

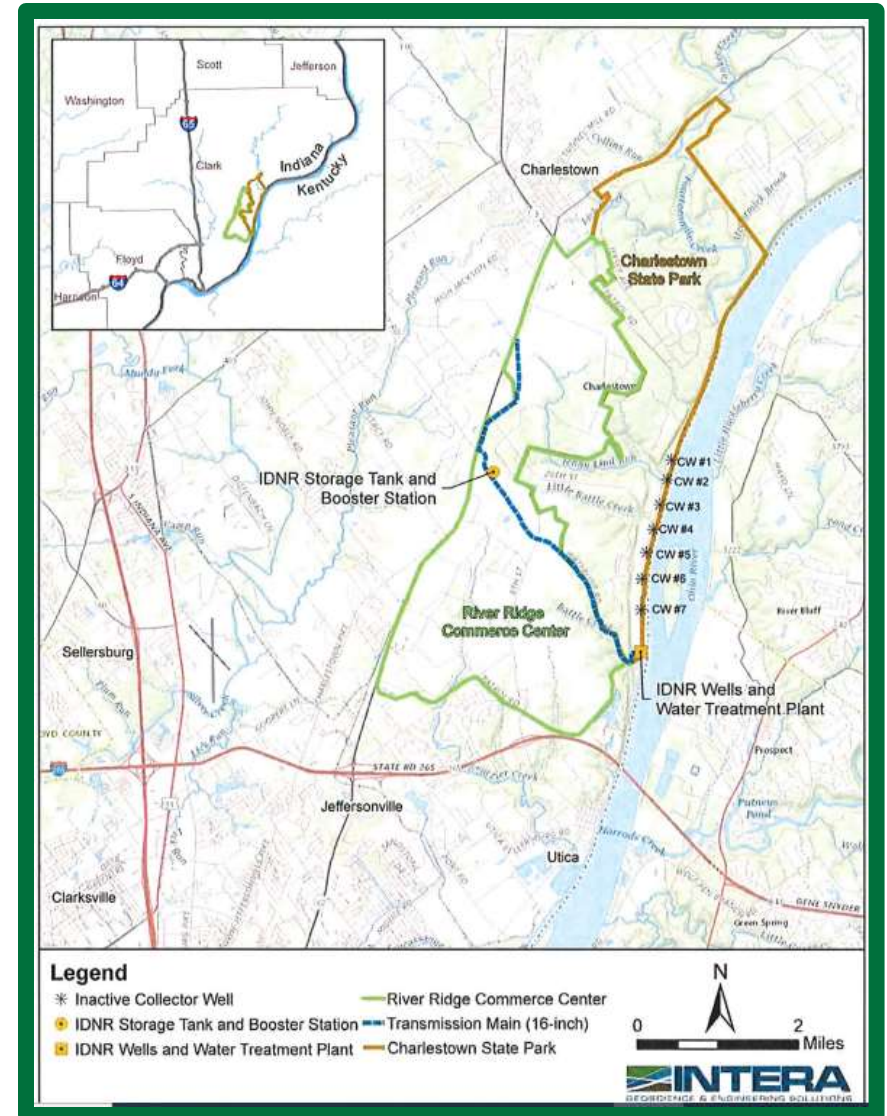
Regional Partnerships:

State of Indiana / DNR and
River Ridge Development Authority



Mark Basch
Water Rights & Use Section
Division of Water

Charlestown State Park and River Ridge Commerce Center

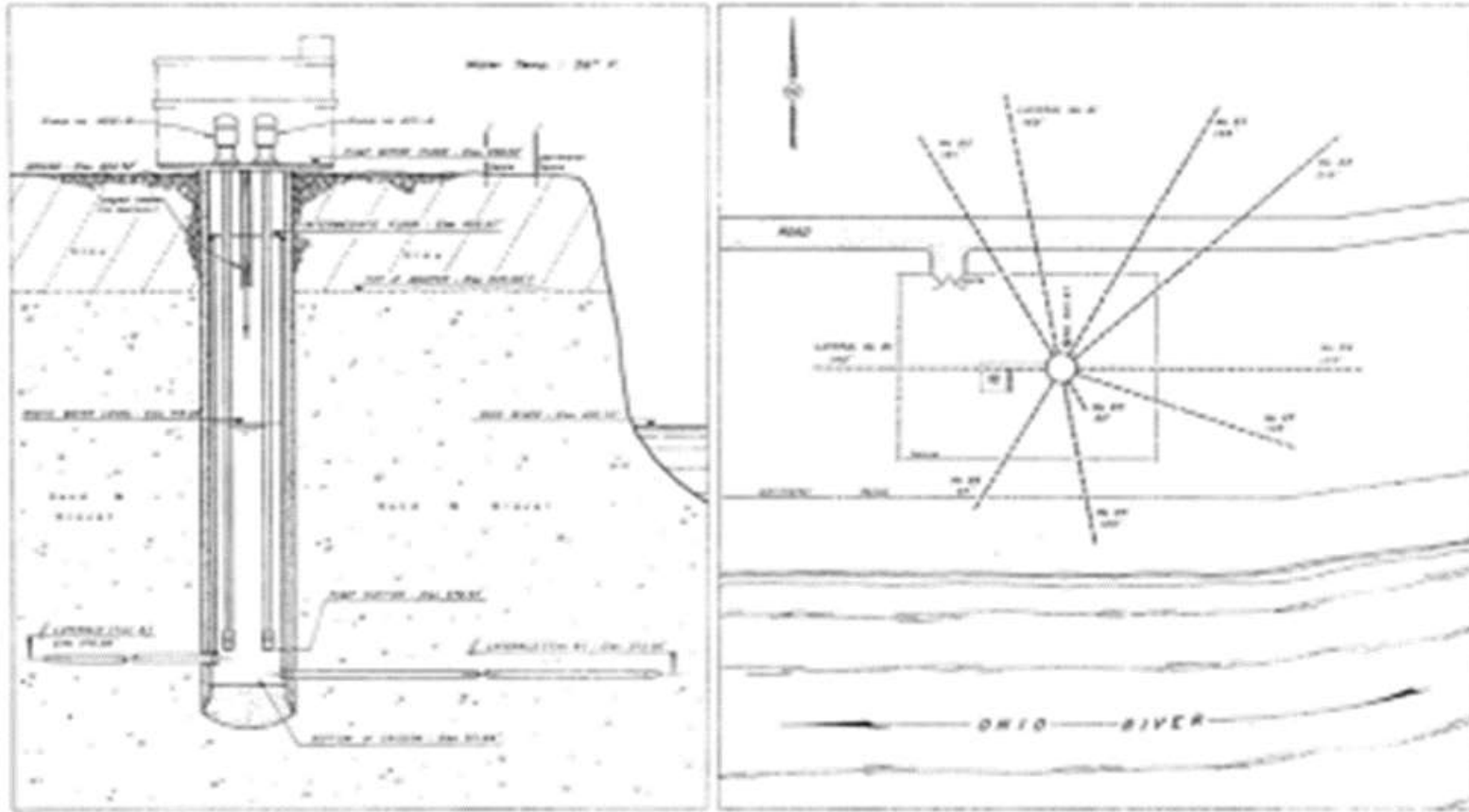


Indiana Ordinance Works: A Brief History

- Operations began in April, 1941
- 7 Horizontal Collector Wells
- Wells have 13 ft diameter concrete casings with depths ranging from 67 ft. to 93 ft
- Wells equipped with 2 pumps having 3,500 GPM capacity each
- Total pumping capacity of 49,000 GPM (70 MGD) for wellfield
- 58.3 BG pumped during April, 1941 thru April, 1945

