



CROWN ASPHALT RIDGE, LLC

1245 E. Brickyard Rd., Suite 110

Salt Lake City, Utah 84106

Telephone: (801) 466-4131

Facsimile: (801) 466-4132

July 27, 2012

Via Email: mnovak@utah.gov

Mark Novak

Division of Water Quality

195 North 1950 West

Salt Lake City, UT 84116

Re: *Crown Asphalt Ridge PBR Determination*

Dear Mr. Novak:

On March 28, 2012, Crown Asphalt Ridge, LLC (“CAR”) through JBR Environmental Consultants Inc., submitted a request (the “Request” herein) to expand operations under its existing permit-by-rule (“PBR”) approved by the Division of Water Quality (“DWQ”) on July 29, 1996 for a tar sands oil extraction project at a mine pit formerly operated by Uintah County. See the Affidavit of Thomas W. Bachtell, ¶ 7, attached hereto as Exhibit “A” and by this reference incorporated herein. The Request was submitted in the form of the official Utah Ground Water Discharge Permit Application of DWQ.

On May 8, 2012, DWQ issued a (preliminary) Ground Water Discharge Permit-By-Rule Statement of Basis (“Determination” herein) conditionally approving CAR’s Request.

By letter dated July 18, 2012, Western Resource Advocates, on its own behalf and on behalf of “Living Rivers” (collectively “WRA” herein) submitted comments requesting DWQ to withdraw the Determination pending further review (the “WRA letter” herein).

Please allow this letter and the attached Affidavits to serve as the official response of CAR to the WRA letter.

The premise of the Request is principally based on the statement contained in its introduction that: “No potential ground water contaminants will be introduced during processing or be present in the sand.” CAR submitted evidence to support this statement which we believe may be properly summed up as follows:

1. The process uses only water as the medium to remove the bitumen from the oil sands ore.
2. As is done in many mining operations throughout the United States, sodium hydroxide is used in small quantities to maintain a neutral pH balance of the water (chemical equilibrium) to prevent an acidic environment from occurring in the process.
3. Commonly used flocculants are utilized during the water treatment phase of the process to recycle the water so that tailings ponds are not required.

WRA's letter makes many conclusory statements which are simply not supported by any evidence. Furthermore, WRA failed to submit any credible evidence that CAR's proposed activity will: (a) discharge any pollutants into the waters of Utah; or (b) exceed the existing Class III TDS limits for ground water; or (c) will or may render waters of Utah harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life. Simply, WRA failed to produce any evidence that CAR would or may discharge any pollutant or contaminant.

CAR is compelled to take this opportunity to "set the record straight" on certain statements and conclusions made by WRA in its letter. To begin with, it seems apparent that WRA does not know or is simply ignoring the fact that the testing during 1999 and 2000 for the "modified hot water process" was conducted under the existing and approved PBR, and is the exact technology that is currently being utilized for this project. See ¶ 7 of Exhibit "A". See also the Affidavit of Richard Burk Adams, ¶ 14, attached hereto as Exhibit "B" and by this reference incorporated herein. While the "modified hot water process" anticipates the utilization of a "two-step" process, CAR is currently only using the first step which does not introduce any liquid in the process other than water.¹

The employees and members of WRA and its client, Living Rivers, are apparently under the false impression that the lands involved in the CAR project are public lands, or lands otherwise owned or managed by a governmental entity to which access is freely granted. CAR finds it remarkable, as stated in the WRA letter, that the members of Living Rivers frequently occupy the project lands ("the exact area proposed for development of the mine") for various recreational and other activities. The fact is, these are privately owned lands and are not open to the public for any purpose. In fact, CAR's

¹ Utilization of the 2nd "step" is still under investigation but may be introduced in the future. If used it may require a solvent to remove fines and clay particles from the bitumen froth. However, these fines and clays are in small quantities, and they will not be returned to the mine for reclamation or landfill without prior approval from DWQ and the Utah Division of Oil, Gas and Mining.

safety operations are administered under federal MSHA regulations which prohibit unauthorized personnel to be on the property.

CAR disagrees with the position taken by WRA and its expert, Elliott W. Lips, that the Request was incomplete and inaccurate. Nowhere in the applicable regulations does it state that a certain level of information is required in a PBR request unless the facility “discharges or would probably result in a discharge of pollutants....” Utah Admin. Code R317-6-6.1.A. To the contrary, the applicable regulation at Utah Admin. Code R317-6-6.2.A.1. provides that a permit-by-rule may be issued for:

...facilities with effluent or leachate which has been demonstrated to the satisfaction of the Executive Secretary to conform and will not deviate from the applicable class TDS limits, ground water quality standards, protection levels or other permit limits and which does not contain any contaminant that may present a threat to human health, the environment or its potential beneficial uses of the ground water.

