



Rec'd.  
Records  
December 19, 2019

**Department of Energy**  
West Valley Demonstration Project  
10282 Rock Springs Road  
West Valley, NY 14171-9799

December 19, 2019

DW:2019:1187

Mr. Scott A. Anderson  
President & General Manager  
CH2M HILL BWXT West Valley, LLC  
West Valley Demonstration Project  
10282 Rock Springs Rd  
West Valley, NY 14171-9799

ATTENTION: J. D. Williams, Regulatory Strategy Manager, WV-10PLEX

SUBJECT: Water Withdrawal Permit

REFERENCE: Letter (381913), K. Hanson to B. C. Bower, "Water Withdrawal Permit; DEC ID# 9-0422-00005/00112, WWA# 12,392; West Valley Demonstration Project, Town of Ashford, Cattaraugus County," dated December 12, 2019

Dear Mr. Anderson:

The enclosed notification from New York State Department of Environmental Conservation contains the Water Withdrawal Permit. Please review the permit for accuracy and comply with the conditions contained therein.

The contents of this correspondence are not intended to impact or modify scope and/or cost. If you have any questions regarding this matter, please contact Moira N. Maloney of my staff on Extension 4255.

Sincerely,

A handwritten signature in black ink, appearing to read "B.C.B.", written over a horizontal line.

Bryan C. Bower, Director  
West Valley Demonstration Project

Enclosure: Referenced Letter

cc: D. P. Klenk, CHBWV, WV-PL6, w/enc.  
K. P. Armstrong, DOE-EMCBC, Office of the Director, w/enc.  
M. N. Maloney, DOE-WVDP, AC-DOE, w/enc.

JTD:381938- 455.1.1

# NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

## Division of Environmental Permits

625 Broadway, 4th Floor, Albany, New York 12233-1750  
P: (518) 402-9167 | F: (518) 402-9168 | [deppermitting@dec.ny.gov](mailto:deppermitting@dec.ny.gov)  
[www.dec.ny.gov](http://www.dec.ny.gov)

December 12, 2019

Bryan C. Bower, Director  
Department of Energy  
West Valley Demonstration Project  
10282 Rock Springs Road  
West Valley, NY 14171-9799

RE: Water Withdrawal Permit  
DEC ID# 9-0422-00005/00112, WWA# 12,392  
West Valley Demonstration Project, Town of Ashford, Cattaraugus County

Dear Mr. Bower,

Enclosed is the permit for which you applied. Please note its conditions. This permit will **expire on December 11, 2029**. Withdrawals beyond the scope of the permit and the approved project plans may be considered a violation of the law and subject to appropriate enforcement action.

Please be advised that the Uniform Procedures Regulations (6 NYCRR Part 621) provide that an applicant may request a public hearing if a permit is denied or contains conditions which are unacceptable to them. Any such request must be made in writing within 30 calendar days of the date of permit issuance and must be addressed to the Chief Permit Administrator at the letterhead address. A copy should also be sent to the Chief Administrative Law Judge at NYSDEC, 625 Broadway, 1st Floor, Albany, NY 12233-1550.

Note that this permit does not eliminate the need to obtain any other federal, state or local permits or approvals that may be required for this project.

If you have any questions regarding your obligations under the permit, please contact me by phone at (518) 408-5476 or by email at [karyn.hanson@dec.ny.gov](mailto:karyn.hanson@dec.ny.gov). Thank you.

Sincerely,



Karyn Hanson  
Environmental Analyst

Enclosures: Permit  
Response to Comments

Electronic copies to: D. Denk, DEC, Regional Permit Administrator  
J. Konsella, DEC, Regional Water Engineer  
J. Hock, DEC, CO-DOW  
P. Concannon, DEC, DMN, Region 9



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December 12, 2019

Mr. Bower

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B. Hourigan, DEC, DOW, Region 9  
M. Stein, DEC, DOW, Region 9  
L. Czechowicz, DEC, DEP, Region 9  
P. Bemba, Director, NYSERDA  
M. Maloney, DOE-WVDP



**PERMIT**  
**Under the Environmental Conservation Law (ECL)**

**Permittee and Facility Information**

**Permit Issued To:**

US DEPT OF ENERGY  
1000 INDEPENDENCE AVE SW  
WASHINGTON, DC 20585

**Facility:**

WEST VALLEY DEMONSTRATION PROJECT  
10282 ROCK SPRINGS RD  
WEST VALLEY, NY 14171-9799

**Facility Location:** in ASHFORD in CATTARAUGUS COUNTY

**Facility Principal Reference Point:** NYTM-E: 199.521 NYTM-N: 4706.242  
Latitude: 42°27'01.0" Longitude: 78°39'13.9"

**Authorized Activity:** This permit authorizes the withdrawal of up to 504,000 gallons per day (gpd) of water for potable water supply, utility water, fire suppression, dust suppression, wastewater discharge flow augmentation, and processes associated with site demolition activities at the West Valley Demonstration Project facility in accordance with the terms and conditions of this permit.

**Permit Authorizations**

**Water Withdrawal Non-public - Under Article 15, Title 15**

Permit ID 9-0422-00005/00112 (WWA No. 12,392)  
New Permit Effective Date: 12/12/2019 Expiration Date: 12/11/2029

**NYSDEC Approval**

**By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.**

Permit Administrator: SCOTT E SHEELEY, Deputy Chief Permit Administrator

Address: NYSDEC Headquarters  
625 Broadway  
Albany, NY 12233

Authorized Signature: Scott E. Sheeley

Date 12/12/2019



**Permit Components**

WATER WITHDRAWAL NON-PUBLIC PERMIT CONDITIONS

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

**WATER WITHDRAWAL NON-PUBLIC PERMIT CONDITIONS**

**1. Source Approval Table**

<b>This table summarizes all system source approvals</b>				
<b>Well Field or Source of Water Supply</b>	<b>Status</b>	<b>Past WWA Number</b>	<b>Individual Source Capacities (gpm)</b>	<b>Maximum Permitted Well Field or Supply of Water (gpd)</b>
Well 1	Active	-	50	72,000 gpd
Well 2	Active	-	50	
Lakes 1 & 2	Active	-	300	432,000 gpd
<b>Total Approved</b>				<b>504,000 GPD</b>

**2. Approval of Completed Works from NYS P.E.** Any new works constructed or modified pursuant to this water withdrawal permit shall be constructed under the general supervision of a person licensed to practice engineering in this state (professional engineer). Upon completion of construction and pre-operational testing, such works may not commence final operation until the professional engineer first certifies in writing to the Department that the works have been constructed in accordance with the issued permit.

**3. Transfer of Ownership of Water Withdrawal Systems** Unless otherwise specified in this permit, a new water withdrawal permit application is required for the acquisition or condemnation of the approved water withdrawal system.

**4. Permit Expiration and Renewal** Any permittee who intends to continue to operate a water withdrawal system beyond the period of time covered in the applicable water withdrawal permit must apply for a renewal of the permit at least 30 days prior to its expiration.

**5. NYSDOH Approval of Potable Water Supplies** This permit does not authorize the permittee to supply, sell or distribute potable water from any source approved herein, without all necessary approvals from NYSDOH.

**6. Meter All Sources** The permittee must install and maintain meters or other appropriate measuring devices on all sources of supply used in the system. Source master meters or measuring devices are to





be read, and records kept of those readings, on at least a weekly basis. The permittee must maintain records of water withdrawn and consumptive use for each calendar year.

**7. Source Meter Calibration** All source meters or measuring devices shall be calibrated for accuracy at least once each year.

**8. Permittee Must Maintain Records** The permittee must retain records of production and consumption, reports of audit results, and summaries of leaks detected and repaired for at least ten years. The permittee must provide copies of such of these records, reports, and summaries as might be requested in writing by the Department within one month of receiving such a request.

**9. Conduct Water Audits** At least once annually, the permittee must conduct a system-wide water audit that utilizes metered water production and consumption data to determine unaccounted-for water.

