Director of Compliance and Innovation Report

July 19, 2023

Plant Loading, CSO Report, and Director's Notes

Plant Influent Report

Biochemical Oxygen Demand, 5-Day (Avg. 24379 lbs/day)

Total Suspended Solids (Avg. 55260 lbs/day)

Average Daily Flow (24.36 million gallons/day)

Maximum Daily Flow (35.77 million gallons/day)

38 percent of design 51 percent of design 29 percent of design 29 percent of design 29 percent of design 38 percent of design 39 percent of design 30 percent of design 30

Plant Effluent Report

Parameter Report Frequency CBOD₅, mg/L Mo./Wk. Avg TSS, mg/L Mo./Wk. Avg		<u>Permit</u>	Reported	Violations		
		<u>Limits</u>	<u>Values</u>			
CBOD ₅ , mg/L	Mo./Wk. Avg	20/40	2/2	0		
TSS, mg/L	Mo./Wk. Avg	25/45	4/5	0		
NH ₃ -N, mg/L	Mo. Avg/Weekly Avg/Daily Max	1.1/2.8/3.0	0.47/0.53/0.60	0		
DO, mg/L	Wk. Avg/Daily Min	6.25/5.0	6.96/6.89	0		
pH, S.U.	Daily Min/Max	6.0/9.0	7.80/8.06	0		
Total Nickel, mg/L	Mo. Avg	0.0381	0.020	0		
CL ₂ Residual, mg/L	Daily Max	0.05	< 0.011	0		
Fecal Coliform	Daily Max	400	233	0		
CFU/100mL						

CSO Report

Location	Events	Est. Total Duration of Discharges (hrs.)	Discharge (million gallons)
Oakland Avenue (Outfall 003)	1	4.1	0.9
Lincoln Park (Outfall 004)	0	0	0
McKinley Avenue (Outfall 007)	1	5.7	4.11
Seventh Ward (Outfall 008)	0	0	0

Director's Notes:

Disinfection Season:

The District staff continues to be successful in the operation of its disinfection system(s). Although there have been some issues with nitrite fluctuation and drought conditions to heavy rain flow the staff continue to meet all permit requirements to date.

Executive Order 22-002 Lifted:

Executive Order 22-002 was issued to ADM on October 11, 2022, for multiple violations stemming from FOG discharges from the West Complex to the SDD Lakeshore Drive Pump Station. The Executive Order required ADM to clean and televise the West Complex sewer system and submit a report on the findings.

Due to a satisfactory completion of the corrective actions according to the schedule set forth the Executive Order 22-002 was lifted June 13, 2023. District personnel will complete a follow-up inspection at the West Plant and discuss the corrective actions in more detail.

Staff Training Activities:

Kent Newton and Ashley Bailey attended a PFAS research workshop in Chicago on the 28th and 29th of June hosted by the Water Research Foundation (WRF). The workshop featured presentations and panel discussions on the current science around per-and polyfluoroalkyl substances (PFAS). Experts from The WRF along with other top organizations gave these presentations and facilitated discussions on topics such as occurrence of PFAS in wastewater treatment plants, transport of PFAS in biosolids, composting and agricultural implications, and recent research on destruction of PFAS in biosolids.

Operations, Laboratory, and Pretreatment Activity Reports – June/July 2023

Operations Activities:

Normal operational activities were conducted as prescribed by standard procedures or in response to conditions within the plant. These include operating, monitoring, and adjusting facility equipment, performing process control testing, records keeping, and coordination with the other departments to realize optimal performance of the Plant.

- 1) Digester #2- Operators have removed all the sludge that they can. Maintenance will finish pumping sludge before checking the attic space.
- 2) Operators drained the water tower for painting and monitored painters while they washed the sludge from the tower. Tower is now back in service.
- 3) Disinfection is going well. Operators are adjusting the chemicals as needed to keep the usage down.
- 4) Operations staff continue to actively address PMs as time, workload, and staff levels allow.
- 5) Blower usage has been higher than normal due to low flows and higher concentrations of Ammonia and Nitrates. We continue to make adjustments to find something that helps lower usage.

Laboratory Activities:

Routine:

A total of 1,804 analyses were performed in the laboratory during the month of June 2023.