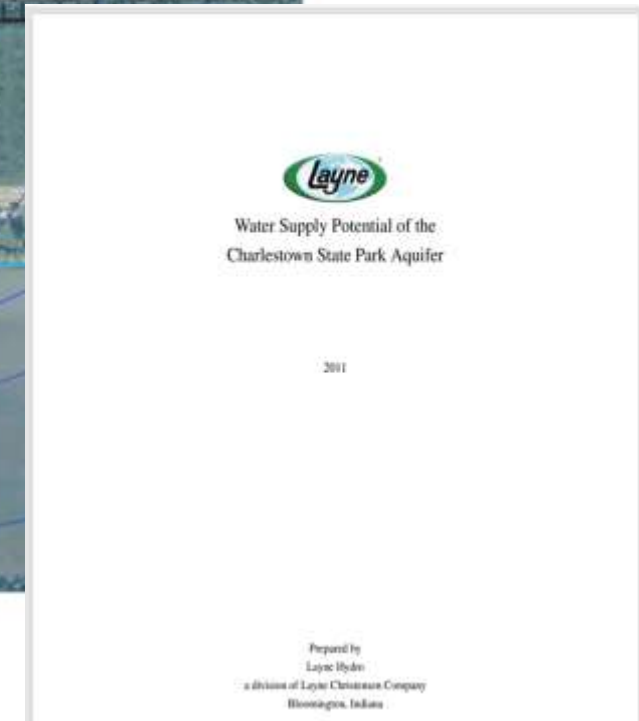
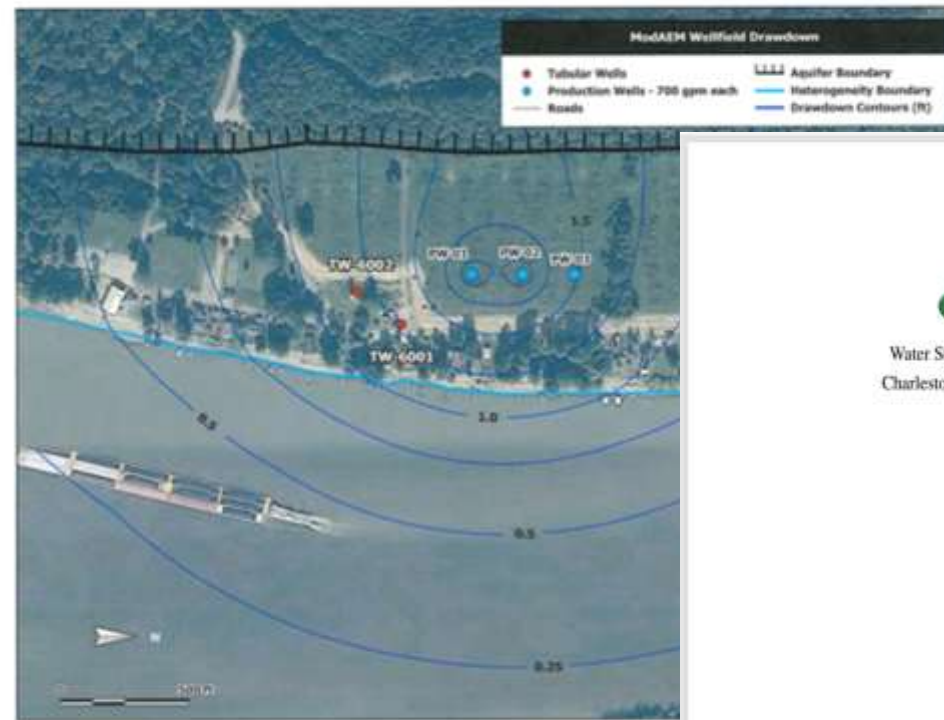


