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STATE OF UTAH
UNDERGROUND INJECTION CONTROL PROGRAM
CLASS III PERMIT APPLICATION PACKAGE FOR
IN-SITU COPPER RECOVERY

DWQ-2019-020625

Last Revised: January 2018

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
Division of Water Quality
1422 Underground Injection Control (UIC) Program

CLASS III INJECTION WELL PERMIT APPLICATION FORM
FOR
IN-SITU RECOVERY OF COPPER

(Reference to R317-7 and 40 CFR in parentheses indicates sections of Utah UIC Administrative Code and Code of Federal Regulations, respectively, requiring information.)

1. Type of Permit Application (check one)

- Initial Application
 Permit Renewal, Original Permit No. _____
 Permit Modification, Original Permit No. _____

2. Type of Permit (check one)

- Individual (Single) Well Permit Area (Multiple Wells) Permit

3. Facility Operator (Applicant must be the operator if owner/operator are different)
(R317-7-9.1(B); R317-7-9.1(D)(4) and 40CFR144.31(b))

Name: Lisbon Valley Mining Company, LLC
(Individual, Corporation or Other Legal Entity)

Address: PO Box 400
(Permanent Mailing Address)

City: Moab State: Utah Zip: 84532

Telephone Number: 435-686-9950

4. Facility Owner
(R317-7-9.1(D)(4) and 40CFR144.31(e)(4))

Name: Lisbon Valley Mining Company, LLC
(Individual, Corporation or Other Legal Entity)

Address: PO Box 400
(Permanent Mailing Address)

City: Moab State: Utah Zip: 84532

Telephone Number: 435-355-0755

5. Facility status: Federal Yes State Yes
 Private Yes Public _____ Other _____

(R317-7-9.1(D)(4) and 40CFR144.31(e)(4))

(Indicate)

6. List those persons or firms authorized to act for the applicant during the processing of the permit application. Include a complete mailing address and telephone number:

George Shaw
 Director & Chairman
 PO Box 400
 Moab, Utah 84532
 435-355-0755

Lantz Indergard
 LLV ISR Project Manager
 313 South County Rd
 La Sal, Utah 84530
 435-686-9950 x 107

7. List all activities conducted at this facility that require an environmental permit under federal, state, or local statutes, rules or ordinances.

(R317-7-9.1(D)(1) and 40CFR144.31(e)(1))

- Open pit mining and crushing of copper ores
- Heap leaching of copper ores
- Beneficiation through solvent extraction and electrowinning
- Exploration activities

8. List all environmental permits or construction approvals received or applied for relevant to this facility or this location under federal, state, or local statutes, rules or ordinances.

(R317-7-9.1(D)(6) and 40CFR144.31(e)(6))

Issuing Agency	Permit or License	Status
Federal Bureau of Land Management Moab Field Office	Record of Decision for Large Mining Activities (UTU-72499)	Approved for LVMC; modification in process for LLV expansion
	Lower Lisbon Valley Exploration Plan of Operations (UTU-77879)	Approved; annual reporting & disturbance updates ongoing
US EPA Region 8	Aquifer Exemption (Class III Wells)	In Process
	RCRA Small Quantity Generator (UTR000008672)	Approved and in good order
Utah Department of Environmental Quality	NPDES Industrial Stormwater Permit (UTR00737)	Approved for LVMC; modification in process for LLV expansion
	Class III UIC Permit	In Process
	Ground Water Discharge Permit (UGW370005)	Approved for LVMC; modification in process for LLV expansion
	Approval Order for Emissions Source (DAQE-AN114620014)	Approved for LVMC; modification in process for LLV expansion
Utah Department of Natural Resources	Large Mining Permit (M/037/0088)	Approved for LVMC; modification in process for LLV expansion
	Reclamation Contract (M/037/0088)	Approved for LVMC; modification in process for LLV expansion
	Exploration Permit (E/037/0115)	Approved; annual reporting & disturbance updates ongoing

Issuing Agency	Permit or License	Status
	Water Rights 05-2593; 05-762	Approved and in good order
San Juan County	Conditional Use Permit	Ongoing
	Building Permit	Ongoing

9. Provide a brief description of the in-situ copper recovery mining operation (s) (include appropriate North American Industry Classification System (NAICS) Codes).
(R317-7-9.1(D)(3) and 40CFR144.31(e)(3) and (8))

The Lisbon Valley Copper Mine, which includes the open pit mining and SX/EW beneficiation classifies as 2017 NAICS 212230 (copper ores mining and/or beneficiation).

