

## **Part V: Permits Obtained or to be Obtained – Exhibit 2**

In accordance with local and state requirements, American Soda has secured permits that are required for the development of the project. The following is a list of applicable permits to the build and operate the Project.

### **Permits Obtained:**

#### **Wyoming Department of Environmental Quality – Land Division**

- WYLQD Permit #495 Change 17 – 1/12/2009
- WYLQD Permit #495 Change 20 – 7/5/2009
- WYLQD Permit #495 Change 22 – 1/28/2010
- WYLQD Permit #495 Change 24 – 8/26/2010
- WYLQD Permit #495 Change 25 – 10/28/2010
- WYLQD Permit #495 Change 26 – 10/28/2010
- WYLQD Permit #495 Change 28 – 6/6/202011
- WYLQD Permit #495 Change 31 – 9/14/2012
- WYLQD Permit #495 Change 32 – 9/14/2012
- WYLQD Permit #495 Change 37 – 12/10/2015
- WYLQD Permit #495 Change 45 – 7/23/2019
- WYLQD Permit #495 Change 52 - 9/20/2022

#### **Wyoming Department of Environmental Quality – Air Division**

- WYAQD MD-10253 – 3/24/2010
- WYAQD MD-10561 – 7/13/2010
- WYAQD MD-11024 – 11/29/2010
- WYAQD WV-11853 – 4/14/2011
- WYAQD WV-14263 – 1/10/2013
- WYAQD WV-14727 – 5/3/2013
- WYAQD WV-16105 – 5/20/2014
- WYAQD MD-16104 – 7/14/2014
- WYAQD P0033699 – 6/23/2021 & 6/1/2022
- WYAQD P0034367 – 12/1/2021

#### **Bureau of Land Management Authorizations**

- BLM Authorization No. WYW-171271 – 10/26/2010
  - Amended
    - 6/28/2012
    - 10/22/2012
    - 9/11/2015
    - 7/17/2019
    - 8/15/2022
- BLM Authorization NO. WYW-153933 – 3/20/2012

**Permits To Be Obtained:**

## Wyoming Department of Environmental Quality – Land Division

- WYLQD Permit #495 Change for project activities in Sections 2, 11, 14, 15, 23, and 24 T17N-109W and Section 19 T17N-108W

## Wyoming Department of Environmental Quality – Air Division

- Permits will be obtained for the operation of additional waste mine methane capture equipment location in Section 14.

## Bureau of Land Management Authorizations

- BLM Authorization No. WYW-171271 – 10/26/2010
  - Amendments for Sections 2, 11, 14, 15, 23, and 24 T17N-109W and Section 19 T17N-108W

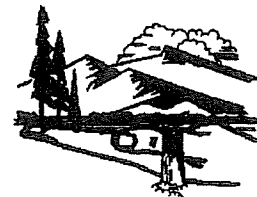
American Soda will continue to monitor legislative and regulatory requirements to ensure that the Project is in compliance with all applicable laws and regulations.

## **Wyoming DEQ – Land Quality Division - Permits**



# Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Dave Freudenthal, Governor

John Corra, Director

January 12, 2009

Mr. Tim Brown  
Solvay Chemical, Inc.  
P.O. Box 1167  
Green River, WY 82935

**RE: Approval of NSR to Permit 495, Solvay Chemical, Inc., SHPO Clearance for GVB Hole #3, Change No. 17**

Dear Tim:

We are in receipt of the SHPO letter of concurrence, dated January 5, 2009, stating that they agree with the findings submitted by Western Archeological Services, Inc. The archeological survey and the approval from SHPO provides the necessary documentation that there are no historic properties that will be affected by the GVB # 3 drill hole project. TFN 5 6/073 is now approved as Change No. 17 to the Permit document.

Please place this approval letter, the letter from SHPO and the original December 10, 2008 request letter in the Change Volume behind Tab 17. The Class III cultural resource inventory, prepared by Western Archeological Services, Inc., will remain in our confidential files. A revised Table of Contents (attached) should be placed in the front of the Change Volume.

Please feel free to contact me if you have any questions.

Sincerely,

Amy Boyle  
Geologic Project Analyst  
Land Quality Division

ATTACH : Table of Contents, Change Volume

COPY : M. Moxley / Lander  
: LQD / Cheyenne  
: Chron





Dave Freudenthal, Governor

# Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



John Corra, Director

August 5, 2009

Mr. Tim Brown  
Solvay Chemical, Inc.  
P.O. Box 1167  
Green River, WY 82935

**RE: Approval of NSR to Permit 495, Solvay Chemical, Inc., Pipeline from GVB Hole #2 to Plant, Compressor Station and Access Road, Change No. 20**

Dear Tim:

We are in receipt of the SHPO letter of concurrence, dated July 15, 2009. The letter states that they concur with the finding that no historic properties will be affected by the pipeline installation from GVB #2 to the Solvay Plant site. Please note that this approval of this Non-Significant Revision to the permit requires that if any cultural materials are discovered during construction of the pipeline that construction will cease and SHPO will be contacted. TFN 5 3/110 is now approved as Change No. 20 to the permit document.

Please place this approval letter, the original request, and the SHPO letter behind Tab 20 of the Change Volume. The Western Archeological Services, Inc. report should remain in a confidential file. A revised Table of Contents (attached) should be placed in the front of the Change Volumes. A copy of the SHPO Section 106 Compliance letter is also attached.

Please feel free to contact me if you have any questions.

Sincerely,

Amy Boyle  
Geologic Project Analyst  
Land Quality Division

ATTACH : SHPO Section 106 Compliance Letter  
: Table of Contents, Change Volume

COPY : M. Moxley / Lander  
: LQD / Cheyenne  
: Chron



# ARTS. PARKS. HISTORY.

Wyoming State Parks & Cultural Resources

State Historic Preservation Office  
Barrett Building, 3rd Floor  
2301 Central Avenue  
Cheyenne, WY 82002  
Phone: (307) 777-7697  
Fax: (307) 777-6421  
<http://wyoshpo.state.wy.us>

Jul 13, 2009

OTC  
-RECEIVED-

AB JUL 15 2009

LAND QUALITY DIV.  
DIST II

Amy Boyle  
Geologic Quality Analyst  
Department of Environmental Quality  
Lander Field Office  
510 Meadowview Lane  
Lander, WY 82520

Re: Section 106 Compliance Letter for Solvay-GVB Hole #2 to Plant Pipeline, Compressor Station and Access Road, Sections 31, 32, and 33 T18N, R109W, and Sections 4, 5, 8, and 9 T 17N, R109W, Permit 495, TFN: 5 3/110. (SHPO File # 0709JRD022)

Dear Mrs. Boyle:

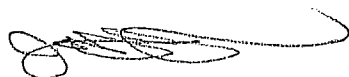
Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced project. We have reviewed the project report and find the documentation meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation (48 FR 44716-42). We concur with your finding that no historic properties, as defined in 36 CFR § 800.16(l)(1), will be affected by the project as planned.

We recommend the Department of Environmental Quality allow the project to proceed in accordance with state and federal laws subject to the following stipulation:

If any cultural materials are discovered during construction, work in the area shall halt immediately, the federal agency must be contacted, and the materials evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983).

This letter should be retained in your files as documentation of a SHPO concurrence on your finding of no historic properties affected. Please refer to SHPO project #0709JRD022 on any future correspondence regarding this project. If you have any questions, please contact Joseph Daniele, Archaeologist/Review and Federal Consultation at 307-777-8793.

Sincerely,



Joseph Daniele  
Wyoming State Historic Preservation Office

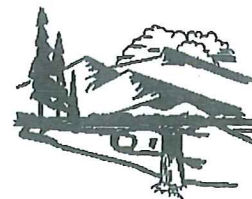


Dave Freudenthal, Governor  
Milward Simpson, Director



# Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Dave Freudenthal, Governor

John Corra, Director

January 28, 2010

Mr. Tim Brown  
Solvay Chemical, Inc.  
P.O. Box 1167  
Green River, WY 82935

**RE: Approval of NSR to Permit 495, Solvay Chemical, Inc., GVB Boreholes #5, 7, 9, and 11, Change No. 22**

Dear Tim:

We are in receipt of SHPO Section 106 Compliance letter, dated January 26, 2010. The letter states that SHPO concurs with the Western Archeological Services Report findings and that the project can proceed. If future work is planned in the vicinity of the unevaluated site 48SW17750 then additional evaluation of the site must take place prior to any disturbance. Please note that this approval of this Non-Significant Revision (NSR) to the permit requires that if any cultural materials are discovered during construction of the Gob Vent Holes that construction will cease and SHPO will be contacted. TFN 5 3/145 is now approved as Change No. 22 to the permit document.

Please place this approval letter, the original request dated January 11, 2010, and a copy of the SHPO Compliance letter behind Tab 22 of the Change Volume. The Western Archeological Services, Inc. report should remain in a confidential file. A revised Table of Contents (attached) should be placed in the front of the Change Volumes. Please feel free to contact me if you have any questions.

Sincerely,

Amy Boyle  
Project Geologist  
Land Quality Division

ATTACH : SHPO Section 106 Compliance Letter, January 26, 2010  
: Table of Contents, Change Volume

COPY : M. Moxley / Lander  
: LQD / Cheyenne  
: Chron



# ARTS. PARKS. HISTORY.

Wyoming State Parks & Cultural Resources

January 26, 2010

## State Historic Preservation Office

Barrett Building, 3rd Floor

2301 Central Avenue

Cheyenne, WY 82002

Phone: (307) 777-7697

Fax: (307) 777-6421

<http://wyoshpo.state.wy.us>

Timothy Brown  
Solvay Chemicals  
PO Box 1167  
Green River, WY 82935

Re: Gob Vent Bore Hole #5, 7, 9, and 11 (SHPO File # 0110JPL003) TFN 5 3/145

Dear Mr. Brown:

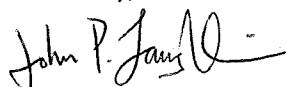
Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced project. We have reviewed the project report and find the documentation meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation (48 FR 44716-42). We concur with your finding that site 48SW5249 is eligible for listing in the National Register of Historic Places (NRHP). Additionally, we concur that sites 48SW17747-17749 and 48SW17751 are not eligible for listing in the NRHP. Finally, we concur that site 48SW17750 should be considered unevaluated at this time. Should future work be planned in the area of 48SW17750, then additional evaluation of the site must take place in order to determine whether or not the site is eligible for inclusion on the NRHP.

We recommend the Department of Environmental Quality allow the project to proceed in accordance with state and federal laws subject to the following stipulations:

If any cultural materials are discovered during construction, work in the area shall halt immediately, the federal agency and SHPO staff be contacted, and the materials be evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983). Additionally, sites 48SW5249 and 48SW17750 should be completely avoided by the project.

This letter should be retained in your files as documentation of a SHPO concurrence with your finding of no historic properties affected. Please refer to SHPO project #0110JPL003 on any future correspondence regarding this project. If you have any questions, please contact John Laughlin at 307-777-3424.

Sincerely,



John P. Laughlin

Archaeologist/Senior Cultural Resources Specialist

cc: Amy Boyle DEQ-Lander

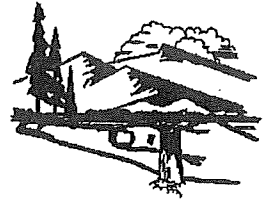


Dave Freudenthal, Governor  
Milward Simpson, Director



# Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Dave Freudenthal, Governor

John Corra, Director

August 26, 2010

Mr. Tim Brown  
Solvay Chemical, Inc.  
P.O. Box 1167  
Green River, WY 82935

**RE: Approval of NSR to Permit 495, Solvay Chemical, Inc., Section 9 Block North Area, Change No. 24**

Dear Tim:

We are in receipt of SHPO Section 106 Compliance letter, dated August 24, 2010. The letter states that SHPO concurs with the Western Archeological Services Report findings and that the project can proceed. Please note that this approval of this Non-Significant Revision (NSR) to the permit requires that if any cultural materials are discovered during construction of any new core holes that construction will cease and SHPO will be contacted. TFN 5 1/185 is now approved as Change No. 24 to the permit document.

Please place this approval letter, the original request dated June 23, 2010, and a copy of the SHPO Compliance letter behind Tab 24 of the Change Volume. The Western Archeological Services, Inc. report should remain in a confidential file. A revised Table of Contents (attached) should be placed in the front of the Change Volumes. Please feel free to contact me if you have any questions.

Sincerely,

Amy Boyle  
Project Geologist  
Land Quality Division

ATTACH : SHPO Section 106 Compliance Letter, August 24, 2010  
: Table of Contents, Change Volume

COPY : M. Moxley / Lander  
: LQD / Cheyenne  
: Chron



# ARTS. PARKS. HISTORY.

Wyoming Department of State Parks and Cultural Resources

## WYOMING STATE HISTORIC PRESERVATION OFFICE

BARRETT BUILDING, 3<sup>rd</sup> FLOOR, 2301 CENTRAL AVE, CHEYENNE, WY 82002

Phone: (307) 777-7697 Fax: (307) 777-6421

<http://wyoshpo.state.wy.us>

August 24, 2010

Amy Boyle, Project Geologist  
Wyoming Department of Environmental Quality  
Land Quality Division  
Lander Field Office  
510 Meadowview Drive  
Lander, WY 82520



re: Solvay Chemicals Inc., Section 9 North Block Area, TFN 5 1/185 (SHPO File # 0810RLC006)

Dear Ms. Boyle:

Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced project. We have reviewed the project report and find the documentation meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation (48 FR 44716-42). We concur with your finding that site 48SW17868 is not eligible for listing in the National Register of Historic Places and no further work or protective measures are necessary.

We recommend the Wyoming Department of Environmental Quality (DEQ) allow the project proceed in accordance with DEQ Land Quality Division rules subject to the following stipulation:

If any cultural materials are discovered during construction, work in the area shall halt immediately, the DEQ and SHPO staff be contacted, and the materials be evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983).

This letter should be retained in your files as documentation of a SHPO concurrence with your finding of no historic properties affected. Please refer to SHPO project #0810RLC006 on any future correspondence regarding this project. If you have any questions, please contact me at 307-777-5497.

Sincerely,

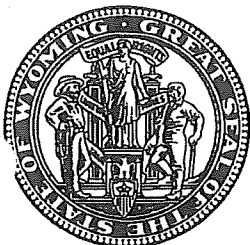
A handwritten signature in black ink, appearing to read "Richard L. Currit".

Richard L. Currit  
Senior Archaeologist

Cc: Timothy Brown, Solvay Chemicals, Inc.

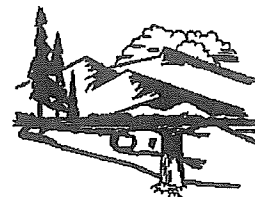


Dave Freudenthal, Governor  
Milward Simpson, Director



# Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Dave Freudenthal, Governor

John Corra, Director

October 28, 2010

Mr. Tim Brown  
Solvay Chemical, Inc.  
P.O. Box 1167  
Green River, WY 82935

**RE: Approval of NSR to Permit 495, Solvay Chemical, Inc., GVB#6 Pipeline and Alternate Access Road, Change No. 25**

Dear Tim:

We are in receipt of SHPO Section 106 Compliance letter, dated October 21, 2010. The letter states that SHPO concurs with the Western Archeological Services Report findings and that the project can proceed. Please note that this approval of this Non-Significant Revision (NSR) to the permit requires that if any cultural materials are discovered during construction of the pipeline or access road that construction will cease and SHPO will be contacted. TFN 5 3/198 is now approved as Change No. 25 to the permit document.

Please place this approval letter, the original request dated October 6, 2010, and a copy of the attached SHPO Compliance letter behind Tab 25 of the Change Volume. The Western Archeological Services, Inc. report should remain in a confidential file. A revised Table of Contents (attached) should be placed in the front of the Change Volumes. Please feel free to contact me if you have any questions.

Sincerely,

Amy Boyle  
Project Geologist  
Land Quality Division

ATTACH : SHPO Section 106 Compliance Letter, October 21, 2010  
: Table of Contents, Change Volume

COPY : M. Moxley / Lander  
: LQD / Cheyenne  
: Chron



# ARTS. PARKS. HISTORY.

Wyoming State Parks & Cultural Resources

State Historic Preservation Office  
Barrett Building, 3rd Floor  
2301 Central Avenue  
Cheyenne, WY 82002  
Phone: (307) 777-7697  
Fax: (307) 777-6421  
<http://wyoshpo.state.wy.us>

October 21, 2010

Amy Boyle  
Project Geologist  
Department of Environmental Quality  
Land Quality Division  
Lander Field Office  
510 Meadowview Drive  
Lander, WY 82520

Re: GVB #6 Pipeline and Alternate Access Road (SHPO File # 1010JPL008) *TFN 5 3/198*

Dear Ms Boyle:

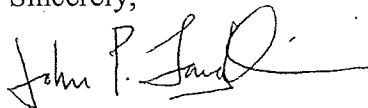
Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced project. We have reviewed the project report and find the documentation meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation (48 FR 44716-42). We concur with your finding that no historic properties, as defined in 36 CFR § 800.16(l)(1), will be affected by the project as planned.

We recommend the Department of Environmental Quality allow the project to proceed in accordance with state and federal laws subject to the following stipulation:

If any cultural materials are discovered during construction, work in the area shall halt immediately, the federal agency must be contacted, and the materials evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983).

This letter should be retained in your files as documentation of a SHPO concurrence on your finding of no historic properties affected. Please refer to SHPO project #1010JPL008 on any future correspondence regarding this project. If you have any questions, please contact John Laughlin at 307-777-3424.

Sincerely,



John P. Laughlin  
Archaeologist/Senior Cultural Resources Specialist



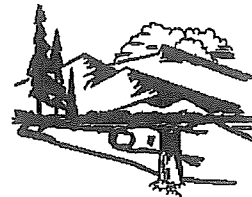
Dave Freudenthal, Governor  
Milward Simpson, Director



Dave Freudenthal, Governor

# Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



John Corra, Director

October 28, 2010

Mr. Tim Brown  
Solvay Chemical, Inc.  
P.O. Box 1167  
Green River, WY 82935

**RE: Approval of NSR to Permit 495, Solvay Chemical, Inc., GVB#2 Revised Pipeline, Compressor Station and Access Road, Change No. 26**

Dear Tim:

We are in receipt of SHPO Section 106 Compliance letter, dated August 26, 2010. The letter states that SHPO concurs with the Western Archeological Services Report findings and that the project can proceed. We have also received verbal confirmation from you that the BLM Right of Way for the project was recently approved. Please note that this approval of this Non-Significant Revision (NSR) to the permit requires that if any cultural materials are discovered during construction of the pipeline, compressor station or access road that construction will cease and SHPO will be contacted. TFN 5 6/184 is now approved as Change No. 26 to the permit document.

Please place this approval letter, the original request dated June 8, 2010, and a copy of the attached SHPO Compliance letter behind Tab 26 of the Change Volume. The Western Archeological Services, Inc. report should remain in a confidential file. A revised Table of Contents (attached) should be placed in the front of the Change Volumes. Please feel free to contact me if you have any questions.