**10. Leak Detection and Repair** The permittee must develop and implement a leak detection and repair program using visual inspection of above ground piping and fittings and sonic detection equipment, meter-to-meter readings reconciliation or other methods acceptable to the Department for the inspection of the facility's underground piping in a systematic fashion. Leaking pipes and fittings shall be repaired in a timely manner.

**11. Annual Water Withdrawal Reports** The permittee must submit a Water Withdrawal Reporting Form to the Department's Division of Water, Albany, NY by March 31st of each year. The form is available on the Department's website and includes information regarding approved sources of water supply, source capacities, average and maximum day water use data and water conservation and efficiencies employed during the past calendar year.

**GENERAL CONDITIONS - Apply to ALL Authorized Permits:**

**1. Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

**2. Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

**3. Applications For Permit Renewals, Modifications or Transfers** The permittee must submit a



separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Deputy Chief Permit Administrator  
NYSDEC Headquarters  
625 Broadway  
Albany, NY12233

**4. Permit Modifications, Suspensions and Revocations by the Department** The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

- a. materially false or inaccurate statements in the permit application or supporting papers;
- b. failure by the permittee to comply with any terms or conditions of the permit;
- c. exceeding the scope of the project as described in the permit application;
- d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
- e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

**5. Permit Transfer** Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

## NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

### **Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification**

The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

### **Item B: Permittee's Contractors to Comply with Permit**



The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

**Item C: Permittee Responsible for Obtaining Other Required Permits**

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

**Item D: No Right to Trespass or Interfere with Riparian Rights**

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.



# NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

## Division of Environmental Permits

625 Broadway, 4th Floor, Albany, New York 12233-1750

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www.dec.ny.gov

## Response to Comments West Valley Demonstration Project (WVDP) Water Withdrawal Permit U.S. Department of Energy DEC ID # 9-0422-00005/00112, WWA # 12,392

December 12, 2019

### Administrative Summary

The New York State Department of Environmental Conservation (NYSDEC) publicly noticed its intent to issue the above-referenced permit in the Environmental Notice Bulletin on August 14, 2019. The applicant also publicly noticed information in the Springville Journal, published on August 15, 2019.

The Department received timely written comments from six individuals who requested an extension of the comment period and/or access to documents in the NYSDEC Region 9 Buffalo office or electronically. The Department responded by extending the comment period on August 28, 2019 to September 23, 2019 and by emailing a link to the electronic files. Commenters were also informed of the existing availability of the documents at the NYSDEC Region 9 Buffalo office.

The Department also received timely written comments on matters other than document access and/or an extension of the comment period from Ms. Laird on September 23, 2019, Ms. Warren on August 28, 2019 & September 23, 2019, and Mr. Vaughan on August 16, 2019 & September 23, 2019.

The Department has evaluated comments provided by Ms. Laird, Ms. Warren, and Mr. Vaughan and provides corresponding responses to relevant comments below. After carefully considering the relevant comments provided during the public comment period, the Department has issued a water withdrawal permit to the U.S. Department of Energy's WVDP facility for a ten-year term.

### Water Withdrawal Activity Summary

The WVDP uses two separate water withdrawal systems to support site operations; the first being surface water and the second being groundwater. Surface water is provided from two man-made reservoirs (Lakes 1 & 2) that are fed by an unnamed tributary to Buttermilk Creek. This water is periodically pumped to an onsite stream, Erdman Brook, as augmentation water to reduce the Total Dissolved Solids (TDS) discharged to Erdman Brook from the WVDP's wastewater treatment system Lagoon 3 as permitted by the WVDP's New York State Pollutant Discharge Elimination System (SPDES) permit (NY0000973 as modified on July 28, 2015).

Water is removed from the reservoirs and discharged downstream into Erdman Brook, eventually flowing into Buttermilk Creek via Franks Creek. The SPDES-permitted discharges occur three to six times per year from Lagoon 3, a 3,000,000-gallon holding lagoon, managed at a maximum level of 60 percent of its operating capacity. In accordance with the SPDES permit, discharges are limited to a 10-day duration. During discharges, the average pumping rate of augmentation water is 200 gallons per minute



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(gpm) (equivalent to 288,000 gpd) and the max pumping rate is 300 gpm, which has been a standard operating procedure per the WVDP SPDES Permit since 1995.

Groundwater is supplied by the two onsite bedrock wells to support the WVDP's potable water needs of approximately 300 workers. Raw water from the groundwater wells is also pumped directly to an on-site 475,000-gallon storage tank to support the site's operational, dust suppression, and fire protection water needs.

Since 2010, when the WVDP first began reporting water withdrawal usages, the WVDP's average withdrawal rate for both groundwater and surface water has been approximately 58,200 gpd. In calendar year 2018, roughly 75 percent of the water withdrawal was provided by the reservoirs and 25 percent was provided by the groundwater wells.

**Comment 1**

*According to the paperwork we see that Erdman Brook, Franks Creek and Buttermilk Creek would all be affected by this water withdrawal permit. How would this affect any of the plants growing along the sensitive areas of these brooks and creeks?*

**Response 1**

Erdman Brook Impacts – Well #1 is located closest to the intermittent stream Erdman Brook and is approximately 300 feet away. The permit application states that Well #1 is drilled to a depth of approximately 115 feet and withdraws water from a depth of 80 feet. Well #2 is located slightly further west, is drilled to a depth of approximately 110 feet, and withdraws water from a depth of 72 feet. In reviewing the well information, pumping test data, and well drawdown maps provided in Attachments D and E to the Engineering Report, NYSDEC has determined that the groundwater well withdrawals do not have a significant impact on water levels and, therefore, natural resources (plants and aquatic species) in or along Erdman Brook.

Franks Creek Impacts - Well #1 is located closest to Franks Creek and is approximately 1,700 feet away. In reviewing the well information, pumping test data, and well drawdown maps provided in Attachments D and E to the Engineering Report, NYSDEC has determined that the groundwater wells do not have a significant impact on water levels and, therefore, natural resources (plants and aquatic species) in or along Franks Creek.

Buttermilk Creek Impacts – Wells #1 and 2 are located over 3,000 feet away from Buttermilk Creek. In reviewing the well information, pumping test data, and well drawdown maps provided in Attachments D and E to the Engineering Report, NYSDEC has determined that the groundwater wells do not have a significant impact on water levels and, therefore, natural resources (plants and aquatic species) in or along Buttermilk Creek.

Impacts of augmentations/discharges from the reservoir system on Erdman Brook, Franks Creek, and Buttermilk Creek were analyzed during review of the WVDP SPDES permit application.

**Comment 2**

*How much would the flow increase to these waterbodies?*

**Response 2**

See Response 1, above

**Comment 3**

*What times of the year are these flow augmentations taking place?*

**Response 3**

See Water Withdrawal Activity Summary and Response 1, above.

**Comment 4**

*Are there any Endangered, Threatened or Special Concerned animals, plants or insects in these areas that could possibly be affected by the rapid increase and decrease of the water levels?*

**Response 4**

NYSDEC screened the project location for presence of threatened and endangered species. NYSDEC found that a portion of the range of the Upland Sand Piper, listed as threatened in New York State, coincides with a portion of the project area. Given the persistence of the species in the project area despite the ongoing withdrawal activity since the 1960s, NYSDEC determined that the proposed action would not result in a significant adverse impact to this species. Also see Response 1, above.

**Comment 5**

*Are there any significant natural communities in this area that could be adversely affected? If there are wood turtles in this region what will happen to them if the flow suddenly increases? Or the frogs if the flow suddenly increases when they need to attach their eggs to a plant?*

**Response 5**

See Response 1 and Response 4, above.

