ADEQ

A R K A N S A S
Department of Environmental Quality

CERTIFIED MAIL: 91 7199 9991 7030 4909 8549

November 22, 2013

Laura J. Mushinski, Environmental Quality Director
Allen's, Inc.
P.O. Box 250
Siloam Springs, AR 72761

RE: Inspection/Complaint Investigations
AFIN: 04-00175 Permit Tracking No.: 4438-WR-4

Dear Ms. Mushinski:

On October 22 and 24, 2013, I performed a compliance inspection at Allen's, Inc. spray irrigation sites west of Butler Road in response to several complaints. On November 13, 2013, Jason Bolenbaugh, Water Division Inspection Branch Manager, and I conducted an inspection at Allen's, Inc. spray irrigation sites east of Turkey Road in response to a complaint. The inspections were conducted in accordance with the provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated thereunder. The inspections revealed the following violations:

1. Placed waste in a location that has caused pollution to the waters of this State in violation of the Arkansas Water and Air Pollution Control Act - A.C.A. § 8-4-217(a)(1) and Condition 2 of the permit. Specifically, I noted the following:
   - Based on visual observation, as well as sampling and analysis results, the facility is causing pollution to the waters of the State (Attachment 1). The Dissolved Oxygen (D.O.) was 5.77 mg/L on October 21, 2013 and 3.84 mg/L on October 22, 2013 at East Sample Site #2. The primary limit for D.O. for this area is 6.0 mg/L. These are in violation of Regulation 2, Section 2.505.
   - Wastewater has been over applied on many of the land-application sites west of Butler Road and east of Turkey Road. Due to the over application, an unknown quantity of irrigated wastewater and solids were discharged into unnamed tributaries which flow into the Illinois River (an Ecologically Sensitive Waterbody).
   - The sample locations are depicted on the attached topography and aerial image maps.

2. The permittee violated Part 2, Condition 9.a of the permit which requires that the permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Specifically, I noted the following pertaining to the irrigation system and/or land-application practices:
   a. An unknown quantity of irrigated wastewater and solids has discharged into unnamed tributaries of the Illinois River due to improperly operating and maintaining the irrigation system.
   b. Poorly established vegetative cover around many irrigation heads, which resulted in land-application on bare soil.
   c. Pooling wastewater around multiple irrigation heads.
   d. Mr. Tim Browers, Allen Canning Plant Manager, conducted evaluations of the irrigation heads and application fields on October 23 and October 28, 2013 (Attachment 2), and potential corrective actions were sent to the Department on October 30, 2013 (Attachment 3).
   e. Photographs of irrigation heads 1, 25, 47, 53, C5, C9, and A14 are attached. The photographs are evidence of the improper operation and maintenance. Mr. Browers evaluation conducted on October 23, 2013, indicated 41 of the 90 irrigation sites west of Butler Road have issues that must be addressed.

3. Due to the mismanagement of the irrigation fields, improperly maintaining the irrigation system, and pollution to the waters of the State, it is apparent that the disposal system is not being serviced by qualified personnel. This is in violation of Part 2, Condition 9.b of your permit. It is strongly recommended that training be provided and documented to discuss permit requirements.

4. Unpermitted discharges from multiple irrigation fields west of Butler Road and east of Turkey Road have occurred in violation of Arkansas Water and Air Pollution Control Act - A.C.A. § 8-4-217(b)(1)(E) which states, "It shall be unlawful for any person to discharge sewage, industrial waste, or other wastes, into any of the waters of this state without having first obtained a written permit from the Department." Specifically, discharges from several irrigation heads flowed into unnamed tributaries which then flow into the Illinois River.

5. Distinctly visible solids and foam were observed in and along the banks of unnamed tributaries of the Illinois River in violation of Regulation 2, Section 2.408 which states, "Receiving waters shall have no distinctly visible solids, scum or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits or sludge banks." Solids should be removed from the receiving stream.

6. Distinctly visible solids were observed in dry ephemeral drainages in violation of Arkansas Water and Air Pollution Control Act - A.C.A. § 8-4-217(a)(2) which states, "No person shall place or cause to be placed any sewage, industrial waste, or other wastes in a location where it is likely to cause pollution of any waters of this state."

7. A daily precipitation calendar was provided by the National Climatic Data Center for August and September 2013 for two weather stations. The first weather station is Siloam Springs 1.8N, AR US. This station is located at 36.205°N and 94.546°W. The second weather station is Fayetteville Springdale NW AR Regional Airport, AR US. This station is located at 36.283°N and 94.300°W. Based on the land-application records and the daily precipitation calendar for the above weather stations on August 7 and 8, 2013 (Attachment 4), it appears waste was irrigated when precipitation was imminent, and/or when the ground was saturated. This is in violation of Part 1, Condition 14 of your permit.

8. Soil analysis records from A & L Analytical Laboratories, Inc. and Environmental Testing & Consulting, Inc. are expressed in pounds/acre. This is in violation of Part 1, Condition 7 of your permit. Soil analysis must be reported in a dry basis in mg/kg for all parameters except Cation Exchange Capacity, Salt Content, and Organic Matter.

9. In the 2012 annual report, Molybdenum was not analyzed for Sample IDs 1-151; and, for Sample IDs 6-11, 12-15 and 16-24, Arsenic, Copper, Lead, Nickel, Zinc, Cadmium, Mercury, and Selenium were not provided. These are in violation of Part 1, Condition 7 of the permit.

10. In violation of Part 1, Condition 8 of the permit, the following information must be documented in the 2012 annual report:
    a. Nitrogen is calculated by the volume of wastewater applied for each month over 216.6 acres (See Attachment 5). The volume of irrigation waste (in dry tons/acre-year and gallons/acre-year of waste) is not documented for each irrigation field. The daily irrigation logs document irrigation head numbers used during a specific time of day. Table 1 shows nozzle size varied per head number for irrigation heads 1-90 west of Butler Road.
    b. The 2012 annual report documents crop grown as perennial or mixed grasses. The type of crop grown must be specified (i.e. Bermuda, Fescue, etc.) for each irrigation field.

11. At multiple irrigation heads, waste was not evenly distributed over the entire application area. Residual accumulations were also observed at many irrigation sites. These are in violation of Part 1, Condition 13 of your permit.

12. A strong wastewater odor emanated from the creeks and land application sites in violation of Part 1, Condition 17 of the permit.

Additional Comments

1. In Section 7.2 of the Waste Management Plan dated September 10, 2007, it states that 209 million gallons of waste was irrigated in 2006. The 2009-2012 annual reports and 2013 data available indicate wastewater application was limited to 216.6 acres. Your records indicated that the yearly volume of irrigated waste applied during year 2009 was 273,899,800 gallons; during year 2010 was 258,335,163 gallons; during year 2011 was 206,685,000 gallons; during year 2012 was 317,493,000 gallons; and, up to September 2013 has been 282,994,111 gallons (See Attachment 5). Based on your records, 1,339,407,074 billion gallons have been land-applied on 216.6 acres in less than 5 years. In 2012, 317,493,000 gallons of irrigated wastewater was applied over 216.6 acres which is approximately 54" of waste applied. The average annual precipitation is approximately 47" in Siloam Springs. Based on the volumes in the annual reports and on the saturated conditions of the soils at the time of the investigation, it appears the soils are hydraulically overloaded. In addition, the Waste Management Plan must be updated to account for the additional volume of waste irrigated and/or land-applied.

2. In Appendix A of the Waste Management Plan dated September 10, 2007, acres available is not included for Irrigation Fields 1-90 and Irrigation Fields 91-166. The Waste Management Plan must be revised to include available acreage for each irrigation field.

3. Please explain what actions you have taken to ensure compliance with Condition 15 of your permit which states, "The permittee shall not cause any underground drinking water source to exceed the limitations in 40 CFR Part 257, Appendix I."

4. Please explain what actions have been taken to comply with Part 2, Condition 10 of your permit which states, "The permittee shall take all reasonable steps to prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment, or the water receiving the discharge."

5. A & L Analytical Laboratories, Inc. and Environmental Testing & Consulting, Inc. indicate that samples were received on March 27, 2012 by Herrons Soil Interpretation, LLC. Both laboratories ran Cation Exchange Capacity, Potassium, and Magnesium. For these 3 parameters, A & L Analytical Laboratories, Inc. analysis data is lower than Environmental Testing & Consulting, Inc. For example in the 2012 annual report, Sample ID 79-84 from A & L Analytical Laboratories indicates 16.3 meq/100g Cation Exchange Capacity, 706 lbs. of potassium/acre, and 556 lbs. of magnesium/acre. Sample ID 79-84 at Environmental Testing and Consulting, Inc. indicates 38.4 meq/100 g Cation Exchange Capacity, 2180 lbs. of Potassium/acre, and 998 lbs. of magnesium/acre. In your response, please explain why the reports differ.

Due to the significance of the above referenced violations this case has been referred to the Water Division Enforcement Branch for further review. If you have any questions you may contact Craig Uyeda, Water Division Enforcement Branch Manager, at 501-682-0640 or at uyeda@adeq.state.ar.us.

If I can be of any assistance, please contact me at west@adeq.state.ar.us or 479.267.0811, ext. 12.

Sincerely,

Joy Alison West

Alison West
District 1 Field Inspector
Water Division

ADEQ
ARKANSAS
Department of Environmental Quality

WATER DIVISION INSPECTION REPORT

AFIN: **04-00175**	PERMIT #: **4438-WR-4**	
COUNTY: **04 Benton**	PDS #: **074830**	MEDIA: **W**
GPS LOCATION: LAT: **36.203377** LONG: **-94.429014** ☐ Outfall / ☒ General Area / ☐ Entrance / ☐ Sample Point		

FACILITY INFORMATION	INSPECTION INFORMATION			
NAME: **Allens, Inc.-Country Plant**	DATE(S):	**10/22/2013**	**10/24/2013**	**11/13/2013**
LOCATION: **14961 Readings Road**	ENTRY TIME:	**09:50**	**11:30**	**08:45**
	EXIT TIME:	**16:20**	**16:50**	**11:30**
CITY: **Siloam Springs, AR 72761**	INSPECTION TYPE: **Compliance Evaluation**			
RESPONSIBLE OFFICIAL	INSPECTOR ID#: **14939 S - State**			
CONTACTED DURING INSPECTION: **Yes**	FACILITY TYPE: **2 - Industrial**			
NAME: **Laura J. Mushinski**	PERMIT EFFECTIVE DATE: **6/1/2009**			
TITLE: **Environmental Quality Director**	PERMIT EXPIRATION DATE: **3/31/2013**			
COMPANY: **Allen's, Inc.-Country Plant**	FACILITY EVALUATION RATING: **N**			
MAILING ADDRESS: **P.O. Box 250**	FAYETTEVILLE SHALE RELATED: **N**			
	FAYETTEVILLE SHALE VIOLATIONS: **N**			
CITY, STATE, ZIP: **Siloam Springs, AR 72761**	**INSPECTION PARTICIPANTS**			
PHONE & EXT: **479.228.0102**	NAME/TITLE/PHONE/FAX/EMAIL/ETC.:			
FAX:	**1. Jeff Tyler/ADEQ District 4 Inspector (Until 11 a.m. 10-22-2013)**			
EMAIL: **lmushinski@allens.com**	**2. Tim Browers/Allen's, Inc. Plant Manager (October 22 and 24, 2013 and November 13, 2013)**			
OTHER:	**3. Myles Browers/Allen's, Inc. Assistant Plant Manager (October 22 and 24, 2013)**			
	4. Donald Whitlock/Allen's Wastewater Operator (October 22 and 24, 2013)			
	5. Jason Bolenbaugh/Water Division Inspection Branch Manager (November 13, 2013)			
	6. Nathan Florer/Allen's Construction and Wastewater Manager (November 13, 2013)			

AREA EVALUATIONS

(S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Applicable/Evaluated)

**	PERMIT	**	FLOW MEASUREMENT	**	STORMWATER
**	RECORDS/REPORTS	**	LABORATORY	**	FACILITY SITE REVIEW
**	OPERATION & MAINTENANCE	**	EFFLUENT/RECEIVING WATER	**	SELF-MONITORING PROGRAM
**	SAMPLING	**	SLUDGE HANDLING/DISPOSAL	**	PRETREATMENT
**	OTHER:				

SUMMARY OF FINDINGS

See letter dated November 21, 2013 for Summary of Findings.

The following are General Comments:

On October 21, 2013, I drove to Butler Road to determine the conditions of the creeks in the area. The intermittent creek at GPS coordinates: 36.192808 and -94.418924 was visibly turbid. The creek had a waste odor that would be associated with a vegetable processing plant. pH and Dissolved Oxygen analysis were conducted at the Butler Road culvert near East Sample Site #2. No contact was made with the facility during this time.

On October 22, 2013, Jeff Tyler, District 4 Water Division Inspector, and I drove to the intermittent creek that I observed on October 21, 2013. At the time of the site investigation, we observed an employee from ESC sampling the creek. Laura Mushinski, Allen's, Inc. Environmental Quality Director, informed me that in a previous permit that Allen's, Inc. was required to conduct stream monitoring. Ms. Mushinski states in October 22, 2013 email the following: "Although the permit no longer requires stream, spring, and groundwater sampling, Allens has chosen to continue this sampling to monitor the surrounding area." I was informed in Ms. Mushinski's email that the sampling was coordinated with the ESC lab in February 2013. The intermittent creek was discolored and turbid. The creek had a waste odor that would be associated with a vegetable

processing plant.

After observing the conditions of the intermittent creek on Butler Road, Mr. Tyler and I drove to Allen's, Inc. plant. At that time, we met with Tim Browers, Allen's, Inc. Plant Manager; Myles Browers, Allen's, Inc. Assistant Plant Manager; Don Whitlock, Wastewater Supervisor; and Stuart Sneed. Mr. Tyler and I were informed that a broken valve was identified on October 17, 2013 for Irrigation Heads 52, 53, and 54. Mr. Whitlock stated that they shut the valve off. Due to a maintenance issue, the valve did not shut off and irrigation continued at the heads. Mr. Whitlock stated that no one drove to the irrigation heads during the rotation to verify that the irrigation heads stopped irrigating. The irrigation records do not indicate this broken valve.

Mr. Whitlock, Mr. Tyler, and I drove to Irrigation Heads 1-90 west of Butler Road. At that time, Mr. Whitlock showed us the valve that was broken for Irrigation Heads 52, 53, 54. We parked across the road from the valve. Due to the ground being saturated, we were unable to drive to these irrigation heads. Mr. Whitlock, Mr. Tyler, and I walked to Irrigation Head 53. At times, the ground was so saturated that I sunk down to my ankles. We followed the run-off from Irrigation Head 53 to the drainage north of the irrigation head. I followed this drainage to the confluence of the intermittent creek. The drainage had a waste odor that would be associated with a vegetable processing plant. Sludge was coating the gravel substrate in several areas along this drainage. The intermittent creek at the confluence of the drainage north of Irrigation Head 53 was discolored, turbid, and foamy. Mr. Tyler had to leave at 11. I walked back to the vehicles to let him know of my findings.

Myles Browers, Mr. Whitlock, and I drove to Irrigation Heads 50 and 51. Mr. Browers and I walked the drainage west and south of Irrigation Head 51. This drainage was the same drainage north of Irrigation Head 53. Once we came to the confluence of the intermittent creek, we started following the drainage to the north. The intermittent creek continued to be visibly discolored and turbid to the headwaters north of Irrigation Head 25. Foam was observed in many areas of the intermittent creek. The drainage had a waste odor that would be associated with a vegetable processing plant. Multiple discharges were observed along the intermittent creek.

After hiking the drainage, I collected water samples at two locations. These locations are depicted on aerial and topographic maps. The first sample location is labeled Hay Barn Hollow. The second sample location is labeled East Sample Site #2 on the chain-of-custody, pH, and dissolved oxygen analysis; and, Sample Site 2 on the analysis, aerial, and topographic maps. The East Sample Site #2 GPS coordinates were obtained from Google Earth Imagery. The coordinates are an approximate location. The analysis results are located in Attachment 1.

Once samples were obtained, I drove to Butler Road south of Old Highway 68. The perennial stream was discolored, foamy, and turbid. The drainage had a waste odor that would be associated with a vegetable processing plant and at times smelled septic. Matthew Douthit filed a complaint during the investigation across from his residence at 16323 Butler Road. After I spoke to Mr. Douthit, I drove downstream to see if I could locate where the perennial stream flows into the Illinois River. While driving, I was flagged down by another resident, Mr. Brian Stricker. Mr. Stricker asked that I come to his residence at 16614 Butler Road. Mr. Stricker's driveway crosses the perennial stream. The creek was clearer at his residence. However, it still had an odor. The creek bottom had a growth that appeared to be a type of algae that was orange. Mr. Stricker and I hiked downstream to Mr. Kameron Slater's property. The perennial stream was turbid. I was informed that the creek goes underground prior to entering the Illinois River. Based on Google Earth Imagery, it appears that I was approximately 700 feet from the Illinois River from where I observed the creek on Mr. Slater's property. After leaving Mr. Slater's property, Mr. Stricker and I drove to Old Highway 68 to observe the stream. The creek was discolored and had an odor.