Sincerely,

Amy Boyle  
Project Geologist  
Land Quality Division

ATTACH : SHPO Section 106 Compliance Letter, August 26, 2010  
: Table of Contents, Change Volume

COPY : M. Moxley / Lander  
: LQD / Cheyenne  
: Chron

Lander Field Office • 510 Meadowview Drive • Lander, WY 82520 • <http://deq.state.wy.us>

ABANDONED MINES  
(307) 332-5085  
FAX 332-7726

AIR QUALITY  
(307) 332-6755  
FAX 332-7726

LAND QUALITY  
(307) 332-3047  
FAX 332-7726

SOLID & HAZARDOUS WASTE  
(307) 332-6924  
FAX 332-7726

WATER QUALITY  
(307) 332-3144  
FAX 332-7726



# ARTS. PARKS. HISTORY.

Wyoming Department of State Parks and Cultural Resources

## WYOMING STATE HISTORIC PRESERVATION OFFICE

BARRETT BUILDING, 3<sup>rd</sup> FLOOR, 2301 CENTRAL AVE, CHEYENNE, WY 82002

Phone: (307) 777-7697 Fax: (307) 777-6421

<http://wyoshpo.state.wy.us>

August 26, 2010

Amy Boyle, Project Geologist  
Wyoming Department of Environmental Quality  
Land Quality Division  
Lander Field Office  
510 Meadowview Drive  
Lander, WY 82520



re: Solvay Chemicals, Inc., Gobb Vent Borehole #2, Access Road, Expansion Area and Compressor Station Reroute, TFN 5 6/184 (SHPO File # 0909JJM099)

Dear Ms. Boyle:

Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced project. We have reviewed the project report and find the documentation meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation (48 FR 44716-42). We concur with your finding that site 48SW17815 is not eligible for listing in the National Register of Historic Places and no further work or protective measures are necessary.

We recommend the Wyoming Department of Environmental Quality (DEQ) allow the project to proceed in accordance with state and federal laws subject to the following stipulation:

If any cultural materials are discovered during construction, work in the area shall halt immediately, the federal agency, DEQ and SHPO staff be contacted, and the materials be evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983).

This letter should be retained in your files as documentation of a SHPO concurrence with your finding of no historic properties affected. Please refer to SHPO project #0909JJM099 on any future correspondence regarding this project. If you have any questions, please contact me at 307-777-5497.

Sincerely,

Richard L. Currit  
Senior Archaeologist

Cc: Timothy Brown, Solvay Chemicals, Inc.

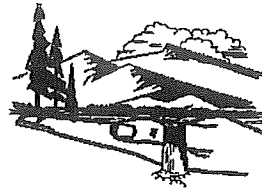


Dave Freudenthal, Governor  
Milward Simpson, Director



# Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Matt Mead, Governor

John Corra, Director

June 6, 2011

Tim Brown  
Solvay Chemicals, Inc.  
P.O. Box 1167  
Green River, WY 82935

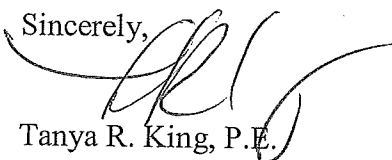
RE: Approval of NSR to Permit 495, Solvay chemical, Inc., GVB 5,7,9 and 11, Pipeline and Access Road, Change #28

Dear Tim,

We are in receipt of a SHPO Section 106 Compliance letter, dated June 2, 2011, concurring with the finding by WAS that no historic properties, as defined in 36 CFR800.16(i)(1), will be affected by the project. Please note that this approval of this NSR (non-significant revision) to the permit requires that if any cultural materials are discovered during construction of the boreholes, pipeline or access road, that construction will cease and SHPO will be contacted.

TFN 5 5/247 is approved as Change #28 to Permit 495.

Sincerely,



Tanya R. King, P.E.  
Natural Resource Analyst  
Land Quality Division

enclosure: SHPO Letter

xc: Cheyenne DEQ/LQD  
Mark Moxley – Lander DEQ/LQD  
chron file (no enclosure)

Lander Field Office • 510 Meadowview Drive • Lander, WY 82520 • <http://deq.state.wy.us>

ABANDONED MINES  
(307) 332-5085  
FAX 332-7726

AIR QUALITY  
(307) 332-6755  
FAX 332-7726

LAND QUALITY  
(307) 332-3047  
FAX 332-7726

SOLID & HAZARDOUS WASTE  
(307) 332-6924  
FAX 332-7726

WATER QUALITY  
(307) 332-3144  
FAX 332-7726



# ARTS. PARKS. HISTORY.

Wyoming State Parks & Cultural Resources

State Historic Preservation Office  
Barrett Building, 3rd Floor  
2301 Central Avenue  
Cheyenne, WY 82002  
Phone: (307) 777-7697  
Fax: (307) 777-6421  
<http://wyoshpo.state.wy.us>

Jun 2, 2011

Tanya King  
Department of Environmental Quality  
Natural Resource Analyst  
Land Quality Division  
510 Meadowview Drive  
Lander, WY 82520



Re: Solvey - Gob Vent Boreholes 5,7,9, and 11, Pipeline and Access Road, Permit 495, TFN 5 5/247 (SHPO File # 0611JRD003)

Dear Mrs. King:

Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced undertaking. We have reviewed the associated report and find the documentation meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation (48 FR 44716-42). We concur with your finding that no historic properties, as defined in 36 CFR § 800.16(l)(1), will be affected by the undertaking as planned.

We recommend the Department of Environmental Quality allow the undertaking to proceed in accordance with state and federal laws subject to the following stipulation:

If any cultural materials are discovered during construction, work in the area shall halt immediately, the federal agency must be contacted, and the materials evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983).

This letter should be retained in your files as documentation of a SHPO concurrence on your finding of no historic properties affected. Please refer to SHPO project #0611JRD003 on any future correspondence regarding this undertaking. If you have any questions, please contact Joseph Daniele, Archaeologist/Review and Federal Consultation at 307-777-8793.

Sincerely,

Joseph Daniele

Wyoming State Historic Preservation Office



Matthew H. Mead, Governor  
Milward Simpson, Director



# Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Matt Mead, Governor

John Corra, Director

September 14, 2012

Tim Brown  
Solvay Soda Ash Joint Venture, Inc.  
P.O. Box 1167  
Green River, WY 82935

RE: Solvay, Mine Permit 495 TFN 5 6/321 GVB #4, #9, #13, #17 and Access Roads Project, Change #31

Dear Tim,

The WDEQ/LQD has reviewed the April 16, 2012 Western Archaeological Services Class III cultural Resource Inventory Report prepared for Solvay Chemicals, Inc. for the GVB #4, #9, #13, #17 and Access Roads Project. No new historic sites were identified. No new acreage will be added to Permit 495. The report advises avoiding site 48SW18005.

This letter approves the NSR, TFN 5 6/321, as Change #31 and closes the TFN. A line item will need to be added to the bond in the Annual Report for the additional reclamation of the boreholes and access roads. An updated version of the Change Volume Table of Contents is attached.

Please feel free to call me with any questions or concerns (307) 332-3047.

Sincerely,

Tanya R. King, P.E.  
Natural Resource Analyst  
Wyoming DEQ/ Land Quality Division  
District II, Lander Office

Enclosure: Permit 495, Change Volume Table of Contents

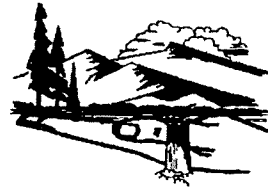
xc: Cheyenne DEQ/LQD attn: Ramona (no attachment)  
Lander DEQ/LQD File (no attachment)  
Chron file – Tanya





# Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Matt Mead, Governor

John Corra, Director

September 14, 2012

Tim Brown  
Solvay Soda Ash Joint Venture, Inc.  
P.O. Box 1167  
Green River, WY 82935

RE: Solvay, Mine Permit 495 TFN 5 2/351, Section 9 Fill-In, Gob Vent Boreholes, Pipeline, and Access Roads Project, Change #32

Dear Tim,

The WDEQ/LQD has reviewed the August 16, 2012 Western Archaeological Services Class III cultural Resource Inventory Report prepared for Solvay Chemicals, Inc. for the Section 9 Fill-In project. No new historic sites were identified. No new acreage will be added to Permit 495.

This letter approves the NSR, TFN 5 2/351, as Change #32 and closes the TFN. A line item will need to be added to the bond in the Annual Report for the additional reclamation of the boreholes and access roads. An updated version of the Change Volume Table of Contents is attached.

Please feel free to call me with any questions or concerns (307) 332-3047.

Sincerely,

  
Tanya R. King, P.E.  
Natural Resource Analyst  
Wyoming DEQ/ Land Quality Division  
District II, Lander Office

Enclosure: Permit 495, Change Volume Table of Contents

xc: Cheyenne DEQ/LQD attn: Ramona (no attachment)  
Lander DEQ/LQD File (no attachment)  
Chron file – Tanya





Matthew H. Mead, Governor

# Department of Environmental Quality

*To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.*



Todd Parfitt, Director

December 10, 2015

Mr. Tim Brown  
Solvay Soda Ash Joint Venture  
P.O. Box 1167  
Green River, WY 82935

**RE: Approval Letter, Minor Revision, GOB Vent hole review, Solvay Soda Ash Joint Venture, PT 495, (TFN 6 1/110), Change No. 37**

Dear Mr. Brown:

As per a December 2, 2015 email from Craig Hults (LQD Cheyenne) the Form 11 associated with this project has been reviewed and found to be correct. At the recommendation of Amy Boyle, District 2, Project Geologist, the final review comments associated with this Minor Revision have been resolved. This letter approves the GOB vent hole project in Section 3, 4, 9, and 10, T.17N., R.109W. Total projected disturbance will be 34.53 acres.

This Minor Revision is the approval of TFN 6 6/110 and Change No. 37 to Permit 495. This approval letter and related correspondence for this TFN should be placed behind Tab 37 of the Change Volume. A revised Table of Contents for the Change Volume is attached in addition to the signed and approved Form 11. Any questions regarding this approval should be directed to Amy Boyle at (307) 335-6941 or [amy.boyle@wyo.gov](mailto:amy.boyle@wyo.gov).

Sincerely,

Kyle Wendtland  
Administrator  
Land Quality Division

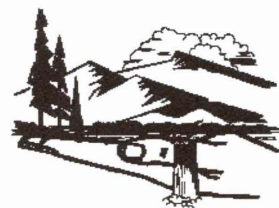
ATTACH : Form 11  
: PT 495 Change Volume, Table of Contents

COPY : J. Erickson / Lander  
: LQD / Cheyenne



# Department of Environmental Quality

*To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.*



Mark Gordon, Governor

Todd Parfitt, Director

Mr. Marty Stearns  
Solvay Soda Ash Joint Venture  
P.O. Box 1167  
Green River, WY 82935

**RE: Approval of Minor Revision for Solvay Soda Ash Joint Venture, PT0495, TFN 6 1/369,  
Change No. 45, Revision No. 14**

Dear Mr. Stearns:

The supporting material for the Form 11 minor revision is approved. The approval allows for the transition from a 4-hole per longwall panel Gob Vent Borehole program to a 5-hole per panel GVB program. The approval allows for an improved pipeline layout that reduces the acreage to affect by 1.52 acres while adding the additional vents.

Receipt of this letter grants Solvay Soda Ash Joint Venture permission to change their Permit documents as listed in the application. In the event that revisions other than those listed on the Index of Changes inadvertently occurred within this package, those revisions are not automatically considered approved.

This operation is within Sage Grouse Core Area as designated by the Governor's Executive Order 2015-4. The disturbance density calculation tool was reviewed by the Wyoming Game and Fish Department (letter dated July 8, 2019, WER 50070.03. The following stipulations are placed on this mining permit:

1. Construction, reclamation, and other activities are not authorized between March 15 and June 30 as per the SGEO.

If you have questions, please contact Taylor Spiegelberg at (307) 335-6752 or [taylor.spiegelberg@wyo.gov](mailto:taylor.spiegelberg@wyo.gov).

Sincerely,

  
Kyle Wendtland  
Administrator, Land Quality Division

Date: July 23, 2019

Enclosure

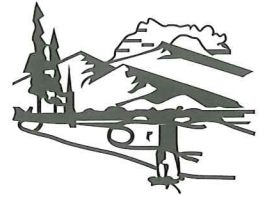
cc: Nancy Williams, Taylor Spiegelberg - Lander DEQ-LQD  
Tammi Pusheck - LQD Records Manager  
Karin Quigley - LQD Administrator's Administrative Assistant



Mark Gordon, Governor

# Department of Environmental Quality

*To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.*



Todd Parfitt, Director

Ms. Ouisha Dean  
Solvay Soda Ash Joint Venture  
P.O. Box 1167  
Green River, WY 82935

**RE: Approval of Minor Revision for Solvay Soda Ash Joint Venture, PT0495, TFN 7 3/074,  
Change No. 52, Revision No. 19**

Dear Ms. Dean:

The supporting material for the Form 11 minor revision is approved. The approval allows the construction of a mine-waste gas pipeline from the mine-waste gas compressor site to the #5 Shaft for heating in-take air.

Receipt of this letter grants Solvay Soda Ash Joint Venture permission to change their Permit documents as listed in the application. In the event that revisions other than those listed on the Index of Changes inadvertently occurred within this package, those revisions are not automatically considered approved.

This operation is within Sage Grouse Core Area as designated by the Governor's Executive Order 2019-3. The proposed Minor Revision was reviewed by the Wyoming Game and Fish Department (letter dated January 26, 2022, WER 50070.08. The following stipulations are placed on this mining permit:

1. There should be No Surface Occupancy within 0.6 miles of occupied, core area leks.
2. Construction and development activities should not occur from March 15 – June 30 in core area.
3. Solvay has agreed to monitor affected leks. Please contact Jeff Short, Mountain View District Wildlife Biologist, annually to coordinate monitoring of the G-Solvay 2 lek prior to March 1 yearly. Jeff can be reached at (307) 782-6810 or [jeff.short@wyo.gov](mailto:jeff.short@wyo.gov).
4. Reclamation should re-establish grasses, forbs, and shrubs, during interim and final reclamation commensurate with pre-disturbance plant communities, Ecological Site Descriptions, or reference sites. Operators are required to control noxious and invasive species, including annual grasses and are encouraged to work with local Weed and Pest districts on control efforts.

If you have questions, please contact Nancy Williams at (307) 335-6939 or [nancy.williams@wyo.gov](mailto:nancy.williams@wyo.gov).

Sincerely,

Kyle Wendtland  
Administrator, Land Quality Division

Date: September 20, 2022

Enclosure

cc: Nancy Williams - Lander DEQ-LQD  
[deq-lqd.upload@wyo.gov](mailto:deq-lqd.upload@wyo.gov)  
Karin Quigley, LQD Administrator's Administrative Assistant  
Joanna Nara-Kloepper, BLM Rock Springs Field Office

## **Wyoming DEQ – Air Quality Division – Permits**



# Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Dave Freudenthal, Governor

John Corra, Director

March 24, 2010

Mr. Ronald O. Hughes  
General Manager  
Solvay Chemicals, Inc.  
P.O. Box 1167  
Green River, WY 82935

Permit No. **MD-10253**

Dear Mr. Hughes:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed final review of Solvay Chemicals, Incorporated's application to modify operations at the Green River Soda Ash Plant with the voluntary installation of the Gob Vent Borehole Project. This project is to improve miner safety by decreasing the potential explosive hazard in the mine, and consists of the installation and operation of process equipment to collect and burn (or flare) methane extracted from the mine longwall gob. The Green River Soda Ash Plant is located in the NE1/4 of Section 31, T18N, R109W, approximately twenty (20) miles west of Green River, in Sweetwater County, Wyoming.

Following this agency's proposed approval of the request as published February 3, 2010 and in accordance with Chapter 6, Section 2(m) of the Wyoming Air Quality Standards and Regulations, the public was afforded a 30-day period in which to submit comments concerning the proposed modification, and an opportunity for a public hearing. No public comments have been received. Therefore, on the basis of the information provided to us, approval to modify the Green River Soda Ash Plant as described in the application is hereby granted pursuant to Chapter 6, Section 2 of the regulations with the following conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.
2. That all substantive commitments and descriptions set forth in the application for this permit, including but not limited to those related to the voluntary methane emissions project, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.
3. That Solvay Chemicals, Inc. shall modify their Operating Permit in accordance with Chapter 6, Section 3 of the WAQSR.
4. That all notifications, reports and correspondence required for this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25<sup>th</sup> Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 510 Meadowview Drive, Lander, WY 82520.

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH  
(307) 777-7937  
FAX 777-3610

ABANDONED MINES  
(307) 777-6145  
FAX 777-6462

AIR QUALITY  
(307) 777-7391  
FAX 777-5616

INDUSTRIAL SITING  
(307) 777-7369  
FAX 777-5973

LAND QUALITY  
(307) 777-7756  
FAX 777-5864

SOLID & HAZ. WASTE  
(307) 777-7752  
FAX 777-5973

WATER QUALITY  
(307) 777-7781  
FAX 777-5973



5. That written notification of the anticipated date of initial startup, in accordance with Chapter 6, Section 2(i) of the WAQSR, is required not more than 60 days or less than 30 days prior to such date. Notification of the actual date of startup is required within 15 days after startup.
6. That the date of commencement of construction shall be reported to the Administrator within 30 days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within 24 months after receipt of such approval or if construction is discontinued for a period of 24 months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.
7. That performance tests be conducted, in accordance with Chapter 6, Section 2(j) of the WAQSR, within 30 days of achieving a maximum design rate but not later than 90 days following initial startup, and a written report of the results be submitted. The operator shall provide fifteen (15) days prior notice of the test date. If a maximum design rate is not achieved within 90 days of start-up, the Administrator may require testing be done at the rate achieved and again when a maximum rate is achieved.
8. Initial performance tests, as required by Condition 7 of this permit, shall be conducted on the following sources:
  - i. Engine E3:

NO<sub>x</sub>, CO, and VOC Emissions: Testing shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR part 60, subpart JJJJ.

A test protocol shall be submitted to this office for review and approval prior to testing. Engine horsepower, inlet temperature to the catalyst, pressure drop across the catalyst and other operating conditions shall be recorded during each test run and submitted with the test report. Results shall be submitted to this Division within 45 days of completion.

9. The engines shall be limited to the following:

| ID | Emission Unit     | NO <sub>x</sub> |       |     | CO      |       |     | VOC     |       |     |
|----|-------------------|-----------------|-------|-----|---------|-------|-----|---------|-------|-----|
|    |                   | g/hp-hr         | lb/hr | tpy | g/hp-hr | lb/hr | tpy | g/hp-hr | lb/hr | tpy |
| E1 | Caterpillar G3306 | 1.0             | 0.3   | 1.4 | 1.0     | 0.3   | 1.4 | 0.5     | 0.2   | 0.7 |
| E2 | Zenith 520-4      | 1.0             | 0.2   | 0.7 | 1.0     | 0.2   | 0.7 | 0.5     | 0.1   | 0.4 |
| E3 | Waukesha F18GSI   | 0.7             | 0.6   | 2.7 | 1.0     | 0.9   | 3.9 | 0.5     | 0.4   | 1.9 |

10. That Solvay Chemicals, Inc. shall follow the testing requirements as follows for engines E1-E3:
  - i. That every twelve (12) calendar months, or more frequently as specified by the Administrator, the engines (E1-E3) shall be tested to verify compliance with the NO<sub>x</sub>, CO, and VOC limits set forth in this permit. Annual tests for each engine are required within twelve (12) calendar months after completion of the initial performance test or the last periodic test. Testing for NO<sub>x</sub>, CO and VOCs shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR part 60, subpart JJJJ. Notification of the test date shall be provided to the Division fifteen (15) days prior to testing. Results of the tests shall be submitted to this Division within forty-five (45) days of completing the tests.
  - ii. The Air Quality Division shall be notified within 24-hours where the testing/monitoring required by (i) of this condition shows operation outside the permitted emission limits. By no later than seven (7) calendar days of such testing/monitoring event, the owner or operator shall repair and retest/monitor the affected engine to demonstrate that the engine has been returned to operation within the permitted emission limits. Compliance with this permit condition regarding repair and retesting/monitoring shall not be deemed to limit the authority of the Air Quality Division to cite the owner or operator for an exceedance of the permitted emission limits for any testing/monitoring required by (i) of this condition which shows noncompliance.
11. That Solvay Chemicals, Inc. shall follow the monitoring and maintenance requirements as follows for engines E1-E3 equipped with an NSCR catalyst:
  - i. Operate and maintain the engine, air pollution control equipment, and monitoring equipment according to good air pollution control practices at all times, including startup, shutdown, and malfunction.
  - ii. Install a thermocouple to measure the inlet catalyst temperature.
    - a. The inlet temperature shall be recorded at least monthly. If the temperature is outside of the range listed below, corrective action shall be taken.