**Comment 6**

*In the justification section, question 7, "Whether the proposed withdrawal will result in no significant individual or cumulative adverse environmental impacts:" Answer: The project will result in no significant individual or cumulative adverse environmental impacts because the area is sparsely populated. The Western New York Service Center fenced zone of exclusions of 3,300 acres is not inhabited by others." We understand that there are not many people in this area but what about all the wildlife that reside there? Since there are less people and a larger section of land in this region it would definitely have a lot more wildlife there that would need protecting! We know that part of your job is to protect people but isn't it also to protect all wildlife, in whatever form they take?*

**Response 6**

NYSDEC reviews all relevant information in evaluating individual and cumulative impacts associated with the issuance of a water withdrawal permit. Based on the information provided in the application, NYSDEC has determined that the withdrawal of water from the two onsite wells and the two reservoirs does not have a significant adverse impact on the quantity or quality of the water sources, nearby natural resources, or aquatic life (See Response 1 and Response 4, above).

**Comment 7**

*A plume of strontium has moved across the entire North Plateau, and increased concentrations have reached the permeable treatment wall, resulting in greater strontium releases offsite. We want to know whether the 2014 wells are contaminated with strontium.*

**Response 7**

The Cattaraugus County Health Department (CCHD) required the WVDP to submit a Source Water Protection Plan to address the question of whether the groundwater supply wells could potentially be impacted by radiological contamination that historically originated from the Main Plant Process Building (MPPB) at the WVDP. The commenter may contact the CCHD to obtain a copy of the Source Water Protection Plan. The CCHD has approved the use of the WVDP water supply wells for potable water supply. A potable water supply system approval letter from CCHD has been included as an attachment to this response.

See also Response to Comment 19, below.

**Comment 8**

*Action Request – A permanent requirement for all West Valley application for proposed projects to show evidence of a written and verbal presentation about the project to the public at regular scheduled Citizens Task Force or Quarterly Public Meetings Such notice should be provided 60 days prior to the date of the Environmental Notice Bulletin (ENB) publication.*

**Response 8**

The actions and procedures required pursuant to 6 NYCRR Part 621 do not include the procedure described in the comment above.

**Comment 9**

*In response to two questions related to the site of the proposed action or adjoining properties, the answer was “NO” to both- the presence of a solid waste management facility and remediation of a hazardous waste management facility. Notably the rationale for using sentinel monitoring wells is related to these facilities, SDA, NDA and the strontium plume. (application p.20 of 515 pages)*

**Response 9**

NYSDEC reviewed the Environmental Assessment Form Part 1 provided by the applicant. The applicant described the proposed action as “Water Withdrawal Permit Application to allow for the withdrawal of water for industrial uses, potable water and augmentation water that is used to meet the project’s SPDES permit for TDS compliance.” The information provided on the Environmental Assessment Form Part 1 adequately describes the water withdrawal activity and NYSDEC is sufficiently aware of the larger project setting.

**Comment 10**

*We calculated from the information provided that 2,268,000 gallons of augmentation water would be used over the 7 days for the lagoon discharge or 324,000 gallons per day. This is obviously a lot of dilution to obtain the desired concentration in Buttermilk Creek. Environmental science has not supported the concept of dilution as a solution to pollution. Other alternatives should have been explored.*

**Response 10**

Alternatives to the methods used to derive SPDES permits limits are not under consideration in NYSDEC's decision of whether or not to permit the water withdrawal activity. The water withdrawal activities represent a beneficial, largely non-consumptive water use linked to existing, authorized discharges.

**Comment 11**

*Water is pumped from the Pump House at Reservoir #2 to the site's Utility room. As shown on the Map at p. 49 of 515, this would be the Utility Room being demolished at the Main Plant Process Building. Where will the pumped water go when the Utility Room is gone?*

**Response 11**

Facility representatives have indicated that, "In planning for demolition of the Utility Room, the augmentation water line was rerouted to allow water from the reservoirs to continue discharging into a drainage ditch that flows into Erdman Brook. These changes were implemented so that augmentation water was available at all times from the reservoirs."

**Comment 12**

*While we were provided with the primary purpose for the water withdrawal, inadequate details are provided for this essential item in a permit application. We don't know the number of gallons contained in Lagoon 3 when it is full. We also don't know the concentration of TDS in the lagoon water being discharged or whether the manner of discharge affects the concentration of dissolved solids. Complete information about the SPDES permit limits and what contaminants are regularly tested was not provided. The application does not provide information about the concentration of Total dissolved solids in recent years, and the amount of total discharges from Lagoon 3. There was no analysis indicating that other options were explored.*

**Response 12**

Facility representatives have characterized Lagoon 3 as having a capacity to hold 3,000,000 gallons. See Water Withdrawal Activity Summary, above. Data requested above is beyond the scope of the information needed to complete technical review of the water withdrawal permit application. Alternatives to the methods used to derive SPDES permits limits are not under consideration in NYSDEC's decision of whether or not to permit the water withdrawal activity.

**Comment 13**

*The spread of one easterly prong of the Strontium plume has extended toward Lagoon 3 and does not pass through the permeable treatment wall. Strontium contamination could be present. Has Lagoon 3 been tested for Strontium levels?*

**Response 13**

Data requested above is beyond the scope of the information needed to complete technical review of the water withdrawal permit application.

**Comment 14**

*The West Valley site is very vulnerable to erosion. Rain and the flow of water over the site surface contributes to erosion. Notably the Environmental Assessment Form did not indicate the potential for stream disturbances despite the fact that the augmentation water is discharged to a drainage ditch,*

*Erdman Brook, Franks Creek and Buttermilk Creek. No photos of these locations were included or any description of measures taken to control erosion. If erosion is occurring during these discharges, water at Buttermilk Creek will be degraded, not improved. In addition, total erosive processes could be worsened as a result of extreme rainfalls and these additional discharges.*

**Response 14**

Data requested above is beyond the scope of the information needed to complete technical review of the water withdrawal permit application.

**Comment 15**

*What sampling has been done at Buttermilk Creek to know the final TDS levels? What other sampling is done at Lagoon 3 prior to water discharges to screen for radionuclides and other toxins, such as heavy metals? Mercury was found in water discharges a few years ago.*

**Response 15**

Data requested above is beyond the scope of the information needed to complete technical review of the water withdrawal permit application.

**Comment 16**

*Water is necessary for much of the cleanup work that is being done at the West Valley site. It is also necessary for workers to shower after the work they perform. Finally large amounts of water are needed to control dust that is released to the air from demolition activities. It is critically important that adequate water be available for these activities, especially as work is done on the Main Plant Process Building. Recently NRC published their regulatory basis related to GTCC or Greater than Class C radioactive waste, which indicates that large quantities of this waste are associated with the MPPB— 1250 cubic meters of GTCC-like waste with 540 cubic meters requiring remote handling. (See Federal Register, July 22, 2019 and NRC Regulatory Basis- Adams # ML19059A403.) This highlights the importance of redundant air emissions control for this work and adequate misting. Temporary enclosures for demolition of the MPPB and real time air monitoring should be employed. At the same time attention must be paid to channeling and capturing the water used for dust suppression, testing and subsequent handling based on testing results to ensure proper disposal.*

**Response 16**

WDVP presented a justification of its reasonable use of water to support demolition activities. It is our understanding that the WVDP has evaluated the estimated annual water needs to support demolition activities and determined that the total annual water usage anticipated will be within the limits of the proposed water withdrawal permit and are capable of being supported by the two bedrock groundwater wells. Temporary enclosures, air quality monitoring, runoff recapture, runoff testing, runoff water quality reporting and runoff disposal are activities beyond the scope of this permit

**Comment 17**

*Does lagoon 3 have to be drained over 7 days in a row or can it be interrupted? We want assurance that adequate water is available for dust suppression during demolition activities, as this is an essential health and safety matter. We have never been provided with information about total water used for demolition activities in a single day.*

**Response 17**

The Engineering Report states that 300,000 gallons out of the 475,000 gallon capacity of the on-site storage tank are set aside for wash downs, decontamination, dust suppression, fire protection and other non-potable needs. Water for these purposes is not withdrawn directly from lagoon 3. It is our understanding that the WVDP has evaluated the estimated water needs to support these activities and determined that the usage anticipated will be within the limits of the proposed water withdrawal permit and are capable of being supported by the two bedrock groundwater wells.

