e-*MANIFEST*

ADVISORY BOARD MEETING: *INCREASING ADOPTION OF THE E-MANIFEST SYSTEM*

JUNE 18 – 20, 2019

AGENDA

e-*Manifest*

- Introduction/Purpose
- Background
- Program Update
- Update on User Fees for FY2020/2021
- Background for Charge Questions
  - Problem Statement
  - CROMERR Overview/e-Manifest Signature Requirements
  - User Registration
  - 3rd Party Application and Biometrics
  - External System Authorization
  - CROMERR Application Review Process
  - CROMERR Advocate Case Study
- Charge Questions

INTRODUCTION & PURPOSE

INTRODUCTION

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- October 5, 2012: The President signed into law the Act authorizing EPA to implement a national electronic manifest system - key features of the Act:
  - Scope extends to all federally and state-regulated wastes requiring a RCRA manifest
  - Users may elect to use electronic or paper manifests
  - Agency shall impose reasonable fees EPA determines necessary to pay system costs
  - System Fund established in Treasury for deposit of fees
  - Standard appropriations act controls on spending authority for collected fees
  - Uniform effective date in all states, with EPA implementation until states are authorized
  - Mandate to establish 9-member Advisory Board to oversee system performance
- June 30, 2018 – the e-Manifest system launched

INTRODUCTION

e-*Manifest*

- The e-Manifest Program
  - System Development
  - Regulatory and Policy Development
  - Implementation and Communication
  - Advisory Board

MEETING PURPOSE

e-*Manifest*

- Congress directed EPA to develop the e-Manifest system to reduce the administrative burden of the paper manifest process
- In the first year of system operation, fully and hybrid electronic manifests represented less than 1 percent of all manifests received
- EPA seeks to increase this percentage by seeking input from the Advisory Board

White Paper: Section 1, Purpose

BACKGROUND

BACKGROUND: STATUTE

e-*Manifest*

- Hazardous Waste Electronic Manifest Establishment Act.
  - Authorized EPA to establish a national electronic manifest system to be implemented in partnership with industry and states
  - All paper and electronic manifests required by either federal or state law would be collected in the e-Manifest system
  - Congress intended costs of system and its operation to be offset by user fees to be determined by the Agency
- Purpose: Transition from paper-intensive and burdensome manual process to a more streamlined and efficient IT system
  - Benefits: Cost savings, more timely shipment tracking, creation of one-stop reporting hub, integration with other RCRA reports and systems
- System launched on schedule on June 30, 2018

White Paper: Section 3.1, Overview of e-Manifest

BACKGROUND: REGULATIONS

e-*Manifest*

- RCRA section 3002(a)(5) required EPA to establish a manifest system or other reasonable means to ensure that all HW generated are designated for, and arrive at, permitted waste management facilities
- The 1980s implementing regulations required generators to complete the critical data required to identify the types and quantities of wastes shipped, and the routing of the shipment
  - Manifest incorporates DOT hazardous materials shipping descriptions, augmented by information about quantities, number and type of containers, units, and RCRA waste codes
  - Routing: Generator must supply identifying information (name, address, EPA ID#) about generator company and site, about each transporter that will handle waste in transport, and about the designated facility that will receive and manage the waste
- Manifest regulations provide for confirmation of receipt of waste at the designated facility by requiring the facility to certify receipts of waste and to return a signed copy to the generator
- From 1980s to present, EPA's manifest regulations have required the chain of custody of waste shipments to be shown by signatures

White Paper: Section 3.2, Manifest Regulation Background

BACKGROUND: REGULATIONS

e-*Manifest*

- Paper manifest process involves carrying, signing, keeping records of, and mailing a multi-copy set of manifest forms
- Generator initiates the manifest by completing the waste and routing information, and signing the hazmat "shipper's certification"
- Initial transporter accepts the waste shipment by signing the transporter's acknowledgment of receipt and giving a signed copy to the generator
- With each subsequent change of custody, the transporter or facility accepting custody signs the manifest and pulls off a copy for the previous handler's files
- At receipt by the designated facility, the facility: signs the manifest for receipts, gives a signed copy to the transporter, keeps a copy for its files, and mails copies to the generator and states