On October 23, 2013, I drove to ADEQ Headquarters to deliver the samples from Allen's, Inc. I spoke to Colby Ungerank, ADEQ Water Division Permit Engineer, and Kerri McCabe, ADEQ Water Division Inspection Supervisor, about my initial findings. I showed Ms. McCabe the pictures taken from October 22, 2013.

On October 24, 2013, I conducted a follow-up inspection at Allen's, Inc. During the investigation, I met with Tim Browers and Myles Browers. Mr. Tim Browers informed me that an evaluation was conducted of Irrigation Heads 1-90 (west of Butler Road). Mr. Browers stated that he would forward me the evaluation. Mr. Brower's findings are located in Attachment 2. From Mr. Browers evaluation, 41 of the 90 irrigation sites (west of Butler Road) have issues. Out of the 41 irrigation sites west of Butler Road, Mr. Browers and I visited approximately 22 of the irrigation fields. In addition, Mr. Brower's showed me the freeboard in the lagoon. After leaving Allen's, I checked the condition of the intermittent stream at Butler Road.

On November 13, 2013, Jason Bolenbaugh, Water Division Inspection Branch Manager, and I met with Paul Young on his property north of C13 irrigation head. At the time of the complaint investigation, Mr. Young took us to his property boundary which adjoins Allen's, Inc. property. Water was flowing in the drainage to Mr. Young's property. The water was turbid and had a waste odor that would be associated with a vegetable processing plant. The drainage flows toward Mr. Young's spring fed pond.

After meeting with Mr. Young, Mr. Bolenbaugh and I met with Mr. Tim Browers and Nathan Florer, Allen's, Inc. Construction Manager and Wastewater Manager. We investigated Irrigation Heads C4, C5, C9, C14, A11, A14, and A15 at Turkey Ridge. We observed irrigation fields that were saturated. Run-off was going into the drainage that runs north to Mr. Young's property. This drainage is between C9 and A15. The water was turbid and had a waste odor that would be associated with a vegetable processing plant.

In addition to the site visits, I reviewed the following paperwork: 2012 annual report, Irrigation Logs from January 1, 2012 through October 21, 2013, precipitation logs from the National Climatic Data Center for the following weather stations: Siloam Springs 1.8N, AR US from March-November 2013 and Fayetteville Springdale NW AR Regl Airport, AR US from January-November 10, 2013.

GENERAL COMMENTS	
See General Comments in Summary of Findings.	
INSPECTOR'S SIGNATURE: Joy Alison West **-Alison West**	DATE: **11-21-2013**
SUPERVISOR'S SIGNATURE: **Jason Bolenbaugh**	DATE: **11/21/2013**

Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	1	**Of**	62		**Date:**	10-22-2013	**Time:**	12:35 p.m.
Description:	DSCN1405. Irrigation Head 25- Waste was applied in a manner which resulted in pooling. Poor vegetative cover. Run-off towards drainage located in the tree line north of the irrigation head. Dark gray is residuals. Ground is saturated.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	2	**Of**	62		**Date:**	10-22-2013	**Time:**	12:35 p.m.
Description:	DSCN1406. Irrigation Head 25- Waste was applied in a manner which resulted in pooling. Poor vegetative cover. Run-off towards drainage located in the tree line north of the irrigation head. Dark gray is residuals. Ground is saturated.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	3	**Of**	62		**Date:**	10-22-2013	**Time:**	12:34 p.m.
Description:	DSCN1402. Irrigation Head 25- Run-off towards drainage located in the tree line north of the irrigation head.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	4	**Of**	62		**Date:**	10-22-2013	**Time:**	12:33 p.m.
Description:	DSCN1400. Near the tree line north of irrigation head 25, looking up the slope towards the irrigation head. Poor vegetative cover. Dark gray is residuals.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	5	**Of**	62		**Date:**	10-22-2013	**Time:**	12:29 p.m.
Description:	DSCN1386. Flow path of waste from Irrigation Head 25 towards the drainage. . Drainage is below. Drainage behind photographer.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	6	**Of**	62		**Date:**	10-22-2013	**Time:**	2:04 p.m.
Description:	DSCN1407. Hay Barn Hollow Sample Site. Visibly turbid, discolored water in the drainage.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	7	**Of**	62		**Date:**	10-22-2013	**Time:**	12:00 p.m.
Description:	DSCN1356. **Photographs 7–10show the stream conditions progressing downstream of the Unnamed Tributary of the Illinois River east of Irrigation Head 25, etc to the drainage north of Irrigation Heads 57-53).** The Unnamed Tributary of the Illinois River is visibly turbid, discolored, and foamy.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	8	**Of**	62		**Date:**	10-22-2013	**Time:**	11:56 a.m.
Description:	DSCN1348. The Unnamed Tributary of the Illinois River is visibly turbid, discolored, and foamy.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	9	**Of**	62		**Date:**	10-22-2013	**Time:**	11:55 a.m.
Description:	DSCN1347. The Unnamed Tributary of the Illinois River is visibly turbid, discolored, and foamy.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	10	**Of**	62		**Date:**	10-22-2013	**Time:**	10:55 a.m.
Description:	DSCN1308. Looking down the Unnamed Tributary of the Illinois River. The drainage to the right of the picture is a branch north of Irrigation Heads 57-53. Sludge deposits in point bar. Discolored sludge on gravel substrate. The Unnamed Tributary of the Illinois River is visibly turbid, discolored, and foamy.							

Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jeff Tyler		
Photo #	11	**Of**	62		**Date:**	10-22-2013	**Time:**	10:40 a.m.
Description:	DSCN1279. Irrigation Head 53. Waste was applied in a manner which resulted in pooling. Poor vegetative cover. Run-off towards drainage located in the tree line north of the irrigation head. Dark gray is residuals.							

Photographer:	Alison West				**Witness:**	Jeff Tyler		
Photo #	12	**Of**	62		**Date:**	10-22-2013	**Time:**	10:40 a.m.
Description:	DSCN1280. Irrigation Head 53. Waste was applied in a manner which resulted in pooling. Poor vegetative cover. Dark gray is residuals. Ground is saturated.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jeff Tyler		
Photo #	13	**Of**	62		**Date:**	10-22-2013	**Time:**	10:40 a.m.
Description:	DSCN1281. Irrigation Head 53. Waste was applied in a manner which resulted in pooling. Poor vegetative cover. Dark gray color is residuals. Ground is saturated.							

Photographer:	Alison West				**Witness:**	Jeff Tyler		
Photo #	14	**Of**	62		**Date:**	10-22-2013	**Time:**	10:41 a.m.
Description:	DSCN1283. Close-up of residuals north of Irrigation Head 53.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jeff Tyler		
Photo #	15	**Of**	62		**Date:**	10-22-2013	**Time:**	10:43 a.m.
Description:	DSCN1284. Flow path of waste north of Irrigation Head 53.							

Photographer:	Alison West				**Witness:**	Jeff Tyler		
Photo #	16	**Of**	62		**Date:**	10-22-2013	**Time:**	10:43 a.m.
Description:	DSCN1285. Flow path of waste north of Irrigation Head 53. Drainage is located in the tree line north of the irrigation head.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jeff Tyler		
Photo #	17	**Of**	62		**Date:**	10-22-2013	**Time:**	10:43 a.m.
Description:	DSCN1286. Ruts located north of Irrigation Head 53 before the tree line.							

Photographer:	Alison West				**Witness:**	Jeff Tyler		
Photo #	18	**Of**	62		**Date:**	10-22-2013	**Time:**	10:43 a.m.
Description:	DSCN1288. Flow path of waste north of Irrigation Head 53. Drainage is located in the tree line north of the irrigation head.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jeff Tyler		
Photo #	19	**Of**	62		**Date:**	10-22-2013	**Time:**	10:44 a.m.
Description:	DSCN1289. Flow path of waste north of Irrigation Head 53. Drainage is located in the tree line north of the irrigation head.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	20	**Of**	62		**Date:**	10-22-2013	**Time:**	10:48 a.m.
Description:	DSCN1292. Flow path of waste north of Irrigation Head 53 towards the drainage.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	21	**Of**	62		**Date:**	10-22-2013	**Time:**	10:48 a.m.
Description:	DSCN1293. Flow path of waste north of Irrigation Head 53 towards the drainage.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	22	**Of**	62		**Date:**	10-22-2013	**Time:**	10:48 a.m.
Description:	DSCN1295. **Photographs 22-26 show the stream conditions progressing downstream to the Unnamed Tributary of the Illinois River from Irrigation Head 53.** Sludge coating gravel in drainage north of Irrigation Head 53.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	23	**Of**	62		**Date:**	10-22-2013	**Time:**	10:51 a.m.
Description:	DSCN1299. Sludge coating gravel in drainage. The drainage is visibly turbid and discolored.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	24	**Of**	62		**Date:**	10-22-2013	**Time:**	10:51 a.m.
Description:	DSCN1300. Sludge coating gravel substrate.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	25	**Of**	62		**Date:**	10-22-2013	**Time:**	10:54 a.m.
Description:	DSCN1303. Sludge coating gravel substrate.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	26	**Of**	62		**Date:**	10-22-2013	**Time:**	10:55 a.m.
Description:	DSCN1304. Sludge on gravel substrate. The Unnamed Tributary of the Illinois River is visibly turbid, discolored, and foamy. This is where confluence of the drainage north of irrigation heads 57-53 drains into the Unnamed Tributary of the Illinois River.							

Location:	Allen's, Inc.-Country Plant							
Photographer:		Alison West			**Witness:**	NA		
Photo #	27	**Of**	62		**Date:**	10-22-2013	**Time:**	10:55 a.m.
Description:	DSCN1308. Looking down the Unnamed Tributary of the Illinois River. The drainage to the right of the picture is a branch north of Irrigation Heads 57-53. Sludge deposits in point bar. Discolored sludge on gravel substrate. The Unnamed Tributary of the Illinois River is visibly turbid, discolored, and foamy.							

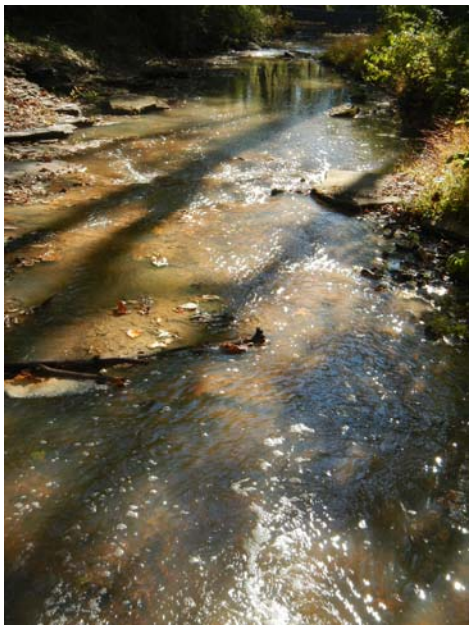
Photographer:		Alison West			**Witness:**	NA		
Photo #	28	**Of**	62		**Date:**	10-22-2013	**Time:**	14:52 p.m.
Description:	DSCN1408. **Photographs 28-35 show the stream conditions progressing downstream to the Unnamed Tributary of the Illinois River.** East Sample Site #2. The Unnamed Tributary of the Illinois River is visibly turbid and discolored.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	29	**Of**	62		**Date:**	10-22-2013	**Time:**	16:18 p.m.
Description:	DSCN1423. The Unnamed Tributary of the Illinois River is visibly turbid and discolored on the east side of Old Highway 68.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	30	**Of**	62		**Date:**	10-22-2013	**Time:**	15:50 p.m.
Description:	DSCN1410. The Unnamed Tributary of the Illinois River is visibly turbid, discolored, and foamy across the road from 16323 Butler Road in Siloam Springs, AR.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	31	**Of**	62		**Date:**	10-22-2013	**Time:**	15:47 p.m.
Description:	DSCN1413. Rust colored algae in Unnamed Tributary to the Illinois river at 16614 Butler Road in Siloam Springs, AR.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	32	**Of**	62		**Date:**	10-22-2013	**Time:**	15:47 p.m.
Description:	DSCN1414. Rust colored algae in Unnamed Tributary to the Illinois river downstream of bridge crossing at 16614 Butler Road in Siloam Springs, AR.							



Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	33	**Of**	62		**Date:**	10-22-2013	**Time:**	15:58 p.m.
Description:	DSCN1416. The Unnamed Tributary of the Illinois River is visibly turbid south of 16614 Butler Road in Siloam Springs, AR.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	34	**Of**	62		**Date:**	10-22-2013	**Time:**	15:58 p.m.
Description:	DSCN1418. Bottom deposits in unnamed tributary of the Illinois River south of 16614 Butler Road in Siloam Springs, AR.							

Location:	Allen's, Inc.-Country Plant							
Photographer:		Alison West			**Witness:**	NA		
Photo #	35	**Of**	62		**Date:**	10-22-2013	**Time:**	15:59 p.m.
Description:	DSCN1420. The Unnamed Tributary of the Illinois River is visibly turbid and discolored south of 16614 Butler Road. Based on Google Earth Imagery, the Illinois River is approximately 700 feet from this location.							

Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	36	**Of**	62		**Date:**	10-24-2013	**Time:**	12:30 p.m.
Description:	DSCN1471. Irrigation Head 1- Run-off towards drainage located in the tree line west of the irrigation head.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	37	**Of**	62		**Date:**	10-24-2013	**Time:**	12:30 p.m.
Description:	DSCN1472. Irrigation Head 1-Waste was applied in a manner which resulted in pooling. Poor vegetative cover. Run-off towards drainage located in the tree line west of the irrigation head. Ground is saturated.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	38	**Of**	62		**Date:**	10-24-2013	**Time:**	12:31 p.m.
Description:	DSCN1473. Irrigation Head 1- Waste was applied in a manner which resulted in pooling. Poor vegetative cover.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	39	**Of**	62		**Date:**	10-24-2013	**Time:**	12:31 p.m.
Description:	DSCN1475. Irrigation Head 1-Poor vegetative cover. Dark gray is residuals.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	40	**Of**	62		**Date:**	10-24-2013	**Time:**	12:31 p.m.
Description:	DSCN1476. Irrigation Head 1- Run-off towards drainage located in the tree line west of the irrigation head. Poor vegetative cover.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	41	**Of**	62		**Date:**	10-24-2013	**Time:**	12:32 p.m.
Description:	DSCN1478. Irrigation Head 1- Run-off towards drainage located in the tree line west of the irrigation head.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	42	**Of**	62		**Date:**	10-24-2013	**Time:**	2:20 p.m.
Description:	DSCN1596. Irrigation Head 47.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	43	**Of**	62		**Date:**	10-24-2013	**Time:**	2:20 p.m.
Description:	DSCN1599. Irrigation Head 47-Ground is wet near tree line.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	44	**Of**	62		**Date:**	11-13-2013	**Time:**	10:28 a.m.
Description:	DSCN1677. Irrigation Head C5 at Turkey Ridge. Run-off towards drainage located in the tree line east of the irrigation head.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	45	**Of**	62		**Date:**	11-13-2013	**Time:**	10:29 a.m.
Description:	DSCN1679. Irrigation Head C5 at Turkey Ridge. Run-off towards drainage located in the tree line east of the irrigation head. Ground is wet.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	NA		
Photo #	46	**Of**	62		**Date:**	11-13-2013	**Time:**	10:29 a.m.
Description:	DSCN1680. Irrigation Head C5 at Turkey Ridge. Run-off towards drainage located in the tree line east of the irrigation head.							

Photographer:	Alison West				**Witness:**	NA		
Photo #	47	**Of**	62		**Date:**	11-13-2013	**Time:**	10:30 a.m.
Description:	DSCN1681. Irrigation Head C5 at Turkey Ridge. Run-off towards drainage located in the tree line east of the irrigation head.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	48	**Of**	62		**Date:**	11-13-2013	**Time:**	10:34 a.m.
Description:	DSCN1684. Irrigation Head C9 at Turkey Ridge. Waste was applied in a manner which resulted in pooling. Ground is saturated.							

Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	49	**Of**	62		**Date:**	11-13-2013	**Time:**	10:36 a.m.
Description:	DSCN1685. Irrigation Head C9 at Turkey Ridge. Run-off towards drainage located in the tree line east of the irrigation head.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	50	**Of**	62		**Date:**	11-13-2013	**Time:**	10:38 a.m.
Description:	DSCN1686. Irrigation Head C9 at Turkey Ridge. Run-off towards drainage located in the tree line east of the irrigation head.							

Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	51	**Of**	62		**Date:**	11-13-2013	**Time:**	10:38 a.m.
Description:	DSCN1687. Irrigation Head C9 at Turkey Ridge. Run-off towards drainage located in the tree line east of the irrigation head.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	52	**Of**	62		**Date:**	11-13-2013	**Time:**	11:38 a.m.
Description:	DSCN1688. Irrigation Head C9 at Turkey Ridge. Run-off towards drainage located in the tree line east of the irrigation head.							

Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	53	**Of**	62		**Date:**	11-13-2013	**Time:**	10:52 a.m.
Description:	DSCN1699. Irrigation Head A14 at Turkey Ridge. Irrigation head is leaking. Run-off towards drainage located in the tree line west of the irrigation head. Waste was applied in a manner which resulted in pooling. Poor vegetative cover.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	54	**Of**	62		**Date:**	11-13-2013	**Time:**	10:51 a.m.
Description:	DSCN1698. Irrigation Head A14 at Turkey Ridge. Irrigation head is leaking. Waste was applied in a manner which resulted in pooling.							

Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	55	**Of**	62		**Date:**	11-13-2013	**Time:**	10:51 a.m.
Description:	DSCN1697. Irrigation Head A14 at Turkey Ridge. Looking east towards Irrigation Head, run-off towards drainage west of the irrigation head. Ground is saturated. Waste was applied in a manner which resulted in pooling. Poor vegetative cover.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	56	**Of**	62		**Date:**	11-13-2013	**Time:**	10:41 a.m.
Description:	DSCN1691. Drainage runs in the tree line between Irrigation Heads C9 and A14. The drainage is visibly turbid.							

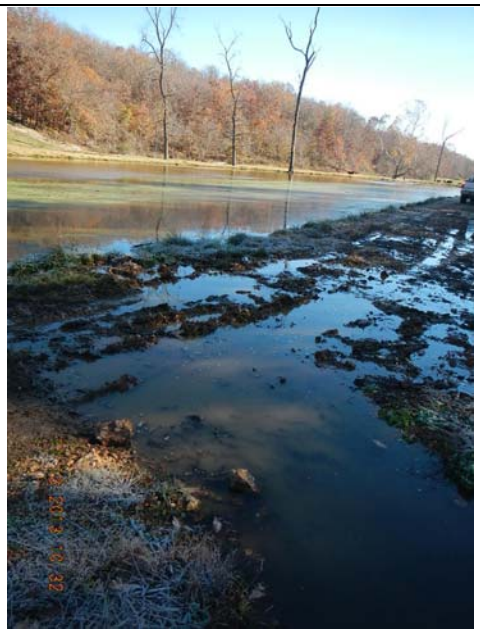
Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	57	**Of**	62		**Date:**	11-13-2013	**Time:**	8:49 a.m.
Description:	DSCN1644. Drainage is visibly turbid on Allen's, Inc. property prior to flowing onto Paul Young's property.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	58	**Of**	62		**Date:**	11-13-2013	**Time:**	8:48 a.m.
Description:	DSCN1642. Drainage is visibly turbid on Paul Young's property. Same area as Photograph 57.							

Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	59	**Of**	62		**Date:**	11-13-2013	**Time:**	9:29 a.m.
Description:	DSCN1648. Drainage flows through a swath north of Allen's, Inc. near C13 at Turkey Ridge. Drainage is visibly turbid.							

Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	60	**Of**	62		**Date:**	11-13-2013	**Time:**	9:30 a.m.
Description:	DSCN1649. Same area as DSCN1648. Close-up of drainage. Water is visibly turbid.							

Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	61	**Of**	62		**Date:**	11-13-2013	**Time:**	9:32 a.m.
Description:	DSCN1655. Flow from swath drains into Mr. Young's spring fed pond.							



Location:	Allen's, Inc.-Country Plant							
Photographer:	Alison West				**Witness:**	Jason Bolenbaugh		
Photo #	62	**Of**	62		**Date:**	11-13-2013	**Time:**	9:32 a.m.
Description:	DSCN1656. Mr. Young's spring fed pond.							

ATTACHMENTS

1. **Surface Water Sampling Analysis conducted on October 21 and 22, 2013 by ADEQ.**

2. **Tim Browers, Allen Canning Plant Manager, evaluation conducted on October 23, 2013 and October 28, 2013 of Irrigation Heads 1-90 (west of Butler Road).**

3. **Corrective Actions for Irrigation System at Allens, Inc. – Plant #1. The corrective actions were submitted by Ms. Mushinski on October 30, 2013.**

4. **The precipitation calendars for August and September 2013 at Siloams Springs 1.8N AR US and Fayetteville Springdale NW AR Regl Airport AR US and the daily irrigation logs dated: August 7-8, 2013.**

5. **Volume and Mass Applications-Spray Irrigation. January-September 2013 volumes were provided in an email from Ms. Mushinski on October 22, 2013. 2009-2012 Volume and Mass Application for Spray Irrigation are from Allens, Inc. annual reports.**

TABLE 1

1. **Nozzle sizes (inches) for Heads 1-90 as of 10/5/2007. An updated table for nozzle head sizes was sent by Allens, Inc. on November 21, 2013 and is also attached.**

ATTACHMENT 1

5301 Northshore Drive
North Little Rock, AR 72118
Telephone: 501-682-0744

Client Report For: Allen's Inc. - Country Plant 2013 3745-3746
Attention:
Client Address:

Report Date: November 05, 2013
LAB ID: AR13OCT23-06
Comment:

Approved By:_____ Date:November 05, 2013

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: Special Samples
Lab ID: 2013-3745

Client Sample ID: Allens - Hay Barn Hollow
Collection Date: 10/22/2013 1:45:00 PM
Matrix: Water

Analyses

Total Metals by EPA 200.8 *EPA 200.8* ***Batch: 13110501*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Aluminum	72.7	20	20		ug/L
Antimony	<10	10	5		ug/L
Arsenic	3.66	1	0.5		ug/L
Barium	128	10	2.0		ug/L
Beryllium	<0.5	0.5	0.1		ug/L
Boron	87.6	25	5.0		ug/L
Cadmium	<1	1	0.3		ug/L
Chromium	1.58	1	0.3		ug/L
Cobalt	25.1	1	0.5		ug/L
Copper	3.74	1	0.5		ug/L
Lead	<1	1	0.1		ug/L
Magnesium	26.5	0.1	0.1		mg/L
Nickel	17.3	2.5	0.5		ug/L
Potassium	119	1	0.05		mg/L
Selenium	<2	2	0.5		ug/L
Silver	<5	5	1.0		ug/L
Thallium	<2.5	2.5	0.05		ug/L
Vanadium	3.84	2.5	1.0		ug/L
Zinc	17.5	3	2.0		ug/L
Dilution Factor	1				
Analyzed By	Robert Graddy				
Analysis Date/Time	Nov 5 2013 10:35AM				
Prep By					
Prep Date/Time					

Total Metals by EPA 200.8 *EPA 200.8* ***Batch: 13110501*** ***Run: 2***

	Result	Reporting Limit	MDL	Qual	Unit
Calcium	148	0.4	0.04		mg/L
Sodium	488	0.4	0.02		mg/L

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
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501-682-0955

Dilution Factor	10
Analyzed By	Robert Graddy
Analysis Date/Time	Nov 5 2013 10:29AM
Prep By	
Prep Date/Time	

Total Metals by EPA 200.8 ***EPA 200.8*** ***Batch: 13110501*** ***Run: 3***

	Result	Reporting Limit	MDL	Qual	Unit
Iron	5990	2000	10.0		ug/L
Manganese	8470	100	0.2		ug/L
Dilution Factor	100				
Analyzed By	Robert Graddy				
Analysis Date/Time	Nov 5 2013 10:22AM				
Prep By					
Prep Date/Time					

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client:	Special Samples	**Client Sample ID:**	Allens - Sample Site 2
Lab ID:	2013-3746	**Collection Date:**	10/22/2013 2:35:00 PM
		Matrix:	Water

Analyses

Total Metals by EPA 200.8 ***EPA 200.8*** ***Batch: 13110501 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Aluminum	168	20	20		ug/L
Antimony	<10	10	5		ug/L
Arsenic	4.38	1	0.5		ug/L
Barium	472	10	2.0		ug/L
Beryllium	<0.5	0.5	0.1		ug/L
Boron	41.0	25	5.0		ug/L
Cadmium	<1	1	0.3		ug/L
Chromium	1.73	1	0.3		ug/L
Cobalt	64.3	1	0.5		ug/L
Copper	2.06	1	0.5		ug/L
Lead	<1	1	0.1		ug/L
Magnesium	12.4	0.1	0.1		mg/L
Nickel	16.8	2.5	0.5		ug/L
Potassium	63.1	1	0.05		mg/L
Selenium	<2	2	0.5		ug/L
Silver	<5	5	1.0		ug/L
Thallium	<2.5	2.5	0.05		ug/L
Vanadium	4.68	2.5	1.0		ug/L
Zinc	15.7	3	2.0		ug/L
Dilution Factor	1				
Analyzed By	Robert Graddy				
Analysis Date/Time	Oct 28 2013 6:00PM				
Prep By					
Prep Date/Time					

Total Metals by EPA 200.8 ***EPA 200.8*** ***Batch: 13110501 Run: 2***

	Result	Reporting Limit	MDL	Qual	Unit
Calcium	114	0.4	0.04		mg/L
Sodium	244	0.4	0.02		mg/L
Dilution Factor	10				

Arkansas Department of Environmental Quality
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North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Analyzed By	Robert Graddy
Analysis Date/Time	Oct 28 2013 5:48PM
Prep By	
Prep Date/Time	

Total Metals by EPA 200.8 ***EPA 200.8*** ***Batch: 13110501*** ***Run: 3***

	Result	Reporting Limit	MDL	Qual	Unit
Iron	20900	2000	10.0		ug/L
Manganese	12300	100	0.2		ug/L
Dilution Factor	100				
Analyzed By	Robert Graddy				
Analysis Date/Time	Oct 30 2013 12:10PM				
Prep By					
Prep Date/Time					

Arkansas Department of Environmental Quality
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North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
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501-682-0955

Client:	Special Samples	**Client Sample ID:**	Allens - Hay Barn Hollow
Lab ID:	2013-3745	**Collection Date:**	10/22/2013 1:45:00 PM
		Matrix:	Water

Analyses

Ammonia as Nitrogen — ***SM 4500-NH3 H (20th)*** — ***Batch: 13102403*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Ammonia as N	<0.03	0.03	0.03		mg/L
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 3:00:05 PM				

Carb. Biochemical Oxygen Demand (CBOD) 5 Day — ***SM 5210-B*** — ***Batch: 13102914*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Carbonaceous BOD	1650	0.2	0.2		mg/L
Analyzed By	John Hawkins				
Analysis Date/Time	10/24/2013 10:18				

Nitrate and Nitrite — ***SM 4500-NO3 I (20th)*** — ***Batch: 13102405*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Nitrate/Nitrite as N	<0.03	0.03	0.03		mg/L
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 3:00:05 PM				

Orthophosphate as Phosphorus — ***SM 4500-P G (20th)*** — ***Batch: 13102404*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Orthophosphate as P	7.15	0.05	0.01		mg/L
Dilution Factor	5				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 3:08:01 PM				

Total Solids — ***EPA 160.3*** — ***Batch: 13102910*** ***Run: 1***

	Result	Reporting	MDL	Qual	Unit

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

		Limit		
Total Solids	2830	1.0	1.0	mg/L
Analyzed By	John Hawkins			
Analysis Date/Time	10/23/2013 15:00			

Total Kjeldahl Nitrogen ***SM 4500-N C*** ***Batch: 13102801*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Total Kjeldahl Nitrogen	<0.05	0.05	0.05		mg/L
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 1:04:25 PM				

Total Phosphorus ***SM 4500-P J (20th)*** ***Batch: 13102503*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Phosphorus-total	9.5	0.2	0.02		mg/L
Dilution Factor	10				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 2:22:07 PM				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client:	Special Samples	**Client Sample ID:**	Allens - Sample Site 2
Lab ID:	2013-3746	**Collection Date:**	10/22/2013 2:35:00 PM
		Matrix:	Water

Analyses

Ammonia as Nitrogen ***SM 4500-NH3 H (20th)*** ***Batch: 13102403 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Ammonia as N	<0.03	0.03	0.03		mg/L
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 3:01:25 PM				

Carb. Biochemical Oxygen Demand (CBOD) 5 Day ***SM 5210-B*** ***Batch: 13102914 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Carbonaceous BOD	1220	0.2	0.2		mg/L
Analyzed By	John Hawkins				
Analysis Date/Time	10/24/2013 10:18				

Nitrate and Nitrite ***SM 4500-NO3 I (20th)*** ***Batch: 13102405 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Nitrate/Nitrite as N	0.158	0.03	0.03		mg/L
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 3:01:25 PM				

Orthophosphate as Phosphorus ***SM 4500-P G (20th)*** ***Batch: 13102404 Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Orthophosphate as P	0.392	0.01	0.01		mg/L
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 3:01:25 PM				

Total Solids ***EPA 160.3*** ***Batch: 13102910 Run: 1***

	Result	Reporting	MDL	Qual	Unit

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

		Limit		
Total Solids	1820	1.0	1.0	mg/L
Analyzed By	John Hawkins			
Analysis Date/Time	10/23/2013 15:00			

Total Kjeldahl Nitrogen ***SM 4500-N C*** ***Batch: 13102801*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Total Kjeldahl Nitrogen	<0.05	0.05	0.05		mg/L
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 1:05:38 PM				

Total Phosphorus ***SM 4500-P J (20th)*** ***Batch: 13102503*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Phosphorus-total	1.5	0.2	0.02		mg/L
Dilution Factor	10				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 2:23:19 PM				

Arkansas Department of Environmental Quality
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North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
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501-682-0955

Analytical Quality Control Results Report

Batch: 13102910	Total Solids - water
Allens - Sample Site 2	LIMS ID: 2013-3746

Solids, Total - water DUP — Run: 1

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Total Solids	1820 mg/L	1	1		
Total Solids (RPD)	0.1 %				0 - 20
Analyzed By	John Hawkins				
Analysis Date/Time	10/23/2013 15:00				

MB	LIMS ID: 13102910-MB-01

Solids, Total - water MB — Run: 1

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Total Solids	<1.0 mg/L	1	1		
Analyzed By	John Hawkins				
Analysis Date/Time	10/23/2013 15:00				

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Analytical Quality Control Results Report

Batch: 13102914 | **CBOD5 - water**

Allens - Sample Site 2 | **LIMS ID: 2013-3746**

CBOD - water DUP — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Carbonaceous BOD (RPD)	>20 %				0 - 20
Carbonaceous BOD	945 mg/L	0.2	0.2		
Analyzed By	John Hawkins				
Analysis Date/Time	10/24/2013 10:18				

MB — **LIMS ID: 13102914-MB-01**

CBOD - water MB — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Carbonaceous BOD	<0.2 mg/L	0.2	0.2		
Analyzed By	John Hawkins				
Analysis Date/Time	10/24/2013 10:18				

LCS — **LIMS ID: 13102914-LCS-01**

CBOD - water LCS — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Carbonaceous BOD (% Recovery)	81.1 %			80 - 120	
Analyzed By	John Hawkins				
Analysis Date/Time	10/24/2013 10:18				

LCS — **LIMS ID: 13102914-LCS-02**

CBOD - water LCS — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Carbonaceous BOD (% Recovery)	83.1 %			80 - 120	
Analyzed By	John Hawkins				
Analysis Date/Time	10/24/2013 10:18				

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Analytical Quality Control Results Report

Batch: 13110501	ICP Metals - water (total)
Allens - Sample Site 2	LIMS ID: 2013-3746

ICP Metals - water (Total) DUP — Run: 1

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Aluminum (RPD)	0.7 %				0 - 20
Aluminum	166 ug/L	20	20		
Antimony	<10 ug/L	5	10		
Antimony (RPD)	71.8 %				0 - 20
Arsenic	4.55 ug/L	0.5	1		
Arsenic (RPD)	3.8 %				0 - 20
Barium (RPD)	0.4 %				0 - 20
Barium	474 ug/L	2	10		
Beryllium	<0.5 ug/L	0.1	0.5		
Beryllium (RPD)	11.8 %				0 - 20
Boron (RPD)	0.8 %				0 - 20
Boron	40.6 ug/L	5	25		
Cadmium	<1 ug/L	0.3	1		
Cadmium (RPD)	3.6 %				0 - 20
Chromium (RPD)	0.6 %				0 - 20
Chromium	1.74 ug/L	0.3	1		
Cobalt	64.9 ug/L	0.5	1		
Cobalt (RPD)	1.0 %				0 - 20
Copper (RPD)	1.9 %				0 - 20
Copper	2.02 ug/L	0.5	1		
Lead	<1 ug/L	0.1	1		
Lead (RPD)	0.5 %				0 - 20
Magnesium (RPD)	1.1 %				0 - 20
Magnesium	12.5 mg/L	0.1	0.1		
Nickel	17 ug/L	0.5	2.5		
Nickel (RPD)	3.6 %				0 - 20
Potassium (RPD)	0.5 %				0 - 20
Potassium	63.4 mg/L	0.05	1		
Selenium	<2 ug/L	0.5	2		
Selenium (RPD)	5.0 %				0 - 20
Silver (RPD)	0 %				0 - 20
Silver	<5 ug/L	1	5		
Thallium	<2.5 ug/L	0.05	2.5		

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Thallium (RPD)	2.9 %				0 - 20
Vanadium (RPD)	2.9 %				0 - 20
Vanadium	4.82 ug/L	1	2.5		
Zinc (RPD)	3.4 %				0 - 20
Zinc	16.3 ug/L	2	3		
Dilution Factor	1				
Analyzed By	Robert Graddy				
Analysis Date/Time	Oct 28 2013 6:19PM				

Allens - Sample Site 2 ***LIMS ID: 2013-3746***

ICP Metals - water (Total) DUP ***Run: 2***

Parameter	*Result*	*DL*	*RL*	*Accuracy Control*	*Precision Control*
Calcium	129 mg/L	0.4	0.4		
Calcium (RPD)	12.4 %				0 - 20
Sodium (RPD)	7.2 %				0 - 20
Sodium	262 mg/L	0.2	0.4		
Dilution Factor	10				
Analyzed By	Robert Graddy				
Analysis Date/Time	Oct 28 2013 5:54PM				