The proposed in-situ copper recovery operation would include the extraction of copper ores using a solution pumped and extracted via wellfields. This is more properly defined using the Standard Industrial Classification Code (SIC Code) 1021. Industry 1021 includes: "Establishments primarily engaged in mining, milling, or otherwise preparing copper ores. This industry also includes establishments primarily engaged in the recovery of copper concentrates by precipitation and leaching of copper ore." Using the SIC Code, the final refinement of the copper solution into copper cathode would classify as SIC Code 3331010 Cathodes-Copper.

10. Location of Proposed In-Situ Copper Recovery Mining Operation
(R317-7-9.1(D)(2) and (40CFR144.31(e)(2))

Facility name: Lisbon Valley Mining Company, LLC

Facility mailing address: PO Box 400, Moab Utah 84532

Facility location description: Located approx. 17 miles southeast of La Sal, Utah

Street address: 313 South County Rd

City: La Sal

County: San Juan Lease: See Attached Land Ownership

No. of Wells* : 3,000 (includes injection, extraction, and monitor wells)

For each well provide the following: Sections 4-11, 14-17, Township 31 South, Range 26 East, Sections 31 and 32, Township 30 South, Range 26 East, Section 36, Township 30 South, Range 25 East, Township; Range; Section; and 1/4, 1/4 Section: Section 1, Township 31 South, Range 25 East, SLBM

UTM Northing (NAD 83 UTM 12, Meters): 4220911

UTM Easting (NAD 83 UTM 12, Meters): 667470

* Location(s) of injection well(s) should be identified on all maps included in the Technical Report.

11. Are the proposed injection well(s) located on Indian land? Yes No
(R317-7-9.1(D)5) and 40CFR144.31(e)(5))

12. Submit the Technical Report with Application Form (R317-7-6.9). (See Attached)

13. Certification of information submitted on application form and in the Technical Report
(R317-7-9.3 and 40CFR144.32).

LANTZ TINDERGARD

(Name of Company Official: Type or Print Legibly)

MANAGER SOLUTION SCIENCES

(Title)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Lantz Tindergard

Date: _____

12/23/19

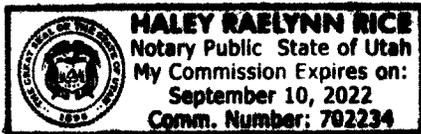
SUBSCRIBED AND SWORN to before me this 23 day of Dec., 2019.

My commission expires on the 10 day of Sept., 2022.

Haley Raelynn Rice in Grand for Utah
Notary Public in and for

Grand County, Utah

(SEAL)





United States Environmental Protection Agency
**Underground Injection Control
 Permit Application**
 (Collected under the authority of the Safe Drinking
 Water Act. Sections 1421, 1422, 40 CFR 144)

I. EPA ID Number		
	T/A	C
U		

Read Attached Instructions Before Starting
 For Official Use Only

Application approved mo day year	Date received mo day year	Permit Number	Well ID	FINDS Number

II. Owner Name and Address				III. Operator Name and Address			
Owner Name Lisbon Valley Mining Company, LLC				Owner Name Lisbon Valley Mining Company, LLC			
Street Address PO Box 400		Phone Number (435) 355-0755		Street Address 313 South County Rd		Phone Number (435) 686-9950	
City Moab	State UT	ZIP CODE 84532		City La Sal	State UT	ZIP CODE 84530	

IV. Commercial Facility	V. Ownership	VI. Legal Contact	VII. SIC Codes
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Private <input type="checkbox"/> Federal <input checked="" type="checkbox"/> Other	<input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator	SIC Code 1021

VIII. Well Status (Mark "x")			
<input type="checkbox"/> A Operating	Date Started mo day year	<input type="checkbox"/> B. Modification/Conversion	<input checked="" type="checkbox"/> C. Proposed

IX. Type of Permit Requested (Mark "x" and specify if required)				
<input type="checkbox"/> A. Individual	<input checked="" type="checkbox"/> B. Area	Number of Existing Wells 0	Number of Proposed Wells 3,000	Name(s) of field(s) or project(s) Lower Lisbon Valley Copper Project

X. Class and Type of Well (see reverse)			
A. Class(es) (enter code(s)) III	B. Type(s) (enter code(s)) G	C. If class is "other" or type is code 'x,' explain	D. Number of wells per type (If area permit) 3,000

XI. Location of Well(s) or Approximate Center of Field or Project												XII. Indian Lands (Mark 'x')		
Latitude			Longitude			Township and Range						<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Deg	Min	Sec	Deg	Min	Sec	Sec	Twp	Range	1/4 Sec	Feet From	Line			Feet From
38	07	13.9	109	05	22.1		31	26						

XIII. Attachments

(Complete the following questions on a separate sheet(s) and number accordingly; see instructions)
 For Classes I, II, III, (and other classes) complete and submit on a separate sheet(s) Attachments A-U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application.

