette to early-bolt growth stages
Leafy spurge	Tordon	1 qt/ac	Fall 1month after last mowing
	Tordon + 2,4-D	0.5 - 0.75 + 1 qt/ac	Fall 1month after last mowing
	Vanquish/Clarity	1 qt/ac	Fall 1month after last mowing
Musk thistle	Curtail	0.25 lb ai/ac	Spring 10-14 days before bolting
	dicamba	1 lb ai/ac	Spring 10-14 days before bolting
	picloram	0.25 lb ai/ac	Fall, apply to rosettes when other plants are dormant
Russian knapweed	Curtail		Fall on dormant plants, need to reseed during following year
	picloram	1 lb ai/ac	Anytime

Spotted knapweed	picloram	1 lb ai/ac	Anytime
	dicamba or 2,4-D	1 lb ai/ac	
Yellow toadflax	picloram or dicamba	1 lb ai/ac	Spring during flowering
Saltcedar	imazapyr		Late summer early fall foliar application
	imazapyr or triclopyr		To resprouted stems
	imazapyr or triclopyr		To perimeters of cut stems immediately after cutting

Sources: Colorado Natural Areas Program. 2000. Creating an Integrated Weed Management Plan.

http://parks.state.co.us/cnap, and Colorado State University Cooperative Extension. No date.

Weed Management for Small Rural Acreages. No. 3.106.
http://www.ext.colostate.edu/PUBS/Natres/03106.html

Alternative Reclamation Plan

There is no alternative reclamation plan.

6.4.6 Exhibit F - Reclamation Plan Map

1. Exhibit F – Reclamation Plan Map.

6.4.7 Exhibit G - Water Information

(1) The operation will affect groundwater systems through evaporation and pumping. Predicted depletions to groundwater which are tributary to the Big Thompson River are mitigated implementation of a Temporary Substitute Water Supply Plan (SWSP). The site has a current well permit and SWSP.

Hydrologic Balance

Ponds 1& 2 are being backfilled to prevent exposure of groundwater to the atmosphere. A long term augmentation plan has been applied for with water court (19CW3157) to augment the remaining ponds on the site, with the exception of Ponds located in the South West portion of the site. These SW Ponds were historical mining sites which exposed approximately 5 acres of pond area prior to 1980. Currently approximately 2.8 acres of surface pond area occurs and will remain as such.

With regard to floodwater hydrologic balance, a Letter of Map revision will be filed with Larimer County Engineering pending approval of this amendment. Overall, the earthwork proposed in this reclamation plan will not affect floodwater surface elevations due to the fact that pond areas are modeled as ineffective flow up to their spill elevations. The final backfill grade for Ponds 1 & 2 will be at or just below that elevation.

6.4.8 Exhibit H – Wildlife Information

No Change

6.4.9 Exhibit I – Soils Information

No Change

6.4.10 Exhibit J – Vegetation

No Change

6.4.11 Exhibit K – Climate Information

Monthly Temperature Data [F] NCWCD Loveland Climate Station

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
1990	50.00	39.82	25.10	33.73	31.04	36.69	47.62	54.29	68.63	69.00	68.94	64.69	49.13
1991	49.82	41.16	22.05	23.76	38.08	41.54	46.61	57.87	66.30	70.41	69.35	60.78	48.98
1992	49.34	34.18	31.96	30.95	38.60	41.36	52.74	58.40	64.46	68.29	66.39	63.00	49.97
1993	51.89	32.05	24.13	24.15	27.60	41.61	46.54	57.76	63.58	69.29	66.97	57.42	46.92
1994	47.32	32.72	32.03	31.85	28.69	42.70	47.28	60.43	69.95	70.55	70.62	63.76	49.83
1995	49.63	35.89	33.30	31.23	35.26	40.52	44.25	50.59	62.75	70.39	73.61	60.59	49.00
1996	49.43	41.18	32.89	25.87	33.15	36.67	48.63	58.02	67.43	71.44	69.38	60.04	49.51
1997	50.76	36.38	33.23	25.49	31.47	41.90	41.99	57.33	66.89	71.65	69.14	63.73	49.16
1998	50.08	35.25	30.95	33.46	35.09	37.60	46.50	59.15	62.23	72.78	71.53	66.85	50.12
1999	49.89	42.77	NC	33.76	39.63	43.78	NC	55.24	64.63	73.18	70.74	58.59	NC
2000	50.46	44.64	35.80	33.08	39.31	41.41	51.30	60.82	66.61	75.05	73.19	63.19	52.91
2001	50.01	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2004	NC	NC	NC	NC	29.99	45.01	47.45	59.35	62.02	69.19	66.71	60.88	NC
2005	49.87	36.83	30.55	30.94	34.74	39.23	46.44	55.33	65.30	73.77	69.33	62.41	49.56
2006	50.54	40.78	27.89	35.46	29.32	37.01	50.85	59.26	70.71	74.04	71.14	57.20	50.35
2007	48.42	38.25	26.85	19.51	28.49	44.17	45.74	57.29	66.45	75.10	72.97	62.96	48.85
2008	51.46	39.18	22.68	25.07	32.25	38.16	44.20	54.81	64.60	72.23	67.97	58.94	47.63
2009	48.48	41.09	24.08	30.87	35.58	39.54	44.56	57.21	62.62	68.55	66.75	60.67	48.33
2010	41.11	38.77	21.51	26.54	26.37	38.59	46.67	52.20	66.34	71.61	70.72	62.69	46.93
2011	52.16	36.51	32.57	26.42	25.78	41.21	46.45	51.18	65.65	73.70	73.45	61.45	48.88
2012	50.22	37.26	24.30	33.02	27.75	46.14	52.28	57.58	71.28	75.21	70.83	63.30	50.76
2013	47.07	38.46	28.96	26.88	27.89	35.64	40.52	55.90	67.99	71.66	71.13	64.12	48.02
2014	46.59	38.26	26.21	28.07	25.75	38.70	47.69	56.17	65.28	71.35	68.73	61.80	47.88
2015	52.66	33.57	30.27	30.97	33.11	41.86	48.14	51.89	68.05	71.09	70.81	65.96	49.87
2016	54.49	37.39	27.33	28.01	35.64	40.67	47.92	52.91	69.97	73.16	69.03	62.97	49.96
2017	54.89	43.60	24.38	27.30	39.40	45.72	47.89	54.60	67.55	73.34	68.29	62.32	50.77
2018	47.24	42.14	30.63	30.17	27.09	41.34	46.09	58.98	69.93	72.33	69.70	64.91	50.05
2019	47.41	35.62	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Min:	41.11	32.05	21.51	19.51	25.75	35.64	40.52	50.59	62.02	68.29	66.39	57.20	46.92
Max:	54.89	44.64	35.80	35.46	39.63	46.14	52.74	60.82	71.28	75.21	73.61	66.85	52.91
Mean:	49.68	38.22	28.32	29.06	32.20	40.72	47.05	56.33	66.43	71.86	69.90	62.05	49.31