NSCR Catalyst:            750 °F to 1250 °F
  - iii. Install a device to measure the pressure drop across the catalyst.
    - a. The pressure drop across the catalyst shall be recorded at least monthly. If the pressure changes by more than two inches of water from the pressure drop as determined below, corrective action shall be taken.
      1. During the initial performance test required by this permit, the reference pressure drop shall be established. When the catalyst is replaced, the reference pressure drop shall be reestablished during the subsequent periodic testing required by this permit.

- iv. Records of catalyst inlet temperature, pressure drop, and any maintenance or corrective actions shall be kept and maintained for a period of five (5) years and shall be made available to the Division upon request.
- 12. That VOCs in the gob vent borehole gas shall be controlled by routing the gas for combustion in the Green River Soda Ash Plant or for combustion in the flare.
- 13. Solvay Chemicals, Inc. shall utilize the VOC control strategy, as described in Condition 12, no less than 8563 hours of the time that gas is extracted from the gob vent boreholes. Solvay Chemicals, Inc. shall monitor and record the number of hours that VOCs are combusted in the Green River Soda Ash Plant or flare using the plant data acquisition system (DAS).
- 14. Solvay Chemicals, Inc. shall install, operate, and maintain a flow meter(s) or an equivalent monitor device(s) to monitor the gob vent borehole gas vented to the atmosphere. Solvay Chemicals, Inc. shall also monitor the composition of the gob vent borehole gas such that the amount of VOC emissions vented to the atmosphere can be determined.
- 15. Solvay Chemicals, Inc. shall either monitor the amount of gob vent borehole gas directed to the flare versus the Green River Soda Ash Plant or the number of hours that gas is directed to the flare versus the Green River Soda Ash Plant. Solvay Chemicals, Inc. shall notify the Division of the monitoring methodology chosen along with the startup notification required under Condition 5 of this permit.
- 16. That the Gob Vent Borehole Flare shall be designed, constructed, operated and maintained to be smokeless per Chapter 3, Section 6(b)(i) of the WAQSR, with no visible emissions except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours as determined by 40 CFR part 60, appendix A, Method 22.
- 17. The presence of the Gob Vent Borehole Flare pilot flame shall be monitored using a thermocouple and continuous recording device or any other equivalent device to detect and record the presence of the flame. Records shall be maintained noting period during active operation when the pilot flame is not present.
- 18. Emission control equipment, including the VOC and HAP emission control system or device, all vent lines, connections, fittings, valves, relief valves, hatches or any other appurtenance employed to contain and collect vapors and transport them to the emission control system or device, shall be maintained and operated during any time the gob vent borehole is producing gas such that the emissions are controlled at all times, except as allowed under Condition 13. Records shall be maintained noting dates and durations of times during such operation when any VOC or HAP emissions control system or device or the associated containment and collection equipment is not functioning to control emissions as required by this permit.
- 19. That all emission limits and recordkeeping requirements set forth in valid air quality permits for the Green River Soda Ash Plant shall remain in effect for all gas fired sources utilizing gob vent borehole gas.

20. That Solvay Chemicals, Inc. shall comply with the applicable requirements of 40 CFR part 60, subpart JJJJ.
21. That Solvay Chemicals, Inc. shall comply with the applicable requirements of 40 CFR part 63 subpart ZZZZ.
22. All records required under this permit shall be kept for a period of at least five (5) years and shall be made available to the Division upon request.
23. This permit shall supersede Permit Waiver wv-9390 upon permit issuance. All other valid permits and waivers for the Green River Soda Ash Plant shall remain in effect.

It must be noted that this approval does not relieve you of your obligation to comply with all applicable county, state, and federal standards, regulations or ordinances. Special attention must be given to Chapter 6, Section 2 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with conditions 5, 6 and 7. Attention must be given to Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with condition 3 (major sources). Any appeal of this permit as a final action of the Department must be made to the Environmental Quality Council within sixty (60) days of permit issuance per Section 16, Chapter I, General Rules of Practice and Procedure, Department of Environmental Quality.

If we may be of further assistance to you, please feel free to contact this office.

Sincerely,

  
Chad Schlichtemeier  
Acting Administrator  
Air Quality Division

  
John V. Corra  
Director  
Dept. of Environmental Quality

cc: Tony Hoyt



# Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Dave Freudenthal, Governor

John Corra, Director

July 13, 2010

Mr. Ronald O. Hughes  
Senior Vice President Site Manager  
Solvay Chemicals, Inc.  
P.O. Box 1167  
Green River, WY 82935

Permit No. **MD-10561**

Dear Mr. Hughes:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed final review of Solvay Chemicals, Incorporated's application to modify operations at the Green River Soda Ash Plant with the replacement of two engines associated with the gob vent borehole project. A 145 hp Caterpillar G3306 engine and a 75 hp Zenith 520-4 engine will be replaced with two (2) engines consisting of a 212 hp GM 8.2L engine and a 125 hp GM 4.3L engine. The Green River Soda Ash Plant is located in the NE¼ of Section 31, T18N, R109W, approximately twenty (20) miles west of Green River, in Sweetwater County, Wyoming.

Following this agency's proposed approval of the request as published June 10, 2010 and in accordance with Chapter 6, Section 2(m) of the Wyoming Air Quality Standards and Regulations, the public was afforded a 30-day period in which to submit comments concerning the proposed modification, and an opportunity for a public hearing. No comments have been received. Therefore, on the basis of the information provided to us, approval to modify the Green River Soda Ash Plant as described in the application is hereby granted pursuant to Chapter 6, Section 2 of the regulations with the following conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.
2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.
3. That Solvay Chemicals, Inc. shall modify their Operating Permit in accordance with Chapter 6, Section 3 of the WAQSR.
4. That all notifications, reports and correspondence required for this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25<sup>th</sup> Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 510 Meadowview Drive, Lander, WY 82520.



5. That written notification of the anticipated date of initial startup, in accordance with Chapter 6, Section 2(i) of the WAQSR, is required not more than 60 days or less than 30 days prior to such date. Notification of the actual date of startup is required within 15 days after startup.
6. That the date of commencement of construction shall be reported to the Administrator within 30 days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within 24 months after receipt of such approval or if construction is discontinued for a period of 24 months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.
7. That performance tests be conducted, in accordance with Chapter 6, Section 2(j) of the WAQSR, within 30 days of achieving a maximum design rate but not later than 90 days following initial startup, and a written report of the results be submitted. The operator shall provide fifteen (15) days prior notice of the test date. If a maximum design rate is not achieved within 90 days of startup, the Administrator may require testing be done at the rate achieved and again when a maximum rate is achieved.
8. Initial performance tests, as required by Condition 7 of this permit, shall be conducted on the following sources:
  - i. Engines E4 and E5:

 NOx, CO, and VOC Emissions: Testing shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR part 60, subpart JJJJ.

A test protocol shall be submitted to this office for review and approval prior to testing. Engine horsepower, inlet temperature to the catalyst, pressure drop across the catalyst and other operating conditions shall be recorded during each test run and submitted with the test report. Results shall be submitted to this Division within 45 days of completion.

9. That emissions from the engines shall be limited to the following:

| ID | Emission Unit | NO <sub>x</sub> |       |     | CO      |       |     | VOC     |       |     |
|----|---------------|-----------------|-------|-----|---------|-------|-----|---------|-------|-----|
|    |               | g/hp-hr         | lb/hr | tpy | g/hp-hr | lb/hr | tpy | g/hp-hr | lb/hr | tpy |
| E4 | GM 8.2L       | 0.7             | 0.3   | 1.4 | 1.0     | 0.5   | 2.0 | 0.5     | 0.2   | 1.0 |
| E5 | GM 4.3L       | 0.7             | 0.2   | 0.8 | 1.0     | 0.3   | 1.2 | 0.5     | 0.1   | 0.6 |

10. That Solvay Chemicals, Inc. shall follow the testing requirements as follows for engines E4-E5:
  - i. That every twelve (12) calendar months, or more frequently as specified by the Administrator, the engines (E4 and E5) shall be tested to verify compliance with the NO<sub>x</sub>, CO, and VOC limits set forth in this permit. Annual tests for each engine are required within twelve (12) calendar months after completion of the initial performance test or the last periodic test. Testing for NO<sub>x</sub>, CO and VOCs shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR part 60, subpart JJJJ. Notification of the test date shall be provided to the Division fifteen (15) days prior to testing. Results of the tests shall be submitted to this Division within forty-five (45) days of completing the tests.
  - ii. The Air Quality Division shall be notified within 24-hours where the testing/monitoring required by (i) of this condition shows operation outside the permitted emission limits. By no later than seven (7) calendar days of such testing/monitoring event, the owner or operator shall repair and retest/monitor the affected engine to demonstrate that the engine has been returned to operation within the permitted emission limits. Compliance with this permit condition regarding repair and retesting/monitoring shall not be deemed to limit the authority of the Air Quality Division to cite the owner or operator for an exceedance of the permitted emission limits for any testing/monitoring required by (i) of this condition which shows noncompliance.
11. That Solvay Chemicals, Inc. shall follow the monitoring and maintenance requirements as follows for engines E4-E5 equipped with an AFRC and NSCR catalyst:
  - i. Operate and maintain the engine, air pollution control equipment, and monitoring equipment according to good air pollution control practices at all times, including startup, shutdown, and malfunction.
  - ii. Install a thermocouple to measure the inlet catalyst temperature.
    - a. The inlet temperature shall be recorded at least monthly. If the temperature is outside of the range listed below, corrective action shall be taken.

NSCR Catalyst:            750 °F to 1250 °F
  - iii. Install a device to measure the pressure drop across the catalyst.
    - a. The pressure drop across the catalyst shall be recorded at least monthly. If the pressure changes by more than two inches of water from the pressure drop as determined below, corrective action shall be taken.
      1. During the initial performance test required by this permit, the reference pressure drop shall be established. When the catalyst is replaced, the reference pressure drop shall be reestablished during the subsequent periodic testing required by this permit.

- iv. Records of catalyst inlet temperature, pressure drop, and any maintenance or corrective actions shall be kept and maintained for a period of five (5) years and shall be made available to the Division upon request.
- 12. That the Caterpillar G3306 engine (E1) and 75 hp Zenith 520-4 engine (E2) shall be removed from service prior to the startup of the respective replacement GM 8.2L (E4) or GM 4.3L (E5) engines.
- 13. That Solvay Chemicals, Inc. shall comply with the applicable requirements of 40 CFR part 60, subpart JJJJ.
- 14. That Solvay Chemicals, Inc. shall comply with the applicable requirements of 40 CFR part 63 subpart ZZZZ.
- 15. All records required under this permit shall be kept for a period of at least five (5) years and shall be made available to the Division upon request.
- 16. That all other valid permits and waivers for the Green River Soda Ash Plant shall remain in effect unless superseded by a condition of this permit.

It must be noted that this approval does not relieve you of your obligation to comply with all applicable county, state, and federal standards, regulations or ordinances. Special attention must be given to Chapter 6, Section 2 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with conditions 5, 6 and 7. Attention must be given to Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with condition 3 (major sources). Any appeal of this permit as a final action of the Department must be made to the Environmental Quality Council within sixty (60) days of permit issuance per Section 16, Chapter I, General Rules of Practice and Procedure, Department of Environmental Quality.

If we may be of further assistance to you, please feel free to contact this office.

Sincerely,



Steven A. Dietrich  
Administrator  
Air Quality Division



John V. Corra  
Director  
Dept. of Environmental Quality

cc: Tony Hoyt



# Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's  
environment for the benefit of current and future generations.



Dave Freudenthal, Governor

John Corra, Director

November 29, 2010

Mr. Alain Vandendoren  
Engineering Superintendent  
Solvay Chemicals, Inc.  
P.O. Box 1167  
Green River, WY 82935

Permit No. MD-11024

Dear Mr. Vandendoren:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed final review of Solvay Chemicals, Incorporated's application to modify operations at the Green River Soda Ash Plant with the removal of the hours limitation on venting of the gob vent borehole (GVB) gas, and to be allowed to drill and vent additional test GVBs without any controls on the mine gas vented. The Green River Soda Ash Plant is located in the NE1/4 of Section 31, T18N, R109W, approximately twenty (20) miles west of Green River, in Sweetwater County, Wyoming.

Following this agency's proposed approval of the request as published October 27, 2010 and in accordance with Chapter 6, Section 2(m) of the Wyoming Air Quality Standards and Regulations, the public was afforded a 30-day period in which to submit comments concerning the proposed modification, and an opportunity for a public hearing. No comments have been received. Therefore, on the basis of the information provided to us, approval to modify the Green River Soda Ash Plant as described in the application is hereby granted pursuant to Chapter 6, Section 2 of the regulations with the following conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.
2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.
3. That Solvay Chemicals, Inc. shall modify their Operating Permit in accordance with Chapter 6, Section 3 of the WAQSR.
4. That all notifications, reports and correspondence required for this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25<sup>th</sup> Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 510 Meadowview Drive, Lander, WY 82520.
5. That written notification of the anticipated date of initial startup, in accordance with Chapter 6, Section 2(i) of the WAQSR, is required not more than 60 days or less than 30 days prior to such date. Notification of the actual date of startup is required within 15 days after startup.

Herschler Building • 122 West 25th Street • Cheyenne, WY 82002 • <http://deq.state.wy.us>

ADMIN/OUTREACH  
(307) 777-7937  
FAX 777-3610

ABANDONED MINES  
(307) 777-6145  
FAX 777-6462

AIR QUALITY  
(307) 777-7391  
FAX 777-5616

INDUSTRIAL SITING  
(307) 777-7369  
FAX 777-5973

LAND QUALITY  
(307) 777-7756  
FAX 777-5864

SOLID & HAZ. WASTE  
(307) 777-7752  
FAX 777-5973

WATER QUALITY  
(307) 777-7781  
FAX 777-5973



6. That the date of commencement of construction shall be reported to the Administrator within 30 days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within 24 months after receipt of such approval or if construction is discontinued for a period of 24 months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.
7. That performance tests be conducted, in accordance with Chapter 6, Section 2(j) of the WAQSR, within 30 days of achieving a maximum design rate but not later than 90 days following initial startup, and a written report of the results be submitted. The operator shall provide fifteen (15) days prior notice of the test date. If a maximum design rate is not achieved within 90 days of startup, the Administrator may require testing be done at the rate achieved and again when a maximum rate is achieved.
8. Initial performance tests, as required by condition 7 of this permit, shall be conducted on the following source:

i. Engine E3:

NO<sub>x</sub>, CO, and VOC Emissions: Testing shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR part 60, subpart JJJJ.

A test protocol shall be submitted for review and approval prior to testing. Engine horsepower, inlet temperature to the catalyst, pressure drop across the catalyst and other operating conditions shall be recorded during each test run and submitted with the test report. Results shall be submitted to this Division within 45 days of completion.

9. The engine shall be limited to the following:

| ID | Emission Unit   | NO <sub>x</sub> |       |     | CO      |       |     | VOC     |       |     |
|----|-----------------|-----------------|-------|-----|---------|-------|-----|---------|-------|-----|
|    |                 | g/hp-hr         | lb/hr | tpy | g/hp-hr | lb/hr | tpy | g/hp-hr | lb/hr | tpy |
| E3 | Waukesha F18GSI | 0.7             | 0.6   | 2.7 | 1.0     | 0.9   | 3.9 | 0.5     | 0.4   | 1.9 |

10. That Solvay Chemicals, Inc. shall follow the testing requirements as follows for compressor engine E3:
  - i. That every twelve (12) calendar months, or more frequently as specified by the Administrator, the compressor engine (E3) shall be tested to verify compliance with the NO<sub>x</sub>, CO, and VOC limits set forth in this permit. Periodic tests for the engine (E3) are required within twelve (12) calendar months after completion of the initial performance test or the last periodic test. Testing for NO<sub>x</sub>, CO, and VOCs shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR part 60, subpart JJJJ. Notification of the test date shall be provided to the Division fifteen (15) days prior to testing. Results of the tests shall be submitted to this Division within forty-five (45) days of completing the tests.

- ii. The Air Quality Division shall be notified within 24-hours where the testing/monitoring required by (i) of this condition shows operation outside the permitted emission limits. By no later than seven (7) calendar days of such testing/monitoring event, the owner or operator shall repair and retest/monitor the engine to demonstrate that the engine has been returned to operation within the permitted emission limits. Compliance with this permit condition regarding repair and retesting/monitoring shall not be deemed to limit the authority of the Air Quality Division to cite the owner or operator for an exceedance of the permitted emission limits for any testing/monitoring required by (i) of this condition which shows noncompliance.
11. That Solvay Chemicals, Inc. shall follow the monitoring and maintenance requirements as follows for engine E3 equipped with an NSCR catalyst:
- i. Operate and maintain the engine, air pollution control equipment, and monitoring equipment according to good air pollution control practices at all times, including startup, shutdown, and malfunction.
  - ii. Install a thermocouple to measure the inlet catalyst temperature.
    - a. The inlet temperature shall be recorded at least monthly. If the temperature is outside of the range listed below, corrective action shall be taken.

NSCR Catalyst:            750 °F to 1250 °F
  - iii. Install a device to measure the pressure drop across the catalyst.
    - a. The pressure drop across the catalyst shall be recorded at least monthly. If the pressure changes by more than two inches of water from the pressure drop as determined below, corrective action shall be taken.
      - 1. During the initial performance test required by this permit, the reference pressure drop shall be established. When the catalyst is replaced, the reference pressure drop shall be reestablished during the subsequent periodic testing required by this permit.
  - iv. Records of catalyst inlet temperature, pressure drop, and any maintenance or corrective actions shall be kept and maintained for a period of five (5) years and shall be made available to the Division upon request.
12. That Solvay Chemicals, Inc. shall obtain a permit prior to the installation and operation of additional gob vent borehole methane pump engines, compressor engines, or flares.
13. Solvay Chemicals, Inc. shall monitor and record the number of hours that VOCs are combusted in the Green River Soda Ash Plant or flare using the plant data acquisition system (DAS).

14. Solvay Chemicals, Inc. shall install, operate, and maintain a flow meter(s) or an equivalent monitor device(s) to monitor the gob vent borehole gas vented to the atmosphere. Solvay Chemicals, Inc. shall also monitor the composition of the gob vent borehole gas such that the amount of VOC emissions vented to the atmosphere can be determined.
15. Solvay Chemicals, Inc. shall either monitor the amount of gob vent borehole gas directed to the flare versus the Green River Soda Ash Plant or the number of hours that gas is directed to the flare versus the Green River Soda Ash Plant. Solvay Chemicals, Inc. shall notify the Division of the monitoring methodology chosen along with the startup notification required under Condition 5 of this permit.
16. That the Gob Vent Borehole Flare shall be designed, constructed, operated and maintained to be smokeless per Chapter 3, Section 6(b)(i) of the WAQSR, with no visible emissions except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours as determined by 40 CFR part 60, appendix A, Method 22.
17. ~~That all emission limits and recordkeeping requirements set forth in valid air quality permits for~~ the Green River Soda Ash Plant shall remain in effect for all gas fired sources utilizing gob vent borehole gas.
18. That Solvay Chemicals, Inc. shall comply with the applicable requirements of 40 CFR part 60, subpart JJJJ.
19. That Solvay Chemicals, Inc. shall comply with the applicable requirements of 40 CFR part 63 subpart ZZZZ.
20. All records required under this permit shall be kept for a period of at least five (5) years and shall be made available to the Division upon request.
21. This permit shall supersede permit MD-10253 upon permit issuance. All other valid permits and waivers for the Green River Soda Ash Plant shall remain in effect.