CAR submits that the Request affirmatively and adequately demonstrates that no pollutant or contaminants will be introduced into ground water through the “modified hot water process” operation, and that there will be no discharge of pollutants or other contaminants in the sand or the waters of Utah. CAR has not only met the threshold requirement for the issuance of a permit-by-rule for the proposed activity, but has submitted uncontroverted evidence supporting the Request. CAR further submits that if there is no discharge of a pollutant, then the matters discussed in part “I” of WRA’s “Legal Argument,” such as requiring a ground water sampling and analysis monitoring plan, are simply not required.

CAR fails to understand part “II” of WRA’s “Legal Argument,” that the issuance of the Determination will preclude future public involvement. DWQ has required, and CAR supports and will comply with, the “Tailings Analysis,” and with the instruction to “monitor ground water semi-annually” through the three existing water monitoring wells located on the property. As further required, CAR will submit the analytical results to DWQ for review. CAR is aware of no reason why the analytical results that it submits to DWQ on these matters will not be available to the public for review.

WRA is mistaken that CAR’s reference to analytical results of Earth Energy’s pilot-scale plant is not relevant to the Request. This study indicates that the least mobile components of bitumen are the remaining hydrocarbons in the sand after the more mobile oil constituents have been removed. WRA’s arguments are misplaced for at least two reasons. First, WRA inappropriately concludes that the tar sands ore came from a “different mine.” In fact, the ore tested by Earth Energy actually came from CAR’s mine See ¶ 9 of Exhibit “A”. Even though a different solvent was used, CAR submitted the information because the tests were conducted on its oil sands ore, and any empirical

information that it may present is relevant to the Request. Second, the Determination requires CAR to properly sequester the initial tailings for further analysis to address this very issue. This action is specifically authorized under the permit-by-rule regulations which provide in relevant part:

The Executive Secretary may require samples to be analyzed for the presence of contaminants for the effluent or leachate discharges directly or indirectly into ground water. Utah Admin. Code R317-6-6.2.A.1.

Obviously, the applicable regulations authorize future monitoring and analysis as part of a permit-by-rule determination. Moreover, the regulations allow the Executive Secretary to later require the analysis and approval of a Ground Water Discharge Permit if it is determined that a discharge may be causing or is likely to cause increases above the ground water quality standards or applicable class TDS limits, or is otherwise interfering or may interfere with probable future or beneficial use of the ground water. Utah Admin. Code R316-6-6.2.C. However, in this case, the record unequivocally demonstrates that CAR is not introducing any pollutants or other contaminants into the sand. It is entirely reasonable for the Determination to conclude that the activity would have a *de minimis* impact on ground water.

In part “IV” of its “Legal Argument,” WRA claims that CAR’s technology is “unproven.” WRA has not done its homework, or simply fails to understand the “modified hot water process” and its history. Except for the throughput capacity, the Request is based upon the exact process that was extensively tested under approved conditions in 1999 and 2000 at the subject oil sands mine. See ¶¶’s 6 and 14 of Exhibit “B.” Thousands of tons of ore were systematically processed over an 18 month period in a pilot-facility capable of processing 20 tons of ore per hour. See ¶ 8 of Exhibit “A” and ¶¶’s 6 and 7 of Exhibit “B.” In all respects, including the treatment of the re-circulated water, the pilot-facility was a success. See ¶ 8 of Exhibit “A” and ¶¶’s 9 and 10 of Exhibit “B.” WRA apparently believes it to be relevant that the technology was not advanced for “economic” reasons. Again, WRA misses the point. The economic reasons in 2000 had everything to do with the low prices of oil and asphalt, and nothing to do with the success and efficiency of the “modified hot water process.” See ¶ 8 of Exhibit “A” and ¶ 10 of Exhibit “B.” While, it is true that no water quality analysis has been performed on the sand tailings from the current program and equipment suite which are the subject of the Request, that is the purpose of the Request. WRA ignores the fact that during the 1999-2000 test of the “modified hot water process”, extensive testing was conducted on the water phase and the results were within acceptable limits. See ¶ 9 of Exhibit “B.”