Radial Collector Well Construction



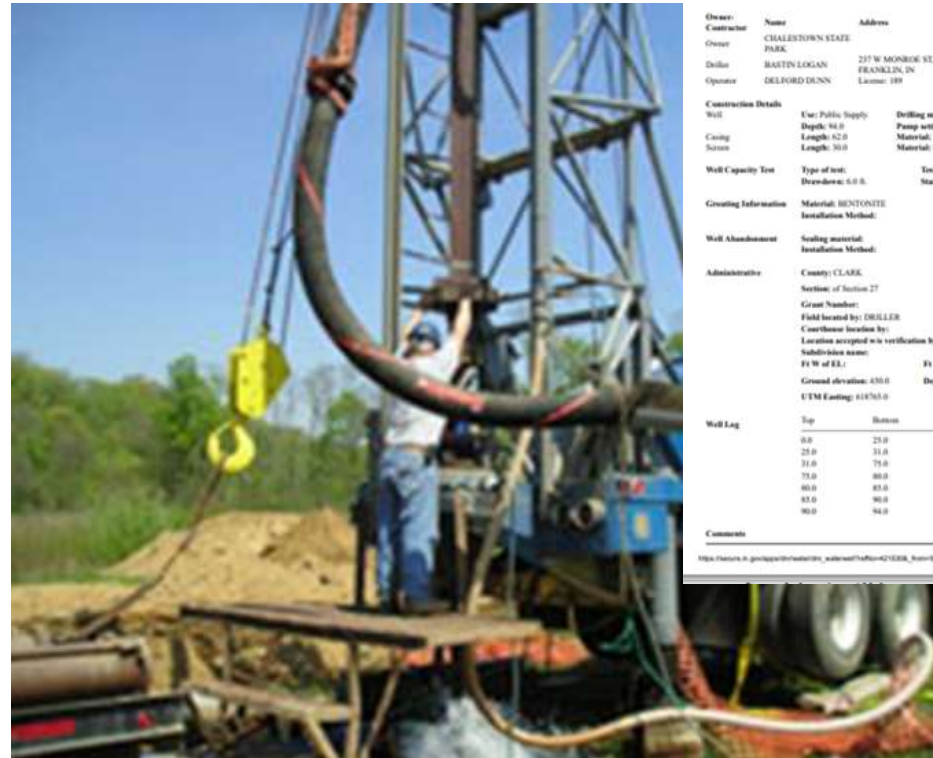
Water Supply Capability of Ohio River Outwash Aquifer

- 2011 study completed by Layne Hydro
- Ohio River Outwash Aquifer yield of 80 to 100 MGD (April, 2020 INTERA Inc. report)
- Existing well caissons in good condition but mechanical equipment must be replaced
- Additional wells necessary
- Ohio River provides somewhat “drought proof” water supply



Charlestown State Park Well Field Development

- Work completed in 2010 - 2011
- Installation of three (3) wells with 700 GPM capacity each (3.02 MGD)
- Water treatment plant capacity of 2 MGD with ability to increase to 4 MGD
- Registered SWWF Reg. No. 01029
- Funding Support from the Indiana Finance Authority (IFA)