It must be noted that this approval does not relieve you of your obligation to comply with all applicable county, state, and federal standards, regulations or ordinances. Special attention must be given to Chapter 6, Section 2 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with conditions 5, 6 and 7. Attention must be given to Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with condition 3. Any appeal of this permit as a final action of the Department must be made to the Environmental Quality Council within sixty (60) days of permit issuance per Section 16, Chapter I, General Rules of Practice and Procedure, Department of Environmental Quality.

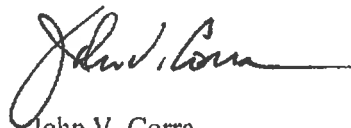
Solvay Chemicals, Inc.  
Air Quality Permit MD-11024  
Page 5

If we may be of further assistance to you, please feel free to contact this office.

Sincerely,



Steven A. Dietrich  
Administrator  
Air Quality Division



John V. Corra  
Director  
Dept. of Environmental Quality

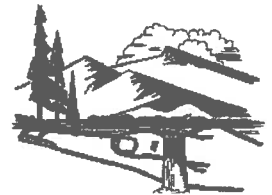
cc: Tony Hoyt

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# Department of Environmental Quality

*To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.*



Matthew H. Mead, Governor

John Corra, Director

April 14, 2011

Ms. Danielle Knaphus  
Environmental Technician  
Solvay Chemicals, Inc.  
P. O. Box 1167  
Green River, WY 82935

**Re: Permit Waiver wv-11853  
Gob Vent Borehole Project**

Dear Ms. Knaphus:

The Division of Air Quality has reviewed your application received March 23, 2011, to install one (1) 2.2 MMscfd TEG dehydration unit with two (2) 0.085 MMBtu/hr reboiler heaters for the Gob Vent Borehole Project at the Green River Soda Ash Plant located in the NE1/4 of Section 31, T18N, R109W, approximately twenty (20) miles west of Green River, in Sweetwater County, Wyoming.

The primary purpose of the Gob Vent Borehole (GVB) project is to extract gas from the gob vent boreholes drilled to help ventilate areas actively being mined by the longwall to prevent the buildup of explosive gases. The typical composition of the gas released in the longwall gob during mining operations is approximately 90 mole percent methane, 0.4 mole percent VOCs with the balance being nitrogen. The pipeline operations require a dry gas stream to ensure the integrity of the pipeline. To accomplish this, Solvay Chemicals, Inc. is proposing to install one (1) 2.2 TEG dehydration unit with two (2) 0.085 MMBtu/hr reboilers heaters to be installed after the compressor.

The major pollutants from the 2.2 MMscf TEG dehydration unit with two (2) 0.085 MMBtu/hr reboiler heaters are VOCs and HAPs associated with vapors from the dehydration unit reboiler still vent and NOx and CO emissions from incomplete combustion from the reboiler heaters. Uncontrolled emissions from the dehydration unit were estimated using GRI-GLYCalc Version 4.0 software at a gas pressure of 95 psig and a wet gas temperature of 70°F. The dehydration unit will be equipped with an electric Rotor-Tech GM4-8 glycol circulation pump with a maximum flowrate of 3.3 gallon per minute (gpm). The reboiler heater emissions were determined with emission factors from AP-42, Chapter 1.4 – *Natural Gas Combustion* - for fuel boilers and heaters. Emissions from the 2.2 MMscfd TEG dehydration unit and two (2) 0.085 MMBtu/hr reboiler heaters were estimated at 0.1 tpy of NOx and CO and 0.6 tpy of VOC. The emissions from this modification are below the PSD significance thresholds and a PSD analysis is not required.



**Chapter 6, Section 2(k)(viii) Waiver**  
**Solvay Chemicals, Inc., wv-11853**  
**Page 2**

The Division has determined the proposed 2.2 MMscf TEG dehydration unit with two (2) 0.085 MMBtu/hr reboiler heaters to be insignificant in emission rate and ambient air quality impact, and waives permitting requirements under Chapter 6 Section 2(k)(viii) of the Wyoming Air Quality Standards and Regulations subject to the following condition of operation per Section 35-11-110 of the Wyoming Environmental Quality Act:

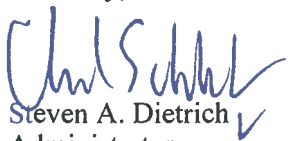
1. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within twenty-four (24) months after receipt of such approval or if construction is discontinued for a period of twenty-four (24) months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.
2. Start-up notification shall be submitted to the Division, within fifteen (15) days of start-up of the 2.2 MMscf TEG dehydration unit with two (2) 0.085 MMBtu/hr reboiler heaters.
3. Notifications, reports, and correspondences associated with this waiver shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25<sup>th</sup> Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 510 Meadowview Drive, Lander, WY 82520.

As a major source under Chapter 6, Section 3 of the WAQSR, you are advised that the modification addressed in this waiver may require a modification to your operating permit. Please contact the Operating Permit Program Manager, at (307) 777-7391 concerning issues pertaining to your operating permit.

The Division is issuing this waiver based on the information submitted in the application. Any deviation in the construction or operation of this facility from that represented in your application which could result in significant pollutant emissions and impact will be a violation of the Wyoming Environmental Quality Act and the Wyoming Air Quality Standards & Regulations. Violations could result in enforcement actions and penalties under the law.

If you have any questions, please contact this office.

Sincerely,



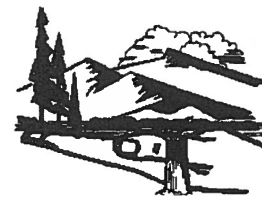
Steven A. Dietrich  
Administrator  
Air Quality Division

cc: Tony Hoyt



# Department of Environmental Quality

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Matthew H. Mead, Governor

Todd Parfitt, Director

January 10, 2013

Ms. Ouisha Toenyes  
Environmental Engineer  
Solvay Chemicals, Inc.  
P.O. Box 1167  
Green River, WY 82935

Re: Permit Waiver wv-14263

Dear Ms. Toenyes:

The Division of Air Quality has reviewed your application dated December 21, 2012 to permanently install a generator in order to power lights, an HVAC system, pumps/motors, and the distributive control system (DCS) system associated with the Mine Waste Methane Project at the Green River Soda Ash Plant. The facility is located in Section 31, T18N, R109W, approximately twenty (20) miles west of Green River, in Sweetwater County, Wyoming.

Solvay Chemical, Inc. currently utilizes a temporary generator engine (123 hp) in order to power lights, an HVAC system, pumps/motors, and the distributive control system (DCS) system associated with the Mine Waste Methane Project. Solvay has proposed to permanently install a generator with an 88 hp General Motors 5.7L natural gas fired engine to replace the temporary generator engine. Based on the information contained in the application the engine will be subject to the requirements of 40 CFR part 60, subpart JJJJ.

The installation of the 88 hp General Motors 5.7L natural gas fired engine does not increase process unit utilization at the soda ash plant. The resultant change in emissions of does not cause a significant emissions increase or significant net emissions increase. Therefore, a review under Chapter 6, Section 4 of the Wyoming Air Quality Standards & Regulations (WAQSR) is not required.

The installation of the 88 hp General Motors 5.7L natural gas fired engine meets the requirements of Chapter 6, Section 2(c)(v), Best Available Control Technology, and the Division has determined this modification to be insignificant in emission rate and ambient air quality impact, and waives permitting requirements under Chapter 6 Section 2(k)(viii) of the Wyoming Air Quality Standards and Regulations subject to the following condition of operation per Section 35-11-110 of the Wyoming Environmental Quality Act:

1. That all notifications, reports, and correspondences associated with this waiver shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25<sup>th</sup> Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 510 Meadowview Driver, Lander, WY 82520.



2. That the date of commencement of construction the 88 hp General Motors 5.7L natural gas fired engine shall be reported to the Administrator within thirty (30) days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within twenty-four (24) months after receipt of such approval or if construction is discontinued for a period of twenty-four (24) months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.
3. That the date the 88 hp General Motors 5.7L natural gas fired engine is put into service shall be submitted to the Division within fifteen (15) days of the actual startup of the unit.
4. That performance tests be conducted, in accordance with Chapter 6, Section 2(j) of the WAQSR, within thirty (30) days of achieving a maximum design rate but not later than ninety (90) days following initial startup, and a written report of the results be submitted. The operator shall provide fifteen (15) days prior notice of the test date. If a maximum design rate is not achieved within ninety (90) days of startup, the Administrator may require testing be done at the rate achieved and again when a maximum rate is achieved.
5. Initial performance testing, as required by condition 4, shall be conducted on the following sources:

- i. 88 hp General Motors 5.7L natural gas fired engine

NO<sub>x</sub>, CO, and VOC Emissions: Testing shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR part 60, subpart JJJJ. For the initial performance test, testing shall not consist of Method 19 or ASTM Methods.

A test protocol shall be submitted for review and approval prior to testing. Engine horsepower, inlet temperature to the catalyst, pressure drop across the catalyst and other operating conditions shall be recorded during each test run and submitted with the test report. Results shall be submitted to this Division within forty-five (45) days of completion.

6. The emissions from the 88 hp General Motors 5.7L natural gas fired engine shall be limited to the following:

| NO <sub>x</sub> |       |     | CO      |       |     | VOC     |       |     |
|-----------------|-------|-----|---------|-------|-----|---------|-------|-----|
| g/hp-hr         | lb/hr | tpy | g/hp-hr | lb/hr | tpy | g/hp-hr | lb/hr | tpy |
| 0.7             | 0.1   | 0.6 | 1.0     | 0.2   | 0.8 | 0.5     | 0.1   | 0.4 |

7. Solvay Chemicals, Inc. shall comply with all applicable requirements of 40 CFR part 63, subpart ZZZZ for the 88 hp General Motors 5.7L natural gas fired engine.
8. Solvay Chemicals, Inc. shall comply with all applicable requirements of 40 CFR part 60, subpart JJJJ for the 88 hp General Motors 5.7L natural gas fired engine.

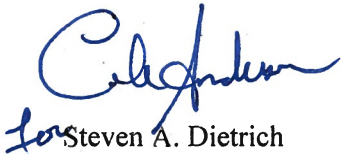
9. Solvay Chemicals, Inc. shall retain any records and support information as required by this permit for a period of at least five (5) years from the date such records are generated, and the records shall be made available to the Division upon request.

As a major source under Chapter 6, Section 3 of the WAQSR, you are advised that the construction addressed in this waiver may require a modification to your Operating Permit. Please contact the Operating Permit Program Manager concerning issues pertaining to your operating permit.

The Division is issuing this waiver based on the information submitted in the application. Any deviation in the construction or operation of this facility from that represented in your application which could result in significant pollutant emissions and impact will be a violation of the Wyoming Environmental Quality Act and the Wyoming Air Quality Standards & Regulations. Violations could result in enforcement actions and penalties under the law.

If you have any questions, please contact this office.

Sincerely,

A handwritten signature in blue ink, appearing to read "Steven A. Dietrich", is written over the printed name.

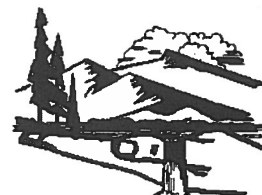
Steven A. Dietrich  
Administrator  
Air Quality Division

cc: Tony Hoyt



# Department of Environmental Quality

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Matthew H. Mead, Governor

Todd Parfitt, Director

May 3, 2013

Mr. Todd Brichacek  
Vice President – Site Manager  
Solvay Chemicals, Inc.  
P.O. Box 1167  
Green River, WY 82935

Re: Permit Waiver wv-14727

Dear Mr. Brichacek:

On April 16, 2013, the Division of Air Quality received an application from Solvay Chemicals, Incorporated to install an additional 88 hp General Motors 5.7L natural gas generator at the Green River Soda Ash Plant. The Green River Soda Ash Plant is located in Section 31, T18N, R109W, approximately twenty (20) miles west of Green River, in Sweetwater County, Wyoming.

Solvay Chemical, Inc. currently utilizes a temporary generator engine (123 hp) in order to power lights, an HVAC system, pumps/motors, and the distributive control system (DCS) system associated with the Mine Waste Methane Project authorized under Air Quality Waiver wv-13880. Air Quality Waiver wv-14263 was issued on January 10, 2013, to permanently install a generator with an 88 hp General Motors 5.7L natural gas fired engine to replace the temporary generator engine. Solvay Chemical, Inc. proposes to install a second permanent 88 hp General Motors 5.7L natural gas fired engine with the ability to run concurrently with the currently permitted permanent generator in order to allow for operational flexibility and periodic maintenance. The addition of a second generator will not increase capacity of the current Mine Waste Methane Recovery equipment.

Based on the information contained in the application, the engines will be subject to the requirements of 40 CFR part 60, subpart JJJJ.

The installation of the two (2) 88 hp General Motors 5.7L natural gas fired engines does not increase process unit utilization at the soda ash plant. The resultant change in emissions does not cause a significant emissions increase or significant net emissions increase. Therefore, a review under Chapter 6, Section 4 of the Wyoming Air Quality Standards & Regulations (WAQSR) is not required.

The installation of the two (2) 88 hp General Motors 5.7L natural gas fired engines meet the requirements of Chapter 6, Section 2(c)(v), Best Available Control Technology, and the Division has determined this modification to be insignificant in emission rate and ambient air quality impact, and waives permitting requirements under Chapter 6 Section 2(k)(viii) of the Wyoming Air Quality Standards and Regulations subject to the following condition of operation per Section 35-11-110 of the Wyoming Environmental Quality Act:



1. That all notifications, reports, and correspondences associated with this waiver shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25<sup>th</sup> Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 510 Meadowview Driver, Lander, WY 82520.
2. That the date of commencement of construction of the two (2) 88 hp General Motors 5.7L natural gas fired engines shall be reported to the Administrator within thirty (30) days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within twenty-four (24) months after receipt of such approval or if construction is discontinued for a period of twenty-four (24) months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.
3. That the date the two (2) 88 hp General Motors 5.7L natural gas fired engines are put into service shall be submitted to the Division within fifteen (15) days of the actual startup of the units.
4. That performance tests be conducted, in accordance with Chapter 6, Section 2(j) of the WAQSR, within thirty (30) days of achieving a maximum design rate but not later than ninety (90) days following initial startup, and a written report of the results be submitted. The operator shall provide fifteen (15) days prior notice of the test date. If a maximum design rate is not achieved within ninety (90) days of startup, the Administrator may require testing be done at the rate achieved and again when a maximum rate is achieved.
5. Initial performance testing, as required by Condition 4, shall be conducted on the following sources:

- i. 88 hp General Motors 5.7L natural gas fired engines

NO<sub>x</sub>, CO, and VOC Emissions: Testing shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR part 60, subpart JJJJ. For the initial performance test, testing shall not consist of Method 19 or ASTM Methods.

A test protocol shall be submitted for review and approval prior to testing. Engine horsepower, inlet temperature to the catalyst, pressure drop across the catalyst and other operating conditions shall be recorded during each test run and submitted with the test report. Results shall be submitted to this Division within forty-five (45) days of completion.

6. The 88 hp General Motors 5.7L natural gas fired engines shall be limited to the values in the following table:

| Engine              | NO <sub>x</sub> |       |     | CO      |       |     | VOC     |       |     |
|---------------------|-----------------|-------|-----|---------|-------|-----|---------|-------|-----|
|                     | g/hp-hr         | lb/hr | tpy | g/hp-hr | lb/hr | tpy | g/hp-hr | lb/hr | tpy |
| General Motors 5.7L | 0.7             | 0.1   | 0.6 | 1.0     | 0.2   | 0.9 | 0.5     | 0.1   | 0.4 |

7. Solvay Chemicals, Inc. shall comply with all applicable requirements of 40 CFR part 63, subpart ZZZZ for the 88 hp General Motors 5.7L natural gas fired engines.

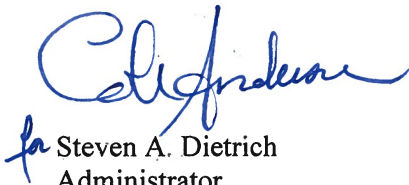
8. That for the General Motors 5.7L natural gas generator engines, Solvay Chemicals, Inc. shall operate and maintain the engine, air pollution control equipment, and monitoring equipment according to good air pollution control practices at all times, including startup, shutdown, and malfunction. Records of any maintenance or corrective actions shall be kept and maintained for a period of five (5) years and shall be made available to the Division upon request.
9. Solvay Chemicals, Inc. shall comply with all applicable requirements of 40 CFR part 60, subpart JJJJ for the 88 hp General Motors 5.7L natural gas fired engines.
10. Solvay Chemicals, Inc. shall retain any records and support information as required by this permit for a period of at least five (5) years from the date such records are generated, and the records shall be made available to the Division upon request.
11. Effective upon waiver issuance, this waiver shall supersede Air Quality Waiver wv-14263 for the Green River Soda Ash Plant.

As a major source under Chapter 6, Section 3 of the WAQSR, you are advised that the construction addressed in this waiver may require a modification to your Chapter 6, Section 3 Operating Permit. Please contact the Operating Permit Program Manager at (307) 777-7391 concerning issues pertaining to your operating permit.

The Division is issuing this waiver based on the information submitted in the application. Any deviation in the construction or operation of this facility from that represented in your application which could result in significant pollutant emissions and impact will be a violation of the Wyoming Environmental Quality Act and the Wyoming Air Quality Standards & Regulations. Violations could result in enforcement actions and penalties under the law.

If you have any questions, please contact this office.

Sincerely,

  
Steven A. Dietrich  
Administrator  
Air Quality Division

cc: Tony Hoyt



# Department of Environmental Quality

*To protect, conserve and enhance the quality of Wyoming's  
environment for the benefit of current and future generations.*



Matthew H. Mead, Governor

Todd Parfitt, Director

**STATE OF WYOMING**  
**Department of Environmental Quality - Air Quality Division**  
**Chapter 6, Section 2(k)(viii) Waiver**  
**May 20, 2014**  
**wv-16105**

Company Name: Solvay Chemicals, Inc.

Mailing Address: P.O. Box 1167, Green River, WY 82935

Company Official: Todd Brichacek Title: Senior Vice President – Site Manager

Facility Name: Green River Soda Ash Plant County: Sweetwater

Legal Description:  $\frac{1}{4}$  Section: NE Section: 31 T: 18N R: 109W

Facility Equipment: • one (1) 2.5 MMscfd TEG dehydration unit with a Kimray Model 21015SC glycol pump (gas), a RotorTech Model GS1114 glycol pump (electric), and 0.75 MMBtu/hr reboiler heater

Reviewer: Alicia Boltz, Air Quality Engineer

On March 18, 2014, the Division of Air Quality received an application from Solvay Chemicals, Inc. to install one (1) 2.5 MMscfd TEG dehydration unit with a Kimray Model 21015SC glycol pump (gas), a RotorTech Model GS1114 glycol pump (electric), and 0.75 MMBtu/hr reboiler heater at the Green River Soda Ash Plant, located in the NE $\frac{1}{4}$  of Section 31, T18N, R109W, approximately twenty (20) miles west of Green River, in Sweetwater County, Wyoming.

Solvay Chemicals, Inc. proposes to install a second mine waste methane dehydration unit. The dehydration unit creates a dry gas stream to prevent corrosion of the pipeline and allows for efficient use of the mine gas in the Solvay processing plant. In order to maintain operational flexibility, this dehydration unit will be equipped with two (2) glycol circulation pumps; one (1) electric RotorTech pump and one (1) gas Kimray pump. These pumps will not run simultaneously and will have a maximum circulation rate of 14 gpm. Uncontrolled VOC emissions were determined to be 0.5 tpy. However, for safety reasons Solvay Chemicals Inc. will install a BTEX burner. The dehydration unit non-condensable vapors will be combusted by a BTEX burner with a VOC and HAP destruction efficiency of ninety-eight percent (98%).

The proposed equipment listed in this waiver meets the requirements of Chapter 6, Section 2(c)(v), Best Available Control Technology, and the emissions are considered insignificant in terms of ambient impact and rate per Chapter 6, Section 2(k)(viii) of the Wyoming Air Quality Standards and Regulations.