Allens - Sample Site 2 ***LIMS ID: 2013-3746***

ICP Metals - water (Total) DUP ***Run: 3***

Parameter	*Result*	*DL*	*RL*	*Accuracy Control*	*Precision Control*
Iron (RPD)	7.5 %				0 - 20
Iron	19400 ug/L	1000	2000		
Manganese	12000 ug/L	20	100		
Manganese (RPD)	4.3 %				0 - 20
Dilution Factor	100				
Analyzed By	Robert Graddy				
Analysis Date/Time	Oct 30 2013 12:17PM				

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Analytical Quality Control Results Report

Batch: 13102503 — **Lachat - TP (water)**

Allens - Sample Site 2 — **LIMS ID: 2013-3746**

TP (Total Phosphorus) - water DUP — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Phosphorus-total (RPD)	1.3 %				0 - 20
Phosphorus-total	1.48 mg/L	0.2	0.2		
Dilution Factor	10				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 2:24:31 PM				

MB — **LIMS ID: 13102503-MB-01**

TP (Total Phosphorus) - water MB — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Phosphorus-total	<0.02 mg/L	0.02	0.02		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 10:36:17 AM				

LCS — **LIMS ID: 13102503-LCS-01**

TP (Total Phosphorus) - water LCS — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Phosphorus-total (% Recovery)	101 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 10:37:29 AM				

MB — **LIMS ID: 13102503-MB-02**

TP (Total Phosphorus) - water MB — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Phosphorus-total	<0.02 mg/L	0.02	0.02		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013				

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11:12:07 AM

LCS — LIMS ID: 13102503-LCS-02 — Run: 1

TP (Total Phosphorus) - water LCS

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Phosphorus-total (% Recovery)	96.5 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 11:13:17 AM				

MB — LIMS ID: 13102503-MB-03 — Run: 1

TP (Total Phosphorus) - water MB

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Phosphorus-total	<0.02 mg/L	0.02	0.02		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 11:50:19 AM				

LCS — LIMS ID: 13102503-LCS-03 — Run: 1

TP (Total Phosphorus) - water LCS

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Phosphorus-total (% Recovery)	99.0 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 11:51:30 AM				

MB — LIMS ID: 13102503-MB-04 — Run: 1

TP (Total Phosphorus) - water MB

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Phosphorus-total	<0.02 mg/L	0.02	0.02		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 12:39:19 PM				

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LCS — **LIMS ID: 13102503-LCS-04** — **Run: 1**

TP (Total Phosphorus) - water LCS

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Phosphorus-total (% Recovery)	99.5 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 12:40:31 PM				

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Analytical Quality Control Results Report

Batch: 13102801 — **Lachat - TKN (water)**

Allens - Sample Site 2 — **LIMS ID: 2013-3746**

TKN - water DUP — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Total Kjeldahl Nitrogen	<0.05 mg/L	0.05	0.05		
Total Kjeldahl Nitrogen (RPD)	0 %				0 - 20
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 1:06:51 PM				

MB — **LIMS ID: 13102801-MB-01**

TKN - water MB — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Total Kjeldahl Nitrogen	<0.05 mg/L	0.05	0.05		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 10:36:17 AM				

LCS — **LIMS ID: 13102801-LCS-01**

TKN - water LCS — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Total Kjeldahl Nitrogen (% Recovery)	106 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 10:37:29 AM				

MB — **LIMS ID: 13102801-MB-02**

TKN - water MB — *Run: 1*

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Total Kjeldahl Nitrogen	<0.05 mg/L	0.05	0.05		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013				

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	11:12:07 AM

LCS — **LIMS ID: 13102801-LCS-02**

TKN - water LCS — **Run: 1**

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Total Kjeldahl Nitrogen (% Recovery)	97.4 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 11:13:17 AM				

MB — **LIMS ID: 13102801-MB-03**

TKN - water MB — **Run: 1**

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Total Kjeldahl Nitrogen	<0.05 mg/L	0.05	0.05		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 11:50:19 AM				

LCS — **LIMS ID: 13102801-LCS-03**

TKN - water LCS — **Run: 1**

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Total Kjeldahl Nitrogen (% Recovery)	106 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 11:51:30 AM				

MB — **LIMS ID: 13102801-MB-04**

TKN - water MB — **Run: 1**

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Total Kjeldahl Nitrogen	<0.05 mg/L	0.05	0.05		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 12:39:19 PM				

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LCS					*LIMS ID: 13102801-LCS-04*
TKN - water LCS					***Run: 1***
Parameter	***Result***	***DL***	***RL***	***Accuracy Control***	***Precision Control***
Total Kjeldahl Nitrogen (% Recovery)	104 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/25/2013 12:40:31 PM				

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Analytical Quality Control Results Report

Batch: 13102403 | **Lachat - Ammonia (water)**

Allens - Sample Site 2 — **LIMS ID: 2013-3746**

Ammonia as N - water DUP — **Run: 1**

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Ammonia as N	<0.03 mg/L	0.03	0.03		
Ammonia as N (RPD)	27.2 %				0 - 20
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 3:02:44 PM				

MB — **LIMS ID: 13102403-MB-01**

Ammonia as N - water MB — **Run: 1**

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Ammonia as N	<0.03 mg/L	0.03	0.03		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 12:02:24 PM				

LCS — **LIMS ID: 13102403-LCS-01**

Ammonia as N - water LCS — **Run: 1**

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Ammonia as N (% Recovery)	102 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 12:03:45 PM				

MB — **LIMS ID: 13102403-MB-02**

Ammonia as N - water MB — **Run: 1**

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Ammonia as N	<0.03 mg/L	0.03	0.03		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013				

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12:42:29 PM

LCS — **LIMS ID: 13102403-LCS-02**

Ammonia as N - water LCS — ***Run: 1***

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Ammonia as N (% Recovery)	103 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 12:43:48 PM				

MB — **LIMS ID: 13102403-MB-03**

Ammonia as N - water MB — ***Run: 1***

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Ammonia as N	<0.03 mg/L	0.03	0.03		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 1:46:39 PM				

LCS — **LIMS ID: 13102403-LCS-03**

Ammonia as N - water LCS — ***Run: 1***

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Ammonia as N (% Recovery)	102 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 1:47:59 PM				

MB — **LIMS ID: 13102403-MB-04**

Ammonia as N - water MB — ***Run: 1***

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Ammonia as N	<0.03 mg/L	0.03	0.03		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 2:44:02 PM				

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LCS ***LIMS ID: 13102403-LCS-04***

Ammonia as N - water LCS ***Run: 1***

Parameter	*Result*	*DL*	*RL*	*Accuracy Control*	*Precision Control*
Ammonia as N (% Recovery)	104 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 2:45:22 PM				

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Analytical Quality Control Results Report

Batch: 13102404 — **Lachat - OP (water)**

Allens - Sample Site 2 — **LIMS ID: 2013-3746**

Orthophosphate as P - water DUP — ***Run: 1***

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Orthophosphate as P	0.373 mg/L	0.005	0.01		
Orthophosphate as P (RPD)	5.0 %				0 - 20
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 3:02:44 PM				

MB — **LIMS ID: 13102404-MB-01**

Orthophosphate as P - water MB — ***Run: 1***

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Orthophosphate as P	<0.01 mg/L	0.005	0.01		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 12:02:24 PM				

LCS — **LIMS ID: 13102404-LCS-01**

Orthophosphate as P - water LCS — ***Run: 1***

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Orthophosphate as P (% Recovery)	95.5 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 12:03:45 PM				

MB — **LIMS ID: 13102404-MB-02**

Orthophosphate as P - water MB — ***Run: 1***

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Orthophosphate as P	0.011 mg/L	0.005	0.01		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013				

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LCS — **LIMS ID: 13102404-LCS-02**

Orthophosphate as P - water LCS — ***Run: 1***

Parameter	*Result*	*DL*	*RL*	*Accuracy Control*	*Precision Control*
Orthophosphate as P (% Recovery)	96.5 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 12:43:48 PM				

MB — **LIMS ID: 13102404-MB-03**

Orthophosphate as P - water MB — ***Run: 1***

Parameter	*Result*	*DL*	*RL*	*Accuracy Control*	*Precision Control*
Orthophosphate as P	<0.01 mg/L	0.005	0.01		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 1:46:39 PM				

LCS — **LIMS ID: 13102404-LCS-03**

Orthophosphate as P - water LCS — ***Run: 1***

Parameter	*Result*	*DL*	*RL*	*Accuracy Control*	*Precision Control*
Orthophosphate as P (% Recovery)	97.0 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 1:47:59 PM				

MB — **LIMS ID: 13102404-MB-04**

Orthophosphate as P - water MB — ***Run: 1***

Parameter	*Result*	*DL*	*RL*	*Accuracy Control*	*Precision Control*
Orthophosphate as P	<0.01 mg/L	0.005	0.01		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 2:44:02 PM				

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LCS					*LIMS ID: 13102404-LCS-04*
Orthophosphate as P - water LCS					***Run: 1***
Parameter	***Result***	***DL***	***RL***	***Accuracy Control***	***Precision Control***
Orthophosphate as P (% Recovery)	98.5 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 2:45:22 PM				

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Analytical Quality Control Results Report

Batch: 13102405 — Lachat - NO3+NO2 (water)

Allens - Sample Site 2 — LIMS ID: 2013-3746

Nitrate and Nitrite - water DUP — Run: 1

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Nitrate/Nitrite as N	0.156 mg/L	0.03	0.03		
Nitrate/Nitrite as N (RPD)	1.3 %				0 - 20
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 3:02:44 PM				

MB — LIMS ID: 13102405-MB-01

Nitrate and Nitrite - water MB — Run: 1

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Nitrate/Nitrite as N	<0.03 mg/L	0.03	0.03		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 12:02:24 PM				

LCS — LIMS ID: 13102405-LCS-01

Nitrate and Nitrite - water LCS — Run: 1

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Nitrate/Nitrite as N (% Recovery)	104 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 12:03:45 PM				

MB — LIMS ID: 13102405-MB-02

Nitrate and Nitrite - water MB — Run: 1

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Nitrate/Nitrite as N	<0.03 mg/L	0.03	0.03		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013				

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12:42:29 PM

LCS					*LIMS ID: 13102405-LCS-02*
Nitrate and Nitrite - water LCS					***Run: 1***
Parameter	***Result***	***DL***	***RL***	***Accuracy Control***	***Precision Control***
Nitrate/Nitrite as N (% Recovery)	105 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 12:43:48 PM				

MB					*LIMS ID: 13102405-MB-03*
Nitrate and Nitrite - water MB					***Run: 1***
Parameter	***Result***	***DL***	***RL***	***Accuracy Control***	***Precision Control***
Nitrate/Nitrite as N	<0.03 mg/L	0.03	0.03		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 1:46:39 PM				

LCS					*LIMS ID: 13102405-LCS-03*
Nitrate and Nitrite - water LCS					***Run: 1***
Parameter	***Result***	***DL***	***RL***	***Accuracy Control***	***Precision Control***
Nitrate/Nitrite as N (% Recovery)	104 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 1:47:59 PM				

MB					*LIMS ID: 13102405-MB-04*
Nitrate and Nitrite - water MB					***Run: 1***
Parameter	***Result***	***DL***	***RL***	***Accuracy Control***	***Precision Control***
Nitrate/Nitrite as N	<0.03 mg/L	0.03	0.03		
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 2:44:02 PM				

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LCS ***LIMS ID: 13102405-LCS-04***

Nitrate and Nitrite - water LCS ***Run: 1***

Parameter	*Result*	*DL*	*RL*	*Accuracy Control*	*Precision Control*
Nitrate/Nitrite as N (% Recovery)	105 %			80 - 120	
Dilution Factor	1				
Analyzed By	Penny Semberski				
Analysis Date/Time	10/23/2013 2:45:22 PM				

pH and Dissolved Oxygen Analysis

Location near East Sample Site #2 on October 21, 2013 at the Butler Road Culvert:

1:25 p.m. pH 7.23 1:27 p.m. pH duplicate 7.27

1:20 p.m. D.O. 5.77 mg/L 1:22 p.m. D.O. duplicate 5.88 mg/L

Hay Barn Hollow on October 22, 2013:

1:55 p.m. pH 7.49

1:59 p.m. D.O. 6.92 @12.2°C

East Sample Site #2:

2:42 p.m. pH 6.36 2:42 p.m. pH duplicate 6.39

2:45 p.m. D.O. 3.84 mg/L @ 13.7°C 2:46 p.m. D.O. duplicate 3.82 mg/L

ATTACHMENT 2

10/23/13 status of irrigation fields.

Fields listed are of concern or have mechanical issue:

#1 – this field is wet on the west side which is towards the holler. The rest of the field looks good so the head needs checked for proper rotation and the field needs to dry.

#2 – this field is running off the ne which is to the holler. Needs rested to dry up.

#3 & #4 are wet and need to dry.

#9 is wet and should be disc to level and remove the large spot of standing water.

#10 – this field appears the head has been stuck and very wet on the west side which is towards the holler. Needs to dry up as this is a problem spot.

#11 & #12 are both pretty wet.

#14 is wet and has been running off in holler. Should be rested.

#20, #21 & #22 are capped because of leaking valve found last week. Still very wet & standing water. Should be disc and seeded.

#23 leaking water today. Valve must also be bad and needs changed.

#25 is very wet and the nozzle size should be reduced on this field. Would suggest working this field as it is a source of run off.

#26 water running out of lower side to holler. This ia a run off issue also and needs dried and or worked.

#29, #30 & #31 are wet, but not running off.

#34, #35 & #36 should have nozzle size checked because they are getting out to far on the edges.

#37 & #38 are extremely wet and the amount of Bermuda grass may be a problem also.

#46 is very wet and running off.

#53, 54, 55, 56, 57, 58, 59, 60 are extremely wet and 53&54 are in serious need of fields being reworked and field 60 should have the nozzle size checked. This is the source of the recent complaints.

#70, 71, 72 & 73 are real wet and need to dry up some.

#74 & 75 are both dry on the south side and wet on the north sides. Check nozzles for proper rotation.

#80 is very wet

#84 is very wet and spraying a good distance down slope. Nozzle size needs checked and replaced if work or reduced.

#87 is real wet on the north and dry the remainder of the radius. Need to check the head rotation.

Need to weed eat around the heads on:

6,8,10,12,14,25,26,33,45,65,66,68,69,74,75,80,

Weeds are very tall and need mowed around:

77,78,79

10/28 audit of fields 1-90:

These 50 fields are in satisfactory condition for irrigation, but cannot be over applied:

3,4,6,7,11,12,23,24,28,29,30,31,32,33,34,35,36,40,41,42,43,45,47,48,49,50,51,61,62,63,64,65,66,67,68, 69,74,75,76,77,78,79,81,82,83,85,96,88,89,90.

These heads need to be capped off. Some short term & some long term:

1,2,8,9,10,13,14,15,20,21,22,25,26,27,37,38,46,52,53,64,55,56,57,58,59,60,70,71,72,73,80,84,87

Field 1 should have the west side of the radius drilled with seed so that cover grows back on it.

Fields 8&9 need disc, leveled so large holes are not present and drilled for cover to grow on them.

Field 14 would be best to drill seed on the north side of it.

Fields 20, 21 & 22 should be drug & then seed drilled on them to get cover crop growing.

Heads 68 & 69 need the nozzle size reduced to keep the water out of the road or put a head on them so the rotation is limited to not get on the road.

I am looking for the nozzle size chart we should have for the heads of each field. If you have that please send it to me and I will get measuring tools so that every nozzle can be checked to assure it is not worn out or the incorrect size.

ATTACHMENT 3

October 30, 2013

Ms. Alison West
Arkansas Department of Environmental Quality (ADEQ) - Fayetteville
west@adeq.state.ar.us

RE: Allens, Inc. – Plant #1
Corrective Actions for Irrigation System

Dear Ms. West:

On October 22, 2013, the Arkansas Department of Environmental Quality (ADEQ) conducted an inspection at the Allens, Inc. (Allens) facility located at 14961 Readings Road in Siloam Springs, Arkansas (Benton County) in response to concerns about runoff from the wastewater spray irrigation system affecting stream quality along Butler Road. ADEQ staff, Alison West and Jeff Tyler, met with Tim Browers (Plant Manager), Donald Whitlock (Irrigation Operator), and Myles Browers (Maintenance Manager). A follow-up site visit was conducted on October 24, 2013 with Alison West and Tim Browers. On October 28, 2013, ADEQ sent an email to Allens stating the following:

> *You must immediately cease all applications to saturated fields. According to Condition 2 of your permit, "Waste shall not be discharged from this operation to the waters of the State or onto the land in any manner that may result in runoff to the waters of the State." You must provide a written summary describing how Allen Canning will continue operation of the plant and management of the waste without causing pollution to the waters of the State. What are your plans to contain runoff of wastewater from saturated fields and prevent this type of incidence from occurring in the future?*

The purpose of this letter is to respond to these issues, describing the immediate and short-term actions that were taken to address the runoff and the changes that have been made to minimize the potential for recurrence. This information includes Allens' initial response to questions raised in the October 22nd inspection (provided via an October 22, 2013 email from Laura Mushinski to Alison West), and summarizes other documents that were provided separately via e-mail to ADEQ on October 28 and 29, 2013.