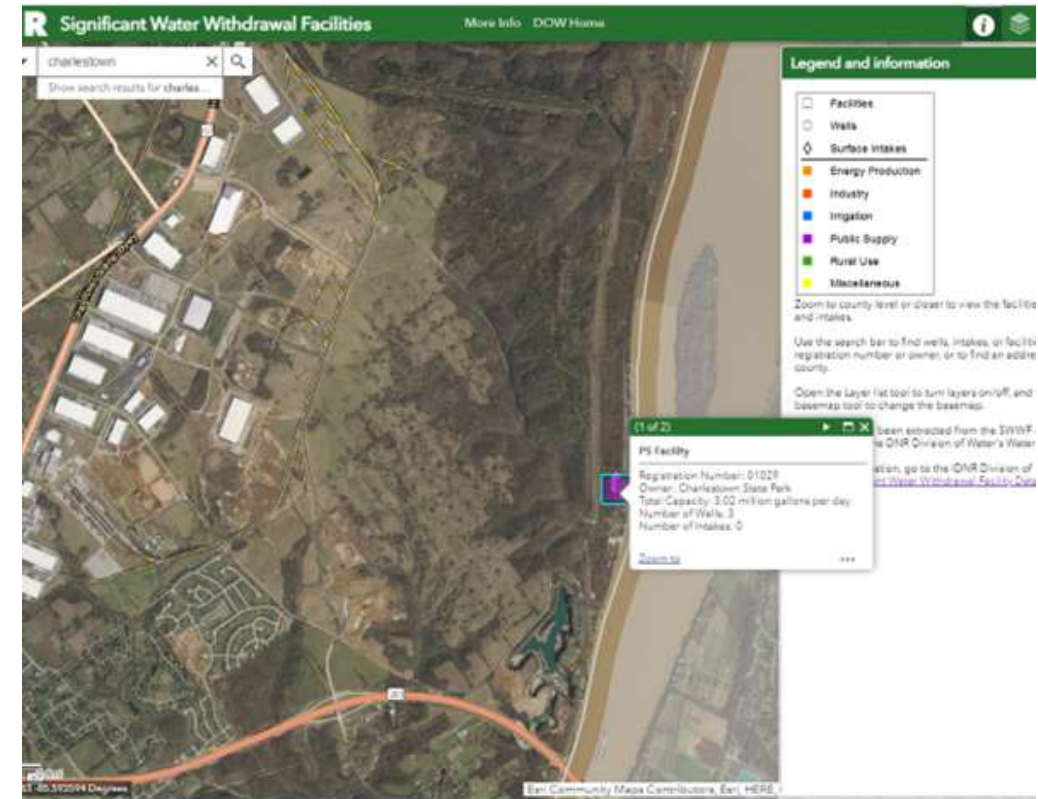
8/26/11 12:30 PM Indiana Department of Natural Resources
Record of Water Well
Indiana Department of Natural Resources

Reference Number	Drilling directions to well		Date completed
421530	100' W OF PATROL (COLLECTOR WELL) ROAD 0.200' N OF WELL #1, CHARLESTOWN STATE PARK - WELL #2 PROJECT 126F		Apr 13, 2010
Owner:	Name	Address	Telephone
Contractor	CHARLESTOWN STATE PARK		
Owner	237 W MONROE ST. PO. BOX 55, FRANKLIN, IN 46738		(317) 738-4377
Dollar	BASTIN LOGAN		
Operator	DELFORD DUNN		
Construction Details			
Well	Use: Public Supply	Drilling method: Reverse Rotary	Pump type:
Casing	Depth: 94.0	Pump setting depth:	Water quality:
Screen	Length: 52.0	Material: PVC	Diameter: 16.0
Well Capacity Test	Type of test:	Test rate: 2000.0 gpm for 24.0 hrs.	Stabil test rate: gpm for hrs.
	Deviation: 0.0 ft.	Static water level: 122.0	Riser Deviations: 0
Grouting Information			
	Material: BENTONITE	Depth: from 9.25 to 45.0	
	Installation Method:	Number of bags used:	
Well Abandonment			
	Sealing material:	Depth: from to	
	Installation Method:	Number of bags used:	
Administrative			
	County: CLARK	Township: 15 Range: 01	Traps map: REVERSONVILLE, IN KY
	Section: of Section 27		
	Grant Number:		
	Field located by: DRILLER	on: Apr 13, 2010	
	Contributor location by:	on:	
	Location accepted on verification by:	on:	
	Subdivision name:	Lot number:	
	FE W of EE:	FE N of SE:	FE E of WL:
	FE S of EE:	Depth to bedrock:	Bedrock elevation: 354.0
	Ground elevation: 430.0		Appifer elevation: 354.0
	UTM Easting: 118763.0		UTM Northing: 4247501.0
Well Log			
	Top	Bottom	Formation
	0.0	25.0	LT BROWN CLAY
	25.0	31.0	LT BROWN CLAY (SOFT)
	31.0	79.0	FINE, MD, COARSE SAND & GRAVEL
	79.0	80.0	FINE, MD & COARSE GRAVEL
	80.0	81.0	FINE, MD, ACICORSE SAND & GRAY
	81.0	82.0	FINE, MD & COARSE SAND SOME GR
	82.0	84.0	FINE/COAR SAND, MED GRAVEL
Comments			