In part “V” of its “Legal Argument,” WRA erroneously concludes that “[t]here is no information or data in the records supporting the assertion that the tailings will not threaten surface or ground water.” Again, WRA simply chooses to ignore the stated and

confirmed fact that CAR is not adding any pollutants or other contaminants in the “modified hot water process.” See ¶ 15 of Exhibit “B.” WRA’s conclusions are not supported by any information or data, and should be ignored. WRA simply fails to produce any evidence, and only conclusory statements, that the water table beneath CAR’s property will be negatively impacted by the proposed operations.

Finally, WRA simply chooses to ignore the third party generated geological information submitted with the Request demonstrating that geologic formations and structures underlying CAR’s property dip downward in a southwest direction, away from the City of Vernal, and in the opposite direction of all existing water wells within a mile radius of the project. Again, WRA simply does not provide any credible evidence challenging the geologic evidence submitted by CAR in the Request, or that water could somehow migrate from the project in the direction that could contaminate other water resources, even if there were a pollutant or other contaminant that could possibly be discharged in the ground water underlying the project.

CAR submits that the Determination is supported by factual and scientific evidence concluding that no pollutant or other contaminants will be discharged as a result of its proposed activities. Moreover, it is entirely appropriate for DWQ to require CAR to continue analysis of the tailings and the ground water for future review, and if necessary, the requirement of a Ground Water Discharge Permit.

Respectfully submitted,



Soung J. Kim
COO of Utah Hydrocarbon, Inc.,
Manager

cc: Rob Herbert w/ attachments; rherbert@utah.gov
Walter Baker w/ attachments; wbaker@utah.gov
Western Resource Advocates w/ attachments; rdubuc@westernresources.org
Jon Schulman w/ attachments; jschulman@jbrenv.com

AFFIDAVIT OF THOMAS W. BACHTELL

State of Utah)
) ss.
County of Salt Lake)


THE UNDERSIGNED, **THOMAS W. BACHTELL**, UPON OATH DULY STATES:

1. My name is Thomas W. Bachtell. I am over 21 years of age and a resident of Park City, Utah.
2. In 1977 I began my career in the oil, gas and mining business. I have owned and operated numerous oil and gas wells, and have actively participated in and owned several mining projects.
3. In 1981, I received a Jurris Doctorate from the University of Utah College of Law and was admitted to practice law in the State of Utah. My legal practice has revolved exclusively around natural resources matters, project permitting and environmental law.
4. On numerous occasions, I have testified as an expert witness before regulatory agencies and courts of law on oil and mining legal and regulatory issues.
5. Since 1986, I have been actively involved in operations involving the extraction of bitumen from oil sands at Asphalt Ridge, originally through BuenaVentura Resources Corporation and then as manager of Crown Asphalt Ridge LLC. I resigned as manager of Crown Asphalt Ridge LLC in October of 2010.
6. In 1996, I was the President of BuenaVentura Resources Corporation.
7. On July 29, 1996, BuenaVentura Resources Corporation was granted a permit-by-rule status for its water based tar sand extraction process at Asphalt Ridge.
8. I have personal knowledge that after the successful test and evaluation of the “modified hot water process” conducted by Crown Asphalt Ridge LLC in 2000, the project was temporarily tabled due to the low prices being paid for oil and asphalt, and not for any technological, permitting or environmental reason. At no time was the site abandoned, mining operations continued to supply run-of-mine oil sands ore for local paving purposes, and full time employees maintained the equipment on site in working condition.
9. On numerous occasions, Crown Asphalt Ridge LLC delivered run-of-mine oil sands to Earth Energy Resources, Inc. n/k/a U.S. Oil Sands Inc. for testing with its proprietary solvent extraction process. I have personal knowledge that the results of these tests were submitted to DWQ as a part of the current permit-by-rule application of Crown Asphalt Ridge, LLC submitted on March 28, 2012.

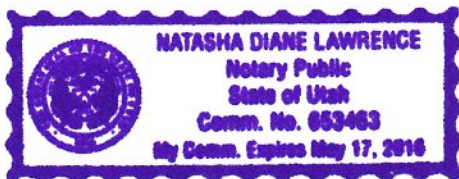
10. I have personal knowledge that since 1996, approximately \$90 million has been expended to develop and implement the "modified hot water process" by and through Crown Asphalt Ridge LLC. It is my opinion that no "economic" or other credible reason has yet been identified which should hinder or prevent the oil extraction project of Crown Asphalt Ridge LLC to proceed at this time.