White Paper: Section 3.2, Manifest Regulation Background

BACKGROUND: REGULATIONS

e-*Manifest*

- With issuance of e-Manifest regulations by EPA, the media for tracking shipments were altered, but the basic process for tracking chain of custody remains largely the same
  - EPA established an electronic manifest system with a prescribed electronic format for the manifest
  - Chain of custody is still commemorated by signature processes
- For electronic manifests, all waste handlers must sign electronically with a "valid electronic signature" per CROMERR
- Primary impact of e-Manifest regulations was to clarify that an electronic manifest obtained from and submitted to the system, and signed by all with valid electronic signatures, is legally equivalent to a paper manifest

White Paper: Section 3.2, Manifest Regulation Background

PROGRAM UPDATE

PROGRAM UPDATE

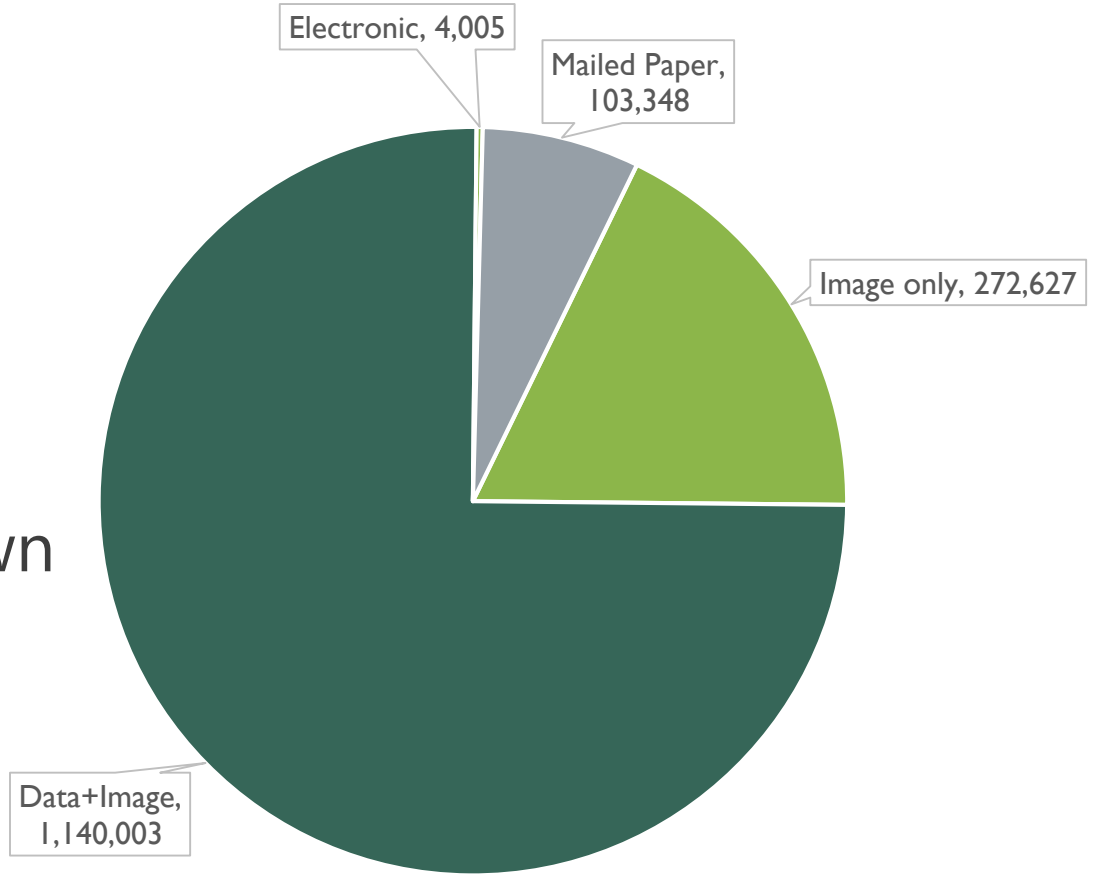
e-Manifest

- Stats
- System Functionality
- Policy/Implementation/Communication
- Financial

PROGRAM UPDATE: STATS

e-Manifest

- Average Daily Submission:
  - 5,500
- Original estimate: 3.5M/year
- Current pace: ~2M/year
- Paper processing backlog burndown in progress