**Comment 18**

*We could not find the "Pseudo-monitoring point 116 M" on the enclosed maps. Please explain the exact location and why we would use a pseudo monitoring point rather than monitoring at Buttermilk Creek where the discharge from the lagoon enters.*

**Response 18**

Please note that lagoon 3 discharges to Erdman Brook at an on-site location and not to Buttermilk Creek. Facility representatives have indicated that Pseudo-monitoring point 116 is located in Franks Creek at the WVDP-DOE project premises fence line. The pseudo-monitoring point is used for SPDES permit reporting and is not relied on in this application.

**Comment 19**

*We need to know details regarding the parameters tested for the sentinel wells. We also recommend monthly testing of the groundwater supply wells. It is possible that sentinel wells will not show contamination first. Please provide contaminant testing for both sentinel and groundwater wells and the frequency for radiological and other toxic contaminants. Please make the Source Water Protection Plan available to us.*

**Response 19**

The Cattaraugus County Health Department (CCHD) has approved the use of the WVDP water supply wells for potable water supply. Prior to approval, the CCHD required the WVDP to submit and implement a comprehensive WVDP Drinking Water Monitoring Plan to ensure that the quality of the water produced by the system remains acceptable. Biweekly radiological monitoring (sampling) is performed at the sentinel wells, which are located between the Main Plant Process Building (MPPB) and the groundwater supply wells. Additionally, monthly radiological sampling is also performed at supply wells #1 and #2. According to WVDP representatives, this information is provided to CCHD in monthly drinking water reports, which also include daily averages of water volumes pumped by the supply wells. The commenter may contact CCHD to obtain a copy of the Drinking Water Monitoring Plan and a listing of the radiological parameters tested.

CCHD also required the WVDP to submit a Source Water Protection Plan to address the question of whether the groundwater supply wells could potentially be impacted by radiological contamination that historically originated from the MPPB at the WVDP. The commenter may contact CCHD to obtain a copy of the Source Water Protection Plan.

A potable water supply system approval letter from CCHD has been included as an attachment to this response.



**Comment 20**

*Regular testing of potable treated water should be done at minimum monthly to assure adequate treatment.*

**Response 20**

Regular monthly testing of the bedrock groundwater wells is prescribed by New York State Department of Health regulations and the results are reported to the CCHD routinely.

**Comment 21**

*Assessment is needed for the hydrology of the aquifer system that is tapped by the two groundwater wells from which much of the proposed withdrawal will occur...The needed hydrologic assessment should at least consist of: i) Identification and quantification of the source(s), i.e., the recharge area(s) and recharge rate...ii) Identification and quantification of the sink(s) to which water in the aquifer is flowing...iii) Characterization...including age-dating the water by tritium analysis and geochemical characterization by major ions and stable isotopes...iv) ...a determination of whether the requested groundwater withdrawal is sustainable, or, alternatively, whether the aquifer will be progressively depleted by the withdrawal. v) Groundwater head mapping of the aquifer...vi) Determination of whether the aquifer is confined or unconfined, and determination and quantification of whether the groundwater head varies seasonally. vii) Determination and quantification...of hydrologic connections between the aquifer tapped by the two groundwater wells and the Kent Recessional, Till Sand, and other permeable units...*

*The aquifer system tapped by the two groundwater wells remains poorly understood; it needs better characterization in order to protect local groundwater resources and to assess the effects of the proposed withdrawal rate on adjacent areas...*

**Response 21**

Appendix F, Geohydrologic Assessment of New Bedrock Groundwater Supply Wells of the Professional Engineers Report includes head mapping of the bedrock aquifer under static conditions and under two pumping rates. One of the pumping rates evaluated was the maximum sustainable rate of 40 gpm estimated from the pump tests and the other was 17 gpm which is slightly less than the typical periodic operating rate of 25 gpm. Higher rates, 50+ gpm, are achievable over the shorter-term (3 to 4 days of continuous pumping). Since these evaluations assumed continuous pumping, the intermittent pumping operation would have an even lesser effect.

Overall, the hydrological assessment data requested herein is beyond the scope of information required for NYSDEC to issue a water withdrawal permit.

**Comment 22**

*What do the dissolved solids consist of, and what is their source?*

**Response 22**

Data requested above is beyond the scope of the information needed to complete technical review of the water withdrawal permit application.

**Comment 23**

*Is the practice or proposed practice of flow augmentation essentially the same as using dilution as a solution to pollution? If so, is this entirely consistent with legal/regulatory requirements and guidance?*

**Response 23**

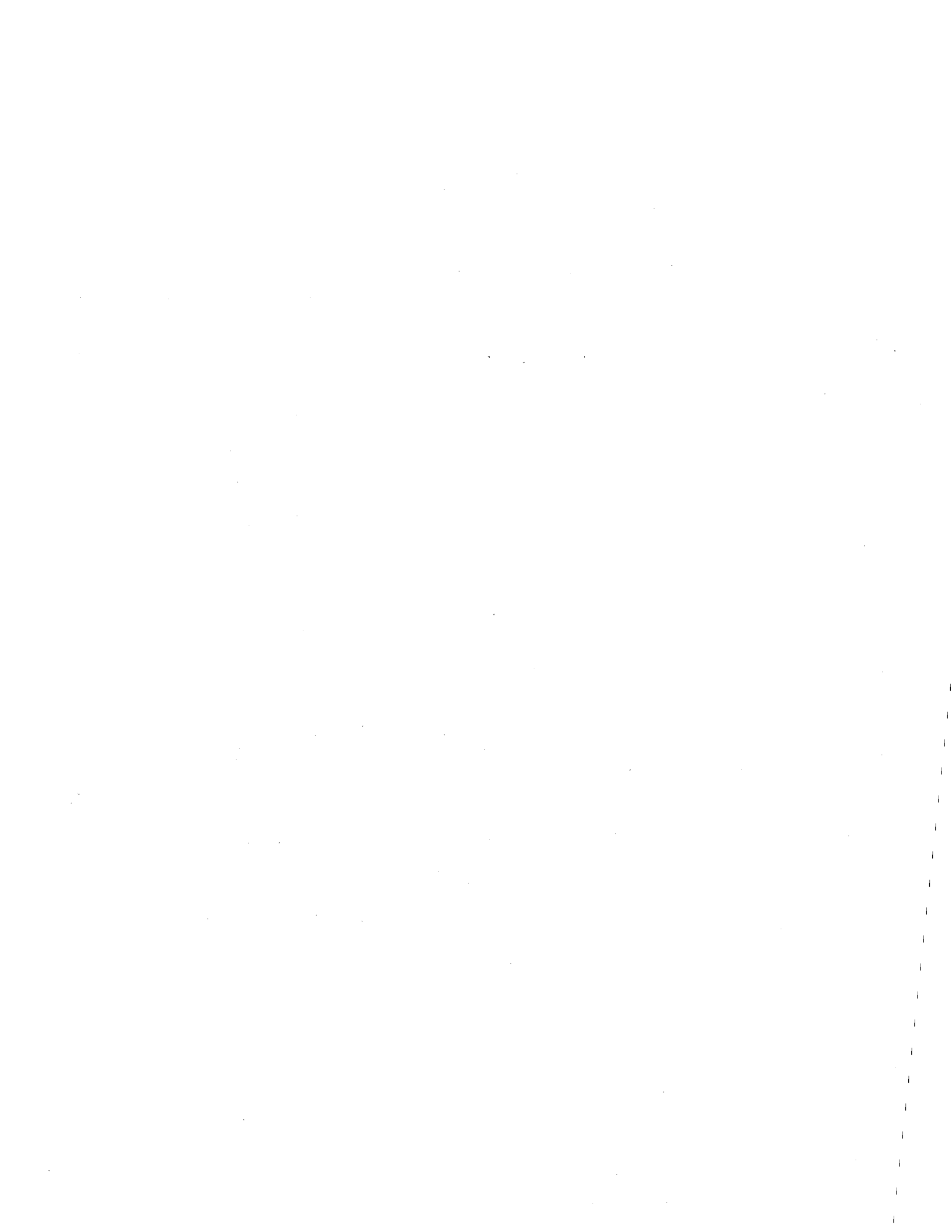
See Response 10, above.