The immediate step that was taken was that the irrigation system was not started up on October 22 and not run at all on October 23, 2013. As indicated to you by Allens staff, a complete evaluation of the irrigation system was conducted by Tim Browers on October 23, 2013 prior to any further irrigation. His notes (handwritten and typed) from that evaluation were provided to you during the October 24th inspection and are also attached. Based on that evaluation, a portion

of the irrigation system (39 irrigation heads or nozzles out of 90 on the main system) was used on a limited basis on October 24th. Tim Brower's evaluation on October 23rd was conducted when there was no water pressure on the system. As a result, when the system was started up again on October 24th, addition issues were identified that were not apparent without water pressure. Various irrigation heads were shut off or capped to address the issues that became apparent under water pressure.

Prior to ADEQ's site visit, Tim Browers and James Phillips had received a call from a concerned neighbor(s) on October 17th and as a result of that, the leaking valve for Heads 52, 53, and 54 was identified as a maintenance issue and replaced over the weekend. Much of the weekend (October 19-20) was spent addressing maintenance concerns based on a check of the fields conducted by Tim Browers over the weekend. However, the impacts of the irrigation system issues for the stream along Butler Road were not fully realized by Allens staff at this point.

Allens had formerly been required to conduct stream and spring sampling at various points around the irrigation system under the ADEQ permit. When the current permit was drafted, Allens commented on the fact that the stream, spring, and groundwater monitoring was not included. The final permit was not changed by ADEQ to incorporate these former requirements. Nonetheless, Allens continued to have Environmental Services Company (ESC) conduct some sampling beyond what is dictated in the permit. Stream and spring sampling was set up for the months of June and October back in February 2013 via an email to ESC. As it turns out, ESC scheduled and conducted the sampling on October 22, 2013 per Allens' direction in February 2013. Since ADEQ staff questioned ESC about why they were sampling, Allens wanted to clarify this. These samples confirm impacts to the stream along Butler Road on October 22, 2013.

As indicated in Allens' October 22, 2013 email, these actions were also taken:

- Irrigation heads 52, 53, and 54 were taken out of service to level, disc, and reseed the cover crop. Allens will wait before the cover crop is reestablished prior to using this for irrigation.
- Irrigation head 25 was capped and will stay that way until we are into warm/dry weather likely in the late spring/early summer.

Subsequent to this, Tim Browers determined that irrigation heads 26, 55, 56, 57, 58, 59, and 60 would be capped for an extended period and reevaluated for future use at a later point.

Routine inspection of the irrigation system, including valves, irrigation heads, cover crop condition, erosion, runoff, etc. is an area identified for improvement so that appropriate and timely maintenance can be conducted. To accomplish this and improve management in this area, Nathan Florer was assigned to work as the supervisor in the wastewater area. Nathan has over twenty years of experience with sewer work with both private companies and municipalities. He was the Project Manager for the construction company that installed the gravity sewer line with over 130 manholes and lift stations in Tontitown. With Allens, Nathan has served as an Assistant Maintenance Manager and Construction Manager. Nathan is an additional full time

person in this area and will supervise all the current irrigation staff. With his experience in construction and maintenance, and his leadership skills, the department will be improved. In addition, Allens will get training lined up for Nathan so that he can pursue a Wastewater Operator license with ADEQ. Donald Whitlock, the current Wastewater Operator, remains on staff.

Tim Browers and Nathan Florer have conducted daily inspections of the system since ADEQ's site visit. Allens is in the process of formalizing that process with the attached **Inspection Form**. Each irrigation head is listed in addition to nine visual monitoring points identified with yellow dots on the attached **Aerial Map of Irrigation Heads & Monitoring Points**. These nine monitoring points were identified based on topography and include the areas of concern from the events this month.

Improved maintenance of the system will be triggered by the inspection process. The performance of the wastewater staff with respect to system maintenance leading up to these runoff concerns was unacceptable and Nathan Florer and Tim Browers are in the process of getting this straightened out. Valves, irrigation heads, and a few sections of underground pipe have been replaced in the last two weeks. Other parts of the system are not being used until they are disked/reseeded, leveled, or otherwise repaired.

The other corrective action that will be taken is a different approach to cover crop harvest. Per the Management Plan, Allens needs to cut and harvest at least three times per year. However, taking out too many sections of the irrigation system for cover crop harvest stresses the remaining system. In October, for about 3 weeks, all of Turkey Ridge (identified as A, B, C, D, and E) was out of the rotation for cover crop harvest. A new schedule – where no more than about 20 irrigation heads are out of service for cover crop harvest at any one time – has been developed and will be tried going forward. (It is attached.) It involves cutting and harvesting nearly each week of the year to avoid too much of the irrigation system being out of service at any one point. If not workable, this tentative schedule will be adjusted somewhat.

While these maintenance issues are being addressed, the amount of irrigation has been reduced to less than the typical wastewater generation rate in the plant. Further, wet weather is projected and irrigation is not allowed when rainfall is occurring or is imminent. The lagoon level is checked daily and production staff is aware of the amount of capacity in the lagoon. Production levels have been reduced already. Allens has worked this week on setting up some contingency wastewater hauling to municipal wastewater treatment plants. Terra Renewal Services (TRS) has provided information on their services with respect to hauling to municipal wastewater treatment plants, hauling for land application on Allens' approved sites, and hauling for land application on TRS's approved sites. Three municipal systems have been approached by Allens – Siloam Springs, NACA, and Decatur – and it seems that Decatur and NACA may be options. If these contingency plans cannot be worked out, production will be shut down prior to reaching the two-foot minimum freeboard in the wastewater lagoon.

On a longer term basis, the facility has also identified some significant water conservation projects that are expected to be implemented in the next capital project period. In the past year,

Allens has worked on the draft permit with ADEQ and understand that it will trigger major changes to address phosphorus loading and slope restrictions. Because of significance of these changes, a three-year compliance schedule has been developed. Nonetheless, in dealing with slope restrictions and nutrient loading, Allens also hopes to improve the wastewater system and change or add systems that are not so weather dependent.

The ADEQ email of October 28th also requested a few other specific items:

- Irrigation logs from January 2012 to the present. These were provided, month by month, via email on October 28th and 29th. The October log includes data from October 1 – 28, 2013.
- The aerial map with the irrigation nozzles identified is attached to this letter and was provided via email. This improved map was developed to facilitate Allens' inspection process.
- With respect to the question on application rate, the irrigation pump operates at approximately 1300 gpm. Irrigation operators open valves (usually 2 or 3) to have a set of approximately 13 heads open for a one-hour period before we switch to another set of heads. Each head covers an average of 1.3 acres. So, 78,000 gallons/hour over approximately 16.9 acres equals about 4,615 gallons/acre.

Allens hopes that we have provided all the requested information and that this adequately addresses the concerns identified during your inspections the week of October 21, 2013. If ADEQ has any questions or requires additional information, please contact Laura Mushinski at (479) 228-0102. Thank you for your time and consideration regarding these issues.

Sincerely,

Allens, Inc.

/s/

Laura J. Mushinski, CHMM
Director – Environmental Quality

cc: James Phillips, Allens
Tim Browers, Allens – Country
Nathan Florer, Allens – Country

Tim Browers' inspection notes from October 23, 2013

Donald,

#1 + #2 wet towards holes

3 + 4 are wet and need a couple days

9 is wet + needs disc to level

10 needs capped for couple weeks - is head turning ?

11+12 need a couple days to dry

4 - should be let dry a few days

16-22 off line

23 leaking water out head

25+24 should be capped

29, 30 + 31 should be let dry a couple days

34, 35 + 36 - check nozzle sizes

37+38 should rest a couple days

46 needs to dry

53-60 need Shut Down indefinitely

70-73 need to dry a couple of days

80 needs to dry a few days

* Did not see head 44. Has it been removed ?

Could Irrigate today on

13, 15, 27, 28, 41, 42, 43, 45, 47, 48
34, 35, 36, 39, 40, 49, 52, 51, 64, 65, 66
61, 62, 63, 67, 68, 69, 77, 78, 79
81, 82, 83, 85, 86, 87, 88, 89, 90

or a combination using these heads

10/23/13 status of irrigation fields.

Fields listed are of concern or have mechanical issue:

#1 – this field is wet on the west side which is towards the holler. The rest of the field looks good so the head needs checked for proper rotation and the field needs to dry.

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#10 – this field appears the head has been stuck and very wet on the west side which is towards the holler. Needs to dry up as this is a problem spot.

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#20, #21 & #22 are capped because of leaking valve found last week. Still very wet & standing water. Should be disc and seeded.

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#34, #35 & #36 should have nozzle size checked because they are getting out to far on the edges.

#37 & #38 are extremely wet and the amount of Bermuda grass may be a problem also.

#46 is very wet and running off.

#53, 54, 55, 56, 57, 58, 59, 60 are extremely wet and 53&54 are in serious need of fields being reworked and field 60 should have the nozzle size checked. This is the source of the recent complaints.

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#84 is very wet and spraying a good distance down slope. Nozzle size needs checked and replaced if work or reduced.

#87 is real wet on the north and dry the remainder of the radius. Need to check the head rotation.

Need to weed eat around the heads on:

6,8,10,12,14,25,26,33,45,65,66,68,69,74,75,80,

Weeds are very tall and need mowed around:

77,78,79

Allens, Inc. – Country Irrigation System Inspection – Page 1 **Date:** _____

Instructions: This inspection must be conducted each day that irrigation occurs. "OK" means the following:

Irrigation Heads – Nozzle is rotating when in use. Ground is not saturated. Runoff is not occurring as evidenced by checking areas closest to ravines or drainage areas. The valves that control this set of irrigation heads are not leaking.

Monitoring Points – Based on visual inspection, wastewater runoff is not occurring.

If the inspection area is not "OK", indicate problem and corrective action needed.

Irrigation Heads or Nozzles	Ok?	Corrective Actions Needed
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		

Irrigation Heads or Nozzles	Ok?	Corrective Actions Needed
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		

Irrigation Heads or Nozzles	Ok?	Corrective Actions Needed
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		
76		
77		
78		
79		
80		
81		
82		
83		
84		
85		
86		
87		
88		
89		
90		

Allens, Inc. – Country Irrigation System Inspection – Page 2 **Date:** _____

Irrigation Heads or Nozzles	Ok?	Corrective Actions Needed
A1		
A2		
A3		
A4		
A5		
A6		
A7		
A8		
A9		
A10		
A11		
A12		
A13		
A14		
A15		
A16		
A17		
B1		
B2		
B3		
B4		
B5		
B6		
B7		
B8		
B9		
B10		
B11		
B12		
B13		
B14		
B15		
B16		
B17		

Irrigation Heads or Nozzles	Ok?	Corrective Actions Needed
C1		
C2		
C3		
C4		
C5		
C6		
C7		
C8		
C9		
C10		
C11		
C12		
C13		
C14		
D1		
D2		
D3		
D4		
D5		
D6		
D7		
D8		
D9		
D10		
D11		
D12		
D13		
E1		
E2		
E3		
E4		
E5		
E6		
E7		
E8		

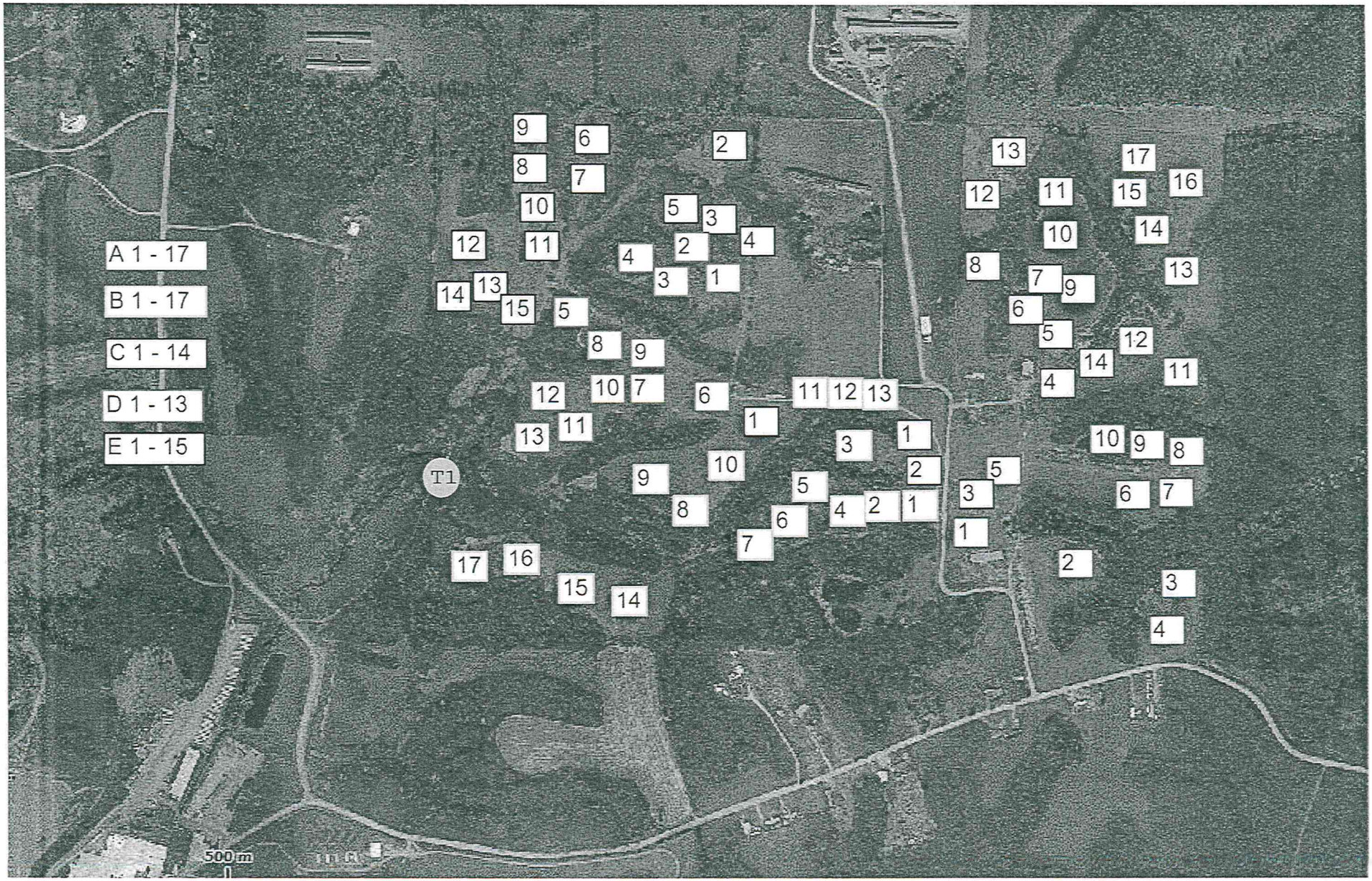
Irrigation Heads or Nozzles	Ok?	Corrective Actions Needed
E9		
E10		
E11		
E12		
E13		
E14		
E15		

Monitoring Point for Runoff

Point ID	Ok?	Corrective Actions Needed
T1		
R1		
R2		
R3		
R4		
B1		
B2		
B3		
B4		

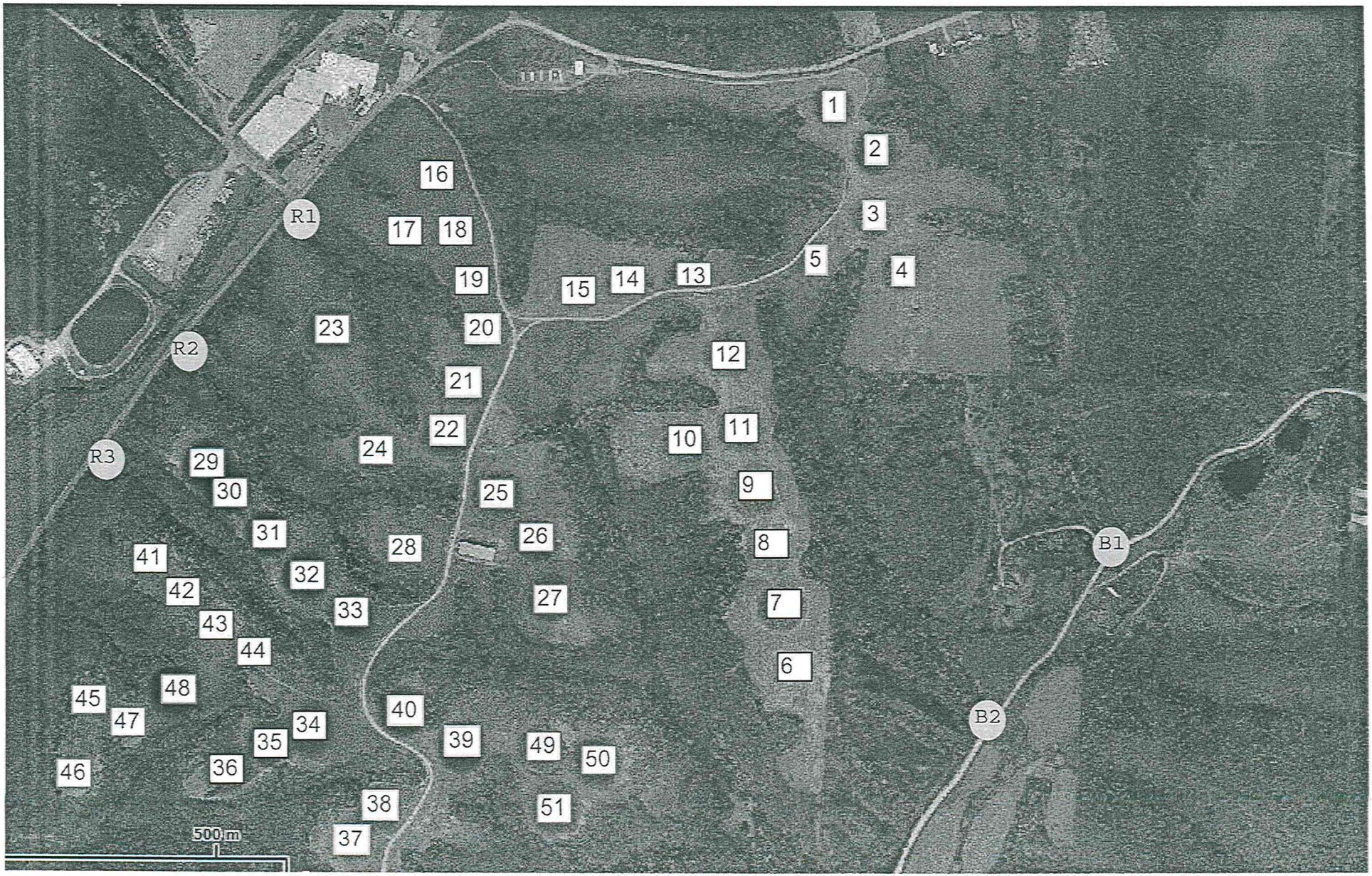
Notes:

Turkey Ridge (North)



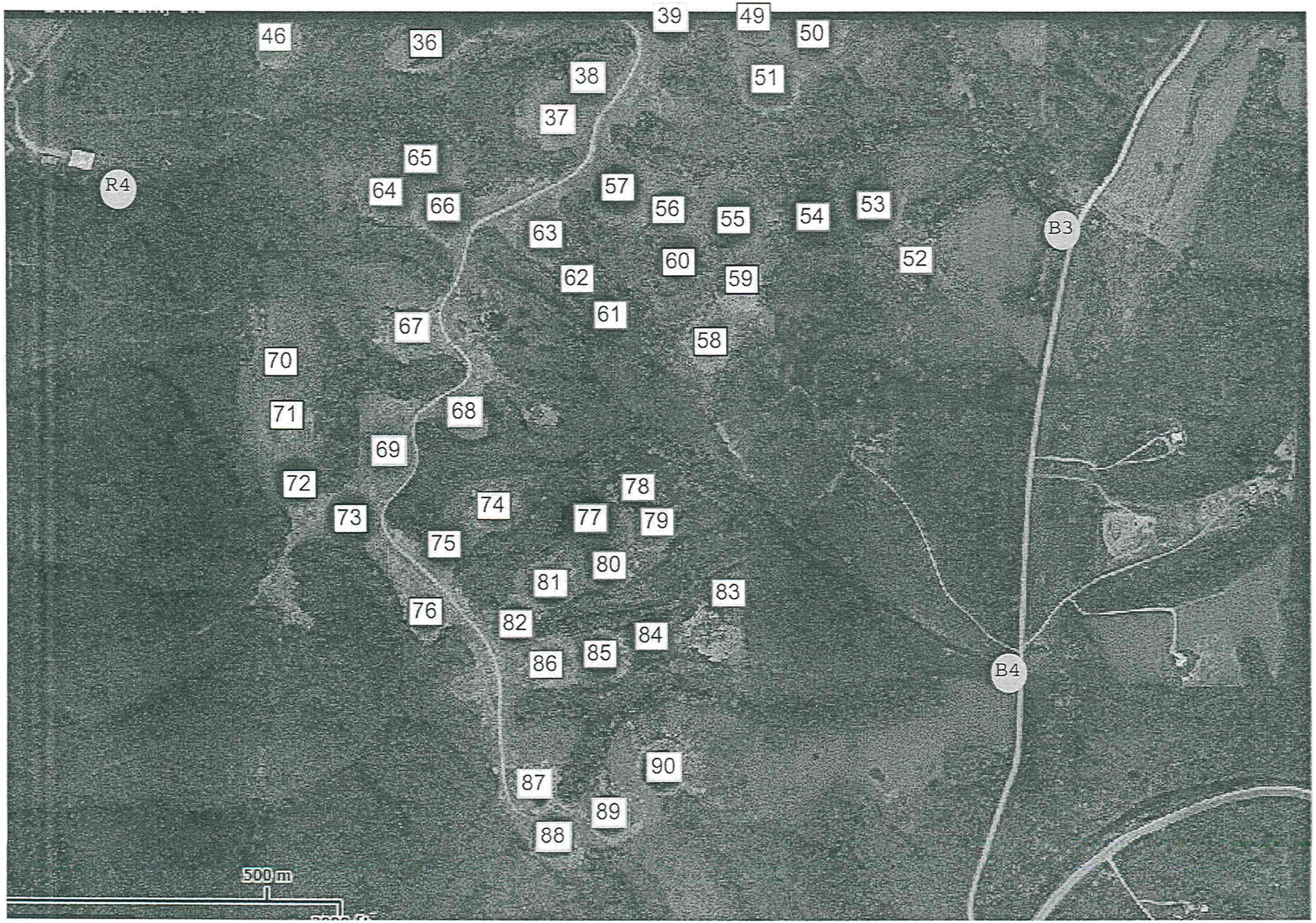
Allens, Inc. – Country – Spray Irrigation System – Irrigation Nozzle Designations – October 2013

Irrigation (Middle)



Allens, Inc. – Country – Spray Irrigation System – Irrigation Nozzle Designations – October 2013

Irrigation (South)



Allens, Inc. – Country – Spray Irrigation System – Irrigation Nozzle Designations – October 2013

Allens, Inc. - Country
Spray Irrigation System Hay Harvest Schedule

Parameters: Need 3 hay harvests per year to support 300 lb/acre nitrogen uptake.
The majority of the irrigation system needs to be in irrigation rotation to support production.
It can take up to 10-16 days (approx 2 weeks) for cover crop harvest depending on weather:
3-7 days to dry after irrigation
1 day to cut
5-7 days for cut hay to dry
1 day to bale
remove bales from field on the same day baling is done
166 irrigation heads total, about 1.3 acres each on average.
Approximately 13 heads used at a time for irrigation.

		Round 1 Hay Cut			Round 2 Hay Cut			Round 3 Hay Cut	
Irrigation Heads in Harvest	Number of Irrigation Heads	Start (stop irrigation to dry)	End (bales off, ready for irrigation)		Start (stop irrigation to dry)	End (bales off, ready for irrigation)		Start (stop irrigation to dry)	End (bales off, ready for irrigation)
A	17	1-Jan	15-Jan		23-Apr	7-May		13-Aug	27-Aug
B	17	8-Jan	22-Jan		30-Apr	14-May		20-Aug	3-Sep
C	14	15-Jan	29-Jan		7-May	21-May		27-Aug	10-Sep
D	13	22-Jan	5-Feb		14-May	28-May		3-Sep	17-Sep
E	15	29-Jan	12-Feb		21-May	4-Jun		10-Sep	24-Sep
1-5	5	5-Feb	19-Feb		28-May	11-Jun		17-Sep	1-Oct
6-12	7	12-Feb	26-Feb		4-Jun	18-Jun		24-Sep	8-Oct
13-22	10	19-Feb	5-Mar		11-Jun	25-Jun		1-Oct	15-Oct
23-33	11	26-Feb	12-Mar		18-Jun	2-Jul		8-Oct	22-Oct
34-40	7	5-Mar	19-Mar		25-Jun	9-Jul		15-Oct	29-Oct
41-48	8	12-Mar	26-Mar		2-Jul	16-Jul		22-Oct	5-Nov
49-54	6	19-Mar	2-Apr		9-Jul	23-Jul		29-Oct	12-Nov
55-66	12	26-Mar	9-Apr		16-Jul	30-Jul		5-Nov	19-Nov
67-73	7	2-Apr	16-Apr		23-Jul	6-Aug		12-Nov	26-Nov
74-82	9	9-Apr	23-Apr		30-Jul	13-Aug		19-Nov	3-Dec
83-90	8	16-Apr	30-Apr		6-Aug	20-Aug		26-Nov	10-Dec
Total	166								
Average	10								

ATTACHMENT 4

Allens, Inc. – Country Plant **Daily Irrigation Field Record**

Date: 8-7-13
Pond Level: _____ steps (2 ¼ steps minimum)
Forecast: ☐ > 50% chance ☐ > 1 inch
☒ ≤ 50% chance ☒ ≤ 1 inch
Hour Meter: 2473.59

SS City Water Meter: 1706.42
2 Ton Water Main: 294008
2 Ton Water Bypass: 541207
Start Totalizer: 99294038
Stop Totalizer: _____

Start	Stop	Rain	1-5	6-11	12-15	16-24	25-30	31-36	37-42	43-48	49-54	55-60	61-66	67-72	73-78	79-84	85-90	A	B	C	D	E
4:00 am	5:00 am							X	X	X												
5:00 am	6:00 am										X	X										
6:00 am	7:00 am												X	X	X							
7:00 am	8:00 am																			X		
8:00 am	9:00 am		X	X	X																	
9:00 am	10:00 am					X	X															
10:00 am	11:00 am							/														
11:00 am	12:00 n																					
12:00 n	1:00 pm							X	X	X												
1:00 pm	2:00 pm										X	X										
2:00 pm	3:00 pm												X	X	X							
3:00 pm	4:00 pm		X	X	X																	
4:00 pm	5:00 pm					X	X															
5:00 pm	6:00 pm							X	X	X												
6:00 pm	7:00 pm										X	X										
7:00 pm	8:00 pm												X	X	X							
8:00 pm	9:00 pm		X	X	X																	
9:00 pm	10:00 pm					X	X															
10:00 pm	11:00 pm							X	X	X												
11:00 pm	12:00 m										X	X										
12:00 m	1:00 am												X	X	X							
1:00 am	2:00 am		X	X	X																	
2:00 am	3:00 am					X	X															
3:00 am	4:00 am	X																				

Maintenance Record: _____

Comments: _____

Operator 1st shift James Allens Operator 2nd shift Blake Sumpter Operator 3rd shift Ron Mask

Allens, Inc. – Country Plant

Daily Irrigation Field Record

Date: 8-8-13

Pond Level: _____ steps (2 ¼ steps minimum)

Forecast: ☐ > 50% chance ☐ > 1 inch

☒ ≤ 50% chance ☒ ≤ 1 inch

Hour Meter: _____

SS City Water Meter: 1708.42

2 Ton Water Main: 294204

2 Ton Water Bypass: 541636

Start Totalizer: _____

Stop Totalizer: _____

Start	Stop	Rain	1-5	6-11	12-15	16-24	25-30	31-36	37-42	43-48	49-54	55-60	61-66	67-72	73-78	79-84	85-90	A	B	C	D	E
4:00 am	5:00 am	X																				
5:00 am	6:00 am	X																				
6:00 am	7:00 am	X																				
7:00 am	8:00 am	X																				
8:00 am	9:00 am	X																				
9:00 am	10:00 am	X																				
10:00 am	11:00 am	X																				
11:00 am	12:00 n																					
12:00 n	1:00 pm																					
1:00 pm	2:00 pm																					
2:00 pm	3:00 pm																					
3:00 pm	4:00 pm					X	X															
4:00 pm	5:00 pm							X	X	X												
5:00 pm	6:00 pm										X	X	X									
6:00 pm	7:00 pm													X	X	X						
7:00 pm	8:00 pm		X	X	X																	
8:00 pm	9:00 pm					X	X															
9:00 pm	10:00 pm							X	X	X												
10:00 pm	11:00 pm										X	X	X									
11:00 pm	12:00 m													X	X	X						
12:00 m	1:00 am		X	X	X																	
1:00 am	2:00 am					X	X															
2:00 am	3:00 am							X	X	X	X	-										
3:00 am	4:00 am										X	X	X									

Maintenance Record: _____

Comments: _____

Operator 1st shift James Adams Operator 2nd shift Bobby Sumpter Operator 3rd shift Ronald Mouse

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Record of Climatological Observations

These data are quality controlled and may not be identical to the original observations.

National Climatic Data Cent
Federal Buildi
151 Patton Aven
Asheville, North Carolina 288
www.ncdc.noaa.g

Station: **SILOAM SPRINGS 1.8 N, AR US** GHCND:US1ARBT00

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown Elev: 1106 ft. Lat: 36.205° N Lon: 94.546°

Preliminary	Year	Month	Day	Temperature (°F)			Precipitation(see **)					Evaporation		Soil Temperature (°F)					
				24 hrs. ending at observation time		at Observation	24 Hour Amounts ending at observation time				At Obs Time			4 in depth			8 in depth		
				Max.	Min.		Rain, melted snow, etc. (in)	Flag	Snow, ice pellets, hail (in)	Flag	Snow, ice pellets, hail, ice on ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
	2013	8	1				0.00		0.0										
	2013	8	2				0.00		0.0										
	2013	8	3				0.76												
	2013	8	4				0.01												
	2013	8	5				0.20												
	2013	8	6				0.00		0.0										
	2013	8	7				0.00		0.0										
	2013	8	8				3.98												
	2013	8	9				0.33												
	2013	8	10				0.07												
	2013	8	11				0.00		0.0										
	2013	8	12				0.00		0.0										
	2013	8	13				0.63												
	2013	8	14				0.19												
	2013	8	15				0.00		0.0										
	2013	8	16				0.00		0.0										
	2013	8	17				0.00		0.0										
	2013	8	18				0.00		0.0										
	2013	8	19				0.00		0.0										
	2013	8	20				0.00		0.0										
	2013	8	21				0.00		0.0										
	2013	8	22				0.00		0.0										
	2013	8	23				0.00		0.0										
	2013	8	24				0.00		0.0										
	2013	8	25				0.00		0.0										
	2013	8	26				0.00		0.0										
	2013	8	27				0.00		0.0										
	2013	8	28				0.00		0.0										
	2013	8	29				0.00		0.0										
	2013	8	30				0.00		0.0										
	2013	8	31				0.00		0.0										
			Summary				6.17		0.0										

The '*' flags in Preliminary indicate the data have not completed processing and qualitycontrol and may not be identical to the original observation
Empty, or blank, cells indicate that a data observation was not reported.
*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown
"s" This data value failed one of NCDC's quality control tests.
"T" values in the Precipitation category above indicate a TRACE value was recorded.
"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.
Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Record of Climatological Observations

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National Climatic Data Cente
Federal Buildin
151 Patton Avenu
Asheville, North Carolina 2880
www.ncdc.noaa.gc

Station: **FAYETTEVILLE SPRINGDALE NW AR REGL AIRPORT, AR US** GHCND:USW0005392

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown Elev: 1286 ft. Lat: 36.283° N Lon: 94.300° V

				Temperature (°F)			Precipitation(see **)					Evaporation		Soil Temperature (°F)					
				24 hrs. ending at observation time		at Observation	24 Hour Amounts ending at observation time				At Obs Time			4 in depth			8 in depth		
Preliminary	Year	Month	Day	Max.	Min.		Rain, melted snow, etc. (in)	Flag	Snow, ice pellets, hail (in)	Flag	Snow, ice pellets, hail, ice on ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
	2013	8	1	89	65		0.00		0.0		0								
	2013	8	2	86	70		T		0.0		0								
	2013	8	3	85	67		1.39		0.0		0								
	2013	8	4	77	72		0.19		0.0		0								
	2013	8	5	91	72		0.05		0.0		0								
	2013	8	6	91	73		T		0.0		0								
	2013	8	7	92	74		T		0.0		0								
	2013	8	8	82	67		2.67		0.0		0								
	2013	8	9	85	70		0.08		0.0		0								
	2013	8	10	84	69		T		0.0		0								
	2013	8	11	87	70		0.00		0.0		0								
	2013	8	12	83	69		0.58		0.0		0								
	2013	8	13	77	66		1.67		0.0		0								
	2013	8	14	78	60		0.00		0.0		0								
	2013	8	15	78	56		0.00		0.0		0								
	2013	8	16	77	60		0.00		0.0		0								
	2013	8	17	79	55		0.00		0.0		0								
	2013	8	18	82	59		0.00		0.0		0								
	2013	8	19	85	61		0.00		0.0		0								
	2013	8	20	85	62		0.00		0.0		0								
	2013	8	21	89	62		0.00		0.0		0								
	2013	8	22	90	65		0.00		0.0		0								
	2013	8	23	91	65		0.00		0.0		0								
	2013	8	24	90	68		0.00		0.0		0								
	2013	8	25	91	68		T		0.0		0								
	2013	8	26	91	68		0.00		0.0		0								
	2013	8	27	89	63		0.00		0.0		0								
	2013	8	28	91	67		0.00		0.0		0								
	2013	8	29	94	68		0.00		0.0		0								
	2013	8	30	94	70		0.00		0.0		0								
	2013	8	31	96	71		0.00		0.0		0								
			Summary	86.4	66.2		6.63		0.0										

The '*' flags in Preliminary indicate the data have not completed processing and qualitycontrol and may not be identical to the original observation
Empty, or blank, cells indicate that a data observation was not reported.
*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown
"s" This data value failed one of NCDC's quality control tests.
"T" values in the Precipitation category above indicate a TRACE value was recorded.
"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.
Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

ATTACHMENT 5

West, Alison

From: Laura Mushinski <lmushinski@allens.com>
Sent: Tuesday, October 22, 2013 6:36 PM
To: West, Alison
Cc: Tim Browers; James Phillips; Myles Browers
Subject: Allens, Inc. - Siloam Springs - Initial Response to Today's Inspection
Attachments: Allens - Country Plant - Sample Schedule

Ms. West – I have been provided with a summary of the concerns and questions from your inspection today on the irrigation system from Tim Browers, Myles Browers, and Donald Whitlock and wanted to get some preliminary information back to you as soon as possible. First, we will not be operating any part of the irrigation system until another comprehensive evaluation is conducted by Allens staff tomorrow. Depending upon how things look at that point, we will make a determination of what sections of the irrigation field, if any, can be operated after that evaluation.