XIV. Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

A. Name and Title (Type or Print) George Shaw, Director & Chairman	B. Phone No. (Area Code and No.) (435) 355-0755
C. Signature 	D. Date Signed 12-20-19

Well Class and Type Codes

Class I Wells used to inject waste below the deepest underground source of drinking water.

Type "I" Nonhazardous industrial disposal well
 "M" Nonhazardous municipal disposal well
 "W" Hazardous waste disposal well injecting below USDWs
 "X" Other Class I wells (not included in Type "I," "M," or "W")

Class II Oil and gas production and storage related injection wells.

Type "D" Produced fluid disposal well
 "R" Enhanced recovery well
 "H" Hydrocarbon storage well (excluding natural gas)
 "X" Other Class II wells (not included in Type "D," "R," or "H")

Class III Special process injection wells.

Type "G" Solution mining well
 "S" Sulfur mining well by Frasch process
 "U" Uranium mining well (excluding solution mining of conventional mines)
 "X" Other Class III wells (not included in Type "G," "S," or "U")

Other Classes Wells not included in classes above.
 Class V wells which may be permitted under §144.12.
 Wells not currently classified as Class I, II, III, or V.

Attachments to Permit Application

Class	Attachments
I new well	A, B, C, D, F, H – S, U
existing	A, B, C, D, F, H – U
II new well	A, B, C, E, G, H, M, Q, R; optional – I, J, K, O, P, U
existing	A, E, G, H, M, Q, R, – U; optional – J, K, O, P, Q
III new well	A, B, C, D, F, H, I, J, K, M – S, U
existing	A, B, C, D, F, H, J, K, M – U
Other Classes	To be specified by the permitting authority

INSTRUCTIONS - Underground Injection Control (UIC) Permit Application

Paperwork Reduction Act: The public reporting and record keeping burden for this collection of information is estimated to average 224 hours for a Class I hazardous well application, 110 hours for a Class I non-hazardous well application, 67 hours for a Class II well application, and 132 hours for a Class III well application. Burden means the total time, effort, or financial resource expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal Agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to the collection of information; search data sources; complete and review the collection of information; and, transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques to Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW, Washington, DC 20460. Include the OMB control number in any correspondence. Do not send the completed forms to this address

This form must be completed by all owners or operators of Class I, II, and III injection wells and others who may be directed to apply for permit by the Director.

- I. **EPA I.D. NUMBER** - Fill in your EPA Identification Number. If you do not have a number, leave blank.
- II. **OWNER NAME AND ADDRESS** - Name of well, well field or company and address.
- III. **OPERATOR NAME AND ADDRESS** - Name and address of operator of well or well field.
- IV. **COMMERCIAL FACILITY** - Mark the appropriate box to indicate the type of facility.
- V. **OWNERSHIP** - Mark the appropriate box to indicate the type of ownership.
- VI. **LEGAL CONTACT** - Mark the appropriate box
- VII. **SIC CODES** - List at least one and no more than four Standard Industrial Classification (SIC) Codes that best describe the nature of the business in order of priority.
- VIII. **WELL STATUS** - Mark Box A if the well(s) were operating as injection wells on the effective date of the UIC Program for the State. Mark Box B if wells(s) existed on the effective date of the UIC Program for the State but were not utilized for injection. Box C should be marked if the application is for an underground injection project not constructed or not completed by the effective date of the UIC Program for the State.
- IX. **TYPE OF PERMIT** - Mark "Individual" or "Area" to indicate the type of permit desired. Note that area permits are at the discretion of the Director and that wells covered by an area permit must be at one site, under the control of one person and do not inject hazardous waste. If an area permit is requested the number of wells to be included in the permit must be specified and the wells described and identified by location. If the area has a commonly used name, such as the "Jay Field," submit the name in the space provided. In the case of a project or field which crosses State lines, it may be possible to consider an area permit if EPA has jurisdiction in both States. Each such case will be considered individually, if the owner/operator elects to seek an area permit.
- X. **CLASS AND TYPE OF WELL** - Enter in these two positions the Class and type of injection well for which a permit is requested. Use the most pertinent code selected from the list on the reverse side of the application. When selecting type X please explain in the space provided.
- XI. **LOCATION OF WELL** - Enter the latitude and longitude of the existing or proposed well expressed in degrees, minutes, and seconds or the location by township, and range, and section, as required by 40 CFR Part 146. If an area permit is being requested, give the latitude and longitude of the approximate center of the area.
- XII. **INDIAN LANDS** - Place an "X" in the box if any part of the facility is located on Indian lands
- XIII. **ATTACHMENTS** - Note that information requirements vary depending on the injection well class and status. Attachments for Class I, II, III are described on pages 4 and 5 of this document and listed by Class on page 2. Place EPA ID number in the upper right hand corner of each page of the Attachments
- XIV. **CERTIFICATION** - All permit applications (except Class II) must be signed by a responsible corporate officer for a corporation, by a general partner for a partnership, by the proprietor of a sole proprietorship, and by a principal executive or ranking elected official for a public agency. For Class II, the person described above should sign, or a representative duly authorized in writing.