Conditions of operation per Section 35-11-110 of the Wyoming Environmental Quality Act:

1. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within twenty-four (24) months after receipt of such approval or if construction is discontinued for a period of twenty-four (24) months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.



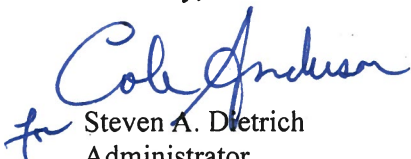
2. Start-up notification shall be submitted to the Division within fifteen (15) days of start-up of the 2.5 MMscfd TEG dehydration unit.
3. That all notifications, reports, and correspondences associated with this waiver shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25<sup>th</sup> Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 510 Meadowview Drive, Lander, WY 82520.
4. Solvay Chemicals, Inc. shall comply with all applicable requirements of 40 CFR part 63, subpart HH.
5. That VOC and HAP emissions associated with the 2.5 MMscfd TEG dehydration unit shall be controlled with the BTEX combustion unit.
6. The presence of the BTEX combustion unit pilot flame shall be monitored using a thermocouple and continuous recording device or any other equivalent device to detect and record the presence of the flame. Records shall be maintained noting periods when the pilot flame is not present.
7. The BTEX combustion unit shall be designed, constructed, operated and maintained to be smokeless, per Chapter 3, Section 6(b)(i) of the WAQSR, with no visible emissions except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours as determined by 40 CFR, Part 60, Appendix A, Method 22.

As a major source under Chapter 6, Section 3 of the WAQSR, you are advised that the modification addressed in this waiver may require a modification to your Operating Permit. Please contact the Operating Permit Program Manager concerning issues pertaining to your operating permit.

The Division is issuing this waiver based on the information submitted in the application. Any deviation in the operation of this facility from that represented in your application which could result in significant pollutant emissions and impact will be a violation of the Wyoming Environmental Quality Act and the Wyoming Air Quality Standards & Regulations. Violations could result in enforcement actions and penalties under the law.

If you have any questions, you may contact this office at (307) 777-7391.

Sincerely,

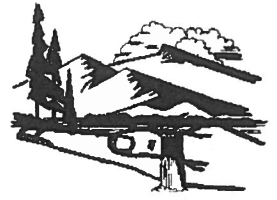
  
for Steven A. Dietrich  
Administrator  
Air Quality Division

cc: Tony Hoyt



# Department of Environmental Quality

*To protect, conserve and enhance the quality of Wyoming's  
environment for the benefit of current and future generations.*



Matthew H. Mead, Governor

Todd Parfitt, Director

July 14, 2014

Mr. Todd Brichacek  
Senior Vice President - Site Manager  
Solvay Chemicals, Inc.  
P.O. Box 1167  
Green River, WY 82935

Permit No. **MD-16104**

Dear Mr. Brichacek:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed final review of Solvay Chemicals, Incorporated's application to install one (1) 530 hp Waukesha H24GSI engine at Solvay Chemicals, Incorporated's Green River Soda Ash Plant facility, located in the NE1/4 of Section 31, T18N, R109W, approximately twenty (20) miles west of Green River, in Sweetwater County, Wyoming.

Following this agency's proposed approval of the request as published June 3, 2014, and in accordance with Chapter 6, Section 2(m) of the Wyoming Air Quality Standards and Regulations, the public was afforded a thirty (30) day period in which to submit comments concerning the proposed modification, and an opportunity for a public hearing. No comments have been received. Therefore, on the basis of the information provided to us, approval to modify the Green River Soda Ash Plant as described in the application is hereby granted pursuant to Chapter 6, Section 2 of the regulations with the following conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.
2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.
3. That Solvay Chemicals, Inc. shall file a complete application to modify their Operating Permit within twelve (12) months of commencing operation, in accordance with Chapter 6, Section 3(c)(i)(B) of the WAQSR.
4. That all notifications, reports and correspondence required for this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25<sup>th</sup> Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 510 Meadowview Drive, Lander, WY 82520.



5. That the date of commencement of construction shall be reported to the Administrator within thirty (30) days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within twenty-four (24) months after receipt of such approval or if construction is discontinued for a period of twenty-four (24) months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.
6. That written notification of the actual date of initial start-up for the Waukesha H24GSI engine is required fifteen (15) days after start-up in accordance with Chapter 6, Section 2(i)(ii) of the WAQSR. Such notification shall be submitted on a complete Engine Installation/Removal form. The form can be downloaded from the Air Quality website <http://deq.state.wy.us/aqd> or obtained from the Air Quality Division.
7. That upon shutdown and removal of an engine from the facility, written notification is required within fifteen (15) days of removal. Such notification shall be submitted on a complete Engine Installation/Removal form.
8. Unless engine replacement is specifically authorized for a unit in this permit, once an engine is removed from the facility, an engine cannot be installed and operated in its place unless authorized by an appropriate permit modification.
9. That performance tests be conducted, in accordance with Chapter 6, Section 2(j) of the WAQSR, within thirty (30) days of achieving a maximum design rate but not later than ninety (90) days following initial start-up, and a written report of the results be submitted. The operator shall provide fifteen (15) days prior notice of the test date. If a maximum design rate is not achieved within ninety (90) days of start-up, the Administrator may require testing be done at the rate achieved and again when a maximum rate is achieved.
10. Initial performance tests, as required by Condition 9 of this permit, shall be conducted on the following source:
  - i. Waukesha H24GSI engine:

NO<sub>x</sub>, CO, and VOC Emissions: Testing shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR part 60, subpart JJJJ. For the initial performance test, testing shall not consist of Method 19 or ASTM Methods.

Formaldehyde Emissions: The engine shall be tested for formaldehyde. Testing shall consist of three (3) 1-hour tests following EPA Reference Methods and a Division-approved formaldehyde test method.

A test protocol shall be submitted to this office for review and approval prior to testing. Engine horsepower and operating conditions shall be recorded during each test run and submitted with the test report. Notification of the test date shall be provided to the Division fifteen (15) days prior to testing. Results shall be submitted to this Division within forty-five (45) days of completion.

11. That emissions from the following engine shall be limited as follows:

| Emission Unit   | NO <sub>x</sub> |       |     | CO      |       |      | VOC     |       |     | Formaldehyde |      |
|-----------------|-----------------|-------|-----|---------|-------|------|---------|-------|-----|--------------|------|
|                 | g/hp-hr         | lb/hr | tpy | g/hp-hr | lb/hr | tpy  | g/hp-hr | lb/hr | tpy | lb/hr        | tpy  |
| Waukesha H24GSI | 0.7             | 0.8   | 3.6 | 2.0     | 2.3   | 10.2 | 0.7     | 0.8   | 3.6 | 0.06         | 0.26 |

12. That Solvay Chemicals, Inc. shall follow the testing requirements as follows for the Waukesha H24GSI engine:

- i. That every twelve (12) calendar months, or more frequently as specified by the Administrator, the Waukesha H24GSI engine shall be tested to verify compliance with the NO<sub>x</sub>, CO, VOC, and formaldehyde limits set forth in this permit. Periodic testing for the engine is required within twelve (12) calendar months after completion of the initial performance test or the last periodic test. Testing for NO<sub>x</sub>, CO and VOCs shall follow 40 CFR part 60, subpart JJJJ §60.4244, except that §60.8 only applies to engines subject to 40 CFR part 60, subpart JJJJ. Testing for formaldehyde shall follow EPA reference methods and a Division-approved formaldehyde test method. Formaldehyde emissions in terms of lb/hr shall be calculated using the methodology in Sections 10.1.1.1 and 10.1.1.2 of the State of Wyoming's Portable Analyzer Protocol. Notification of the test date shall be provided to the Division fifteen (15) days prior to testing. Results of the tests shall be submitted to the Division within forty-five (45) days of completing the tests.
  - ii. The Air Quality Division shall be notified within twenty-four (24) hours of any engine where the testing/monitoring required by (i) of this condition shows operation outside the permitted emission limits. By no later than seven (7) calendar days of such testing/monitoring event, the owner or operator shall repair and retest/monitor the affected engine to demonstrate that the engine has been returned to operation within the permitted emission limits. Compliance with this permit condition regarding repair and retesting/monitoring shall not be deemed to limit the authority of the Air Quality Division to cite the owner or operator for an exceedance of the permitted emission limits for any testing/monitoring required by (i) of this condition which shows noncompliance.
13. That the Waukesha H24GSI engine shall comply with the following emission limitations in accordance with 40 CFR part 63, §63.6600:

- i. 4-Stroke Rich Burn (4SRB) Engines:

Reduce formaldehyde emissions by seventy-six percent (76%) or more

or

Formaldehyde emissions shall be limited 350 ppbvd or less @ 15% O<sub>2</sub>

14. That Solvay Chemicals, Inc. shall follow the monitoring and maintenance requirements as follows for the Waukesha H24GSI engine equipped with an NSCR catalyst:
- i. Operate and maintain the engine, air pollution control equipment, and monitoring equipment according to good air pollution control practices at all times, including startup, shutdown, and malfunction.
  - ii. Install a thermocouple to measure the inlet catalyst temperature.
    - a. The inlet temperature shall be recorded at least monthly. If the temperature is outside of the range listed below, corrective action shall be taken.

NSCR Catalyst:            750 °F to 1250 °F
  - iii. Install a device to measure the pressure drop across the catalyst.
    - a. The pressure drop across the catalyst shall be recorded at least monthly. If the pressure changes by more than two (2) inches of water at one-hundred percent (100%) load, plus or minus ten percent (10%), from the pressure drop as determined below, corrective action shall be taken.
      - 1. During the initial performance test required by this permit, the reference pressure drop shall be established. When the catalyst is replaced, the reference pressure drop shall be reestablished during the subsequent periodic testing required by this permit.
  - iv. Records of catalyst inlet temperature, pressure drop, and any maintenance or corrective actions shall be kept and maintained for a period of five (5) years and shall be made available to the Division upon request.
15. Compliance with 40 CFR part 63, subpart ZZZZ §63.6605 and §63.6640 can be used in lieu of the monitoring and maintenance requirements in Condition 14.
16. That Solvay Chemicals, Inc. shall comply with the applicable requirements of 40 CFR part 63, subpart ZZZZ.
17. All records required under this permit shall be kept for a period of at least five (5) years and shall be made available to the Division upon request.

It must be noted that this approval does not relieve you of your obligation to comply with all applicable county, state, and federal standards, regulations or ordinances. Special attention must be given to Chapter 6, Section 2 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with Conditions 5, 6 and 9. Attention must also be given to Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with Condition 3. Any appeal of this permit as a final action of the Department must be made to the Environmental Quality Council within sixty (60) days of permit issuance per Section 16, Chapter I, General Rules of Practice and Procedure, Department of Environmental Quality.

Solvay Chemicals, Inc.  
Air Quality Permit MD-16104  
Page 5

If we may be of further assistance to you, please feel free to contact this office.

Sincerely,

A handwritten signature in blue ink that reads "Steven A. Dietrich". The signature is written in a cursive style with a large, looped "S" and a distinct "D".

Steven A. Dietrich  
Administrator  
Air Quality Division

A handwritten signature in blue ink that reads "Todd Parfitt". The signature is written in a cursive style with a large, looped "T" and a distinct "P".

Todd Parfitt  
Director  
Dept. of Environmental Quality

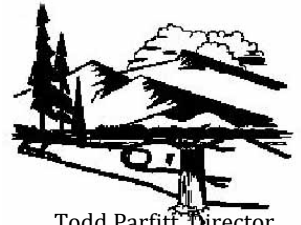
cc: Tony Hoyt



Mark Gordon, Governor

# Department of Environmental Quality

*To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.*



Todd Parfitt, Director

June 23, 2021

Ms. Ouisha Dean  
Environmental Engineer  
Solvay Soda Ash Joint Venture  
400 County Road 85  
Green River, WY 82935

RE: Temporary Authorization Letter P0033699  
Green River Soda Ash Plant (F000765)

Dear Ms. Dean:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed its review of Solvay Soda Ash Joint Venture's (CMP000705) application requesting authorization for the operation of a temporary 97 MMBtu/hr (80,000 lb/hr) steam capacity rental boiler (BOL005) at the Green River Soda Ash Plant. The Green River Soda Ash Plant is located in the NE¼ of Section 31, T18N, R109W, approximately twenty (20) miles west of Green River, in Sweetwater County, Wyoming.

The Solvay Mine Waste Methane Program improves miner's safety and reduces greenhouse gases by capturing methane incidental to the mining process and utilizing the waste mine methane in the Solvay processing plant. Solvay proposes a six (6) month trial of the boiler (BOL005) for the purpose of utilizing the mine methane gas stream to supply steam to the process. The boiler (BOL005) will operate continuously for six (6) months displacing the steam of existing boilers. The utilization of the rental boiler (BOL005) will not debottleneck the process or increase production rates. Solvay estimates emissions for the boiler (BOL005) to be 21.3 tpy NO<sub>x</sub>, 8.0 tpy CO, 0.9 tpy VOC, and 1.07 tpy PM.

The operating of the temporary 97 MMBtu/hr (80,000 lb/hr) steam capacity rental boiler (BOL005), as listed in this authorization letter, meets the requirements of Chapter 6, Section 2(c)(v), Best Available Control Technology, and the emissions are considered insignificant in terms of ambient impact and rate per Chapter 6, Section 2(k)(viii) of the Wyoming Air Quality Standards and Regulations (WAQSR).

Conditions of operation per Section 35-11-110 of the Wyoming Environmental Quality Act:

1. Notifications, reports, and correspondences associated with this authorization letter shall be submitted to the Stationary Source Compliance Program Manager. Submissions may be done electronically through <https://airimpact.wyo.gov> to satisfy requirements of this authorization letter.
2. Start-up and shut-down notifications shall be submitted to the Division within fifteen (15) days of start-up and shut-down of the temporary 97 MMBtu/hr (80,000 lb/hr) steam capacity rental boiler (BOL005).
3. Solvay Soda Ash Joint Venture shall comply with all applicable requirements of 40 CFR part 60, subpart Db for the temporary 97 MMBtu/hr (80,000 lb/hr) steam capacity rental boiler (BOL005).

4. Solvay Soda Ash Joint Venture shall comply with all applicable requirements of 40 CFR part 63, subpart DDDDD for the temporary 97 MMBtu/hr (80,000 lb/hr) steam capacity rental boiler (BOL005).
5. The 97 MMBtu/hr (80,000 lb/hr) steam capacity rental boiler (BOL005) shall be limited to the values in the following table:

| Emission Limits |       |      |          |       |     |
|-----------------|-------|------|----------|-------|-----|
| NO <sub>x</sub> |       |      | CO       |       |     |
| lb/MMBtu        | lb/hr | tpy  | lb/MMBtu | lb/hr | tpy |
| 0.1             | 9.7   | 21.3 | 0.0375   | 3.6   | 8.0 |

6. Initial performance tests shall be conducted on the 97 MMBtu/hr (80,000 lb/hr) steam capacity rental boiler (BOL005) within sixty (60) days of startup as reported in Condition 2:

NO<sub>x</sub> and CO Emissions: Compliance tests shall consist of three (3) 1-hour tests following EPA Reference Methods 1-4, 7E, and 10.

A test protocol shall be submitted for review and approval prior to testing. Notification of the test date shall be provided to the Division fifteen (15) days prior to testing. Results shall be submitted to this Division within forty-five (45) days of completion.

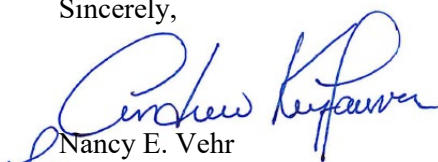
7. This authorization letter and the authorization to operate the temporary 97 MMBtu/hr (80,000 lb/hr) steam capacity rental boiler (BOL005) shall expire six (6) months from the date of startup as reported in Condition 2 of this authorization letter, or on June 1, 2022, whichever occurs first.

As a major source under Chapter 6, Section 3 of the WAQSR, you are advised that the modification addressed in this authorization letter may require a modification to your Operating Permit. Please contact the Operating Permit Program Manager concerning issues pertaining to your operating permit.

The Division is issuing this authorization letter based on the information submitted in the application. Any deviation in the construction or operation of this facility from that represented in your application which could result in significant pollutant emissions and impact will be a violation of the Wyoming Environmental Quality Act and the Wyoming Air Quality Standards & Regulations. Violations could result in enforcement actions and penalties under the law.

If you have any questions, please contact this office.

Sincerely,

  
Nancy E. Vehr  
Administrator  
Air Quality Division



Mark Gordon, Governor

## Department of Environmental Quality

*To protect, conserve and enhance the quality of Wyoming's  
environment for the benefit of current and future generations.*



Todd Parfitt, Director

June 1, 2022

Ms. Ouisha Dean  
Environmental Engineer  
Solvay Soda Ash Joint Venture  
400 County Road 85  
Green River, WY 82935

Re: Temporary Authorization Letter P0033699  
Green River Soda Ash Plant (F000765)

Ms. Dean,

The Wyoming Air Quality Division (Division) received Solvay's request for an extension of the Temporary Authorization Letter P0033699 that expired 6/1/2022. P0033699 authorized Solvay to operate a 97 MMBtu/hr rental boiler for 6 months. Solvay is currently installing the boiler in accordance with the conditions of Authorization Letter P0033699. In order to conduct the 6 month trial Solvay is requesting that the 6/1/2022 deadline stated in Condition 7 be changed to 6/1/2023.

The Division reviewed your request and authorizes the expiration date for P0033699 be changed from 6/1/2022 to 6/1/2023. Condition 7 has been modified as follows:

**7. This authorization letter and the authorization to operate the temporary 97 MMBtu/hr (80,000 lb/hr) steam capacity rental boiler (BOL005) shall expire six (6) months from the date of startup as reported in Condition 2 of this authorization letter, or on June 1, 2023, whichever occurs first.**

**All other Conditions of Temporary Authorization Letter P0033699 remain in effect.**

If you have any questions or concerns regarding this matter, please contact Marty Hamilton, District 5 Compliance, at 307-335-6977 or by email, [marty.hamilton@wyo.gov](mailto:marty.hamilton@wyo.gov).

Sincerely,

Nancy E. Vehr  
Administrator  
Air Quality Division

NV/mh

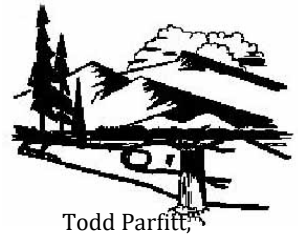
Ecc: Lars Lone, AQD Compliance Program Manager; Jeff Wendt, District V Engineer



Mark Gordon, Governor  
Director

# Department of Environmental Quality

*To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.*



Todd Parfitt

## STATE OF WYOMING

### Department of Environmental Quality - Air Quality Division

#### Chapter 6, Section 2(k)(viii) Authorization Letter

P0034367

December 1, 2021

Company Name: Solvay Soda Ash Joint Venture (CMP000705)

Mailing Address: 400 County Road 85, Green River WY 82935

Company Official: Ouisha Dean Title: Environmental Engineer

Facility Name: Green River Soda Ash Plant (F000765) County: Sweetwater

Legal Description:  $\frac{1}{4}$  Section: NE Section: 31 T: 18N R: 109W

Facility Equipment: • six (6) Maxon APX direct fire 7.4 MMBtu/hr burners

Reviewer: Alicia Boltz, Air Quality Engineer

On October 25, 2021, the Division of Air Quality received an application from Solvay Soda Ash Joint Venture to install six (6) Maxon APX direct fire 7.4 MMBtu/hr burners at the Green River Soda Ash Plant, located in the NE $\frac{1}{4}$  of Section 31, T18N, R109W, approximately twenty (20) miles west of Green River, in Sweetwater County, Wyoming.

Solvay Soda Ash Joint Venture proposes the installation of a new mine air heat system. This heat system will provide heat to the underground workings through the down-cast fresh air Shaft No. 5. The burners will be fueled by captured mine gas. Emissions were determined to be 0.1 tpy NO<sub>x</sub>, 0.6 tpy CO and 0.2 tpy VOC.