**Comment 24**

*What are the alternatives to flow augmentation in Buttermilk Creek for SPDES compliance for Total Dissolved Solids? Can the rate at which dissolved solids are released to the creek be reduced?*

**Response 24**

See Response 10, above.



Kevin D. Watkins, MD, MPH  
Public Health Director

# CATTARAUGUS COUNTY

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## HEALTH DEPARTMENT

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Eric W. Wohlers, P.E.  
Director of Environmental Health

*Established 1923*

*"Public Health for Healthy Communities"*

1 Leo Moss Drive, Suite 4010  
Olean, New York 14760-1154  
Telephone: (716) 373-8050  
Fax No. (716) 701-3737

February 13, 2014

Mr. David P. Klenk, PEE  
CHBWV  
10282 Rock Springs Road  
West Valley, NY 14171

RE: NOTICE OF PLAN APPROVAL  
Ground Water Well Source Project  
West Valley Demonstration Project

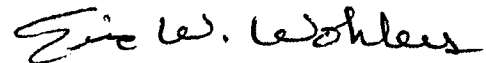
Dear Mr. Klenk:

Pursuant to our recent meeting at the site on February 4, 2014, I am hereby approving the revised engineering report for the siting and development of two new ground water wells on the WVDP property to provide potable and utility water to the project premises. The report, drawings, and specifications from RJR Engineering, P.C. bear a revision date of January 2, 2014.

Enclosed find an Approval of Plans for Public Water Supply Improvement form (DOH-1017). Kindly pay particular attention to the conditions of approval as stated thereon.

Feel free to contact me with any questions or concerns in this matter. One copy of the approved report is being retained for CCHD files; one copy each is being sent to RJR Engineering and the USDOE; and one copy is enclosed for CHBWV records.

Yours truly,



Eric W. Wohlers, P.E.  
Environmental Health Director

EWV/efd  
Enc.

cc: Mr. Rendall, CHBWV  
Mr. Scharf, CHBWV  
Ms. Maloney, USDOE  
Mr. Runge, P.E.



# Approval of Plans for Public Water Supply Improvement

This approval is issued under the provision of 10 NYCRR, Part 5:

1. Applicant CHBWV	2. Location of Works (C, V, T) Ashford (T)	3. County Cattaraugus	4. Water District (Specific Area Served) WVDP
<b>5. Type of Project</b> <div style="display: flex; flex-wrap: wrap; justify-content: space-between;"> <div style="width: 25%;"><input checked="" type="checkbox"/> 1 Source</div> <div style="width: 25%;"><input checked="" type="checkbox"/> 3 Pumping Units</div> <div style="width: 25%;"><input type="checkbox"/> 5 Fluoridation</div> <div style="width: 25%;"><input type="checkbox"/> 7 Distribution</div> <div style="width: 25%;"><input checked="" type="checkbox"/> 2 Transmission</div> <div style="width: 25%;"><input checked="" type="checkbox"/> 4 Chlorination</div> <div style="width: 25%;"><input type="checkbox"/> 6 Other Treatment</div> <div style="width: 25%;"><input type="checkbox"/> 8 Storage</div> <div style="width: 25%;"><input type="checkbox"/> 9 Other</div> </div>			
<b>Remarks:</b> The project involves the siting and development of two new ground water wells to provide potable and utility water to the WVDP premises. This new water supply, with basic chlorine disinfection treatment, is intended to replace the current surface water supply which requires extensive filtration treatment.			

By initiating improvement of the approved supply, the applicant accepts and agrees to abide by and conform with the following:

- a. THAT the proposed works be constructed in complete conformity with the plans and specifications reviewed and approved by the CCHD.
- b. THAT all work be supervised by a NYS licensed P.E. who shall provide written construction certification within fifteen (15) days of project completion.
- c. THAT upon completion of drilling operations for the first well, a minimum 72 hr. pump test shall be completed which conforms with all applicable specifications contained in the attached recommended NYSDEC procedures. Then based on the formal analysis and reporting of the pump test data as outlined in Item 14 (p. 5) therein, informed decisions can be made on the development of well #2. It is also proposed that existing onsite well 6OCT272, plus the EHMKE and WWCOURT wells (see attached map), be utilized as observation points for measuring water table drawdown during the pumping test(s).
- d. That required water quality samples be collected from each well just prior to termination of the pump tests. All analyses required by Subpart 5-1, 10NYCRR, including radiological (see attached sheet), shall be performed at a NYS certified laboratory.

**ISSUED FOR THE STATE COMMISSIONER OF HEALTH**

February 13, 2014  
Date

*Eric W. Wohlers*, P.E.  
Designated Representative

Eric W. Wohlers, P.E.  
Director of Environmental Health  
Name and Title (print)

### General

6. Type of Ownership			
<input type="checkbox"/> Municipal	<input type="checkbox"/> Commercial	<input type="checkbox"/> 68 Private - Other	<input type="checkbox"/> 1 Authority
<input type="checkbox"/> Industrial	<input type="checkbox"/> 9 Water Works Corp.	<input type="checkbox"/> Private-Institutional	<input checked="" type="checkbox"/> 19 Federal
		<input type="checkbox"/> 26 Board of Education	<input type="checkbox"/> 20 State
			<input type="checkbox"/> 30 Interstate
			<input type="checkbox"/> 40 International
			<input type="checkbox"/> 18 Indian Reservation
7. Estimated Total Cost	8. Population Served	9. Drainage Basin	
\$90,000	<500	Erie/Niagara	
10. Federal Aid Involved?		11. WSA Project?	
<input checked="" type="checkbox"/> 1 Yes <input type="checkbox"/> 2 No		<input type="checkbox"/> 1 Yes <input checked="" type="checkbox"/> 2 No	

### Source

12. <input type="checkbox"/> Surface	Name <u>Well #1</u>	Class _____	13. Est. Source Development Cost
<input checked="" type="checkbox"/> Ground	Name <u>Well #2</u>	Class _____	
			\$30,000
14. Safe yield	15. Description		
Design 50 gpm each	Development of two new wells into bedrock. A 72 hr. pump test will be performed to determine the aquifer characteristics.		