Monthly Precipitation [in.] NCWCD Loveland Climate Station

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
1990	NC	NC	NC	0.67	0.67	4.56	0.97	2.89	0.29	1.67	1.43	2.37	NC
1991	0.49	0.73	0.58	0.45	0.03	0.25	0.83	2.04	2.06	3.05	1.47	1.12	13.10
1992	0.65	1.71	0.03	0.48	0.02	3.05	1.17	1.19	1.88	1.48	2.86	0.00	14.52
1993	0.17	1.11	0.30	0.38	0.84	1.43	2.14	1.12	2.55	1.04	0.95	2.70	14.71
1994	2.01	1.23	0.18	0.41	0.80	0.56	2.53	1.28	2.91	1.07	1.77	0.72	15.47
1995	0.81	0.69	0.44	0.21	0.94	0.69	3.16	6.80	3.44	0.82	0.18	1.84	20.02
1996	0.16	0.63	0.11	1.10	0.28	1.51	0.85	2.76	1.56	2.44	0.70	2.74	14.86
1997	0.48	0.72	0.09	0.91	0.77	0.67	3.26	2.57	2.61	1.98	3.11	2.24	19.41
1998	1.25	0.46	0.28	0.12	0.28	2.05	1.99	2.05	1.32	1.09	0.54	0.90	12.34
1999	3.43	0.89	NC	0.45	0.06	0.67	NC	1.83	2.26	1.70	1.85	1.57	NC
2000	1.05	0.72	0.16	0.09	0.28	1.11	0.71	1.50	1.22	0.89	0.60	1.85	10.17
2001	0.57	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2002	NC	NC	NC	NC	NC	NC	NC	NC	NC	0.29	0.47	1.95	NC
2003	0.94	0.61	0.01	0.01	0.97	3.92	2.54	2.63	2.99	0.76	1.58	0.31	17.26
2004	0.09	0.55	0.37	0.47	0.88	0.47	1.96	2.04	2.48	2.66	2.06	2.04	16.06
2005	1.34	1.78	0.21	1.07	0.51	0.78	3.20	2.26	2.61	0.53	0.92	0.37	15.58
2006	3.19	0.11	0.29	0.11	0.59	1.61	0.14	0.71	0.10	1.59	1.72	0.37	10.54
2007	2.22	0.62	1.01	1.03	0.39	1.67	1.96	1.55	0.25	1.15	1.87	1.58	15.28
2008	1.43	0.39	1.57	0.04	0.36	1.14	0.80	1.89	1.32	0.52	2.58	1.43	13.47
2009	0.63	0.07	0.68	0.58	0.26	1.31	4.92	2.02	2.32	2.14	1.34	1.16	17.42
2010	2.28	0.71	1.34	0.23	0.76	2.11	3.30	1.97	2.44	2.50	0.73	0.06	18.42
2011	0.54	0.76	0.33	0.46	0.84	0.29	2.30	4.63	1.67	2.31	0.16	1.64	15.91
2012	1.45	0.88	1.41	0.18	1.45	0.01	0.50	1.62	0.11	2.12	0.08	1.19	11.01
2013	0.81	0.49	0.33	0.08	1.04	1.26	3.22	3.24	1.44	1.32	1.11	6.63	20.96
2014	1.24	0.46	0.50	1.81	0.40	1.22	0.58	5.32	0.65	2.91	2.68	1.46	19.23
2015	0.92	1.04	0.81	0.30	1.57	0.37	2.74	6.44	2.66	1.19	1.02	0.05	19.10
2016	2.24	1.80	1.36	0.52	1.26	2.85	2.30	2.23	0.23	1.08	0.80	0.25	16.92
2017	0.46	0.24	0.72	0.91	0.46	0.67	2.42	4.11	0.39	0.44	1.91	1.86	14.59
2018	1.50	0.57	0.38	0.52	0.93	0.85	0.93	3.70	0.69	2.73	0.64	0.13	13.55
2019	1.23	0.51	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Min:	0.09	0.07	0.01	0.01	0.02	0.01	0.14	0.71	0.1	0.29	0.08	0	10.17
Max:	3.43	1.8	1.57	1.81	1.57	4.56	4.92	6.8	3.44	3.05	3.11	6.63	20.96
Mean:	1.2	0.76	0.54	0.5	0.65	1.37	1.98	2.68	1.65	1.55	1.33	1.45	15.6

