

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY
REUSE PERMIT

M-002-05 – Modification 1

Permittee Name: City of Spirit Lake

Effective Date of this Modification: June 30, 2017 - Final

Complete Description of Modification

The purpose of this Permit Modification is to increase and change the permitted acreage for Reuse Permit No. M-002-05 and correct administrative changes requested by the permittee. Items not changed by this modification are covered in Reuse Permit No. M-002-05.

1. Section 2 Facility Information. Page 7 of the Reuse Permit.
Change the “Authorized Representative” to the following:
Luke Eastman – Responsible Charge Operator, City of Spirit Lake
(208) 623-2131

2. Section 4.1 Hydraulic Management Unit Descriptions. Page 9 of the Reuse Permit.
Replace the table with the following:

Serial Number	Description	Irrigation System Type and Irrigation Efficiency	Maximum Acres^a Allowed
MU-002-01	Field 1 (Center Pivot 1)	Center Pivot: ($E_i = 0.85$)	43
MU-002-02	Field 2 (Center Pivot 2)	Center Pivot: ($E_i = 0.85$)	13
MU-002-03	Field 3 – Conifer Seedlings	Solid Set: ($E_i = 0.75$)	2.7
MU-002-04	Field 4 – Forested Site	Solid Set: ($E_i = 0.75$)	11
MU-002-05	Field 5 – Forested Site	Solid Set: ($E_i = 0.75$)	15.1
Total acreage			84.8

a. Maximum acres represent the total permitted acreage of the MU as provided by the permittee. If the permittee uses less acreage in any season or year, then loading rates shall be presented and compliance shall be determined based on the actual acreage utilized during each season or year.

3. Section 4.2 Hydraulic Loading Limits. Page 9 of the Reuse Permit. Replace the table with the following:

Serial Number	Growing Season Hydraulic Loading ^a	Non-growing Season Maximum Hydraulic Loading
MU-002-01	Substantially at the irrigation water requirement (IWR) ^b	Not allowed
MU-002-02		
MU-002-03 ^c	Substantially at or below the irrigation water requirement (IWR) ^b	Not allowed
MU-002-04	Substantially at or below the irrigation water requirement (IWR) ^b	Not allowed
MU-002-05	Substantially at or below the irrigation water requirement (IWR) ^b	Not allowed

- a. Hydraulic loading shall be equally distributed across the recycled water irrigation site to the maximum extent possible.
- b. For compliance purposes, the source of P_{def} data used to calculate the IWR shall be specified in the Irrigation Management Plan of the PO, if P_{def} is used in the calculation of the IWR.
- c. Conifer seedlings on this management unit shall be replaced when they die to maintain the spacing recommended in the Silvicultural Plan.

4. Section 4.3 Constituent Loading Limits. Page 10 of the Reuse Permit. Replace the table with the following:

Serial Number	Constituent Loading (from all sources)			
	Nitrogen (lb/acre)	Salt (NVDS) (lb/acre)	COD growing season (lb/acre-day)	COD non-growing season (lb/acre-day)
MU-002-01	Alfalfa -133% of typical crop uptake using a 15% fixation factor ^a Oats – 150% of typical crop uptake ^a	Not Applicable	Not Applicable	Not Applicable
MU-002-02				
MU-002-03	155	Not Applicable	Not Applicable	Not Applicable
MU-002-04	140	Not Applicable	Not Applicable	Not Applicable
MU-002-05	140	Not Applicable	Not Applicable	Not Applicable

- a. Typical crop uptake is the median constituent crop uptake from the 3 most recent years the crop has been grown. For crops having less than 3 years of on-site crop uptake data, other crop yield data or nutrient content values may only be used if approved in writing by DEQ in advance of use. If written approval is not provided by DEQ, compliance with the nitrogen loading limit shall be determined by comparing the current year nitrogen loading to the current year nitrogen uptake.

5. Section 4.4 Management Unit Buffer Zones. Page 10 of the Reuse Permit. Replace the table with the following:

Serial Number	Buffer Distances (in feet) from Management Units						
	Public Water Supplies ^a	Private Water Supplies	Inhabited Dwellings	Permanent and Intermittent Surface Water ^b	Irrigation Ditches and Canals	Public Water System Main Pipe Line	Areas Accessible to the Public
MU-002-01	1,000	500	300	100 and 0	50	25	0
MU-002-02							
MU-002-03							
MU-002-04							
MU-002-05							