### Treatment

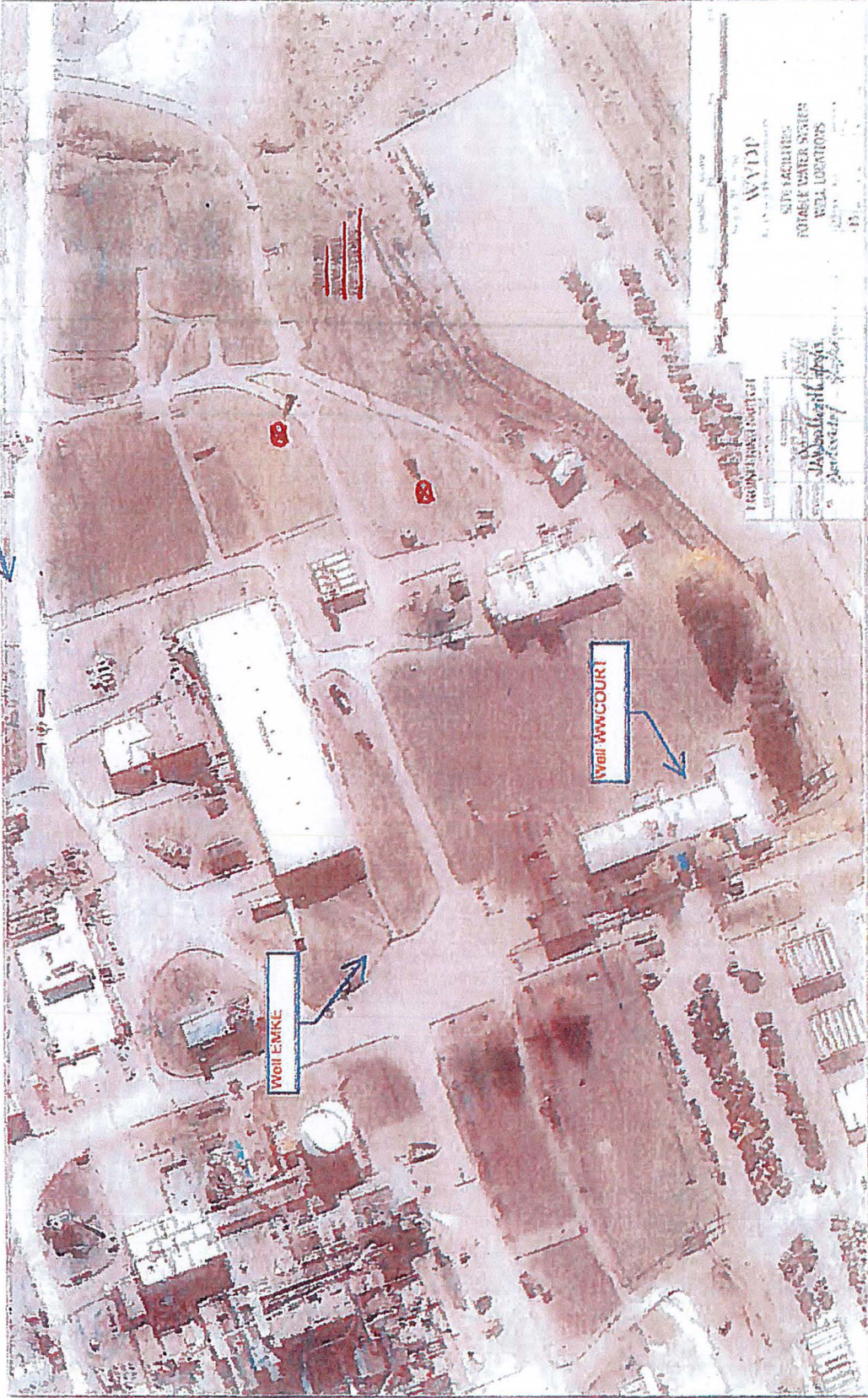
16. Type of Treatment			
<input type="checkbox"/> 1 Aeration	<input type="checkbox"/> 4 Sedimentation	<input type="checkbox"/> 7 Iron Removal	<input type="checkbox"/> 10 Softening
<input type="checkbox"/> 2 Microstrainers	<input type="checkbox"/> 5 Clarifiers	<input checked="" type="checkbox"/> 8 Chlorination	<input type="checkbox"/> 11 Corrosion Control
<input checked="" type="checkbox"/> Pumping	<input type="checkbox"/> 3 Mixing	<input type="checkbox"/> 9 Fluoridation	<input type="checkbox"/> 12 Other
<input type="checkbox"/> 6 Filtration			
17. Name of Treatment Works	18. Max. Treatment Capacity	19. Grade of Plant Operator Req.	20. Est. Cost
WVDP	72,000 GPD	C	\$10,000
21. Description			
<p>The two new wells will be fitted with submersible pumps capable of producing 50 gpm each. Pump cycles will alternate. The existing WVDP treatment facilities will be utilized to provide simple chlorine disinfection and contact time complying with the Ground Water Rule (GWR).</p> <p>Detailed water quality tests will be performed on the raw water to determine whether other treatment is required for compliance with all federal and state drinking water standards.</p>			

### Distribution

22. Type of Project		23. Type of Storage		24. Est. Distribution Cost
<input type="checkbox"/> 1 Cross Connection	<input checked="" type="checkbox"/> 3 Transmission	Ground <u>475,000</u> Gals.	\$20,000	
<input type="checkbox"/> 2 Interconnection	<input type="checkbox"/> 4 Fire Pump C12	Underground _____ Gals.		
25. Anticipated Distribution			26. Designed for fire flow?	
System Demand: Avg. <u>20,000</u> GPD Max. <u>25,000</u> GPD			<input type="checkbox"/> 1 Yes <input checked="" type="checkbox"/> 2 No	
27. Description				
The proposal is to connect the new wells to the existing treatment facility via conversion of an existing 2-inch steel line which was installed in 1992.				



W011 RUG1272

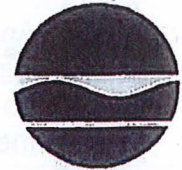






**New York State Department of Environmental Conservation  
Division of Water**

Bureau of Water Permits, 4<sup>th</sup> Floor  
625 Broadway, Albany, New York 12233-3505  
Phone: (518) 402-8099 FAX: (518)402-9029  
Website: www.dec.state.ny.us



Denise Sheehan  
Acting  
Commissioner

August 31, 2005

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***RECOMMENDED***

***PUMP TEST PROCEDURES FOR WATER SUPPLY APPLICATIONS***

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Department regulations require that pump test results be submitted as part of any Water Supply Application involving a new or additional groundwater source (6 NYCRR 601.5(f)(12)). To approve any such application, the Department must determine that the proposed well or wells will adequately meet the needs of the applicant without adversely affecting others who may rely on the same aquifer. The recommendations that follow have been designed to produce the accurate and complete information that is vital to these determinations.

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APPLICANTS ARE ADVISED TO SUBMIT THEIR PUMP TEST PLANS TO DEC PRIOR TO CONDUCTING A PUMP TEST, PARTICULARLY IF THE PROPOSED TEST PROCEDURES WILL DEVIATE FROM THESE RECOMMENDATIONS.

***FOR INFORMATION AND ASSISTANCE***

Call the Public Water Supply Program in the Bureau of Water Permits:  
James Garry (518) 402-8101 or Michael Holt (518) 402-8099

NOTE: Before starting construction, it is advisable to submit a location map of the proposed new wells and any related construction to the Division of Environmental Permits in the appropriate DEC Regional office for a determination as to whether that construction requires any other DEC permits, such as for disturbance of protected streams, protected freshwater wetlands, or for storm water runoff from a construction site. Other factors to consider when siting a project include flood plain location, agricultural districts, conceptual wellhead protection/recharge areas, existing or potential groundwater contamination sources, and existing sub-surface utility corridors (whose bedding might provide a preferential path for groundwater flow or contamination).

1. **TIME OF YEAR** - The pump test of unconfined sand and/or gravel aquifer wells should be conducted during a period of time of average or below average seasonal stream flow conditions; that is, when "normal" groundwater gradients have not been reversed or significantly altered. (Typically, this eliminates the months of March,



April, and May.) Pump tests for rock wells or confined sand and/or gravel wells not significantly influenced by overlying unconsolidated ground or surface water may be conducted during any month of the year. The applicant should demonstrate that the test well(s) will not be affected by spring recharge.

2. **TEST PUMPING RATE** - The pump test must be performed at or above the pumping rate for which approval will be sought in the water supply application. If multiple wells are to be pumped simultaneously to achieve the necessary yield, the test should incorporate such a pumping plan. To reproduce the anticipated stress on the aquifer, the pump test should be done when nearby wells normally in operation are running. Pumping of other wells in the test area should be monitored.
3. **LENGTH OF TEST** - Regardless of the type of aquifer, pump tests shall be conducted for a minimum of 72 hours at a constant pumping rate.
  - (a) A minimum of six hours of **stabilized drawdown** must be displayed at the end of the test. Stabilized drawdown is defined herein as a water level that has not fluctuated by more than plus or minus 0.5 foot for each 100 feet of water in the well (i.e., static water level to bottom of well) over at least a six hour period of constant pumping flow rate. The plotted measurements shall not show a trend of decreasing water level.
  - (b) If **stabilized drawdown is not achievable**, the test period may be extended or semi-log extrapolation of drawdown versus time (or other similar methods) may be employed to demonstrate the ability of the aquifer to supply a pumping rate equal to the desired yield (which must be equal to or less than the pump test yield) on a long term basis. Normally, an extrapolation of six months of pumping with no assumed recharge must be compared against the level of water remaining above the pump intake at the end of the period (see paragraph No. 14). This type of evaluation may be used in lieu of satisfying the objectives of section 3.(b) of this document at the discretion of NYSDEC.
  - (c) If positive (recharge) or negative (barrier) **boundary conditions** are encountered during the test, they must have a record of at least 24 hours.
  - (d) Excessive **rainfall** may require extension of the test or a rescheduling of the test.
4. **PRE-TEST CONDITIONS** - No pumping should be conducted at or near the test site for at least 24 hours prior to the test. Static water levels at the pumping well and observation wells should be measured at least daily for one week prior to the start of the test and again immediately prior to the start of the test. If on site or

nearby pumping cannot be curtailed due to system supply needs or other factors, DEC should be consulted prior to the start of the test.