Monitoring of treatment plant, industrial users, and receiving stream samples for compliance purposes and process monitoring continued. Laboratory personnel continued to perform additional background nutrient monitoring to help fully characterize the nutrient loading on the plant.

Non-Routine:

- 1) The SDD laboratory continued to send samples of raw influent twice a week throughout the month of June 2023 for the "COVID-19 in Wastewater" study funded by the Illinois Department of Public Health. A Zoom call was held on June 2, 2023, with the study participants and the researchers to discuss the results of the study thus far. The monthly calls now qualify for CEU credits for wastewater operators, so several SDD operators watched the June call to obtain no cost CEU credits.
- 2) Keith Richard attended a webinar hosted by the Illinois Water Environment Association on June 7, 2023, titled "Wastewater Microbiology & Process Control". The webinar focused on managing the health of the microorganisms in wastewater treatment plants to ensure proper control of the treatment process. The webinar was very informative.
- 3) Samples were collected of the influent, primary effluent, final effluent, primary sludge, sludge to the Wyckles Lagoon, sludge in the Wyckles Lagoon, and landfill leachate on June 13, 2023, for PFAS testing. Going forward, we will be conducting PFAS sampling/testing on a quarterly basis to characterize the PFAS compounds in our system.
- 4) The SDD laboratory/pretreatment collected and analyzed samples on June 25, 2023, for the ongoing nutrient study for Black and Veatch.

Pretreatment Activities:

Pretreatment - General Activities:

- Pretreatment personnel monitored seven commercial and industrial users (IU) during June 2023.
 An industrial site inspection was completed at **Primient**, completing all first half inspections for all permitted industrial users.
- 2) Bimonthly sampling for the Nutrient Study is ongoing. SDD personnel are utilizing our portable samplers to collect the extra samples from **Primient** and **ADM**.
- 3) No industrial user permit renewals took place in the month of June.
- 4) No Wastehauler Permit Applications were granted in the month of June.
- 5) Executive Order 22-002 concerning ADM's repeated discharge of FOG to the Lake Shore Pump Station has been lifted following satisfactory completion of corrective actions according to the compliance schedule set forth in the Executive Order. District personnel will complete a follow-up inspection at the West Plant and discuss the corrective actions in more detail.

Pretreatment Ordinance - Verbal Notices:

The SDD issued a total of 2 Verbal Notices to **Primient** and **ADM James R. Randall Research Center** in June 2023:

- 1. The **ADM James R. Randall Research Center (JRRRC)** was issued a verbal notice for the improper discharge of 2 gallons of fermentation broth to the district on June 29th. They submitted an acceptable 5-day response letter detailing their corrective actions that will prevent recurrence of a spill of this nature. This warning carried no fine.
- Primient was issued a verbal notice with a \$1,000 fine due to discharging 28,772 pounds
 of TSS on June 29th, exceeding their limit of 28,500 pounds. Primient has been asked to
 submit a 5-day response letter detailing their corrective actions to prevent future TSS
 excursions.

Pretreatment Ordinance - Warning Notices (WN):

No Warning Notices were issued during June 2023.

Pretreatment Ordinance - Notices of Violation (NOV):

No Notices of Violation were issued during June 2023.

Pretreatment Ordinance - Executive Orders:

No Executive Orders were issued during June 2023

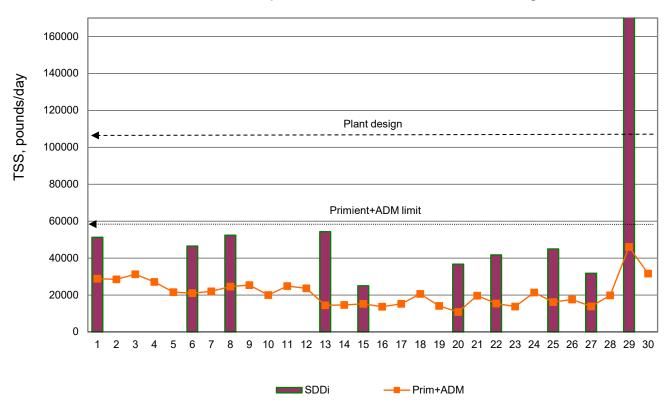
Pretreatment Ordinance - Penalty Assessments:

The following industrial penalties were assessed for June 2023:

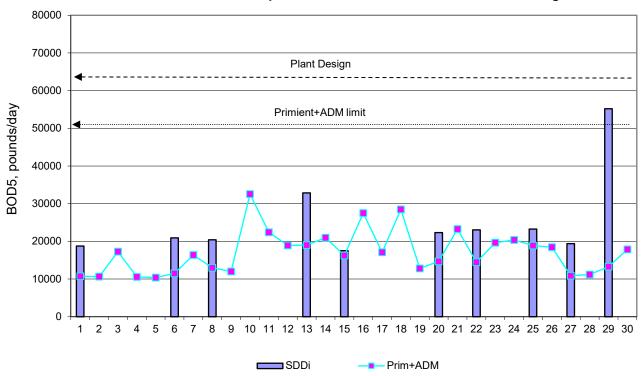
1) Primient \$1,000

Plant Operating Graphs:

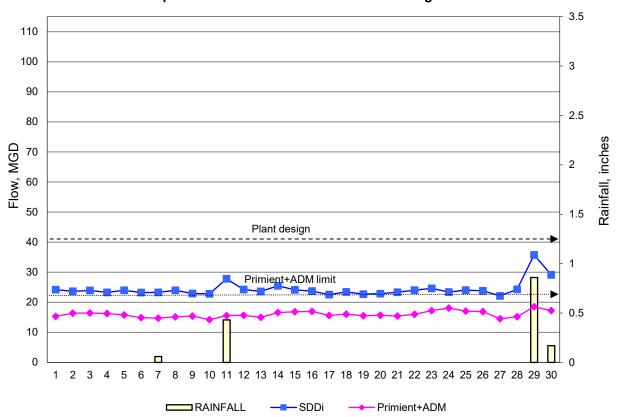
TSS Comparison: SDD Inf Primient + ADM Discharges



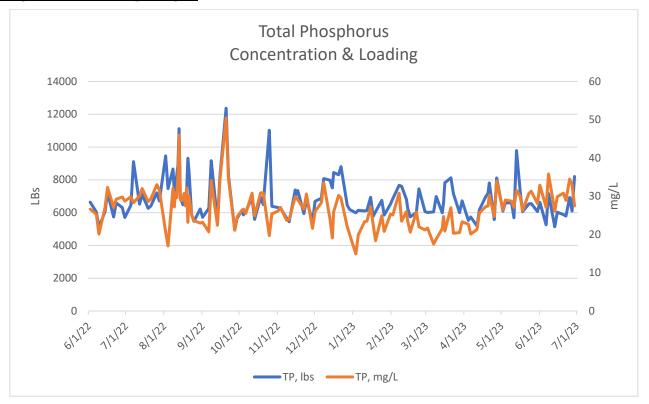
BOD Comparison: BOD Inf vs. Primient + ADM Discharges



Flow Comparison: SDD vs. Primient + ADM Discharges and Rainfall

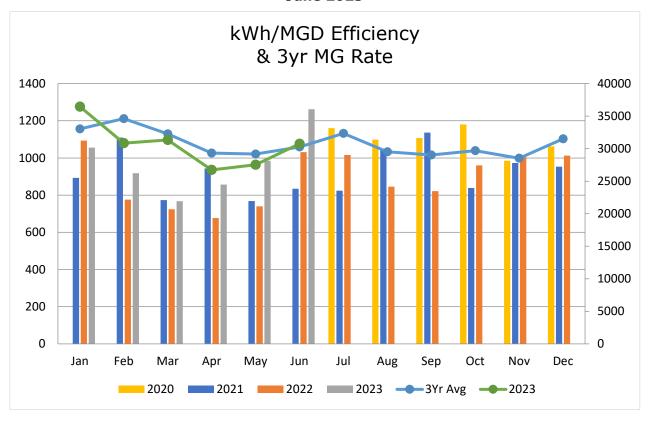


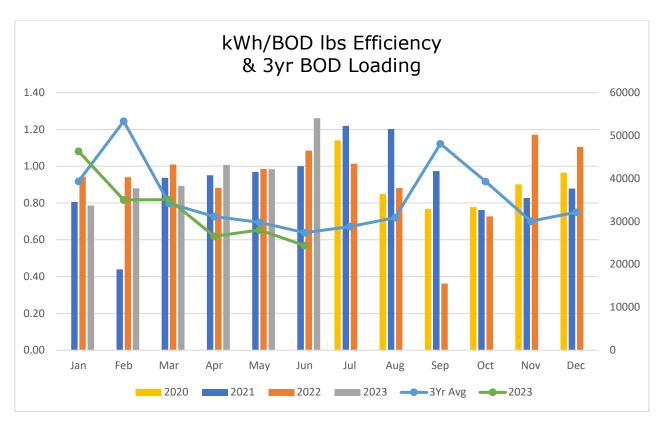
Phosphorus Tracking Graph:



Plant Efficiency Graphs:

June 2023





Sanitary District of Decatur Nutrient Program Management Report

July 19, 2023

During the month of June District personnel attended meetings with members of the Black & Veatch Team to affect progress in nutrient reduction planning and activities.

Currently, activities continue to surround the gathering and sharing of data and information so that all parties can assist in how to move the projects forward as efficiently as possible. In the month of June, the District continued to gather and forward all requested industrial special sampling lab results and plant performance data as requested by the B&V.

B&V concentrated on continuing their efforts associated to the analysis and evaluations of solid stream alternatives by beginning to develop their draft Technical Memorandum incorporating district input from a series of workshops. B&V has also continued to request, receive, and assimilate data provided by SDD for integration into a Power BI dashboard for the Program and updating the draft dashboard for SDD. B&V in conjunction with their subconsultant and the District completed the first quarterly industrial coordination meetings with both ADM and Primient as part of the Industrial Pre-Treatment Program update Task. In addition, B&V has continued the development of their full facility model, continued moving forward with established next steps for the aging infrastructure evaluations, as well as continued to assistance with bid phase services of the Frac Tank Pilot Study including leading the pre-construction meeting.

Below you will find a list of the actual meetings conducted in chronological order. The information covers the subject, date, and agenda items of each meeting. Additional information related to any of these meetings or specific agenda items can be supplied to the Board upon request including meeting minutes and documentation used during the meeting as it is all being stored as part of the permanent record.

Nutrient Reduction Program Meetings Conducted during June 2023

<u>Subject</u>	<u>Date</u>	<u>Agenda</u> <u>Items</u>
Industrial Coordination Quarterly	06/06/2023	Summary of Regulatory
Meeting with ADM		Requirements
_		2. Total influent and Industrial Pollutant
		Loadings
		3. Treatment Evaluations
		4. Industrial Pretreatment Program
		5. Discussion/Next Steps
Industrial Coordination Quarterly	06/07/2023	1. Summary of Regulatory
Meeting with Primient		Requirements
		2. Total influent and Industrial Pollutant
		Loadings 3. Treatment Evaluations
		4. Industrial Pretreatment Program 5. Discussion/Next Steps
Nutrient Dresser Management	06/21/2022	Objective: Provided Status Update on
Nutrient Program Management		Program Tasks
Bi-weekly Meeting		1. Frac Tank Pilot
		2. Power BI
		3. Pretreatment Program Update
		4. PDOP/Annual Progress Report
		5. Watershed Services
		6. Aging Infrastructure
		7. WRRF Upgrade Plan

<u>Subject</u>	<u>Date</u>	<u>Agenda</u> <u>Items</u>
Fermentation Reactor Pilot Pre- Construction Meeting	06/27/2023	 Introductions, Sign-in, & Communications Contract and Preliminary Documents Construction Schedules Payment Procedures and Related Requirements Critical Work Sequences Submittals Questions and/or Change of Contract Documents Project Requirements Comments/Questions

Sanitary District of Decatur Watershed Management Report

July 19, 2023

During the month of June District personnel attended meetings with members of the Black & Veatch and Geosyntec Teams to affect progress in meeting the NARP requirements as listed in the NPDES permit as well as moving forward on the formation of a future watershed workgroup for the Middle Sangamon River.

Recent activities pertained to items necessary to complete the NARP Study. Foremost in these efforts included Geosyntec continuing their modeling efforts and next steps for the NARP Study in addition to the development/coordination of the Bylaws for the Watershed Group formation.

Below you will find a list of the meetings conducted. The information covers the subject, date, and agenda items of each meeting. Black & Veatch provided a written summary. Additional information related to any of these items can be supplied to the Board upon request including meeting minutes and documentation used during the meeting as it is all being stored as part of the permanent record.

