

March 15, 2019

Permit Supervisor, Utah Regulatory Program
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, UT 84114-5801

Re: Clean Copies of Revisions to M&RP to add Infrared Vegetation Monitoring 2018,
Appendix 3-15, Task ID#5849; Canyon Fuel Company, LLC, Sufco Mine, C/041/002

Dear Sirs:

Enclosed with this letter are two clean copies of the infrared vegetation monitoring for 2018 for
incorporation into Appendix 3-15.

Please contact Vicky Miller at (435)286-4481 if there are questions or additional information is
needed.

Sincerely,



John D. Byars
General Manager
Sufco Coal Mine

Encl.

Cc: DOGM Correspondence File

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APPLICATION FOR COAL PERMIT PROCESSING

Permit Change New Permit Renewal Exploration Bond Release Transfer

Permittee: Canyon Fuel Company, LLC

Mine: Sufco Mine

Permit Number: C/041/002

Title: Clean Copies of Infrared Vegetation Monitoring 2018, Appendix 3-15, Task ID#5849

Description, Include reason for application and timing required to implement:

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

- Yes No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ increase decrease.
- Yes No 2. Is the application submitted as a result of a Division Order? DO# _____
- Yes No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
- Yes No 4. Does the application include operations in hydrologic basins other than as currently approved?
- Yes No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
- Yes No 6. Does the application require or include public notice publication?
- Yes No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
- Yes No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
- Yes No 9. Is the application submitted as a result of a Violation? NOV # _____
- Yes No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: _____
- Yes No 11. Does the application affect the surface landowner or change the post mining land use?
- Yes No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
- Yes No 13. Does the application require or include collection and reporting of any baseline information?
- Yes No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
- Yes No 15. Does the application require or include soil removal, storage or placement?
- Yes No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
- Yes No 17. Does the application require or include construction, modification, or removal of surface facilities?
- Yes No 18. Does the application require or include water monitoring, sediment or drainage control measures?
- Yes No 19. Does the application require or include certified designs, maps or calculation?
- Yes No 20. Does the application require or include subsidence control or monitoring?
- Yes No 21. Have reclamation costs for bonding been provided?
- Yes No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
- Yes No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach one (1) review copy of the application.

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

John D. Byars

Print Name

J. D. Byars Gen Mgr.

General Manager, 03/15/2019

Sign Name, Position, Date

Subscribed and sworn to before me this _____ day of _____, 20____

Notary Public

My commission Expires: _____, 20____ }

Attest: State of _____ } ss:
County of _____ }

For Office Use Only:

**Assigned Tracking
Number:**

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APPENDIX 3-15

Infrared Vegetation Monitoring Report

INCORPORATED

MAR 21 2019

PROJECT # 15-218

Addendum to APPENDIX 3-15

Infrared Vegetation Monitoring Report - 2019

INCORPORATED

MAR 21 2019

Div. of Oil, Gas & Mining

**Appendix 3-15
Sufco Mine
Explanation of Vegetation Change per Infrared Photography 2013 - 2018**

Infrared photography was used to provide the condition of vegetation for evaluation over the five-year period from August/September of 2013 through September of 2018.

Using the USGS VegDRI animated time series the vegetation drought conditions for the area surveyed by Sufco (shown on the infrared photos) were checked at the end of September for the years 2013 through 2018. Conditions were as follows:

Year	Vegetation Condition End of September
2014	Near Normal to Drought Stressed
2015	Near Normal to Drought Stressed
2016	Stressed to Moderate Drought
2017	Stressed to Moderate Drought
2018	Moderate to Severe Drought

Year	Annual Precipitation % of Normal (USGS)
2014	0.90
2015	0.85
2016	0.52
2017	0.38
2018	0.59

From this information it should be noted that in both 2013 and 2018 when the infrared photos were taken in September the vegetation in the area was considered to be in drought condition.

Conclusion

The vegetation in the 2018 photo appears to be in similar if not identical locations. Due to the continued dry conditions and lack of precipitation in September the meadow areas adjacent to ponds and streams do not appear as green as they did in 2013.