5. **PUMPING RATE** - A constant pumping rate should be maintained throughout the test. The pumping rate should be measured accurately and recorded at least as often as water level measurements (see No. 7). It should be noted that a decrease in discharge from the pump will normally occur with increasing drawdown, as the pump works against a greater hydraulic head and increasing friction in the system. These effects should be compensated for during the test. The flow rate should be held to within 5 percent of the of the design pump rate.

During the first hour of the test, any **failure to pump within 10 percent of the test pump rate** for any reason will require termination of the test, recovery of water levels to static, and a restart of the test. Later pump failures must have no significant effect on the data or a similar termination and restart is necessary

6. **DISCHARGE OF WATER** - Water discharged during the pump test should be conducted away from the pumping well in a down gradient direction and at sufficient distance to eliminate recharge of this water to the aquifer. The discharge line and discharge point must be shown on the site plan referenced in paragraph No. 15. If the aquifer is confined or if it can be otherwise demonstrated that discharged water will not recharge the aquifer being tested, a more convenient method of discharge can be used (within caveats of paragraph No. 16).
7. **MEASURING SCHEDULE** - Water levels in observation wells and at the pumping well should be measured to give at least ten observations of drawdown within each log cycle of time, beginning one minute after the start of pumping. A suggested schedule of measurements at all wells is as follows:

<u>Time After Pumping Started</u>	<u>Time Intervals</u>
0 to 15 minutes	1 minute
15 to 50 minutes	5 minutes
50 to 100 minutes	10 minutes
100 to 500 minutes	30 minutes
500 to 1000 minutes	1 hour
1000 to 5000 minutes	4 hours

8. **OBSERVATION WELLS** - At least three observation wells should be monitored during the pump test. The horizontal distance between each observation well and the pumping well should be measured to the nearest 0.1 foot. The vertical elevation of a fixed reference point on each observation well and on the pumping well (e.g., "top of casing") should be established to the nearest 0.01 foot and reported in NAD 1983 (or in NGVD of 1929 if this is the standard at the test site). One observation well should be located outside of the expected influence of the pumping well; this observation well should serve to monitor background conditions during the pump test. The remaining observation wells should be placed so as to best define the hydrogeologic characteristics of the aquifer with respect to the

pumping well. In some cases the Department may recommend that a representative sample of nearby homeowner wells be monitored during the pump test, regardless of whether the anticipated zone of influence will extend to those wells.

Observation wells should be just large enough to allow accurate and rapid measurement of the water levels. **Small diameter wells are recommended** because the volume of water contained minimizes time lag in drawdown changes. Existing wells can be utilized if they are in good condition and were properly installed.

For **unconfined aquifers**, at least two observation wells should generally be placed no farther than 300 feet from the pumping well and at least one additional observation well should be placed beyond the 300 foot radius. For thick confined aquifers that are considerably stratified, at least two observation wells should be placed within 700 feet of the pumping well and at least one observation well located further than 700 feet from the pumping well.

Observation wells should be screened in, or open to, the same formation as the pumping well. Additional observation wells beyond the specified minimum number may be screened in, or open to, formations above or below the one tapped by the pumping well to determine if there is any hydraulic connection between formations.

Water levels in nearby water bodies should be measured prior to and during the test.

9. **RECOVERY PERIOD** - Water level measurements should be collected during the recovery period for all wells using the same procedure and time pattern followed at the beginning of the pump test (see No. 7). Measurement should commence at least one minute prior to shutdown of the pumping well and continue for at least 12 hours. Water level measurements should be made to the nearest 0.01 foot. To obtain accurate data during the recovery period, a check valve must be installed at the base of the pump column pipe in the pumping well to eliminate backflow of water into the well. Water level measurements should also be collected during the recovery period in all off-site monitoring wells, such as homeowners private wells.
10. **RAINFALL MEASUREMENT** - Rainfall should be measured to the nearest 0.01 inch and recorded daily at or near the site for one week preceding the pump test, during the test, and during the recovery period. A log of weather conditions during this period should also be kept, including barometric pressure recorded on the same schedule as rainfall. Weather station data available from within a reasonable distance of the test site can be utilized.
11. **SURFACE WATER MEASUREMENTS** - Fluctuations in surface water stages (or flow) for all surface waters within 500 feet of the pumping well should be measured to the nearest 0.01 foot. Measurements should be made using, as appropriate: weirs, staff gages (with stilling wells as necessary), nested piezometers, etc. The

horizontal distance between each observation point and the pumping well should be measured to the nearest 0.1 foot. The vertical elevation of a fixed reference point on each observation point should be established to the nearest 0.01 foot and reported in NAD 1983 (or in NGVD of 1929, if this is the standard at the test site). Measurements should be read and recorded at least once daily for one week prior to the start of the test and at least twice per log cycle, after the first ten minutes, for the duration of the test. Measurements should be made more frequently if surface water levels are changing rapidly. The degree and nature of hydraulic connection with the surface water body should be quantified.

12. **WATER QUALITY SAMPLES** - Comprehensive (per NYS DOH requirements) water samples should be obtained from the pumping well during the last hour of pumping. Samples should be analyzed to establish acceptable quality as per NYSDOH requirements.
13. **WELLS UNDER THE INFLUENCE OF SURFACE WATER** - Additionally, If the pumping well is, or may be, hydraulically connected to a surface water body, water samples from the well should be analyzed in the field at least once every four hours for the following parameters: pH, temperature, conductivity, and hardness. Further, representative water samples from the surface water body should be taken at both the beginning and the end of the pump test and analyzed for the same parameters. The NYS DOH should be consulted on all issues related to groundwater under the influence of surface water.
14. **ANALYSIS OF PUMP TEST DATA** - In order to accurately analyze pump test data, it is necessary to use the methods and formulae appropriate for the hydrogeologic and test conditions encountered at, and specific to, the pump test site. Knowledge of the hydrogeologic conditions of the area is necessary in order to ensure the use of appropriate techniques of analysis. Accordingly, analysis of pump test data should be carried out by a hydrogeologist, professional engineer with hydrogeologic training, or other appropriately trained evaluator.
  - (a) **DATA CORRECTIONS** - Water level data, graphs, and interpretations should be corrected, as appropriate or deemed significant, for the effects of: ambient water level trends; partially penetrating production well(s); partially penetrating observation wells; delayed yield from unconsolidated aquifers; aquifer thickness, recharge and/or impermeable boundaries; barometric pressure changes; changes in stage in nearby surface water bodies; recharge events (rainfall, snow melt) during the week preceding the test, during the test, or during the recovery period; influence from nearby pumping wells; and any other hydrogeologic influences. All such data and calculations should be included in the test information package.
  - (b) Theoretical **time-drawdown graphs** should be prepared from the recorded drawdown graphs. The graphs should be derived from the pump test data, setting time equal to 180 days and groundwater withdrawal equal to the pump test production rate. Based on these graphs and the remaining



standing water in the well at the end of the pump test, a maximum safe pumping rate (yield) should be established for each production well or for the well field if simultaneous pumping of multiple production wells is planned (taking into account well interference).

- (c) **Theoretical distance-drawdown graphs** should be prepared. The graphs should be derived from the pump test data, setting time equal to 180 days and groundwater withdrawal equal to the pump test production rate. The theoretical cone of depression so determined should be used to establish the area of influence of the well(s). It is highly recommended that the following **wellhead protection areas** be delineated using all available information (e.g., published hydrogeologic information, local knowledge, pump test results, etc.) and best professional judgement: 60-day time-of-travel area, zone-of contribution area or recharge areas (for confined or bedrock aquifers), and aquifer boundary area.
- (d) **Recovery data** should be analyzed in a similar manner to drawdown data.