Watershed Management Meetings Conducted during June 2023

Subject	<u>Date</u>	Agenda Items
Watershed Services Bi-weekly Meeting	06/14/2023	Objective: Provided Status Update on Watershed Services Tasks 1. Watershed Group 2. Instream Water Quality Model 3. Watershed Alternatives 4. Discussion/Next Steps
Watershed Services Bi-weekly Meeting	06/28/2023	Objective: Provided Status Update on Watershed Services Tasks 1. Watershed Group 2. Instream Water Quality Model 3. Watershed Alternatives 4. Discussion/Next Steps



July 3, 2023

Sanitary District of Decatur (SDD) 501 Dipper Lane Decatur, IL 62522 Nutrient Program Manager BV Project No. 411502

Attention: Don Miller, P.E., Director of Engineering

Subject: SDD Nutrient Program Management

June Monthly Progress Update (June 3, 2023 – June 30, 2023)

Dear Mr. Miller:

This letter summarizes the work associated to the SDD Nutrient Program Management project for services from June 3, 2023, through June 30, 2023.

- 1. Program Management, Administration, and Coordination
 - Conducted bi-weekly program conference calls to update progress and discuss key issues
 - Provided Monthly Project Update.
 - Attended June Board meeting to present program summary and update to the Board of Trustees.
 - Provided ongoing management of the project including program management, preparation/monitoring of the program schedule and budget as well as program administrative duties.
 - Continued to coordinate Power BI development including project data integration and dashboard development.

2. Pretreatment Program Update

- Continued to evaluate special sampling data
- Continued to work with Jacobs and coordinate their review of pre-treatment programs for municipalities with similar influent as SDD due to industrial users and prepare for the initial industrial coordination quarterly meeting.
- Conducted the initial industrial coordination quarterly meeting with ADM on June 6th, 2023, and Primient on June 7th, 2023.
- 3. Phosphorus Discharge and Optimization Plan (PDOP)
 - No Services were completed this period.

4. Watershed Support Services

- Conducted bi-weekly progress update meeting.
- Geosyntec completed the initial watershed model and began next steps associated with their Instream model for the NARP Study
- Continued initial planning efforts and outline for the Watershed Group formation development providing comments from the review of the draft Bylaws developed by SDD.

5. WRRF Upgrade Plan

- Solutions Development Solids Stream
 - Began the development of TM 4 BNR Solids Handling Evaluation which identifies and documents the comprehensive list of technologies evaluated in prior workshops.
 - 1. The technologies address solids handling upgrades required by the recommended liquid stream technology.
 - 2. TM will include the high-level costs estimates developed as part of the evaluation process for anticipated solids handling process changes.
 - ii. Prepared and submitted the draft Technical Memorandum for Phosphorus Based Land Applications of Biosolids which included:
 - 1. Sources of Influent Phosphorus
 - 2. Current Biosolids Land Application Program
 - 3. Liquid Stream and Solids Handling Alternatives
 - 4. Biosolids Land Application Regulations
 - 5. Agronomic Rates for Nitrogen and Plant Available Phosphorus
- Aged Infrastructure Evaluation
 - i. Completed the overall condition assessment approach including evaluation criteria and associated forms for documentation.
 - Continued summarize and organize results of the onsite assessment to further establish next steps and prioritize areas to include in additional discipline condition assessments.
 - iii. Completed additional data request and onsite visit to gather historical data and detailed equipment data.
 - iv. Began structural evaluations.
- Plant Facility Evaluation
 - Continued detailed modeling efforts to evaluate and provide whole plant process model simulations related to the alternatives identified for nutrient removal.
- 6. Pilot and Demonstration Testing
 - Coordinated with District and Contractor on Value Engineering.
 - Prepared letter of recommendation for approval to award contract and issue Notice to Proceed.
 - Prepared for and conducted the Pre-Construction Meeting with Burdick (Contractor)

FRAC TANK PILOT PROJECT S	CHEDULE
MILESTONE/ACTIVITES	DATE
Receive comments from Vendors	January 27, 2023
Issue draft procurement packages for primary sludge pumps, bubble mixing and Frac Tank to SDD	January 31, 2023
Issue 50% Design Documents to SDD	February 24, 2023