Tim Browers (Plant Manager at the Country Plant) and James Phillips (Vice President) received a call from a concerned neighbor(s) on October 17th and as a result of that, the leaking valve for Heads 52, 53, and 54 was identified as a maintenance issue and replaced. Much of this past weekend was spent addressing maintenance concerns based on a check of the fields conducted by Tim Browers this weekend.

The sampler from ESC that you saw this morning was doing routine sampling on the streams and springs at my request. This was set up with the lab back in February 2013. Although the permit no longer requires stream, spring, and groundwater sampling, Allens has chosen to continue this sampling to monitor the surrounding area. I have attached the e-mail that set up this routine sampling for 2013. I did not conclude (apparently incorrectly given the additional information from today) that the October 17th neighbors' calls were a reason to conduct stream sampling; it just so happens that it was set up for the month of October and today is the day they came.

I understand Donald Whitlock has provided the handwritten logs for the month of October to-date. I have the scanned logs from the months of July, August, and September to provide the requested 4 months of irrigation logs. I am sending them in separate emails since they are 10-14 megabytes each. If they don't come through, please let me know. Following is a monthly summary taken from those logs. We are dealing with an outlier on PAN from early this year which has resulted in a higher annual average PAN.

ANNUAL REPORT - 2013

Volume & Mass Applications - Spray Irrigation

					Annual Average Analytical Data*
				% solids	mg/l
216.6	acres			0.421	23.222
					Loading (lb)
	Wastewater* (gallons)	Wastewater (million gallons)	Wastewater (wet tons)	Wastewater (dry tons)	Plant Available Nitrogen
January	16,860,000	16.860	70306	296	3265
February	17,447,000	17.447	72754	306	3379
March	22,888,000	22.888	95443	402	4433
April	22,948,000	22.948	95693	403	4444
May	32,070,585	32.071	133734	563	6211

June	35,965,008	35.965	149974	631	6965
July	41,757,756	41.758	174130	733	8087
August	49,480,015	49.480	206332	869	9583
September	43,577,747	43.578	181719	765	8440
October	-	-	0	0	0
November	-	-	0	0	0
December	-	-	0	0	0
Total	**282,994,111**	**282.994**			**54,808**
Pounds/Acre/Year					**253.04**

Based on the discussion with those who were with you on the inspection, we plan to do the following as corrective actions:

1) Take the areas around heads 52, 53, and 54 out of service to level, disc, and reseed cover crop. Wait until the cover crop is reestablished prior to using this for irrigation.
2) Cap head 25 until we are into warm/dry weather likely in the late spring/early summer.
3) Inspect each irrigation head and valve; replace or fix any with problems.
4) Provide a mule/4-wheeler for accessing the irrigation field to conduct a complete inspection of every irrigation area (each irrigation head, and each valve) daily to more promptly identify maintenance concerns not visible from access roads. Include inspection points at the end of the ravines by Butler Road.

In addition to these near-term plans, the facility has also identified some significant water conservation projects that will be implemented in the next capital project period.

Please let me know if we have missed any area of concern that you are seeking a response too. And let me know whether I should put this information into a letter to submit to you or wait for additional questions from you. Thank you.

Laura J. Mushinski, CHMM
Director – Environmental Quality
Allens, Inc.
PO Box 250, Siloam Springs, AR 72761
Cell: (479) 228-0102 FAX: (479) 524-9591

ANNUAL REPORT - 2012

ALLENS, INC. - COUNTRY PLANT, SILOAM SPRINGS, ARKANSAS

Volume & Mass Applications - Spray Irrigation

			Annual Average Analytical Data*									
			mg/l									
216.6	acres		24.160	16.100	8.299	0.388	1.515	0.000	0.000	0.000	0.000	0.000
			Loading (lb)									
	Wastewater* (gallons)	Wastewater (million gallons)	Plant Available Nitrogen	Total Phosphorus	Magnesium	Copper	Zinc	Arsenic	Selenium	Cadmium	Mercury	Lead
January	14,544,000	14.544	2931	1953	1007	47	184	0	0	0	0	0
February	24,384,000	24.384	4913	3274	1688	79	308	0	0	0	0	0
March	26,144,000	26.144	5268	3510	1810	84	330	0	0	0	0	0
April	23,888,000	23.888	4813	3208	1653	77	302	0	0	0	0	0
May	33,873,000	33.873	6825	4548	2345	109	428	0	0	0	0	0
June	23,230,000	23.230	4681	3119	1608	75	294	0	0	0	0	0
July	28,060,000	28.060	5654	3768	1942	91	355	0	0	0	0	0
August	32,507,000	32.507	6550	4365	2250	105	411	0	0	0	0	0
September	32,213,000	32.213	6491	4325	2230	104	407	0	0	0	0	0
October	35,109,000	35.109	7074	4714	2430	113	444	0	0	0	0	0
November	28,422,000	28.422	5727	3816	1967	92	359	0	0	0	0	0
December	15,119,000	15.119	3046	2030	1046	49	191	0	0	0	0	0
Pounds/Acre/Year	**317,493,000**	**317.493**	**63,973**	**42,631**	**21,976**	**1,026**	**4,012**	-	-	-	-	-
			295	**197**	**101**	**5**	**19**	-	-	-	-	-

*Results of zero for some metals meant that sample results were below detection.

ANNUAL REPORT - 2011

ALLENS, INC. - COUNTRY PLANT, SILOAM SPRINGS, ARKANSAS

Volume & Mass Applications - Spray Irrigation

			Annual Average Analytical Data*									
			mg/l									
216.6	acres		21.604	18.109	11.109	0.000	0.088	0.000	0.000	0.000	0.000	0.000
												Loading (lb)
	Wastewater* (gallons)	Wastewater (million gallons)	Plant Available Nitrogen	Phosphorus	Magnesium	Copper	Zinc	Arsenic	Selenium	Cadmium	Mercury	Lead
January	8,641,000	8.641	1557	1305	801	0	6	0	0	0	0	0
February	8,546,000	8.546	1540	1291	792	0	6	0	0	0	0	0
March	10,701,000	10.701	1928	1616	991	0	8	0	0	0	0	0
April	11,695,000	11.695	2107	1766	1084	0	9	0	0	0	0	0
May	19,675,000	19.675	3545	2972	1823	0	15	0	0	0	0	0
June	16,012,000	16.012	2885	2418	1483	0	12	0	0	0	0	0
July	15,624,000	15.624	2815	2360	1448	0	12	0	0	0	0	0
August	17,263,000	17.263	3110	2607	1599	0	13	0	0	0	0	0
September	26,010,000	26.010	4686	3928	2410	0	19	0	0	0	0	0
October	27,948,000	27.948	5035	4221	2589	0	21	0	0	0	0	0
November	24,250,000	24.250	4369	3662	2247	0	18	0	0	0	0	0
December	20,320,000	20.320	3661	3069	1883	0	15	0	0	0	0	0
Total	**206,685,000**	**206.685**	**37,239**	**31,216**	**19,149**	-	**152**	-	-	-	-	-
Pounds/Acre/Year			**172**	**144**	**88**	-	**1**	-	-	-	-	-

*Results of zero for some metals meant that sample results were below detection.

ANNUAL REPORT - 2010

ALLENS, INC. - COUNTRY PLANT, SILOAM SPRINGS, ARKANSAS

Volume & Mass Applications - Spray Irrigation

216.6 acres

			Annual Average Analytical Data (mg/l)								
			22.073	12.144	0.040	0.112	0.000	0.020	0.000	0.000	0.000
			Loading (lb)								
	Wastewater* (gallons)	Wastewater (million gallons)	Plant Available Nitrogen	Magnesium	Copper	Zinc	Arsenic	Selenium	Cadmium	Mercury	Lead
January	19,381,015	19.381	3568	1963	6	18	0	3	0	0	0
February	17,769,999	17.770	3271	1800	6	17	0	3	0	0	0
March	21,473,046	21.473	3953	2175	7	20	0	4	0	0	0
April	18,328,103	18.328	3374	1856	6	17	0	3	0	0	0
May	11,905,000	11.905	2192	1206	4	11	0	2	0	0	0
June	18,964,000	18.964	3491	1921	6	18	0	3	0	0	0
July	23,555,000	23.555	4336	2386	8	22	0	4	0	0	0
August	27,733,000	27.733	5105	2809	9	26	0	5	0	0	0
September	27,347,000	27.347	5034	2770	9	26	0	5	0	0	0
October	29,577,000	29.577	5445	2996	10	28	0	5	0	0	0
November	28,263,000	28.263	5203	2862	9	26	0	5	0	0	0
December	14,039,000	14.039	2584	1422	5	13	0	2	0	0	0
Total	**258,335,163**	**258.335**	**47,558**	**26,164**	**85**	**242**	**-**	**44**	**-**	**-**	**-**
Pounds/Acre/Year			**220**	**121**	**0.39**	**1.12**	**-**	**0.20**	**-**	**-**	**-**

ANNUAL REPORT - 2009

ALLENS, INC. - COUNTRY PLANT, SILOAM SPRINGS, ARKANSAS

Volume & Mass Applications - Spray Irrigation

216.6	acres		Annual Average Analytical Data (mg/l)								
			19.074	13.540	0.015	0.132	0.000	0.015	0.000	0.000	0.000
			Loading (lb)								
	Wastewater* (gallons)	Wastewater (million gallons)	Plant Available Nitrogen	Magnesium	Copper	Zinc	Arsenic	Selenium	Cadmium	Mercury	Lead
January	15,709,000	15.709	2499	1774	2	17	0	2	0	0	0
February	21,744,000	21.744	3459	2455	3	24	0	3	0	0	0
March	20,976,000	20.976	3337	2369	3	23	0	3	0	0	0
April	28,598,000	28.598	4549	3229	4	31	0	4	0	0	0
May	27,936,000	27.936	4444	3155	4	31	0	4	0	0	0
June	29,389,000	29.389	4675	3319	4	32	0	4	0	0	0
July	21,869,100	21.869	3479	2469	3	24	0	3	0	0	0
August	29,427,300	29.427	4681	3323	4	32	0	4	0	0	0
September	21,786,300	21.786	3466	2460	3	24	0	3	0	0	0
October	23,728,500	23.729	3775	2679	3	26	0	3	0	0	0
November	19,604,700	19.605	3119	2214	2	22	0	2	0	0	0
December	13,131,900	13.132	2089	1483	2	14	0	2	0	0	0
Total	**273,899,800**	**273.900**	**43,572**	**30,929**	**35**	**301**	**-**	**35**	**-**	**-**	**-**
Pounds/Acre/Year			**201**	**143**	**0.16**	**1.39**	**-**	**0.16**	**-**	**-**	**-**

* Some days are estimated based on 90% of total water usage due to temporary irrigation pumps by-passing wastewater flow meter. Assumed 10% losses due to water in cans and evaporation.

TABLE 1

Nozzle Sizes for Heads 1-90 As OF 10/5/07

Heads	Nozzle Size	Heads	Nozzle Size	Heads	Nozzle Size
1	1.0	31	0.65	61	0.80
2	0.65	32	1.0	62	0.70
3	0.80	33	0.80	63	0.90
4	0.80	34	0.65	64	0.80
5	0.90	35	1.0	65	0.80
6	0.60	36	0.80	66	0.80
7	0.70	37	0.80	67	0.90
8	0.60	38	0.80	68	0.80
9	0.80	39	0.80	69	0.80
10	0.80	40	0.80	70	0.90
11	0.80	41	0.60	71	0.65
12	0.80	42	0.60	72	0.80
13	0.60	43	0.60	73	0.80
14	0.80	44	0.60	74	1.0
15	0.65	45	0.80	75	0.65
16	Capped	46	0.80	76	0.70
17	Capped	47	0.80	77	0.80
18	Capped	48	0.80	78	0.80
19	Capped	49	0.90	79	0.80
20	0.60	50	0.80	80	0.80
21	0.90	51	0.90	81	0.80
22	0.80	52	0.90	82	0.80
23	0.80	53	0.90	83	0.80
24	0.80	54	0.80	84	0.60
25	1.0	55	0.90	85	0.80
26	0.80	56	0.80	86	0.80
27	0.80	57	0.80	87	1.0
28	1.0	58	0.80	88	0.80
29	0.60	59	1.0	89	0.80
30	1.0	60	0.65	90	0.80

HEADS THAT HAVE THE WRONG NOZZLE

HEADS THAT ARE CAPPED OFF

Bolenbaugh, Jason

From: West, Alison
Sent: Friday, November 22, 2013 9:28 AM
To: Bolenbaugh, Jason
Subject: FW: E-mail Message from ALLENS INC TIM BROWERS
Attachments: 20131121123706.pdf

Jason,

For some reason, I didn't see this come through yesterday. I have asked for clarification about the units again. Do you want me to add this with the other attachment with the nozzles or replace the other one with this one?

Alison

-----Original Message-----
From: Tim Browers [mailto:tbrowers@allens.com]
Sent: Thursday, November 21, 2013 1:06 PM
To: West, Alison
Cc: Laura Mushinski
Subject: FW: E-mail Message from ALLENS INC TIM BROWERS

Mrs. West,
The attachment shows the nozzle size on heads 1-90. Note that a few do not currently have heads and are capped.

-----Original Message-----
From: CountryPlant@allens.com [mailto:CountryPlant@allens.com]
Sent: Thursday, November 21, 2013 12:37 PM
To: Tim Browers
Subject: E-mail Message from ALLENS INC TIM BROWERS

This is an E-mail message.
Please see the file attached.

Sent from : CountryPlant@allens.com
4795240144
Number of pages : 1
Date : Thu, 21 Nov 2013 12:37:06 -0600

Allens, Inc. – Country Irrigation System Inspection – Page 1 **Date:** _____

Instructions: This inspection must be conducted each day that irrigation occurs. "OK" means the following:
Irrigation Heads – Nozzle is rotating when in use. Ground is not saturated. Runoff is not occurring as evidenced by checking areas closest to ravines or drainage areas. The valves that control this set of irrigation heads are not leaking.
Monitoring Points – Based on visual inspection, wastewater runoff is not occurring.
If the inspection area is not "OK", indicate problem and corrective action needed.

