

Surface Water Quality S-356 Testing

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Surface Water Quality



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- Overview: S-356 discharge is a new water source for ENP.
- Expected to consist of clean seepage water from ENP and WCA-3B.
- Primary focus of concern for ENP inflows is total phosphorus.
- Surface WQ monitoring plan: main purpose is to confirm S-356 discharge water is good (low total phosphorus) and help identify if any operational practices negatively impact water quality.



Increment 0 - Water Quality



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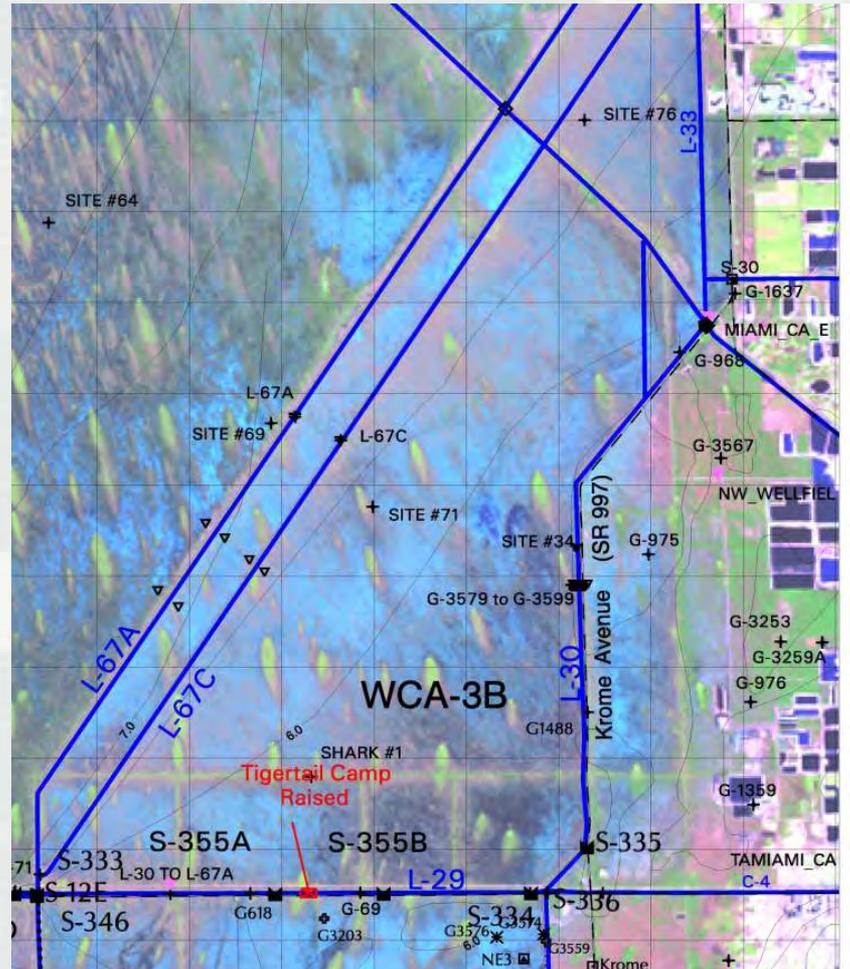
- S-356 mechanical test conducted Sept. 9, 2015 through Sept. 30, 2015.
- Conditions did not exist to allow high pumping rates without potential to run pumps dry (cavitation could occur, which is damaging for pumps).
- To avoid pump cavitation, water was routed from WCA 3A via S-151 to S-337 to S-335 (pump intake).
- This direct routing of water from WCA 3A was predicted to produce higher phosphorus than expected from recycling of seepage water from WCA 3B/ENP (pump station purpose is to recycle additional seepage caused by implementation of Mod Water Deliveries).



Project Area Map



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Increment 0 WQ - continued



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- Despite the bypass of water directly from WCA 3A under dry season conditions, total phosphorus concentrations were fairly low. These were worst case conditions for S-356 WQ.
- Highest value recorded was **12 ppb total P** for both the autosampler (daily collection) and the weekly grab/manual samples.
- Range of values for **weekly grab samples was 8-12 ppb.**
- Range of values for **daily samples** collected by **autosampler was 7-12 ppb.**
- **Average of all increment 0 (grabs & ADT) samples was 9.7 ppb.**



Increment 1 - Test results



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- Increment 1 started Oct. 15, 2015 with 2 of the 4 pumps (250 cfs) running most of the time during this period up through Jan. 11, 2016 (period of data evaluation for this briefing).
- The **highest value** recorded for the **weekly grab samples** during this period was **9 ppb** total P. **Average of 6 ppb**
- The **highest value** recorded for the samples collected daily by the autosampler (ADT) was **17 ppb** with an **average value of 8 ppb**.
- The **flow weighted mean** from Oct. 15 2015 through Jan. 11, 2016 is **7.1 ppb**. This was calculated using the sample results collected daily and daily avg flow.



Increment 0 & 1 - Results Summary



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- While we only have a limited amount of surface water data, the results thus far are encouraging (low phosphorus levels).
- **Increment 0: Low phosphorus levels (avg of 9 ppb with peak value of 12 ppb)** under what are probably worst case conditions (direct bypass of WCA 3A water to pump intake under dry season conditions) for increment 0.
- **Increment 1: Low flow weighted mean (7.1 ppb)** for the S356 pump discharges during the Increment 1 thus far (Oct. 15, 2015 – Jan. 11, 2016).



Questions?



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- Surface water quality questions?