6.4.12 Exhibit L – Reclamation Costs

No change to Reclamation Cost

6.4.13 Exhibit M – Other Permits and Licenses

The following permits

NPDES Stormwater Discharge Permit:

Air Pollution Control Division Construction Permit:

State Engineers Office Well Permit / SWSP:

Larimer County Use by Special Review Permit.

6.4.14 Exhibit N – Source of Legal Right to Enter

A legal right to enter from Randy Kirtright is on file with the DRMS. A legal right to enter agreement from the Obrien Living Trust is pending.

6.4.15 Exhibit O – Owner (s) of Record of Affected Land (Surface Area) and Owners of Substance to be Mined

The owners of record of the land and surface minerals are as follows:

KIRTRIGHT RANDY A
260 SE FRONTAGE RD
JOHNSTOWN, CO 80534

OBRIEN LIVING TRUST THE
PO BOX 920
JOHNSTOWN, CO 80534

6.4.16 Exhibit P – Municipalities Within Two Miles

The Municipalities within 2 miles of the permit area are as follows:

1. Town of Loveland
2. Town of Johnstown

6.4.17 Exhibit Q - Proof of Mailing of Notices to Board of County Commissioners and Soil Conservation District

From: Peter Wayland
To: "bocc@larimer.org"
Subject: FW: Notification for Filing an Amendment Application for Mined Land Reclamation Permit
Date: Tuesday, February 27, 2024 11:05:00 AM
Attachments: Kirtright Notice to LC Board of CC.pdf

To whom it may concern,

Per the rules and regulations of the mined land reclamation board, this is a notification to the Larimer County Board of County Commissioners of Filing an Amendment Application for Mined Land Reclamation Permit for the Kirtright Pit

Please find attached notice and completed application form.

Please confirm receipt.

Thank You

_____

Peter Wayland
Weiland, Inc.

PO Box 18087
Boulder, CO 80308
M 303.518-2182

6.4.17 Exhibit Q - Proof of Mailing of Notices to Board of County Commissioners and Soil Conservation District

From: Peter Wayland
To: info@bigthompson.org
Subject: Notice of Filing Amendment Application for Mined Land Reclamation Permit Kirtright Pit
Date: Tuesday, February 27, 2024 1:48:00 PM
Attachments: Kirtright Notice to Soil Cons.pdf

To Whom it may concern,

I have attached a notice of Notice of Filing Amendment Application for Mined Land Reclamation Permit Kirtright Pit
Along with the completed application form.

Please provide a receipt response.

Thank You

_____

Peter Wayland
Weiland, Inc.

PO Box 18087
Boulder, CO 80308
M 303.518-2182

6.4.17 Exhibit Q - Proof of Mailing of Notices to Board of County Commissioners and Soil Conservation District

From: Debi Randol
To: Peter Wayland
Subject: New Email Address Re: Notice of Filing Amendment Application for Mined Land Reclamation Permit Kirtright Pit
Date: Tuesday, February 27, 2024 1:48:16 PM

The Big Thompson and Fort Collins Conservation District's have merged! We are now the Larimer Conservation District!

Please update my email address to debi@larimercd.org

Thank you!

--
Debi Randol
District Manager
Big Thompson & Fort Collins Conservation Districts
email: debi@bigthompson.org
Office: (970) 295-5658

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

AFFIDAVIT

I Peter Wayland, do hereby certify that a copy of the Construction Materials Regular (112) Operation Reclamation Permit Application and all Specific Exhibits has been mailed Via FedEx overnight (Tracking #787214587204) on May 13, 2019 to the Weld County Clerk & Recorders office to be placed on file for review by the public.

Peter Wayland

_____Date: _____

6.4.19 Exhibit S – Permanent Man-Made Structures

There are no permanent man-made structures within 200ft of any excavations or backfill activities.