Manifests Submitted June 30 – April 30

White Paper: Section 4.1, Manifest Submission Breakdown

PROGRAM UPDATE: SYSTEM FUNCTIONALITY

e-*Manifest*

- EPA continues to use Agile software development practices to build and enhance the e-Manifest system
- EPA communicates the status of its system development through regular calls with its developer community, consisting of industry and state technical contacts

White Paper: Section 4.3, System Development

PROGRAM UPDATE: SYSTEM FUNCTIONALITY

e-*Manifest*

- Major functionality released since system launch
  - General Public
    - Reports and data extract available on RCRAInfo Web
  - Industry Users
    - Billing user interface and enhancements
    - Bulk signatures
    - Correcting, deleting and copying a manifest
    - All manifest rejection scenarios
    - Multiple updates to the submission schema
  - State Users
    - State data services
    - State reports

White Paper: Section 4.3, System Development

PROGRAM UPDATE: SYSTEM FUNCTIONALITY *e-Manifest*

- Upcoming functionality
  - Industry Users
    - Transporter and Broker to create a manifest
    - In-transit shipping changes
    - Notifications and bulk signature enhancements
    - 3rd-party signature intake
    - Additional needs based on user input
  - State Users
    - Corrections
    - Additional state reports

White Paper: Section 4.3, System Development

PROGRAM UPDATE: POLICY/IMPLEMENTATION/COMMUNICATION

e-Manifest

- Major activities completed since system launch:
  - 150+ FAQs available
  - 12 stakeholder-specific fact sheets
  - Monthly public webinars
  - Ten Regional "Road Shows" for states and EPA
  - Listserv/email/help desk
  - Updates to e-manifest.epa.gov

White Paper: Section 4.4, User Engagement

PROGRAM UPDATE: POLICY/IMPLEMENTATION/COMMUNICATION *e-Manifest*

- Upcoming activities:
  - Continuing to publish FAQs (handful in queue now)
  - New web content related to state wastes requiring a manifest
  - Developing rulemaking to extend e-Manifest to export manifests and other manifest-related reporting
  - Monthly public webinars
  - Planning direct outreach activities for generators

PROGRAM UPDATE: FINANCIAL

e-Manifest

- In fiscal year 2019, e-Manifest collected $10.3 million from roughly 1.2 million manifests, to date
- Anticipate collecting $15.6 million from ~2 million manifests through the rest of the year
- Numbers are below initial estimates; $24.3 million from ~3 million manifests

PROGRAM UPDATE: FINANCIAL

e-*Manifest*

A note on credit cards!

- The US Treasury Department has a $24,999.99 daily cap on credit card transactions per credit card. This is a hard cap because Treasury absorbs the costs of processing credit cards.
- For companies that are only using credit cards, we ask that you consider using Automatic Clearinghouse (ACH) payments in our system because of the much higher cap on those transactions.

UPDATE: USER FEES FOR FY 2020/2021

UPDATE: USER FEES FOR FY 2020/2021

e-*Manifest*

- The 2018 Final User Fee Rule requires us to reset manifest fees every two fiscal years
- We expect to publicly release fees by July 1, 2019, on http://www.epa.gov/e-manifest
- New fee rates will be in place from Oct 1, 2019 – Sept 30, 2021

UPDATE: USER FEES FOR FY 2020/2021

e-*Manifest*

- EPA has collected 1 million fewer (33%) manifests than anticipated this year, resulting in lower revenues
- The data entry backload and QA charges will be incurred over the next two years

BACKGROUND FOR CHARGE QUESTIONS

PROBLEM STATEMENT

PROBLEM STATEMENT

e-Manifest

- The manifest process is unique among EPA's reporting requirements
  - Manifests are live, commercial transactions that are typically executed by shippers and receivers at loading docks and from transport vehicles
  - Not all sites have reliable network access
  - The user community consists of shipping clerks and truck drivers, and not the corporate official or regulatory affairs staff who typically submit other EPA reports
  - This user community experiences frequent staff turnover

White Paper: Section 2, Problem Statement: e-Manifest's Unique Reporting Requirements
Charge Question 1: Identifying Pain Points Preventing Wider Adoption of Electronic Manifests