The six (6) Maxon APX direct fire 7.4 MMBtu/hr burners listed in this authorization letter meet the requirements of Chapter 6, Section 2(c)(v), Best Available Control Technology, and the emissions are considered insignificant in terms of ambient impact and rate per Chapter 6, Section 2(k)(viii) of the Wyoming Air Quality Standards and Regulations.

Conditions of operation per Section 35-11-110 of the Wyoming Environmental Quality Act:

1. The date of commencement of construction shall be reported to the Administrator within thirty (30) days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within twenty-four (24) months after receipt of such approval or if construction is discontinued for a period of twenty-four (24) months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.

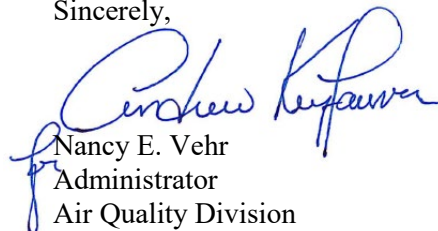
2. Notifications, reports, and correspondences associated with this authorization letter shall be submitted to the Stationary Source Compliance Program Manager. Submissions may be done electronically through <https://airimpact.wyo.gov> to satisfy the requirements of this authorization letter.
3. That written notification of the actual date of initial startup of the six (6) Maxon APX direct fire 7.4 MMBtu/hr burners is required fifteen (15) days after startup in accordance with Chapter 6, Section 2(i)(ii) of the WAQSR.

As a major source under Chapter 6, Section 3 of the WAQSR, you are advised that the modification addressed in this authorization letter may require a modification to your Operating Permit. Please contact the Operating Permit Program Manager concerning issues pertaining to your operating permit.

The Division is issuing this authorization letter based on the information submitted in the application. Any deviation in the operation of this facility from that represented in your application which could result in significant pollutant emissions and impact will be a violation of the Wyoming Environmental Quality Act and the Wyoming Air Quality Standards & Regulations. Violations could result in enforcement actions and penalties under the law.

If you have any questions, you may contact this office at (307) 777-7391.

Sincerely,



Nancy E. Vehr  
Administrator  
Air Quality Division

## **Bureau of Land Management – Authorizations**



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT

High Desert District  
Kemmerer Field Office  
312 Highway 189 North  
Kemmerer, Wyoming 83101



In Reply Refer To:  
2800 (WYD090)  
WYW-171271

October 26, 2010

CERTIFIED MAIL HAND DELIVERED RETURN RECEIPT REQUESTED

## Decision

Mr. Ronald O. Hughes  
Solvay Chemicals Inc.  
P.O. Box 1167  
Green River, WY 82935

:  
:  
:  
:

Right-of-Way Grant  
WYW-171271

### Right-of-Way Grant WYW-171271 Issued Rental Determined Monitoring Fee Determined

Enclosed is Right-of-Way Grant Serial Number WYW-171271 which allows the use of public land for a 6 inch pipeline, flare/incinerator, road and associated facilities from Solvay's processing plant to the Gob Vent boreholes, approved by the Bureau of Land management on October 26, 2010.

The advance rental for the ROW is determined to be \$ 1,128.95 for a ten year period from November 1, 2010 to December 31, 2019. BLM has received your rental for this period.

The monitoring fee for this right-of-way is determined to be a Category 1, which is \$ 111.00. BLM has received your monitoring fee.

This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR, Part 4 and the enclosed Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office (at the above address) within 30 days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

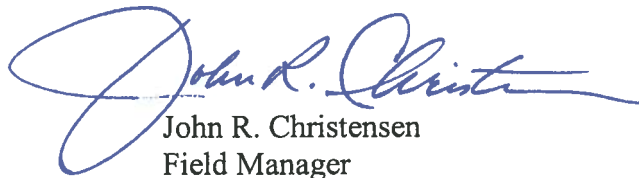
If you wish to file a petition (request) pursuant to regulations 43 CFR 2801.10 or 2881.10 for a stay (suspension) of the effectiveness of this decision during the time that your appeal is being reviewed by the Board, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

### **Standards for Obtaining a Stay**

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

- (1) The relative harm to the parties if the stay is granted or denied,
- (2) The likelihood of the appellant's success on the merits,
- (3) The likelihood of immediate and irreparable harm if the stay is not granted, and
- (4) Whether the public interest favors granting the stay.

If you have any questions, please contact Kaisa McKenna, Realty Specialist, at (307) 828-4542.



John R. Christensen  
Field Manager

Enclosures:

Grant

Form 1842-1

KMcKenna:km:10/26/2010:171271 Grant ISSUED.docx

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

INFORMATION ON TAKING APPEALS TO THE INTERIOR BOARD OF LAND APPEALS

DO NOT APPEAL UNLESS

1. This decision is adverse to you,  
AND
2. You believe it is incorrect

IF YOU APPEAL, THE FOLLOWING PROCEDURES MUST BE FOLLOWED

1. NOTICE OF  
APPEAL.....

A person who wishes to appeal to the Interior Board of Land Appeals must file in the office of the officer who made the decision (not the Interior Board of Land Appeals) a notice that he wishes to appeal. A person served with the decision being appealed must transmit the *Notice of Appeal* in time for it to be filed in the office where it is required to be filed within 30 days after the date of service. If a decision is published in the **FEDERAL REGISTER**, a person not served with the decision must transmit a *Notice of Appeal* in time for it to be filed within 30 days after the date of publication (43 CFR 4.411 and 4.413).

2. WHERE TO FILE

NOTICE OF APPEAL..... FIELD MANAGER, KEMMERER FIELD OFFICE, 312 HWY 189 NORTH, KEMMERER, WYOMING 83101

WITH COPY TO  
SOLICITOR... OFFICE OF THE REGIONAL SOLICITOR, ROCKY MOUNTAIN REGION, 755 PARFET STREET, SUITE 151,  
LAKEWOOD, COLORADO 80215

3. STATEMENT OF REASONS

Within 30 days after filing the *Notice of Appeal*, file a complete statement of the reasons why you are appealing. This must be filed with the United States Department of the Interior, Office of Hearings and Appeals, Interior Board of Land Appeals, 801 N. Quincy Street, MS 300-QC, Arlington, Virginia 22203. If you fully stated your reasons for appealing when filing the *Notice of Appeal*, no additional statement is necessary (43 CFR 4.412 and 4.413).

WITH COPY TO  
SOLICITOR..... OFFICE OF THE REGIONAL SOLICITOR, ROCKY MOUNTAIN REGION, 755 PARFET STREET, SUITE 151,  
LAKEWOOD, COLORADO 80215

4. ADVERSE PARTIES.....

Within 15 days after each document is filed, each adverse party named in the decision and the Regional Solicitor or Field Solicitor having jurisdiction over the State in which the appeal arose must be served with a copy of: (a) the *Notice of Appeal*, (b) the Statement of Reasons, and (c) any other documents filed (43 CFR 4.413).

5. PROOF OF SERVICE.....

Within 15 days after any document is served on an adverse party, file proof of that service with the United States Department of the Interior, Office of Hearings and Appeals, Interior Board of Land Appeals, 801 N. Quincy Street, MS 300-QC, Arlington, Virginia 22203. This may consist of a certified or registered mail "Return Receipt Card" signed by the adverse party (43 CFR 4.401(c)).

6. REQUEST FOR STAY.....

Except where program-specific regulations place this decision in full force and effect or provide for an automatic stay, the decision becomes effective upon the expiration of the time allowed for filing an appeal unless a petition for a stay is timely filed together with a *Notice of Appeal* (43 CFR 4.21). If you wish to file a petition for a stay of the effectiveness of this decision during the time that your appeal is being reviewed by the Interior Board of Land Appeals, the petition for a stay must accompany your *Notice of Appeal* (43 CFR 4.21 or 43 CFR 2801.10 or 43 CFR 2881.10). A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the *Notice of Appeal* and Petition for a Stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

**Standards for Obtaining a Stay.** Except as otherwise provided by law or other pertinent regulations, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards: (1) the relative harm to the parties if the stay is granted or denied, (2) the likelihood of the appellant's success on the merits, (3) the likelihood of immediate and irreparable harm if the stay is not granted, and (4) whether the public interest favors granting the stay.

Unless these procedures are followed, your appeal will be subject to dismissal (43 CFR 4.402). Be certain that all communications are identified by serial number of the case being appealed.

**NOTE:** A document is not filed until it is actually received in the proper office (43 CFR 4.401(a)). See 43 CFR Part 4, Subpart B for general rules relating to procedures and practice involving appeals.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
RIGHT-OF-WAY GRANT

SERIAL NUMBER WYW-171271

---

1. A right-of-way is hereby granted pursuant to Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185).

2. Nature of Interest:

a. By this instrument, the holder:

Solvay Chemicals Inc.  
P.O. Box 1167  
Green River, WY 82935

receives a right to construct, operate, maintain, and terminate a 6" natural gas pipeline, flare/incinerator, road and related facilities, on Federal lands described as follows:

Sixth Principle Meridian, Sweetwater County, Wyoming

T. 17 N., R. 109 W.,  
sec. 4, W $\frac{1}{2}$ W $\frac{1}{2}$ ;  
T. 18 N., R. 109 W.,  
sec. 32, N $\frac{1}{2}$ , E $\frac{1}{2}$ SE $\frac{1}{4}$ .

b. The right-of-way area granted herein is 50 feet wide, 13,400 feet long and contains 15.38 acres, more or less.

c. This instrument shall terminate on December 31, 2039, unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.

d. This instrument may be renewed. If renewed, the right-of-way shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.

e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental:

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. Terms and Conditions:

- a. This grant is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2880.
- b. Upon grant termination by the authorized officer, all improvements shall be removed from the Federal lands within 90 days, or otherwise disposed of as provided in paragraph (4)(c) or as directed by the authorized officer.
- c. The stipulations, plans, maps, or designs set forth in Exhibits A, B and C, dated August 23, 2010, attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- d. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20<sup>th</sup> year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.
- e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- g. The holder shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the plan of development which was approved and made part of the grant on August 23, 2010. Any relocation, additional construction, or use that is not in accord with the approved plan of development, shall not be initiated without the prior written approval of the authorized officer. A copy of the complete right-of-way grant, including all stipulations and approved plan of development, shall be made available on the right-of-way area during construction, operation, and termination to the authorized officer. Noncompliance with the above will be grounds for immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.
- h. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to

proper mitigation measures will be made by the authorized officer after consulting with the holder.

- i. The Holder shall be responsible for total control of all invasive/noxious weed species on any and all disturbed sites, including areas outside the development where weeds have established due to project installation and development. If at all possible all vehicles and equipment used for project construction and developments should be power or high pressure washed prior to entering the project area. Guidelines in Partners Against Weeds, An Action Plan for the Bureau of Land Management needs to be followed as outlined in Appendix 4 as a prototype for weed prevention measures on public lands.

The Holder is responsible for consultation with the Authorized Officer and/or local authorities for acceptable weed control methods, and shall comply with the following:

Use of pesticides shall comply with all applicable Federal and State laws. Pesticides shall be used only in accordance with their registered uses within limitations imposed by the Secretary of the Interior. Prior to the use of the pesticides, the Holder shall obtain from the Authorized Officer, written approval of a Pesticide Use Proposal Plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, locations of storage and disposal of containers, and any other information deemed necessary by the Authorized Officer.

Applicator(s) of chemicals used must have completed the pesticide certification training and have a current up to date Certified Pesticide Applicator's License.

Pesticide Application Records for the areas and acres treated must be submitted to the BLM Kemmerer Field Office each year. This includes the following:

- Brand or Product name
- EPA registration number
- Total amount applied (use rate #A.I./acre)
- Date of application
- Location of application
- Size of area treated
- Method of treatment (air/ground)
- Name of applicator
- Certification number and dates
- Costs to treatment
- Amount of surfactants or dyes used in spraying operation

The record information must be recorded no later than 14 days following the pesticide application and must be maintained for two years.

Use of herbicides on public lands must comply with the labeled use as specified and outlined for each individual herbicide label.

- j. In the event that the public land underlying the right-of-way (ROW) encompassed in this grant, or a portion thereof, is conveyed out of Federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed, and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the right-of-way or portion thereof, within the conveyed land under Federal Laws, statutes, and

regulations, including the regulations at 43 CFR Part 2800 or 2880, including any rights to have the holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the right-of-way, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.

- k. The holder shall seed all disturbed areas, using an agreed upon method suitable for the location. Seeding shall be repeated if a satisfactory stand is not obtained as determined by the authorizing officer upon evaluation after the second growing season.
- l. The Holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way.
- m. The Holder shall re-contour the disturbed area and obliterate all earthwork by removing embankments, backfilling excavations, and grading to re-establish the approximate original contours of the land in the right-of-way.
- n. Construction activity and surface disturbance will be prohibited during the period from November 15 through April 30 for the protection of crucial big game winter range.

Construction activity and surface disturbance will be prohibited during the period from March 15 through July 15 for the protection of Sage Grouse Nesting/Brood-rearing habitat.

- o. The Holder shall remove only the minimum amount of vegetation necessary for the construction of structures and facilities. Topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate re-growth of vegetation.
- p. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of four (4) inches deep, the soil shall be deemed too wet to adequately support construction equipment.
- q. All permanent above ground structures at the, not subject to safety requirements, shall be painted to blend with the natural color of the landscape. The color selected for this project shall match Covert Green, or be an acceptable substitute pre-approved by the Authorized Officer. Standard environmental color charts are available from the local BLM Office.
- r. The Holder shall furnish and apply water or other means satisfactory to the Authorized Officer for dust control.
- s. All design, material, and construction, operation, maintenance and termination practices shall be in accordance with safe and proven engineering practices.
- t. If snow removal from the road is undertaken, equipment used for snow removal operations shall be equipped with shoes to keep the blade 6 inches off the road surface. The Holder shall take special precautions where the surface of the ground is uneven and at drainage crossings to ensure that equipment blades do not destroy vegetation.

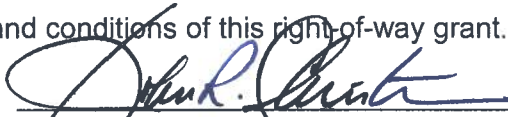
- u. The Holder shall meet Federal, State, and local emission standards for air quality.
- v. The Holder shall recontour the disturbed area and obliterate all earthwork by removing embankments, backfilling excavations, and grading to re-establish the approximate original contours of the land in the right-of-way.
- w. Within 30 days of completion, the Holder will submit to the Authorized Officer, as-built drawings and a certification of construction verifying that the facility has been constructed (and tested) in accordance with the design, plans, specifications, and applicable laws and regulations.
- x. Ninety days prior to termination of the right-of-way, the holder shall contact the authorized officer to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination (and rehabilitation) plan. This plan shall include, but is not limited to, removal of facilities, drainage structures, or surface material, recontouring, topsoiling, or seeding. The authorized officer must approve the plan in writing prior to the holder's commencement of any termination activities.

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant.

  
\_\_\_\_\_  
(Signature of Holder)

*senior vice President*  
\_\_\_\_\_  
(Title)

*10/25/10*  
\_\_\_\_\_  
(Date)

  
\_\_\_\_\_  
(Signature of Authorized Officer)

*Field Manager*  
\_\_\_\_\_  
(Title)

*October 26, 2010*  
\_\_\_\_\_  
(Effective Date of Grant)

## SITE SPECIFIC TERMS AND CONDITIONS

Design Features and/or Mitigation Measures included in this decision are as follows and will be incorporated into the ROW grant in the form of stipulations:

- All areas disturbed by the construction of the natural gas pipelines and associated facilities will be reclaimed per the requirements of the Plan of Development with the additional requirement that reseeding efforts will continue until there is at least 70% ground cover of desirable species on the site. Monitoring of reclamation success will begin during the first growing season after initial seeding.
- Inclusion of the requirement for the use of certified weed-free seed and mulch for rehabilitation projects.
- Pipeline trenches will not be left open for more than 10 days after initial surface disturbance and use of pipeline gates with soft plugs will be required every  $\frac{1}{4}$  mile along the corridor.
- SCI will be required to comply with all rules and regulations regarding air quality monitoring requirements as determined by the Wyoming DEQ Air Quality Division.
- An additional monitoring requirement for SCI to provide to the Authorized Officer, on a yearly basis, a report detailing the amount of methane gas metered from the boreholes connected to the pipeline ending at the SCI processing plant, amount of methane flared/incinerated and amount of methane vented to the atmosphere. Included in the report would be the calculated percentages of the apportioned captured gas for both federal and non federal land ownership.

Solvay Chemicals, Inc.  
Gob Vent to Plant ROW-POD

## ROW-PLAN OF DEVELOPMENT OUTLINE

### I. DESCRIPTION OF FACILITY

Solvay Representative: Timothy Brown  
Environmental Services Supervisor  
Solvay Chemicals, Inc.  
PO Box 1167  
Green River, WY 82935  
Phone: (307) 872-6570

Public Leases Affected: Lease Number W-98420  
Section 32, T18N, R109W  
Lease Number W-98421  
Section 4, T17N, R109W

Private Leases Affected: Lease Number HR0710  
Section 5, T17N, R109W  
Lease Number HR0716  
Section 9, T17N, R109W  
Lease Number HR0710  
Section 31, T18N, R109W

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### Project Description:

Solvay Chemicals, Inc. requests a Right of Way for an underground pipeline, incinerator, communication line, compressor, and access road, from existing gob vent boreholes in Section 9, T17N, R109W through Public Sections 4 and 32, T17N, R109W to the processing facilities in Section 31, T18N, R109W. All activities are within the State of Wyoming Department of Environmental Quality mine permit boundary, Permit Number 495-A4. The pipeline, road, incinerator, compressor station and communication lines are necessary for the transport of mine ventilation gases from existing ventilation boreholes in Section 9, T17N, R109W, as well as other ventilation boreholes that may be required and authorized in the future, to the Solvay Chemicals processing facility.

The route for this pipeline was specifically chosen to minimize the volume of earthwork required and minimize impacts to the environment.

The extraction of trona ore from underground mining operations, and specifically when using a longwall miner, results in the liberation of concentrated methane gas. This methane is a waste stream that is incidental to the mining process and must be ventilated away from the mine operations for safety reasons. Through the use of Gob Vent Boreholes (GVBHs) some of the concentrated methane gas that would otherwise be released into the mine atmosphere can be removed directly from the mine.

This process aids in improving miners' safety by removing the methane while it is above the explosive range for methane. The traditional mine ventilation system involves dilution of the methane from a concentration which is above the explosive range to a concentration which is below the explosive range, thus passing through the explosive range. The resultant gas is moved from the mine into the atmosphere through the vent shaft.

The mine gases will be extracted from existing GVBHs located in Section 9, T17N, R109W (and other boreholes that may be installed and authorized in the future) above both active and inactive longwall mining panels. On the surface, each operating GVBH will have a methane powered motor and vacuum pump to optimize the extraction rate. The methane used to power the vacuum pumps is a part of the waste stream that is incidental to the mining process. The gas pumped out of the GVBHs will be piped to a central compressor location in Section 9. The gas will be piped either into the plant to be burned in the existing natural gas fired equipment or to an enclosed, smokeless, incinerator.

No federal mine gas will be routed to the process plant until such time as an approval for "beneficial use" is authorized by the Federal Government. Determination of whether the vented gas originates from fee land or federal land will be accomplished by apportioning the captured gas in accordance with the land ownership within the areal extent of longwall mining (both actual and projected) where GVBHs are use at the time. At present, this calculated value is, fifty-three percent (53%) private land and forty-seven percent (47%) federal land. Accordingly, the gas that is liberated from the GVBHs, at this point in time, will be metered and no more than 53% will be routed to the processing plant. The remaining 47% will either be sent to the incinerator or vented to the atmosphere until such time as an approval for beneficial use is authorized by the Federal Government.