FURTHER AFFIANT SAYETH NOT

Dated this 26th day of July, 2012.


Thomas W. Bachtell

Personally appeared before me, Thomas W. Bachtell, who after being duly sworn, states that the foregoing statements are true and accurate to the best of his knowledge.



Dated this 26th day of July, 2012.


NOTARY PUBLIC

AFFIDAVIT OF RICHARD BURK ADAMS

State of Utah)
) ss.
County of Salt Lake)

THE UNDERSIGNED, **RICHARD BURK ADAMS**, UPON OATH DULY STATES:

1. My name is Richard Burk Adams. I am over 21 years of age and a resident of Farmington, Utah.
2. I received, from Brigham Young University, a Bachelors of Science Degree in Chemical Engineering in 1993, and a Masters of Business Administration in 1996.
3. I am a Professional Engineer registered under the Utah Professional Engineers and Professional Land Surveyors Licensing Act, License No. 276054-2202
4. For more than 14 years, I have devoted a substantial amount of my professional time to working in the United States and Canada on oil sands operations with a primary focus on the separation of the bitumen from the sand in an economic and environmentally acceptable manner.
5. In 1998, I was contracted to work on the Crown Asphalt Ridge, LLC Project at Asphalt Ridge, Utah to, among other things, thoroughly test and evaluate the “modified hot water process” on the oil sands ore produced from the Crown Asphalt Ridge mine (the “Mine”).
6. I was the Lead Consulting Process Engineer during the 1999-2000 testing and evaluation of the “modified hot water process” at the Mine (the “pilot test”).
7. The pilot test was conducted over a period of approximately 18 months culminating in a sustained 12 day operation.
8. The cost of the pilot test was approximately \$5.3 million. Most of the cost was centered around water treatment and re-circulation of the water so that tailings ponds would not be required for any commercial operation.
9. Following the pilot test, we thoroughly evaluated the recycled water and concluded that the ion concentrations in the water at plant equilibrium were:

Na (sodium):	120 – 160 mg/L
SO4 (sulfate):	150 – 200 mg/L
HCO3 (bicarbonate):	150 – 200 mg/L
Ca (calcium):	1 – 3 mg/L
K (potassium):	5 – 15 mg/L
Fe (iron):	1 – 5 mg/L
pH:	6.5 – 8.0

10. In my professional opinion, the pilot test demonstrated that the “modified hot water process” was technologically feasible and could be operated in compliance with permitting and environmental laws and regulations, a view that I continue to have to this day.

11. In 2008, I was again contracted by Crown Asphalt Ridge, LLC to design and construct a commercial operating facility to utilize the “modified hot water process” at the Mine (the “Project”).

12. I am actively involved as the Lead Process Engineer for the Project.

13. I have reviewed the Ground Water Discharge Permit-By-Rule Statement of Basis dated May 8, 2012 (“PBR” herein) issued by the Utah Division of Water Quality (“DWQ”).

14. The current proposal of Crown Asphalt Ridge, LLC to DWQ for the Project is based upon the exact technology that was utilized during the pilot test, and in some cases, the same equipment.

15. The only additives to water are sodium hydroxide and flocculants. The sodium hydroxide is used to maintain chemical equilibrium of the water which will prevent an acidic environment from being created during commercial operations. The flocculants used to treat and clarify the re-circulated water are the same as those currently being utilized in public and private waste water treatment facilities throughout the United States.

16. It is my professional opinion, based upon the substantial testing of the “modified hot water process” at the Mine, that the oil sands mining, processing and tailings disposal proposed by Crown Asphalt Ridge, LLC should have a *de minimis* potential effect on ground water quality and qualifies for ground water discharge permit-by-rule under Utah Admin. Code R317-6-6.2.A.

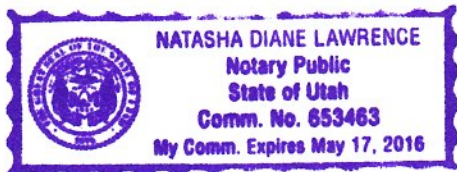


FURTHER AFFIANT SAYETH NOT

Richard Burk Adams

Richard Burk Adams

Personally appeared before me, Richard Burk Adams, who after being duly sworn, states that the foregoing statements are true and accurate to the best of his knowledge.



Dated this 25th Day of July, 2012.

Natasha Diane Lawrence
NOTARY PUBLIC