The majority of the stock ponds in the 2013 photo had water in them, while in the 2018 photo the majority of the ponds were dry, with that being the case for the entire year. In August and September of 2013, it rained 30 of the 61 days at the Sufco mine site which would account for the ponds having water in them and likely the condition of the vegetation looking better. In 2018 it only rained 6 days in August and with no precipitation in September.

The vegetation in the monitoring area was in moderate to severe drought condition (VegDRI) and overall and the precipitation averaged 0.65% of normal over the five year period of evaluation, with the last three years average being 50% of normal. The average annual precipitation in the area ranges from 10 to 17 inches depending upon the elevation.

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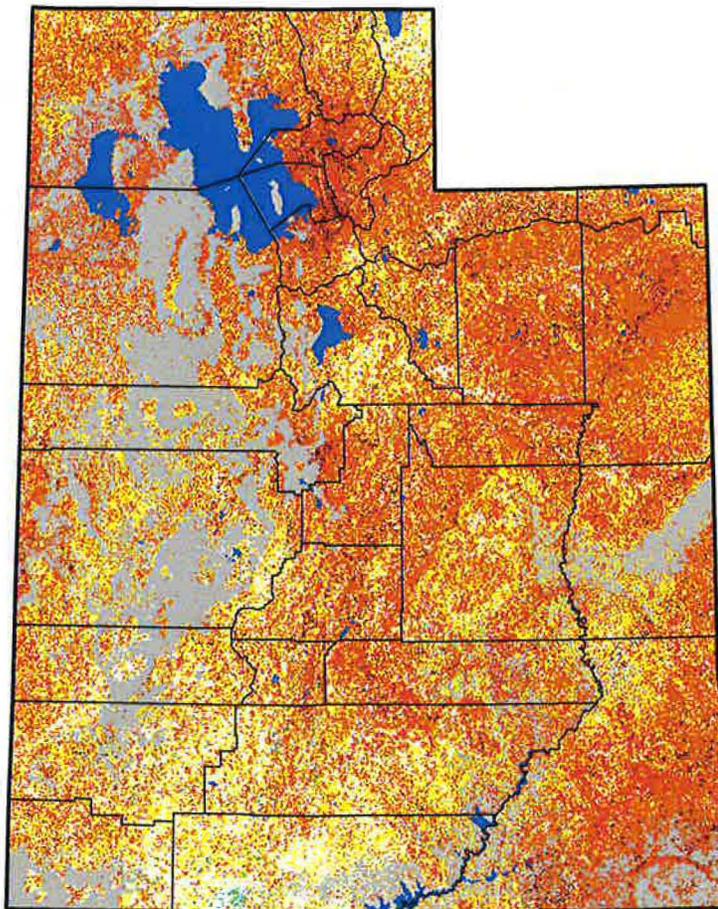
MAR 21 2019