Ideally, until such time as an approval for the beneficial use of federal gas is authorized, the fee gas will be routed into the plant 100% of the time. However, the incinerator will have the capacity to process 100% of the gas extracted from the GVBHs with an equipment availability of 90%. When either the plant cannot burn the gas or the incinerator is not available, the gas will bypass the incinerator and be vented to the atmosphere. The incinerator will satisfy Wyoming DEQ Air Quality Division and EPA requirements for completeness of combustion of the hydrocarbons. The combustion efficiency of the incinerator is manufacturer guaranteed to be 99.9%. The incinerator will be enclosed, smokeless, and will not emit particulate matter.

The mine gob gas powered pump engines are operating under permit #MD-10253, issued by the State of Wyoming DEQ Air Quality Division March 24, 2010. The primary fuel source for the equipment in this project will be the liberated mine gob gas (methane) which is a waste stream that is incidental and necessary to the mining process. Propane gas will be used to start the engines.

Gas incineration is a standard safety practice in many industries. For example, methane and other associated gases are routinely incinerated during processing and production of oil and gas and are continuously incinerated from landfill collection systems. Incineration is conducted to combust methane and other associated gases

Operation of each GVBH, the compressor, and the incinerator will be monitored by the distributive control system (DCS) at the Solvay soda ash processing plant located approximately three miles from the GVBHs. Instruments will be powered by a combination of solar panels, battery backup, and a power generator located on the compressor engine.

Methane gas from the existing boreholes will be transported to the centralized compressor station via buried 14" Schedule 40 steel pipe. Access to the compressor station will be via dirt road that will run adjacent to the buried pipeline. At the compressor station, the gas will be compressed and fed to a single 6" Schedule 10 steel pipe. The pipeline will run from the compressor station to the Solvay Chemicals plant site. A single 2" Schedule 10 steel natural gas line will run from the plant site to the compressor to supply fuel to run the compressor when the gas concentration from the GVBHs is too low for the compressor to operate on gob vent gas alone.

The location of the pipeline, road, compressor and access road, incinerator and fiber optic communication line are as follows:

NE quarter of Section 31, T18N, R109W  
N half of Section 32, T18N, R109W  
SE quarter of Section 32, T18N, R109W  
NW quarter of Section 4, T17N, R109W  
SW quarter of Section 4, T17N, R109W  
SE quarter of Section 5, T17N, R109W  
NW quarter of Section 9, T17N, R109W  
SW quarter of Section 9, T17N, R109W

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See map #P1 submitted on June 17, 2010 for the location of proposed pipeline, incinerator, compressor and access road, communication line, and existing boreholes.

The access road will be a typical crowned and ditched dirt road which will be bladed to provide suitable all weather access to the compressor station, GVBHs and to provide access to the pipeline for inspection and maintenance. See Drawing No. P-3 submitted on June 17, 2010 for a typical road and pipeline section.

The water source for the pipeline construction will be supplied by the soda ash processing facility under Certificate of Appropriation of Water, Permit No. 26126. This appropriation is "limited to 5.0 c.f.s for industrial and miscellaneous purposes, Soda ash processing plant including drinking, bathing, culinary, sanitary and shop maintenance." The pipeline **will not** be hydrostatically tested.

The Right of Way requested is approximately 63 acres (18,400' x 150'/43,560), actual surface disturbance will be significantly less as the route for this pipeline was specifically chosen to minimize the volume of earthwork required and to minimize impacts to the environment.

An archaeological reconnaissance of the project route was made by Western Archaeological Services in June, 2009 and April, 2010. The April, 2010 archaeological reconnaissance was conducted to reflect the route change of the pipeline and road to avoid a sage grouse lek in Section 8, T17N, R109W. Results indicate that no significant cultural remains were observed and cultural clearance is recommended. A copy of the latest field report was sent to the State of Wyoming State Historical Preservation Office for approval. A copy of the latest field report was submitted on June 17, 2010.

For the pipeline and road, it is necessary to cross public lands because of topographical contours and precise locations of the existing and future mine panels where the mine gases will be collected.

#### **Description of Affected Lands:**

The area of operations are in the central area of the Solvay Chemicals Sodium Leasehold which is in the Green River drainage basin of Sweetwater County, Wyoming. Individual geologic units from youngest to oldest, Bridger Formation undifferentiated and the Green River Formation consisting of the Laney Shale Member and Wilkins Peak Members, all of the Eocene Epoch. Formations consist of sandstones, mudstones, shales and oil shales interbedded with thin layers of tuff.

The closest source of surface water to the pipeline and associated equipment is an intermittent stream called Chicken Draw located on the mid to the south. Chicken Draw is a drainage basin and a tributary to the Blacks Fork River. The southern portion of the lease area drains directly into Chicken Draw via ephemeral washes. Chicken Draw is not sampled on a regular basis, but occasional samples collected show that when the stream does flow, the water quality averages 400 to 800 mg/l TDS. Samples were also very high in suspended solids.

Groundwater occurs in small quantities and can be divided into alluvial and bedrock groundwater. Alluvial groundwater is that groundwater that occurs in the isolated pockets of alluvium in existing valleys, and bedrock groundwater is considered to be that groundwater that occurs in the Green River Formation underlying the Bridger Formation. Groundwaters encountered at the lease area are of the high sodium bicarbonate type. Total dissolved solids were found to be very high (5,000 to 30,000 mg/l) in the aquifers penetrated by previous exploration drill holes.

Vegetative cover in the vicinity of the proposed pipeline is the sagebrush-mixed shrubland vegetation type. The type is dominated by a mixture of shrubs, including big sagebrush (*Artemisia tridentata*),

hopsage (*Grayia spinosa*), shadscale (*Atriplex confertifolia*), and rabbitbrush (*Chrysothamnus viscidiflorus*). Several grasses such as needle and thread grass (*Stipa comata*), thickspike wheatgrass (*Agropyron dasystachyum*), and Indian ricegrass (*Oryzopsis hymenoides*) occur as understory species in this group.

Indigenous wildlife to the Solvay lease area include the pronghorn antelope, coyote, badger, desert cottontail, white-tailed jack rabbit and other small mammals such as the deer mouse, Richardson ground squirrel, kangaroo rat, least chipmunk and bushy-tailed woodrat. Two species of game birds have been observed on the lease area; the mourning dove and sage grouse, both of which are quite common. The most commonly observed non-game birds are horned larks, brewer's sparrow, sage sparrow, sage thrasher and Oregon junco. Raptors include the golden eagle, burrowing owl, American kestrel, merlin and marsh hawk. Migratory waterfowl pass through the area during spring and fall migrations. Solvay Chemicals' 200 acre tailings pond, centrally located within the permit area attracts a great deal of these birds, and has necessitated implementation of a waterfowl recovery program during the fall migration.

There is no fish habitat near the proposed pipeline or associated activities.

Previous extensive surveys for threatened and endangered species, such as the black-footed ferret and peregrine falcon, have been done with no evidence of either species for the entire lease area. Since the project locations are within the lease area, the proposed activities will have no impact on threatened and endangered species.

A pygmy rabbit survey was conducted on May 11, 2010 by Aster Canyon Consulting at the request of the BLM Kemmerer District biologist. Results indicate that "No pygmy rabbits were observed within the proposed disturbance area or the quarter mile buffer of the proposed pipeline." A copy of the survey was attached with the Plan of Development submitted on June 17, 2010.

Present land use is primarily wildlife habitat and grazing of sheep and cattle. Additional present uses include trona mining and processing, hunting, and four-wheel drive recreation. The closest residence is the Bonomo Ranch, located on the Blacks Fork River about four miles to the east of the proposed pipeline. Soil conditions and the absence of water do not make the area conducive to agricultural developments.

## II. DESIGN CRITERIA

### A. Road Specifications:

The access/maintenance road to the compressor station will be bladed and improved. The road is necessary for compressor station operations and also for inspection and maintenance of the pipeline.

The road will be a standard bladed crown and ditch arrangement composed of compacted subgrade and gravel base. The road will be built according to Solvay Chemicals' Specification CIV-1 for Earthwork. See Drawing No. 000-D-100 submitted on June 17, 2010 for a Typical Gravel Road Section and Construction Specification CIV-1.

B. Pipeline Specifications:

- **LENGTH AND WIDTH OF ROW/TUP:**

The length and width of requested Right of Way for the gob vent pipeline, access road, incinerator, compressor station and communication line is 18,400'x 150'. Actual surface disturbance will be much less as the route for this project was chosen to minimize the impacts to the environment.

- **DIAMETER OF PIPE AND TYPE OF MATERIAL:**

The pipeline from GVBH #2 to the compressor station will consist of one 14 inch diameter Schedule 40 steel pipe. From the compressor station to the Solvay plant site will be one six inch Schedule 10 steel pipe. A single 2" Schedule 10 steel natural gas line will run from the plant site to the compressor to supply fuel to run the compressor when the gas concentration from the GVBHs is too low for the compressor to operate on gob vent gas alone.

- **DEPTH OF PIPELINE:**

The depth of pipeline from the compressor station to the Solvay plant site will be a minimum of 60 inches.

- **SIZE OF TRENCH:**

The size of the trench from the compressor station to the Solvay plant site will be a minimum of 60 inches deep by 24 inches wide.

Please see attached plan details for pipe arrangement, cross sections, and areas of additional earthwork necessary to maintain proper pipeline slope.

The route for this pipeline was specifically chosen to minimize the volume of earthwork required and minimize impacts to the environment.

- **CONSTRUCTION ACCESS REQUIREMENTS DURING AND AFTER CONSTRUCTION:**

The access road to the compressor station in Section 9 will be bladed and improved. The road is necessary for compressor station operations and also for inspection and maintenance of the pipeline.

The pipeline will be constructed by removing topsoil and placing it to one side of the right of way. In areas of steep terrain, cut, and gullies, some blading may be necessary to provide a safe and suitable working area. After the right of way has been cleared and graded, a trench approximately two feet wide and five feet deep will be dug. After the pipe is placed, the trench will be backfilled, contoured, and reclamation will take place.

Please plan details submitted on June 17, 2010 for pipe arrangement, cross sections, and areas of additional earthwork necessary to maintain proper pipeline slope.

The incinerator to be installed will be an Abutec High Temperature Flare Model HTF 27.0.

Typical incinerator dimensions are:

Length: 13' 6"  
Width: 12' 4.6"  
Height: 29' 10"

The incinerator will satisfy Wyoming Air Quality Division and EPA requirements for completeness of combustion of the hydrocarbons. The combustion efficiency of the incinerator is manufacturer guaranteed to be 99.9%. The incinerator will be enclosed, smokeless, and will not emit particulate matter.

Please see previously submitted plan details for typical arrangement.

The compressor to be installed will be a Toromont Standard 400 BHP rotary screw compression unit. The compressor will be installed within the ten acre survey area.

Typical compressor dimensions are:

Length: 23'  
Width: 16'  
Height: 11'5" eave

Please see previously submitted plan details for typical arrangement.

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### III. CONSTRUCTION OF THE ROW FACILITY

Method of Drilling and Equipment To be Used On Existing Gob Vent Boreholes in Section 9, T17N, R109W:

An archeological reconnaissance of the gob vent holes was made by Western Archaeological Services in April, 2008. Results indicated that no significant cultural remains were observed and cultural clearance was recommended. A copy of the field report was sent the State of Wyoming State Historical Preservation Office for approval.

The surface pits will be of sufficient size to contain all drill cuttings and fluids. The pits will be no more than 30-feet long, 10-feet wide and 8-feet deep. Topsoil will be stockpiled for site reclamation.

Ventilation hole drilling operations will include the following:

1. Rotary drill with a 17" bit to a depth below any surface water (estimated casing depth is 120 feet).
2. Install 13-3/8" steel casing to bottom of surface casing drill hole and cement in place with 8-bag grout between casing and drill hole.
3. Air rotary drill with a 12-1/4" bit to approximately 1400 feet deep stopping 240' above the mining level.
4. Log open hole.
5. Install 9-5/8" casing from 1400-foot depth to the surface and cement annulus.
6. Cement bond log (if required).
7. Rotary drill 8-3/4" hole from 1400 to approximately 1620-foot depth into top of longwall gob.
8. Install 240' of perforated 7" casing in the open hole portion the drill hole; i.e., 1380 to 1620-foot depth.
9. Rig down and reclaim mud pit.

Drilling equipment will be a diesel-powered, unitized truck-mounted drill rig, 3,500 gallon tandem water truck, diesel-powered air compressors, and the necessary drill pipe, mixing tanks and mud pumps. Cementing equipment was typical of trucks used by Halliburton Energy Services. Logging equipment was typical of trucks used by Atlas Baker Logging Services.

#### Measures to Control Fire, Soil Erosion, Pollution of Water and Air, etc.:

Fire extinguishers will be placed near any potential fire sources on and around the drill rig; such as, near diesel engines and tanks.

Control of soil erosion will be provided by containment of all drilling fluids and water inflows in surface mud pits. Adequate surface casing will control surface water flow into the drill hole. If needed, a water truck will be available to transport excess water to Solvay's tailings pond.

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Pollution of surface and ground water will be controlled by adequate surface casing and containment of all drilling fluids generated by the drilling operation. As mentioned above, the surface and ground waters in this area are saline in their natural state and will not be adversely affected by the drilling operation.

Pollution of the air will not occur as the only emission into the air will be diesel engine exhaust.

Control of damage to fish and wildlife habitat and other natural resources will be maintained by disturbing only a small area of land.

Hazards to public health and safety will be controlled by the remoteness of the proposed pipeline site. The pipeline contractor's employees will be required to adhere to Solvay's Safety Policy for their personal safety.

The pipeline operations will be done in accordance with Wyoming DEQ, Wyoming State Engineer, and Federal EPA standards.

Method for Plugging Gob Vent Borehole:

Drilling completion procedures are as follows:

1. Hole will be fully cemented between the annulus of the casing and drill hole wall.
2. A cement bond log will be run in the cased hole.
3. Displaced drilling fluids will be recovered in the mud pit and disposed of in Solvay's tailings pond.
4. Pits backfilled and covered with stockpiled topsoil.

Surface Reclamation:

Disturbed acreage will be recontoured to produce a surface configuration that blends with the adjacent topography, minimizes erosion, reestablishes drainages and does not exceed the average natural slopes in the area. The area will be furrowed to provide a suitable seedbed and to enhance moisture retaining capabilities. Seeding will take place during the fall reclamation program after hole completion.

The area will be seeded to a depth of 1/2 inch with the following seed mix:

lbs/acre

|                       |       |
|-----------------------|-------|
|                       | PLS   |
| Indian Ricegrass      | 4     |
| Shadscale             | 2     |
| Thickspike Wheatgrass | 4     |
| Gardner Saltbrush     | 2     |
|                       | <hr/> |
|                       | 12    |

All acreage will be mulched and crimped with 2,000 lb/acre straw.

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Project Timetable:

The proposed pipeline project is projected to occur during summer of 2010. Reclamation of the disturbed acreage would occur in October or November of 2010.

**IV. OPERATION AND MAINTENANCE OF THE FACILITY**

Project Authorization Timetable:

Access for pipeline to the ventilation drill hole sites will be determined by operational concerns and periodic maintenance.

Access for compressor station and flare will be determined by operational concerns and periodic maintenance.

Snow removal and minimal road grading may be necessary for pipeline maintenance, flare maintenance and inspection, compressor station maintenance and inspection.

Building maintenance will be necessary at the compressor station as the compressor is enclosed in an all weather shelter.

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October 4, 2010

Ms. Kaisa McKenna  
Bureau of Land Management  
Kemmerer District Office  
312 Hwy 189  
Kemmerer, Wyoming 83101

RE: Responses to October 1, 2010 site visit questions for Compressor to Plant Pipeline, Right of Way Application Serial No. WYW-171271

Dear Kaisa:

As discussed in your site visit on October 1, 2010, you needed additional information. The questions/requests are below with responses in bold italics.

#1) Provide a diagram of the pipeline relative to the Solvay rails and current flare/incinerator location.

***See attached plot plans.***

#2) How many hours did the flare/incinerator operate and how many hours did the GVBHs vent?

***As of May 5, 2010, the flare/incinerator operated 2,168 hours and The gob vent boreholes vented 138.4 hours. The remainder of the time the boreholes were shut in.***

#3) What is the seed mix that will be used for reclaiming areas disturbed during construction of the pipeline and access road?

***The area will be seeded to a depth of 1/2 inch with the following seed mix:***

***lbs/acre***

|                                     | <b><i>PLS</i></b> |
|-------------------------------------|-------------------|
| <b><i>Indian Ricegrass</i></b>      | <b><i>4</i></b>   |
| <b><i>Shadscale</i></b>             | <b><i>2</i></b>   |
| <b><i>Thickspike Wheatgrass</i></b> | <b><i>4</i></b>   |
| <b><i>Gardner Saltbrush</i></b>     | <b><i>2</i></b>   |
|                                     | <b><i>12</i></b>  |

***All acreage will be mulched and crimped with 2,000 lb/acre straw.***

#4) On map P1 what is the relevance of Phase I and Phase II?

***Phase II is the current application.***





September 27, 2010

Ms. Kaisa McKenna  
Bureau of Land Management  
Kemmerer District Office  
312 Hwy 189  
Kemmerer, Wyoming 83101

RE: Responses to questions for Compressor to Plant Pipeline, Right of Way Application Serial No. WYW-171271

Dear Kaisa:

As discussed in our phone conversation of September 27, you needed clarification on three items. The questions are below with responses in bold italics.

#1) What is the footage of the pipeline in federal sections?

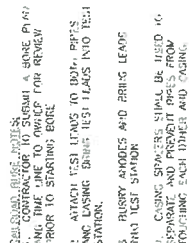
***13,400 feet of pipeline are in federal sections 4 and 32.***

#2) How many gob vents are currently active?

***Currently there is one active ventilation borehole (GVBH #5) and one in development (GVBH #6) in Section 9, T17N, R109W that will be tied into the compressor site.***

#3) Supply a description of the boring sequence under the railroad tracks in Section 31, T18, R109W and the footage of pipe within the plant.

***The pipeline will enter the plant site under the existing rail bed in previously disturbed ground. An 18" steel casing will be bored under the tracks, the six inch pipe, the two inch pipe, and fiber optic line will run inside the 18" pipe. The pipe will be link sealed, vented and cathodically protected. From the point of the boring under the tracks to the tie in with plant piping is 935' all on previously disturbed ground within the Solvay Chemicals plant site. Please see attached detail sheet for arrangement of boring and route of pipeline within the plant site.***



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**SOLVAY CHEMICALS, INC.**

**SPECIFICATION CIV-1**

**EARTHWORK**

**Original Related Specifications:**

- o Original Soda Ash Project Specification SS-061-10.01-1

| Rev. | Date | By | Checked | Plt. Engr.<br>Supt.<br>Approval | Maint.<br>Supt.<br>Approval | Comments |
|------|------|----|---------|---------------------------------|-----------------------------|----------|
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Solvay Chemicals, Inc.

Specification for  
Earthwork  
Specification CIV-1

Rev. 0, 5/95

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1. **SCOPE**

The work covered by this specification consists of furnishing all equipment, materials, labor, and performing all operations required for excavation, fill and backfill.

2. **REFERENCED SPECIFICATIONS AND STANDARDS**

The latest editions of the following specifications, standards and publications are part of this specification.