SDD to Issue Procurement Documents to Vendors for Primary Sludge Pump, Bubble Mixing System and Frac Tank (rental agreement)	Week of February 27, 2023
Receive Quotes from Vendors for Direct Procurement	March 10, 2023
Issue Final Bid Documents for SDD Review / Approval	March 17, 2023
Issue Purchase Orders / Rental Agreements with Vendors	March 23, 2023
Advertise for Bids (16 days)	March 20, 2023
Bid Opening	May 9, 2023
Issue Notice to Proceed	June 21, 2023
Early Receipt of Pre-purchased Equipment	Five Months from Issuance of Purchase Order
Primary Sludge Pumps (20-week delivery) Big Bubble Mixing (20-week delivery) Frac Tank (6 weeks delivery)	August 2023
Substantial Completion (pending equipment delivery times)	October 2023
Final Completion	October 2023

Please feel free to contact me with any questions, comments or if you need additional information.

Sincerely,

Diane Grossenheider, P.E. Project Manager, Black & Veatch

Enclosure(s):

- SDD Nutrient Program Manager Schedule
- Anticipated Cost Forecast

Project: Nutrient Program Management - 070323 | The | The

SANITARY DISTRICT OF DECATUR - NUTRIENT PROGRAM MANAGEMENT

2022 - 2023 COST FORECAST BV Project Number 411502

ncremental		2022.02	2022.03	2022.04	2022.05	2022.06	2022.07	2022.08	2022.09	2022.10	2022.11	2022.12	2023.01	2023.02	2023.03	2023.04	2023.05	2023.06	2023.07	2023.08	2023.09	2023.10	2023.11	2023.12	2022 Total	2023 Total
	Planned	13 683	108 359	237 519	168 336	497 476	284 217	100 648	86 219	109 725	91 822	91 820	204 625	175 033	184 839	230 195	181 219	171 412	188 595	126 472	126 461	158 090	126 472	126 465	1 789 824	1 999 878
	Actuals	16,724	60,831	77,995	54,608	61,865	125,355	145,679	112,979	118,381	94,677	105,543	155,812	179,053	152,247	155,630	138,917	142,916							974,636	924,575
	Forecast	16,724	60,831	77,995	54,608	61,865	125,355	145,679	112,979	118,381	94,677	105,543	155,812	179,053	152,247	155,630	138,917	142,916	170,512	133,883	125,267	136,583	100,391	100,389	974,636	1,691,600
	Planned	4,631	18,589	25,171	20,169	20,164	25,213	20,168	20,170	25,211	20,169	20,167	20,050	17,010	17,014	21,263	17,010	17,012	21,267	17,010	17,012	21,263	17,012	17,012	219,822	199,88
Task 1 Program Mgmt	Actuals	7 905	2 198	2 585	3 303	2 115	3 760	4 348	5 103	3 173	9 068	4 320	9 295	8 708	21 585	22 475	18 400	15 683							47 875	96 14
	Forecast	7,905	2,198	2,585	3,303	2,115	3,760	4,348	5,103	3,173	9,068	4,320	9,295	8,708	21,585	22,475	18,400	15,683	21,267	17,010	17,012	21,263	17,012	17,012	47,875	206,72
	Planned	1 726	15 177	42 250	17 294	10 680	30 576	19 616	5 192	6 491	5 192	5 192					-			-	-				159 386	
Task 2 Pretreatment Program	Actuals	1720	13 177	705	470	470	235	15 010	353	430	430	1,450	4,250	4.715	8.238	7,625	2,330	40,696		_				_	4,543	17,20
Update	Forecast			705	470	470	235		353	430	430	1,450	4,250	4,715	8,238	7,625	2,330	40,696	31.805	6.491	5,192	5.192			4,543	116,53
	1 Greater			,,,,	410	410	200		000	400	400	1,400	4,200	4,710	0,200	1,020	2,000	40,030	01,000	0,431	0,132	0,152			4,040	110,00