- a. The Spirit Lake Industrial Park Well (PWS #ID1090212) is located approximately 870 feet northeast from Field #3 (MU-002-03). The minimum buffer distance from this well to MU-002-03 will be 870 feet. The well location was found to be acceptable based on a 2014 evaluation of the ground water flow direction by Gary Stevens, P.G. in the Coeur d’Alene DEQ Regional Office showing that the estimated ground water flow direction is from the southwest to the northeast.
- b. When Spirit Creek is running or has standing water in the stream bed, a one hundred (100) foot buffer will be maintained between the edge of the creek and any irrigated portion of the fields. The operator will need to prepare written documentation of his observations on days when Field #1 (MU-002-01), Field #2 (MU-002-02) and Field #4 (MU-002-04) are being irrigated (See Section 5.6). The hydraulic loading rate calculations will need to account for the variations of the irrigated acreage when the irrigation system is modified to meet the buffer zone requirements. When Spirit Creek is not running and has no standing water in it, the minimum buffer distance is reduced to zero (0) feet. Recycled water can only be irrigated on to the crops being grown and never irrigated to the Spirit Creek stream bed.

6. Section 5.1.2 Management Unit and Other Flow Monitoring. Page 13 of the Reuse Permit. Replace the table with the following:

Management Unit or Flow Measurement Serial Number and Location	Sample Description	Sample Type and Frequency	Measured Parameter, each MU
MU-002-01	Effluent flow of recycled water to each management unit	- Daily meter reading; - Monthly compilation of data; (during periods of recycled water irrigation)	- flow volume (gal/day, MG/month) - application depth (inches/month)
MU-002-02			
MU-002-03			
MU-002-04			
MU-002-05			

7. Section 5.3.1 Soil Monitoring Unit Descriptions. Page 14 of the Reuse Permit.

Replace the table with the following:

Monitoring Point Serial Number	Description	Associated Management Unit
SU-002-01	Field 1 (Center Pivot 1)	MU-002-01
SU-002-02	Field 2 (Center Pivot 2)	MU-002-02
SU-002-03	Field 3 – Conifer seedlings	MU-002-03
SU-002-04	Field 4 – Forested Site	MU-002-04
SU-002-05	Field 5 – Forested Site	MU-002-05

8. Section 5.3.2 Soil Monitoring Unit Descriptions. Page 14 of the Reuse Permit.

Replace the table with the following:

Monitoring Point Serial Number	Sample Type	Sample Frequency	Constituents (Units in mg/kg Soil Unless Otherwise Specified)
SU-002-01	Composite samples ^a	Annually: October	- nitrate + nitrite-nitrogen - ammonium-nitrogen - % organic matter - pH
SU-002-02			
SU-002-03			
SU-002-04			
SU-002-05			

- a. The number of sample locations specified in the PO or QAPP for each SU shall be sampled. At each location, samples shall be obtained from three depths: 0–12 inches; 12–24 inches; and 24–36 inches or refusal. The samples obtained from each depth shall be composited by depth to yield three composite samples for each soil monitoring unit; one composite sample for each depth.

9. Section 5.4.1 Crop Harvest Monitoring. Page 15 of the Reuse Permit. Replace the table with the following:

Associated Hydraulic Management Units	Sample Type	Sample Frequency	Parameters ^a
MU-002-01	Harvested portion, each crop	Each harvest	<ul style="list-style-type: none"> - Crop Type - Harvest Date - Sample Collection Date - Harvest acreage (acres) - As-harvested ('wet') Yield in customary harvested units (tons, bushels, cwt, etc.) - As-harvested (field) moisture content (%) - Dry Yield (lbs.)
MU-002-02			

a. Documentation of reported yields shall be provided for each harvest.