https://dnr.in.gov/water/wells/well.html?well=421530&well=01029&well=01029&well=01029

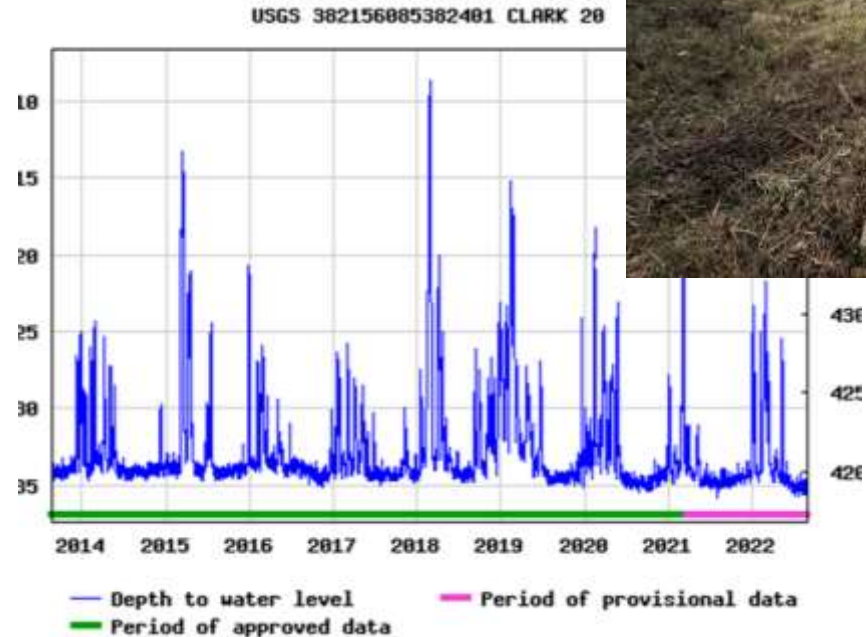
Upgrade of Charlestown SP Water Supply System

- Double capacity of existing (3) wells from 700 GPM to 1,400 GPM each
- Installation of new well with 1,400 GPM capacity (2 MGD)
- Total capacity of (4) wells to be 8 MGD (6 MGD firm)
- Increase water treatment plant capacity to 6 MGD (4.5 MGD firm)
- High service pump upgrade to 6 MGD (4 MGD firm)
- Likely to go online 1st quarter of 2023
- Funding support from the IFA



Groundwater Monitoring at Charlestown State Park Well Field

- USGS observation well Clark 20 established in 2013 (continuous recording)
- Clark 22 included in DNR Voluntary Monitoring Network (equipped with transducer)
- Four (4) existing on-site wells monitored by DNR (quarterly measurements)



Contract between State of Indiana and River Ridge Development Authority

- 50 year contract for water supply from Ohio River Outwash Aquifer
- State shall use care and diligence to reserve a capacity of 20 MGD from aquifer for RRDA
- RRDA payments made to Water Resources Development Fund
- DNR and RRDA entered into a separate contract for the operation of the Water Supply System



The Next Steps.....

- DNR/State of Indiana intend to continue the development and management of the Ohio River Outwash Aquifer and Water Supply Systems
- A request for proposal will like be released during the Fall of 2022 to investigate the next phase of well field/treatment options to meet the growing water demand of RRDA and the region



Thank You!

DNR, Division of Water
Water Rights & Use Section

Mark Basch

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