	Planned	536	3,756	4,694	7,073	26,718	5,977	4,881	4,879	6,099	4,877	4,879	6,748	5,656	5,213	5,665	4,536	4,531	5,665	4,533	4,531	5,668	4,533	4,531	74,369	55,06
Task 3 Phosphorus Discharge	Actuals		1,290	3,755	3,508	1,613	235	4,645	8,731	8,100	10,948	3,898	4,760	6,665	1,045	-	-	-							46,721	12,47
and Optimization	Forecast		1,290	3,755	3,508	1,613	235	4,645	8,731	8,100	10,948	3,898	4,760	6,665	1,045	-	-	-	-	-	-	-	-	-	46,721	12,47
Task 4 Watershed Support	Planned	6 790	61 631	12 107	4 040	193 891	22 817	18 255	18 250	22 817	18 253	18 251	5 383	4 569	4 567	3 760	29 712	29 705	30 850	29 712	29 705	30 850	29 709	29 707	397 102	258 22
Services	Actuals	940	14,809	17,206	28,841	21,065	45,297	54,170	36,587	44,435	12,003	34,319	16,395	4,931	31,212	1,260	42,718	29,505							309,674	126,02
	Forecast	940	14,809	17,206	28,841	21,065	45,297	54,170	36,587	44,435	12,003	34,319	16,395	4,931	31,212	1,260	42,718	29,505	30,850	29,712	29,705	30,850	29,709	29,707	309,674	306,55
	Planned		9.206	100.004	89,447	32.035	35,466						62,344	52.898	52,900	66,121	52,900	52.898	66,124	52.898	52,898	55 404	52,898	52.898	289,138	621,55
Task 5 Comprehensive WRRF	Actuals	7,879	42,534	122,984 53,745	16,778	36,223	74,878	81,756	59,461	42,065	47,294	28.643	60,035	67,250	65,345	116,523	71,274	49.148	00,124	52,090	52,090	66,124	32,090	52,090	491,254	429,57
Upgrade Plan	Forecast	7 879	42 534	53 745	16 778	36 223	74,878	81 756	59 461	42,005	47,294	28 643	60 035	67 250	65 345	116 523	71,274	49 148	52 000	52 000	44 688	44 688	25 000	25 000	491,254	672 94
	1 Greates		42 004	00 140	10110	00 220	14010	01700	65 461	42 000	4, 234	20 040	00 000	0, 200	00 040	110 020	11214	45 140	02 000	02 000	44 000	47 000	20 000	20 000	-	
	Planned	- 1	-	-		-	-	-	-	-	-	-	-	3,670	3,670	4,590	3,670	3.670	4.590	3,670	3,670	4,590	3.670	3,670	-	43,13
Task 6 Feas bilty Study	Actuals													775	1 128	-	-	-							-	1 90
	Forecast				-	-	-	-	-	-	-	-	-	775	1,128	-	-	-	4,590	3,670	3,670	4,590	3,670	3,670	-	25,76
Task 7 Pilot and Demonstration	Planned	-	-	-	-	213,988	164,168	37,728	37,728	49,107	43,331	43,331	105,773	91,229	101,474	54,736	43,787	43,787	54,736	43,789	43,785	54,736	43,789	43,787	589,381	725,40
Testing	Actuals				1,710	380	950	760	2,745	20,178	14,935	32,914	61,078	86,010	23,695	7,748	4,195	7,885							74,572	190,61
	Forecast				1 710	380	950	760	2 745	20 178	14 935	32 914	61 078	86 010	23 695	7 748	4 195	7 885	30 000	25 000	25 000	30 000	25 000	25 000	74 572	350 61
Cumulative		2022.02	2022.03	2022.04	2022.05	2022.06	2022.07	2022.08	2022.09	2022.10	2022.11	2022.12	2023.01	2023.02	2023.03	2023.04	2023.05	2023.06	2023.07	2023.08	2023.09	2023.10	2023.11	2023.12	2022 Total	2023 Tota
Planned		13 683	122 042	359 561	527 897	1 025 373		1 410 238	1 496 457	1 606 182		1 789 824			2 354 321						3 378 675	3 536 765		3 789 702		
MITTER	-	.5 005	122 042	005 001	OE7 057	1 023 373	. 003 030	1 410 200	1 450 457	1 000 102	. 030 004	1 703 024	1 224 443	2 103 402	2 004 021	2 004 010	2 700 700	2 307 147	0 120 742	0 202 214	0 0/0 0/0	0 000 700	0 000 201	0 705 702	1 703 024	0 105 ru