Div. of O&E, C. J. F. Miller

Vegetation Drought Response Index

Complete: Utah

September 30, 2018



Vegetation Condition

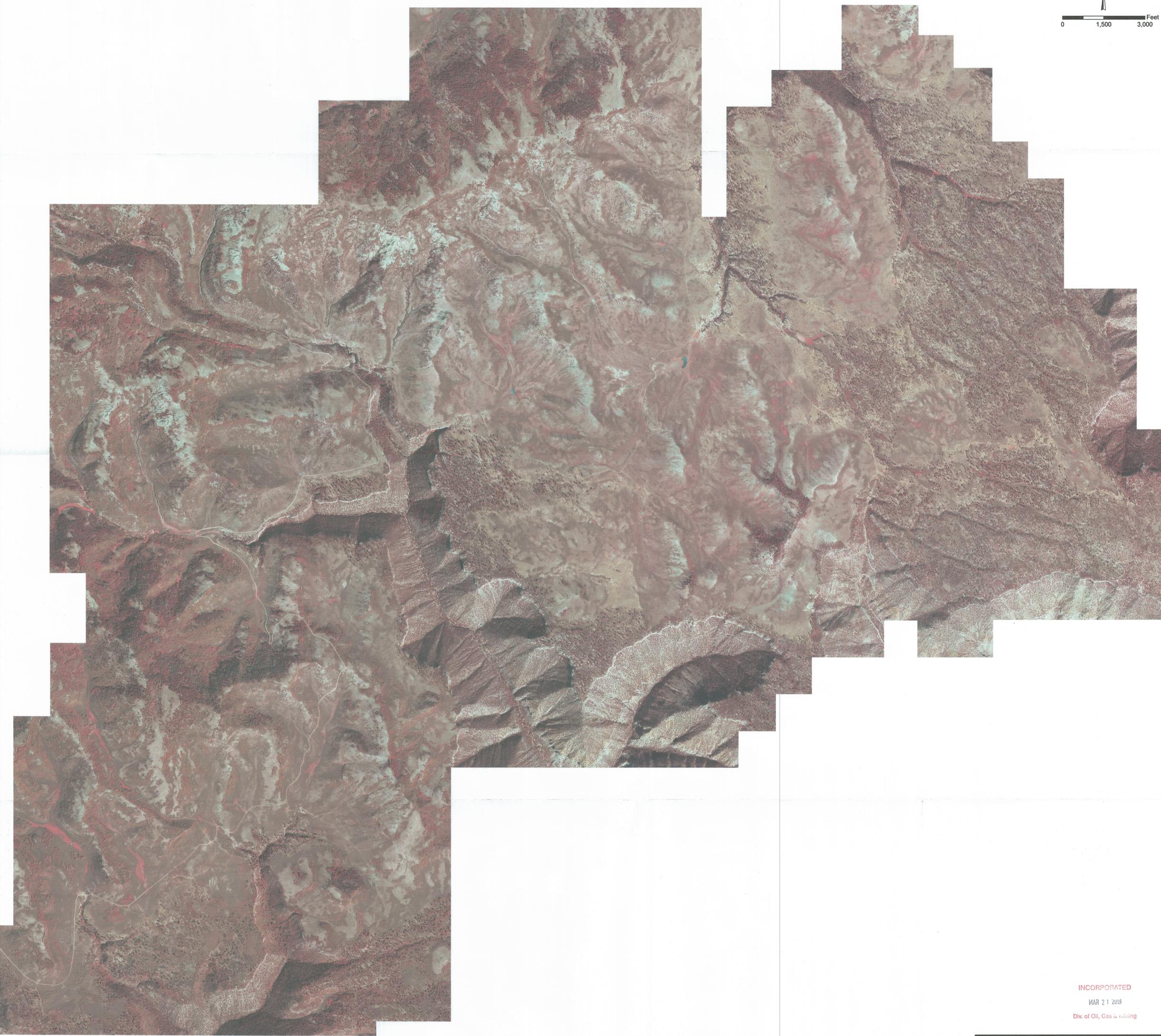
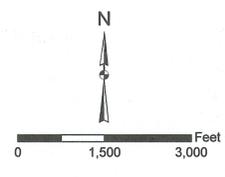
- Extreme Drought
- Severe Drought
- Moderate Drought
- Pre-drought stress
- Near Normal
- Unusually Moist
- Very Moist
- Extreme Moist
- Out of Season
- Water



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Div. of Oil, Gas, & Geothermal Energy



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SUFCO MINE
2013 CIR IMAGERY

SCALE: 1" = 1,250'	DATE: 11/18/2013	DRAWN BY: T.R.B.	CHECKED BY: V.L.M.	PROJ.:	SHEET NO.:
FILE NAME					1



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MAR 21 2018
Dir. of Oil, Gas & Mining



REVISIONS							
NO.	DATE	REQ. BY	DWG. BY	REMARKS			

PEN TBL:		SCALE:	DATE:	DRAWN BY:	ENGINEER:	CHECKED BY:	SHEET NO.
_1Stdnd-SUFEM1.ctb		none	12/31/2018	J.G.C.	V.M.		1
DWG. SET:	PROJECT NUMBER:	FILE NAME:					
###	###	Y:\Christensen\vegetation survey\2018 CIR.dwg					

Canyon Fuel Company, LLC
SUFCO Mine
 597 South SR 24 - Soling, UT 84654
 (435) 286-4890 Phone
 (435) 286-4499 Fax

SUFCO MINE
2018 CIR IMAGERY