INSTRUCTIONS - Attachments

Attachments to be submitted with permit application for Class I, II, III and other wells.

A. AREA OF REVIEW METHODS - Give the methods and, if appropriate, the calculations used to determine the size of the area of review (fixed radius or equation). The area of review shall be a fixed radius of 1/4 mile from the well bore unless the use of an equation is approved in advance by the Director.

B. MAPS OF WELL/AREA AND AREA OF REVIEW - Submit a topographic map, extending one mile beyond the property boundaries, showing the injection well(s) or project area for which a permit is sought and the applicable area of review. The map must show all intake and discharge structures and all hazardous waste treatment, storage, or disposal facilities. If the application is for an area permit, the map should show the distribution manifold (if applicable) applying injection fluid to all wells in the area, including all system monitoring points. Within the area of review, the map must show the following:

Class I

The number, or name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, and other pertinent surface features, including residences and roads, and faults, if known or suspected. In addition, the map must identify those wells, springs, other surface water bodies, and drinking water wells located within one quarter mile of the facility property boundary. Only information of public record is required to be included in this map;

Class II

In addition to requirements for Class I, include pertinent information known to the applicant. This requirement does not apply to existing Class II wells;

Class III

In addition to requirements for Class I, include public water systems and pertinent information known to the applicant.

C. CORRECTIVE ACTION PLAN AND WELL DATA - Submit a tabulation of data reasonably available from public records or otherwise known to the applicant on all wells within the area of review, including those on the map required in B, which penetrate the proposed injection zone. Such data shall include the following:

Class I

A description of each well's types, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the Director may require. In the case of new injection wells, include the corrective action proposed to be taken by the applicant under 40 CFR 144.55.

Class II

In addition to requirement for Class I, in the case of Class II wells operating over the fracture pressure of the injection formation, all known wells within the area of review which penetrate formations affected by the increase in pressure. This requirement does not apply to existing Class II wells

Class III

In addition to requirements for Class I, the corrective action proposed under 40 CFR 144.55 for all Class III wells

D. MAPS AND CROSS SECTION OF USDWs - Submit maps and cross sections indicating the vertical limits of all underground sources of drinking water within the area of review (both vertical and lateral limits for Class I), their position relative to the injection formation and the direction of water movement, where known, in every underground source of drinking water which may be affected by the proposed injection. (Does not apply to Class II wells.)