10. Section 5.4.2 Plant Tissue Monitoring. Page 15 of the Reuse Permit. Replace the table with the following:

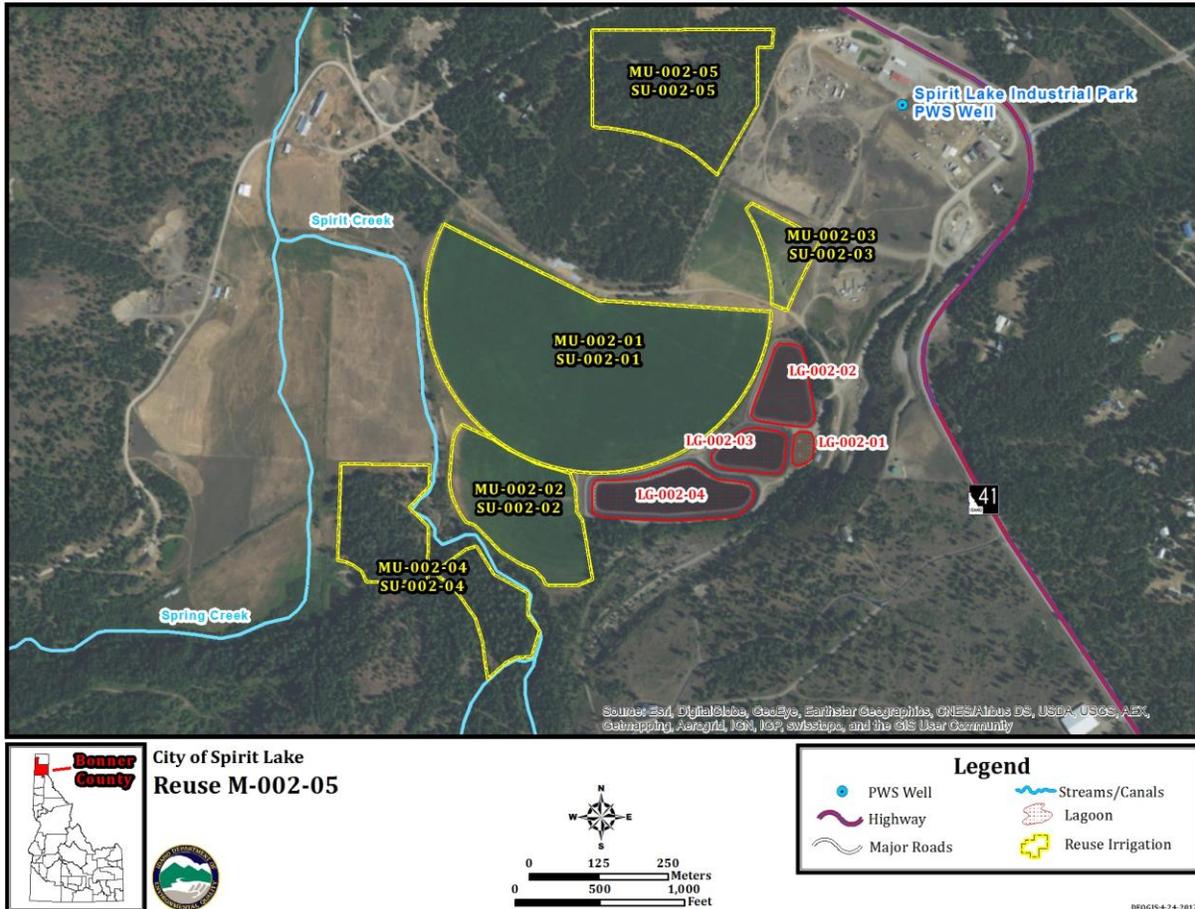
Associated Hydraulic Management Units	Sample Type	Sample Frequency	Parameters ^a
MU-002-01	Harvested portion, each crop, each harvest	Each harvest	<ul style="list-style-type: none"> - Lab moisture content (%) - Total nitrogen as N (ppm)
MU-002-02			

a. Report dry-basis results for all parameters except lab moisture content.

11. Section 6.1.2. Page 18 of the Reuse Permit. Replace the table with the following:

Monitoring Point Serial Number	Parameter (Calculate for each MU)	Units
MU-002-01 MU-002-02 MU-002-03 MU-002-04 MU-002-05	Recycled water loading rate	Million gallons/month Inches/month
	Irrigation water requirement (IWR) for each crop	Inches/month Inches/growing season
	Recycled water nitrogen loading rates	Pounds/acre-year
	Fertilizer nitrogen application rates, reported as elemental N	Pounds/acre-year
	Crop Harvest and Yield Report each harvest and the annual totals for each MU.	Crop Types Harvested Total Harvested Area (acres/yr) Total 'wet' yield (lbs/yr, lbs/acre-yr) Total 'dry' yield (lbs/yr, lbs/acre-yr)
	Crop nitrogen removal rates (dry-basis) Report each harvest and the annual totals for each MU.	Pounds-N/acre-year
Other Reporting Requirements: 1. Visual observation of field conditions: areas of ponding, ice, and unusual conditions.		

12. Section 11.2 Facility Map. Replace the map with the following map:



Modification 1 is hereby approved. This modification to the permit is incorporated into, and constitutes a part of, Reuse Permit No. M-002-05. This permit modification must be attached to the permit. The permit is incomplete and unlawful under IDAPA 58.01.17, *Recycled Water Rules*, without this permit modification attached.

Signed,



Daniel Redline, Regional Administrator
Coeur d'Alene Regional Office
Department of Environmental Quality

6/30/2017

Date