Irrigation Heads or Nozzles	Ok?	Corrective Actions Needed
1		Capped
2		.90
3		Capped
4		.80
5		Capped
6		.65
7		.70
8		.50
9		Capped
10		Capped
11		Capped
12		.80
13		Capped
14		.80
15		.80
16		Capped
17		Capped
18		Capped
19		Capped
20		Capped
21		Capped
22		Capped
23		.60
24		.50
25		Capped
26		Capped
27		.51
28		1.0
29		.90
30		.90

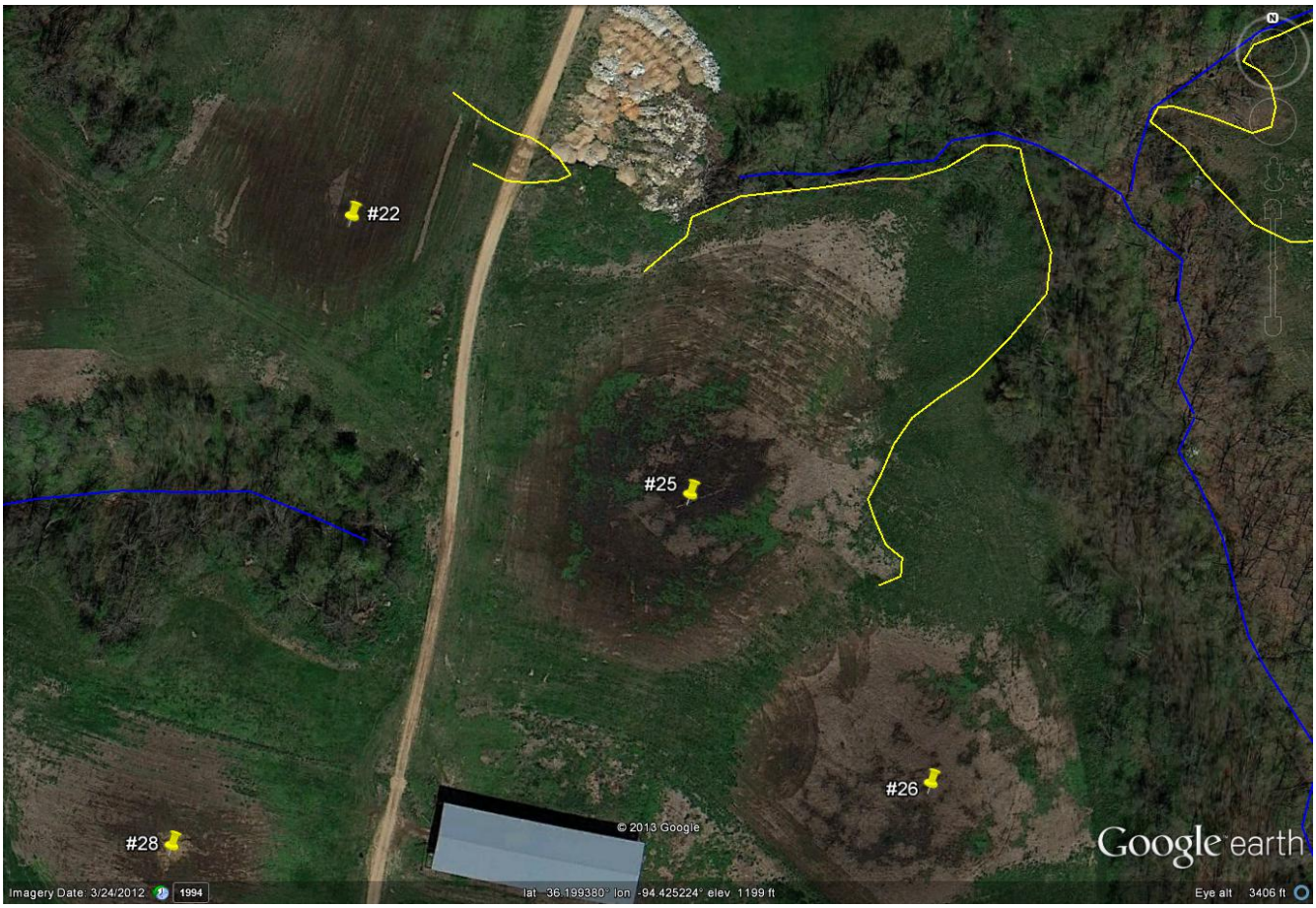
Irrigation Heads or Nozzles	Ok?	Corrective Actions Needed
31		.60
32		1.0
33		.65
34		.80
35		.80
36		.70
37		.80
38		.80
39		.80
40		.80
41		.80
42		.65
43		.80
44		Capped
45		.80
46		Capped
47		.80
48		.80
49		.80
50		.80
51		.80
52		.80
53		.80
54		.90
55		.80
56		.90
57		.90
58		.80
59		.90
60		.91

Irrigation Heads or Nozzles	Ok?	Corrective Actions Needed
61		.80
62		.80
63		.81
64		1.0
65		.80
66		.65
67		.50
68		.80
69		.80
70		.80
71		.80
72		.80
73		.80
74		Capped
75		.60
76		.60
77		.80
78		.80
79		.80
80		.60
81		.65
82		1.0
83		.80
84		Capped
85		.65
86		.60
87		.80
88		.80
89		.65
90		.80

Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet

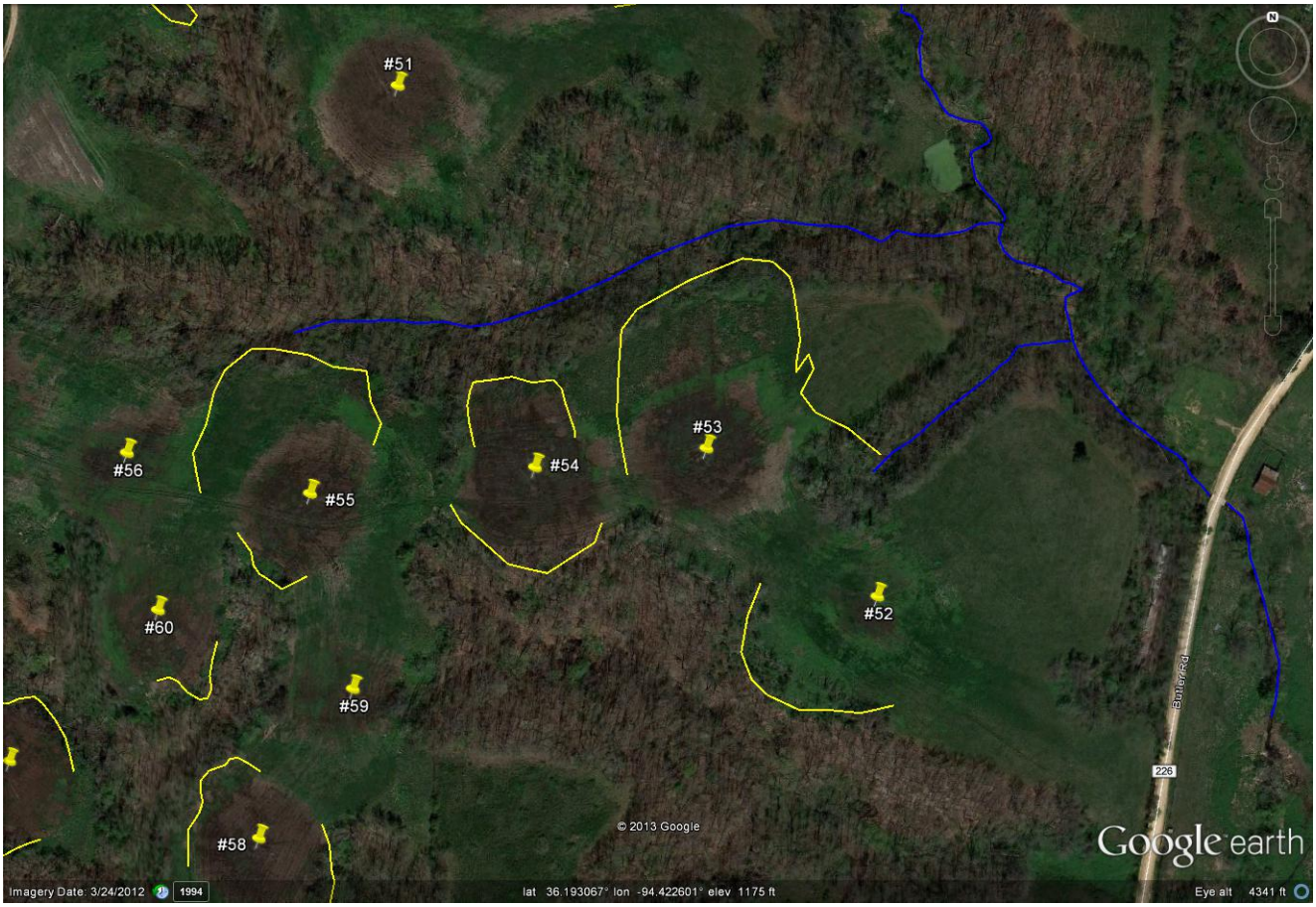
3/24/2012 Google Earth Image 1.
Allen Canning spray irrigation sites. The approximate location and identification number of each irrigation nozzle is indicated by the push pins. The plant waste water impoundment is in the upper left corner of the image while Butler Road (CR 226) is in the lower right corner of the image for reference. Surface water drainage is highlighted in blue. Likely surface runoff of land applied waste water and sludge at the time of the air photo is outlined in yellow.

Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet



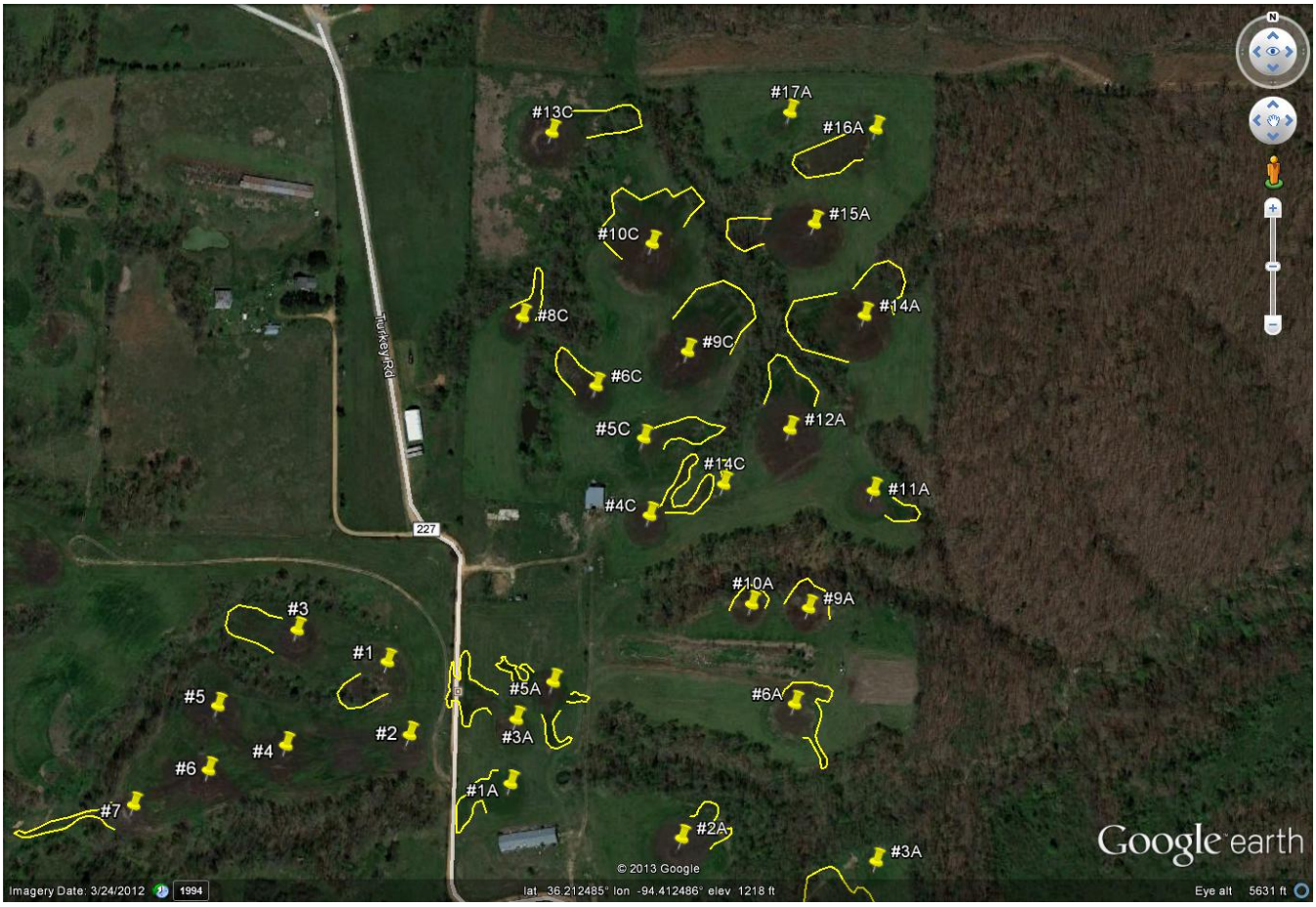
3/24/2012 Google Earth Image 2.
Spray Irrigation nozzle #25 located west of Butler Road. Surface water drainage is highlighted in blue. Likely surface runoff of land applied waste water and sludge at the time of the air photo is outlined in yellow.

Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet



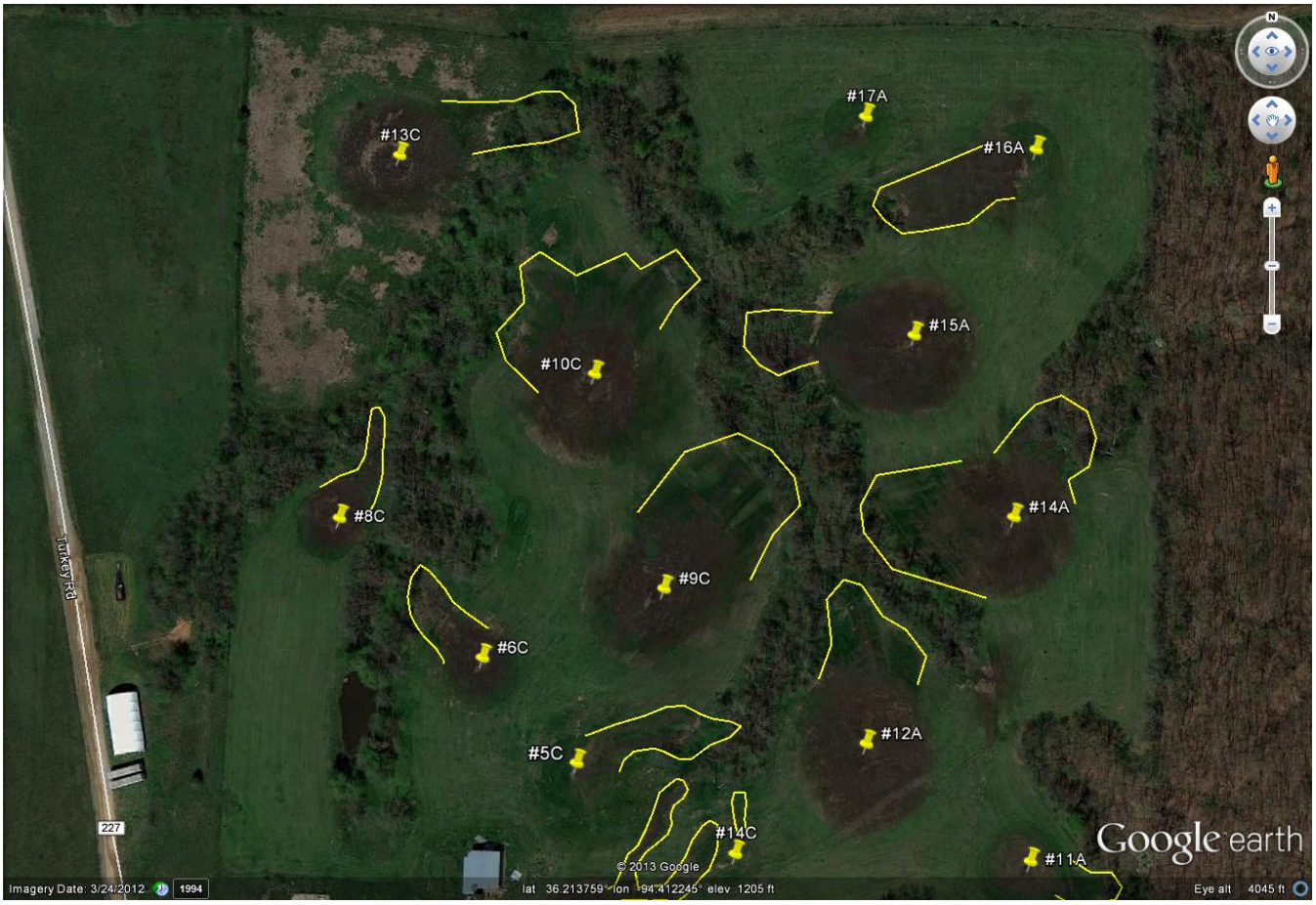
3/24/2012 Google Earth Image 3.
Spray Irrigation nozzle #53 located east of the Allen Canning Plant. Surface water drainage is highlighted in blue. Likely surface runoff of land applied waste water and sludge at the time of the air photo is outlined in yellow.

Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet



3/24/2012 Google Earth Image 4.
Northeast Irrigation Sites Overview (Turkey Ridge) located north of Logan Cave Road. The approximate location of irrigation heads and assigned identification numbers are indicated by push pins. Likely surface runoff of land applied waste water and sludge at the time of this photo is outlined in yellow.

Arkansas Department of Environmental Quality (ADEQ)
Official Photograph Sheet



3/24/2012 Google Earth Image 5.
Northern Turkey Ridge Irrigation Sites. The approximate location of irrigation heads and assigned identification numbers are indicated by push pins. Likely surface runoff of land applied waste water and sludge at the time of this photo is outlined in yellow.


Hay Barn Hollow Sample Site
Intermittent Stream
Intermittent Stream
Butler
Hancock
Sample Site #2
20
21
22
24
25
26
27
28
33
12
11
10
9
8
7
6
40
39
49
50
38
51
37
57
56
55
54
53
52
62
60
59
61
58
78
77
79
0
250
500
750
1,000
Feet
ALLEN CANNING
Sample Locations
Roads
Irrigation Heads
Irrigation Heads
Streams
Intermittent Stream
Perennial Stream
ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
N
1:3,600
MAP DISCLAIMER: This map is intended to represent the general locations of the features displayed. This map should be used for reference purposes only.

ALLEN CANNING

Pit

Hay Barn Hollow Sample Site

Sample Site #2

Intermittent Stream

Intermittent Stream

Butler

Hancock

20 12 21 22 11 10 24 25 9 26 8 28 27 7 33 6 40 39 49 50 38 51 37 57 56 55 54 53 52 60 59 62 61 58 78 77 79

0 250 500 750 1,000 Feet

Sample Locations

Roads

Irrigation Heads

Irrigation Heads

Streams

Intermittent Stream

Perennial Stream

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N

1:3,600

MAP DISCLAIMER: This map is intended to represent the general locations of the features displayed. This map should be used for reference purposes only.