15. **SUBMISSION OF DATA** - Data submitted in support of a requested groundwater withdrawal should include:

- the raw pump test data (legible) with: date, clock time, elapsed time (minutes), measuring point (top of casing) elevation, static water level, water level measurements, and calculated drawdown [an "Excel" or "Quattro Pro" spreadsheet file may be submitted with this data in place of a written record];
- engineering diagrams showing construction details (e.g. well casing, screen setting and casing stickup, etc.) and depths of pumping wells and observation wells;
- geologic logs (completed well registration reports);
- graphs, formulae and calculations used to estimate transmissivity, storage coefficient, and safe yield;
- scaled site plan showing water level elevation controls (e.g., top of casing) and grade elevation for all wells, staff gages and other water measuring points, pump test discharge piping and discharge point, the location of nearby surface water bodies, and, if applicable, the 100-year flood plain and elevation;
- latitude and longitude (in degrees, minutes, seconds, tenths of second) or UTM's for all production wells and any observation wells which are to remain, preferably in NAD83 (specify the method and datum used to locate the wells);
- a topographic map showing wellhead protection areas and the locations of existing or potential groundwater contamination threats; and
- interpretations including methodology, geologic sections of the area, references, and rationale.

1 Leo Moss Drive, Suite 4010  
Olean, New York 14760-1154  
Telephone: (716) 373-8050  
Fax No. (716) 373-0942

New Public Water Supply Wells  
(Community and NTNC Systems)  
Reference Appendix 5-D, 10NYCRR

Well Siting and Development:

- Compliance with Sections 5-D.2 and 5-D.3 (10NYCRR) and AWWA Standard A100 is required.
- The well driller must provide a detailed log of the new well. Also included shall be well, screen, grouting, and pump specifications plus a copy of the NYSDEC well completion report. Copies of all well information and data shall be made part of the official engineering report.

Pump Test Procedure:

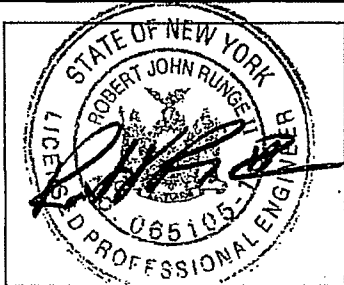
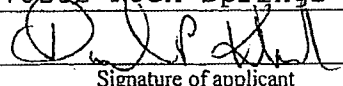
- If the bail test reveals that adequate yield exists to serve the facility demands, a properly sized well pump shall be installed.
- The static water level shall be measured and the well pumped until stabilized flow is reached. Pumping levels shall be measured at 1 minute intervals and recorded until stabilization is achieved.
- The well shall then be pumped for a minimum of 24 or 72 hours per Table 2 of Appendix 5-D and/or NYSDEC requirements where a Water Supply Permit is required.
- All required water quality samples shall be collected just prior to termination of the pump test.

Well/Plumbing Disinfection:

- Attached is the AWWA Standard (C654) for disinfection of wells.
- Also attached is the general procedure for disinfection of seasonal-use or new plumbing systems.

Water Quality Testing:

- The samples required are defined by State and Federal drinking water regulations (See Subpart 5-1, 10NYCRR) and could include additional tests in areas of known contamination.
- The following parameters must be sampled: Inorganic Chemicals (Tables 8B, 8C, 8D), Principal Organic Contaminants (Table 9D), Total coliform and E. coli bacteria (Table 11), Radiological (Table 12/Community Only).
- All samples must be tested by a NYS certified laboratory (see enclosed list).
- All samples are collected at the end of the required pump test noted above.
- Engineering plans for any necessary water treatment must be prepared by a NYS licensed Professional Engineer and approved by the Cattaraugus County Health Department prior to installation.

Applicant <b>VDP</b>	Location of works (C,V,T) <b>(T) ASHFORD</b>	County <b>CATT.</b>	Water District (specific area served) <b>WVDP</b>
Type of ownership <input type="checkbox"/> Municipal <input type="checkbox"/> Commercial <input type="checkbox"/> Private - Other <input type="checkbox"/> Authority <input type="checkbox"/> Interstate <input type="checkbox"/> Industrial <input type="checkbox"/> Water Works Corp. <input type="checkbox"/> Private - Institutional <input checked="" type="checkbox"/> Federal <input type="checkbox"/> International <input type="checkbox"/> Board of Education <input type="checkbox"/> State <input type="checkbox"/> Native American Reservation			
<input checked="" type="checkbox"/> Modifications to existing system. If checked, provide PWS ID # <b>NY 0 4 1 7 7 5 7</b>			
New System. If checked, provide capacity development (viability) analysis*			
If this project involves a new system, new water district, or a district extension provide boundary description location details in digital format on CD or Floppy Disk. If digital boundary location details are not available provide a text description. <input type="checkbox"/> Digital GIS Data Provided <input type="checkbox"/> Digital CAD Data Provided <input type="checkbox"/> Other Digital Data Provided <input type="checkbox"/> Text Description Provided <input checked="" type="checkbox"/> N/A			
Funding Source <input type="checkbox"/> Private <input type="checkbox"/> DWSRF** <input checked="" type="checkbox"/> Federal <input type="checkbox"/> Other _____ If DWSRF is checked, provide DWSRF # _____			
Estimated Project Cost Source \$ <b>30K</b> Treatment \$ _____    Storage \$ _____    Distribution \$ <b>20K</b> Pumping \$ <b>10K</b> Engineering \$ <b>30K</b> Legal/Permitting \$ _____    Total \$ <b>90K</b>			
Type of Project <input checked="" type="checkbox"/> Source <input type="checkbox"/> Corrosion Control <input type="checkbox"/> U.V. Light Disinfection <input type="checkbox"/> Distribution <input type="checkbox"/> Transmission <input type="checkbox"/> Pumping Unit <input type="checkbox"/> Fluoridation <input type="checkbox"/> Storage <input type="checkbox"/> Chlorination <input type="checkbox"/> Other Treatment <input type="checkbox"/> Other			
Project Description: <b>Installation of two (2) water wells to provide potable and utility water to the project site.</b>			
Population Total population of Service area <b>&lt; 500</b> % population actually served <b>100</b> % population served affected by project <b>100</b>			
Latest total consumption data (in MGD) Avg. day <b>0.020</b> Year <b>2013</b> Max. day <b>0.025</b> Year <b>2013</b> Peak hr. <b>1800 GPH</b> Year <b>2013</b>		14. NYS Professional Licensed Engineer Stamp & Signature *** 	
Name of design engineer <b>Robert J. Runge II, P.E.</b> Address <b>23 Mechanic St., Springville, NY 14141</b> Telephone No. <b>716-592-3980, ext. 131</b> E-Mail <b>bob@rjrpc.com</b> Fax No. <b>716-592-4216</b>			
Name and title of applicant or designated representative <b>David Klenk, Principal Environmental Engineer CHBW</b> Address <b>10282 Rock Springs Rd., West Valley, NY 14171</b>  <b>9 / 17 / 13</b> Signature of applicant    Date			
NOTE: All applications must be accompanied by 3 sets of plans, 3 sets of specifications and an engineer's report describing the project in detail. The project must first be discussed with the appropriate city, county, district or regional public health engineer. Signature by a designated representative <i>must</i> be accompanied by a letter of authorization. * Additional information regarding capacity development may be found at: <a href="http://www.health.state.ny.us/nysdoh/water/main.htm">http://www.health.state.ny.us/nysdoh/water/main.htm</a> ** Current DWSRF project listings may be found at: <a href="http://www.health.state.ny.us/nysdoh/water/main.htm">http://www.health.state.ny.us/nysdoh/water/main.htm</a> *** By affixing the stamp and signature the Design Engineer agrees that the plans and specifications have been prepared in accordance with the most recent version of the recommended standards for water works and in accordance with the NYS Sanitary Code.			

Distribution:

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