A. American Society for Testing and Materials (ASTM)

ASTM D 422 STANDARD METHOD FOR PARTICLE-SIZE ANALYSIS OF  
SOILS

ASTM D 423 STANDARD METHOD OF TEST FOR LIQUID LIMIT OF SOILS

ASTM D 424 STANDARD METHOD OF TEST FOR PLASTIC LIMIT  
PLASTICITY INDEX OF SOILS

ASTM D 698 STANDARD METHOD OF TEST FOR MOISTURE-DENSITY  
RELATIONS OF SOILS, USING 5.5-lb RAMMER AND  
12-in. DROP

ASTM D 1556 STANDARD METHOD OF TEST FOR DENSITY OF SOIL IN  
PLACE BY THE SAND-CONE METHOD

ASTM D 2167 STANDARD METHOD OF TEST FOR DENSITY OF SOIL IN  
PLACE BY THE RUBBER-BALLOON METHOD

ASTM D 2922 STANDARD METHODS OF TEST FOR DENSITY OF SOIL AND  
SOIL-AGGREGATE IN PLACE BY NUCLEAR METHODS  
(SHALLOW DEPTH)

ASTM D 2937 STANDARD METHOD OF TEST FOR DENSITY OF SOIL IN  
PLACE BY THE DRIVE-CYLINDER METHOD

ASTM D 3017 STANDARD METHOD OF TEST FOR MOISTURE CONTENT OF  
SOIL AND SOIL-AGGREGATE IN PLACE BY NUCLEAR  
METHODS (SHALLOW DEPTH)

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## 2. REFERENCED SPECIFICATIONS AND STANDARDS (cont.)

- B. American Association of State Highway and Transportation Officials (AASHTO)
  - AASHTO T 99 STANDARD METHODS OF TEST FOR THE MOISTURE--  
DENSITY RELATIONS OF SOILS USING A 5.5-lb  
RAMMER AND A 12-in. DROP
- C. Solvay Specifications
  - CIV-18 SPECIFICATION FOR CLEARING AND GRUBBING
  - CIV-3 SPECIFICATION FOR EXCAVATION AND BACKFILL FOR  
UNDERGROUND PIPE, CONDUITS, AND DUCTS
  - CONC-1 SPECIFICATION FOR CONCRETE

## 3. GENERAL

- A. This specification covers excavation, fill, and backfill for roads, parking areas, paved areas, railroad beds, dikes, firewalls, ponds, buildings, tanks, manholes, catch basins, and other plant structures. Trenching and backfilling for underground pipe, conduits, and ducts are covered by Specification CIV-3.
- B. Existing facilities, services, and pipelines on, above, or under the surface of the area where earthwork operations are to be performed shall be protected from damage.
- C. In case of contradiction between drawings and this specification, drawings will govern.

## 4. EXCAVATION

- A. General
  - 1. Stripping and excavation operations shall be performed after clearing and grubbing has been completed in accordance with CIV-18.

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4. **EXCAVATION** (cont.)

A. **General** (cont.)

2. Areas to be excavated shall be stripped before beginning excavation operations.
3. Excavations shall be performed insofar as practicable in the dry. Proper drainage for excavated areas shall be maintained to prevent the ponding of water. Excavated areas shall be kept dry by pumping or other suitable methods.
4. Materials excavated for the permanent work shall be classified in accordance with the classification system in this specification. Classified material designated for reuse shall be properly segregated and stockpiled. Unclassified materials shall be stored in accordance with CIV-18.
5. Borrow material shall mean suitable material obtained from excavations off the site or from designated borrow areas at the site. Borrow material shall be classified in accordance with the classification system in this specification before placement in the permanent work.
6. Sheeting and shoring shall be used when necessary for personnel safety and work protection. Sheeting and shoring shall meet or exceed OSHA and MSHA requirements.

B. **Stripping**

1. Stripping shall consist of the excavation, removal, and stockpiling of topsoil and the excavation, removal and disposal of unsuitable soils. Stripping operations shall be performed at borrow areas and on locations where dikes, ponds, firewalls, railroad beds, roads, parking areas, paved areas, tank foundations, equipment foundations, building foundations, and other structures are to be constructed.
2. Areas on the natural grade to be excavated or filled shall be stripped. Depths of stripping excavations shall be as indicated on the drawings. Stripped material classified as top soil shall be stockpiled in accordance with CIV-18. Other stripped material shall be stored at designated areas in accordance with CIV-18.

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4. **EXCAVATION** (cont.)

C. Structural Excavation

1. Structural excavation shall include excavations for spread footings, mats, pits, basements, grade beams, retaining walls, manholes, catch basins, etc.
2. Excavations shall be made in accordance with the lines and depths indicated on the drawings, except that when soft and compressible soils are encountered at footing grades the requirements contained herein shall apply. Material encountered within excavation limits shall be excavated.
3. Permanent work shall rest on suitable foundation soil. When soft and compressible soil is encountered at footing grades shown on the drawings, such soil shall be removed and replaced with Class 2x1-1/2 concrete as specified in CONC-1.
4. Overdepth excavation at footings shall be backfilled with Class 2x1-1/2 concrete as specified in CONC-1.
5. Seal slabs shall be provided at locations shown on the drawings. Materials for seal slabs shall be as indicated on the drawings.

D. Earthen Structures

1. Earthen structures shall include permanent work items such as ponds, ditches, etc. Excavations for such work shall be made to the lines, grades, and cross sections shown on the drawings.
2. Side slopes of excavations shall be cut true and straight and graded to the proper cross section. Unstable soil in the slopes shall be removed and the slopes properly prepared. The bottoms of excavations shall be graded to the elevations and configurations shown on the drawings.
3. Overexcavations shall be backfilled with suitable material and compacted to at least 95% maximum standard density as determined by ASTM D 698 or AASHTO T 99.

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**4. EXCAVATION (cont.)**

E. Trenching

Trenching for underground pipe, conduits and ducts shall conform to CIV-3.

**5. FILL AND BACKFILL MATERIAL**

A. General

1. Fill and backfill material shall be obtained from excavation areas or other approved sources. Material shall be classified in accordance with the classification system contained in this specification before use in the permanent work. Frozen or partially frozen material shall not be used.
2. Classified fill and backfill material shall be installed in the permanent work at locations shown on the drawings.

B. Material Classifications

Fill and backfill material shall conform to the following classifications.

1. Class I

Well graded sands and gravels, gravel-sand mixtures, crushed well graded rock, little or no fines (GW, SW).\*

- a. Plasticity Index - Nonplastic
- b. Gradation -  $D_{60}/D_{10} \geq 6$ , % Passing No. 200  $\leq 5\%$

2. Class II

Poorly graded gravels and sands, silty sands and gravels, little or no fines (GM, GP, SW, SP, SM).\*

- a. Plasticity Index - Nonplastic to 5
- b. Gradation - % Passing No. 200  $\geq 12\%$

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5. **FILL AND BACKFILL MATERIAL** (cont.)

B. **Material Classifications** (cont.)

3. Class III

Clayey gravels and sands, poorly graded mixtures of sand, gravel, and clay (GC, SC).\*

- a. Plasticity Index -  $>5$
- b. Gradation - % Passing No. 200  $\geq 12\%$

4. Class IV

Clays (inorganic) of low to medium plasticity, sandy clays silty clays, lean clays (CL).\*

- a. Liquid Limit - 20-50
- b. Plasticity Index - 10-22

5. Class V

Clays (inorganic) of high plasticity, fat clays (CH).\*

- a. Liquid Limit -  $\geq 50$
- b. Plasticity Index -  $\geq 22$

6. Class VI

Silts (inorganic) and very fine sands, rock flour, micaceous or diatomaceous fine sandy or silty soils, elastic silts (ML, MH).\*

- a. Liquid Limit - 20-50
- b. Plasticity Index - 0-22

7. Class VII

Organic silts and organic silt-clays of low plasticity (OL)\*; organic clays of medium to high plasticity (OH)\*, peat (PT)\* and other highly organic soils. Class VII soils are considered unsuitable for fill and backfill material.

\* Unified Soil Classification Symbols

6. **PLACING AND COMPACTING FILL AND BACKFILL MATERIAL**

A. General

Fill and backfill operations shall be performed after clearing and grubbing have been completed in accordance with CIV-18 and areas to be filled have been stripped in accordance with this specification.

B. Subgrade Preparation

1. Before placing compacted fill material, the subgrade surface shall be scarified to a depth of 6 inches, wetted or dried to produce the specified moisture content, and recompact to the specified percent of maximum standard density. This requirement shall apply under roads, parking areas, paved areas, railroad beds, firewalls, pond embankments, and other earthen structures.
2. At structures, excavation surfaces on which backfill is to be placed shall be undisturbed soil free of loose material.

C. Placement

1. Areas to receive fill and backfill shall be free of roots, trash, and other foreign matter.
2. Only classified fill and backfill material shall be placed in the permanent work at locations shown on the drawings.
3. After areas to receive fill or backfill have been properly prepared, material shall be placed and spread in loose horizontal lifts of not more than 6 to 8 inches compacted thickness across the entire fill or backfill section. Lesser thicknesses shall be used if necessary to achieve specified compacted density. Material shall then be disced and manipulated to achieve a homogeneous mixture of proper moisture content free of large, hard lumps of soil. Moisture content shall not exceed optimum Proctor moisture content by more than 4% or fall under optimum by more than 2%.

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6. **PLACING AND COMPACTING FILL AND BACKFILL MATERIAL** (cont.)

C. Placement (cont.)

4. Structural backfill adjacent to structures shall be placed in lifts not to exceed 6 inches compacted thickness and at moisture content approximately equal to the optimum Proctor moisture content +2%. Where possible, the more plastic clays should be used as an impervious cap to prevent the infiltration of surface water through the filled areas and into foundation soils.

D. Compacting

1. Compacting shall begin only after the fill or backfill has been properly placed and the material to be compacted is at the proper moisture content. Compacting shall be performed with equipment compatible with the soil type. Fill and backfill lifts shall be uniformly compacted to a minimum acceptable density of 95% of standard Proctor density with an average desirable density of 98%. Structural backfill adjacent to structures should be compacted at least 90% of maximum of Proctor density.
2. If the material to be compacted contains excessive moisture to permit compacting in accordance with the specified requirements, the material shall be processed to reduce the moisture content. If the soil has less than the specified moisture content or is likely to lose enough moisture to bring the moisture content below requirements before completion of compacting, water shall be added and the soil lift thoroughly mixed before compacting.
3. To provide a blending and interlocking of adjoining surfaces, the upper surface of each compacted layer of the fill or backfill shall be lightly scarified to a depth of 1 inch before placing the next lift.
4. After compacting of the material, in-place density tests shall be made as specified below. If the material fails to meet the density specified, the course shall be reworked as necessary to obtain the specified density. The compacting method or equipment on later work may be altered to obtain the specified density.

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6. **PLACING AND COMPACTING FILL AND BACKFILL MATERIAL** (cont.)

D. Compacting (cont.)

5. Fill and backfill adjacent to structures such as retaining walls, pits, and basements shall not be compacted with heavy equipment but shall be compacted with hand operated equipment to a distance of 4 feet or greater beyond the sides of the structure.
6. The compacting of backfill for underground pipe, conduits, and ducts shall conform to CIV-3.

7. **FINISHING**

Compacted surfaces of fills and backfills shall be finish graded to the cross sections, lines, grades, and elevations indicated on the drawings.

8. **TESTING**

A. General

All tests will be performed by an independent testing laboratory.

B. Classification Tests

1. Plasticity characteristics shall be defined in accordance with ASTM D 423 and ASTM D 424.
2. Gradation characteristics shall be defined in accordance with ASTM D 422.

C. Compacting Tests

The moisture density relationship for fill and backfill soils shall be determined in accordance with ASTM D 698 or AASHTO T 99.

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## 8. **TESTING** (cont.)

### D. Fill Density

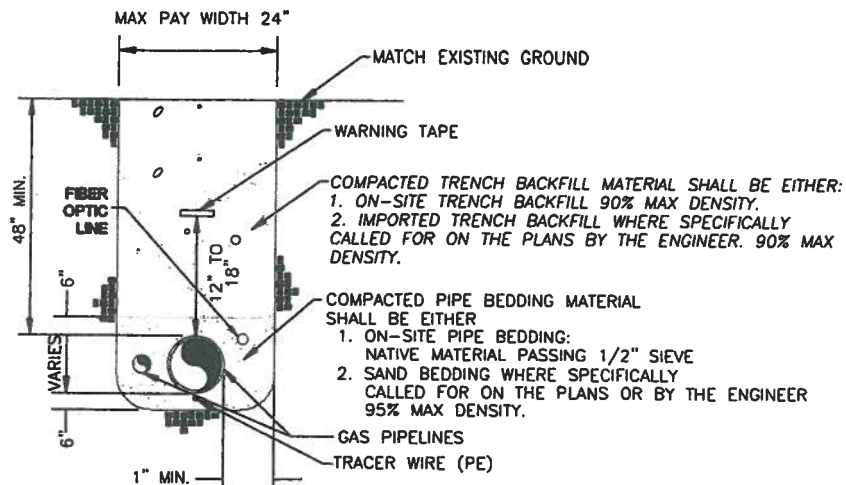
In-place density of compacted fill or backfill shall be defined as follows:

1. One test shall be performed for each 2500-5000 square feet of each lift for roads, parking areas, and earthen structures.
2. One test shall be performed for each 200-500 cubic yards of compacted material at structures.
3. The number of tests should be increased if a visual inspection determines that the moisture content is not uniform or if the compacting effort is variable and not considered sufficient to attain the specified density.  
Density and moisture content can be determined by the drive cylinder method for cohesive fills and balloon density or sand cone method for cohesionless fills. A nuclear density-moisture meter can also be used provided the unit is properly calibrated and check tests using one of the other methods are performed. Specific test procedures are:
  - a. Sand Cone - ASTM D 1556
  - b. Drive Cylinder - ASTM D 2937
  - c. Balloon Density - ASTM D 2167
  - d. Nuclear Density - ASTM D 2922 and ASTM D 3017

## 9. **ARCHAEOLOGICAL MONITORING**

Although an archaeological clearance has been obtained for the proposed work, construction personnel shall be briefed by a qualified archaeologist from Western Wyoming College on procedures necessary to identify potential archaeological/historical features. Throughout the construction period, earthmoving activity shall be monitored by a construction foreman who has been briefed by a qualified archaeologist as described above.

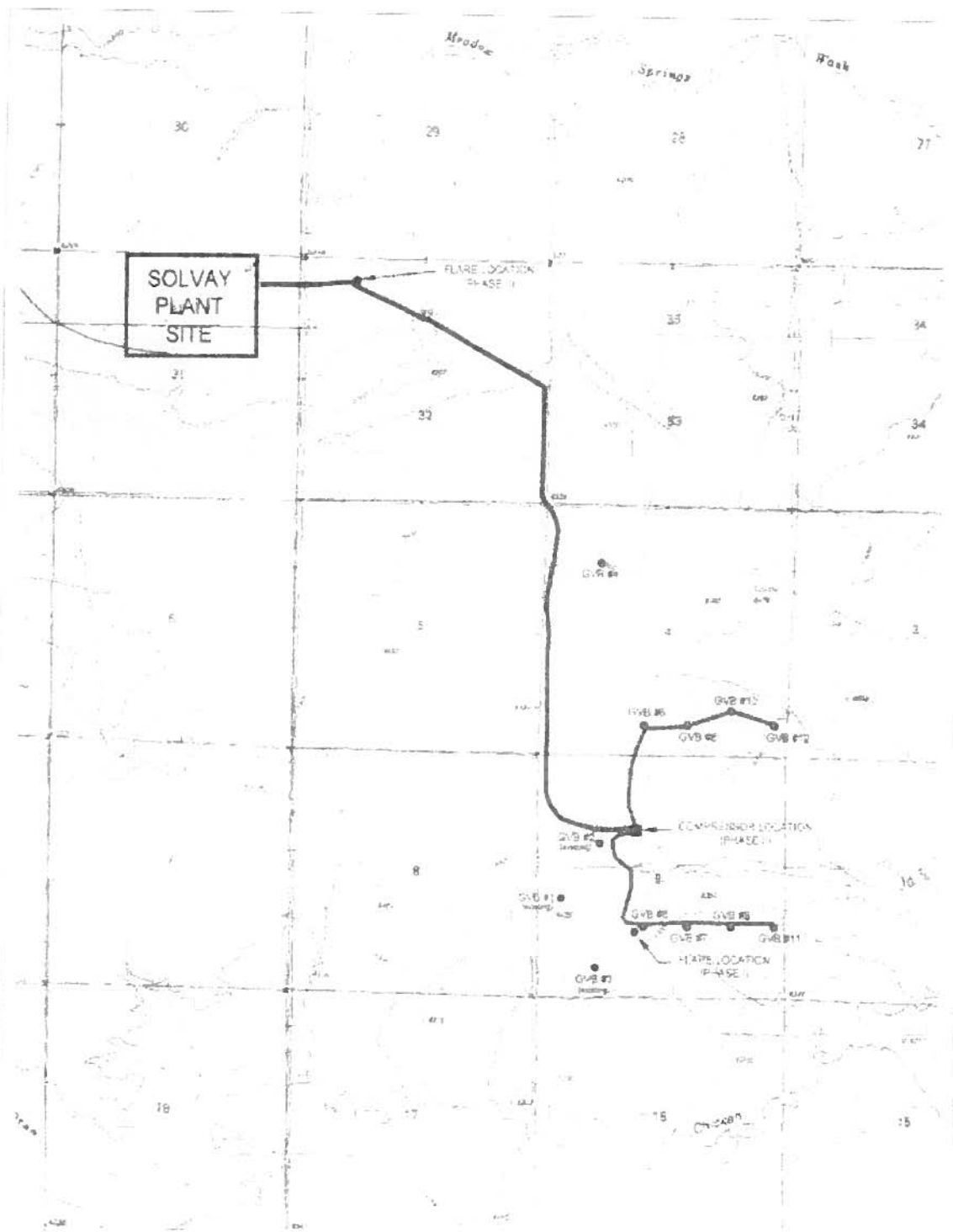
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**NOTE:**

- 1- TRENCH DETAILS APPLIES TO AREAS OUTSIDE OF ROAD SURFACES, DRIVEWAYS, OR WHERE SURFACE IMPROVEMENTS MAY BE CONSTRUCTED.
- 2- THE MINIMUM WIDTH OF THE DITCH SHALL BE THE NOMINAL PIPE SIZE PLUS:  
FOUR INCHES (4") FOR PIPE 2" OR SMALLER  
EIGHT INCHES (8") FOR PIPE 4" OR LARGER

**A** **DETAIL-TYP. TRENCH**  
NO SCALE



SOLVAY CHEMICALS, INC.

Gob Vent Pipeline to Plant

SCALE NO SCALE

DATE 1/28/10



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT

High Desert District  
Rock Springs Field Office  
280 Highway 191 North  
Rock Springs, Wyoming 82901



In Reply Refer To:  
3592 (412g)(WYD04)  
WYW0153933 et. al.

MAR 20 2012

Mr. Ronald O. Hughes  
Executive Vice President – Site Manager  
Solvay Chemicals, Inc.  
P. O. Box 1167  
400 County Road 85  
Green River, WY 82935

Dear Mr. Hughes:

This office has reviewed your proposal dated March 1, 2012 to modify the existing mine plan. The proposal states that Solvay Chemicals, Inc. intends to pursue the option of incinerating Waste Mine Methane (WMM) captured from Solvay's underground trona mine at either the existing stand-alone incinerator or at the soda ash processing plant.

This modification to the approved mine plan will improve mine safety and productivity. In addition the approval of the option of incinerating WMM at the processing plant will assist in the development of federal sodium resources.

Our approval is conditioned upon a requirement that one year from this approval, and each subsequent year thereafter, Solvay provide to this office; 1) a report showing the volume of waste mine methane removed as a result of mining federal sodium leases and 2) a statement certifying all federal waste mine methane was either, vented, flared or incinerated at Solvay's processing plant.

This proposal for modification is in compliance with the regulations and lease terms and Ultimate Maximum Recovery (UMR) of the federal trona shall be achieved, and is therefore approved. It is noted here that in addition to assisting the development of the federal sodium resources, it also will achieve the benefit of reducing WMM and other greenhouse gas emissions directly into the atmosphere.

If you have any questions or any further changes to the mine plan, please contact Jeff Clawson at (307) 352-0323.

Sincerely,

Lance C. Porter  
Field Manager

cc: WY922