- E. NAME AND DEPTH OF USDWs (CLASS II)** - For Class II wells, submit geologic name, and depth to bottom of all underground sources of drinking water which may be affected by the injection.
- F. MAPS AND CROSS SECTIONS OF GEOLOGIC STRUCTURE OF AREA** - Submit maps and cross sections detailing the geologic structure of the local area (including the lithology of injection and confining intervals) and generalized maps and cross sections illustrating the regional geologic setting (Does not apply to Class II wells.)
- G. GEOLOGICAL DATA ON INJECTION AND CONFINING ZONES (Class II)** - For Class II wells, submit appropriate geological data on the injection zone and confining zones including lithologic description, geological name, thickness, depth and fracture pressure.
- H. OPERATING DATA** - Submit the following proposed operating data for each well (including all those to be covered by area permits): (1) average and maximum daily rate and volume of the fluids to be injected, (2) average and maximum injection pressure; (3) nature of annulus fluid; (4) for Class I wells, source and analysis of the chemical, physical, radiological and biological characteristics, including density and corrosiveness, of injection fluids; (5) for Class II wells, source and analysis of the physical and chemical characteristics of the injection fluid; (6) for Class III wells, a qualitative analysis and ranges in concentrations of all constituents of injected fluids. If the information is proprietary, maximum concentrations only may be submitted, but all records must be retained.
- I. FORMATION TESTING PROGRAM** - Describe the proposed formation testing program. For Class I wells the program must be designed to obtain data on fluid pressure, temperature, fracture pressure, other physical, chemical, and radiological characteristics of the injection matrix and physical and chemical characteristics of the formation fluids. For Class II wells the testing program must be designed to obtain data on fluid pressure, estimated fracture pressure, physical and chemical characteristics of the injection zone. (Does not apply to existing Class II wells or projects.) For Class III wells the testing must be designed to obtain data on fluid pressure, fracture pressure, and physical and chemical characteristics of the formation fluids if the formation is naturally water bearing. Only fracture pressure is required if the program formation is not water bearing. (Does not apply to existing Class III wells or projects.)
- J. STIMULATION PROGRAM** - Outline any proposed stimulation program.
- K. INJECTION PROCEDURES** - Describe the proposed injection procedures including pump, surge, tank, etc.
- L. CONSTRUCTION PROCEDURES** - Discuss the construction procedures (according to §146.12 for Class I, §146.22 for Class II, and §146.32 for Class III) to be utilized. This should include details of the casing and cementing program, logging procedures, deviation checks, and the drilling, testing and coring program, and proposed annulus fluid. (Request and submission of justifying data must be made to use an alternative to packer for Class I.)
- M. CONSTRUCTION DETAILS** - Submit schematic or other appropriate drawings of the surface and subsurface construction details of the well.
- N. CHANGES IN INJECTED FLUID** - Discuss expected changes in pressure, native fluid displacement, and direction of movement of injection fluid. (Class III wells only.)
- O. PLANS FOR WELL FAILURES** - Outline contingency plans (proposed plans, if any, for Class II) to cope with all shut-ins or wells failures, so as to prevent migration of fluids into any USDW.
- P. MONITORING PROGRAM** - Discuss the planned monitoring program. This should be thorough, including maps showing the number and location of monitoring wells as appropriate and discussion of monitoring devices, sampling frequency, and parameters measured. If a manifold monitoring program is utilized, pursuant to §146.23(b)(5), describe the program and compare it to individual well monitoring.
- Q. PLUGGING AND ABANDONMENT PLAN** - Submit a plan for plugging and abandonment of the well including: (1) describe the type, number, and placement (including the elevation of the top and bottom) of plugs to be used; (2) describe the type, grade, and quantity of cement to be used; and (3) describe the method to be used to place plugs, including the method used to place the well in a state of static equilibrium prior to placement of the plugs. Also for a Class III well that underlies or is in an exempted aquifer, demonstrate adequate protection of USDWs. Submit this information on EPA Form 7520-14, Plugging and Abandonment Plan.

- R. NECESSARY RESOURCES** - Submit evidence such as a surety bond or financial statement to verify that the resources necessary to close, plug or abandon the well are available
- S. AQUIFER EXEMPTIONS** - If an aquifer exemption is requested, submit data necessary to demonstrate that the aquifer meets the following criteria: (1) does not serve as a source of drinking water; (2) cannot now and will not in the future serve as a source of drinking water; and (3) the TDS content of the ground water is more than 3,000 and less than 10,000 mg/l and is not reasonably expected to supply a public water system. Data to demonstrate that the aquifer is expected to be mineral or hydrocarbon production, such as general description of the mining zone, analysis of the amenability of the mining zone to the proposed method, and time table for proposed development must also be included. For additional information on aquifer exemptions, see 40 CFR Sections 144.7 and 146.04.
- T. EXISTING EPA PERMITS** - List program and permit number of any existing EPA permits, for example, NPDES, PSD, RCRA, etc.
- U. DESCRIPTION OF BUSINESS** - Give a brief description of the nature of the business.