PROBLEM STATEMENT

e-*Manifest*

- The manifest requires multiple, sequential signatures
  - Signing a paper manifest is relatively easy – put pen to paper and go
  - Electronic signature processes typically require users to register and pre-enroll, prove their identity, pass challenges (password, personal questions), sophisticated mobile technology, and responsibility to monitor email accounts for evidence of unauthorized signature activity
  - Multiple signatures multiply the complexity of the signature process
- The unique attributes of the manifest process and user community, as well as the challenges posed by multiple signatures in atypical settings, all contribute to hindering electronic manifest adoption

White Paper: Section 2, Problem Statement: e-Manifest's Unique Reporting Requirements
Charge Question 1: Identifying Pain Points Preventing Wider Adoption of Electronic Manifests

CROMERR OVERVIEW/E-MANIFEST CURRENT SIGNATURE REQUIREMENTS

CROMERR OVERVIEW (GOALS & PURPOSE) *e-Manifest*

- Information Systems
  - Ensure enforceability of electronically submitted reports
  - Allow solutions to be reused
  - Prevent changes to information submitted
- Submitters and Regulated Community
  - Protect the signer of documents from false or spurious reports
  - Protect security and integrity of submitted information
  - Offer signer and company ability to repudiate spurious reports

White Paper: Section 5.1, Overview of CROMERR
Charge Question 1: Identifying Pain Points Preventing Wider Adoption of Electronic Manifests

CROMERR OVERVIEW (APPROACH) *e-Manifest*

- The Cross Media Electronic Reporting Rule (CROMERR) establishes technology-neutral performance standards for systems that collect electronic documents as part of an authorized, delegated, or approved EPA program
  - Complies with Government Paperwork Elimination Act (GPEA)
  - Provides the legal framework by which EPA can accept electronic reports under 40 CFR
  - Applies to states, tribes and local agencies with delegated EPA programs and those programs that report directly to EPA
  - Clarifies EPA's authority to oversee state e-reporting programs and provides special, streamlined approval process
  - Removes obstacles for EPA and co-regulators to electronically receive regulated reports

White Paper: Section 5.1, Overview of CROMERR
Charge Question 1: Identifying Pain Points Preventing Wider Adoption of Electronic Manifests

E-MANIFEST SIGNATURE REQUIREMENTS

e-*Manifest*

- Manifest solutions must be built to comply with CROMERR and simplify integration with industry and regulated users
- Users of e-Manifest must comply with all applicable CROMERR requirements
- Since system launch, e-Manifest has been using EPA's CDX CROMERR electronic signature solution to participate in the e-Manifest transaction by:
  - Signing the manifest as it progresses through the workflow, or
  - Certifying submission of the manifest data when uploading the image or image/data file to e-Manifest

White Paper: Section 5.2, e-Manifest Signature Requirements
Charge Question 1: Identifying Pain Points Preventing Wider Adoption of Electronic Manifests

E-MANIFEST SIGNATURE REQUIREMENTS

e-Manifest

- ID proofing – uniquely identify signers of electronic reports
- Signature device – unique to user
- Signature:
  - Binding Signature to Report
  - Review Copy of Record (COR) in human readable format
  - Attestation
- Security and integrity after signature
  - Copy of Record
  - Repudiation
  - Cannot be altered after signature without detection
  - Records management

White Paper: Section 5.2, e-Manifest Signature Requirements
Charge Question 1: Identifying Pain Points Preventing Wider Adoption of Electronic Manifests

E-MANIFEST SIGNATURE REQUIREMENTS

e-Manifest

- The Site Manager, and Certifier are the two roles within the e-Manifest Application that allow for the electronic signature of manifests. To obtain these roles a user must:
  - Register in the RCRAInfo application as an industry user,
  - Verify their email address,
  - Request and be granted access to a site within the RCRAInfo application, and
  - Establish their identity as a registrant with an Electronic Signature Agreement (ESA) or other method of identity-proofing (such as Lexis/Nexis) .
- Signature Ceremony
  - Authentication – user enters CDX account information (user name/password),
  - Verification – user answers personal security questions, and
  - Sign – user clicks "Sign" to electronically sign manifest/certify data.

White Paper: Section 5.2, e-Manifest Signature Requirements
Charge Question 1: Identifying Pain Points Preventing Wider Adoption of Electronic Manifests

E-MANIFEST SIGNATURE REQUIREMENTS

e-Manifest

	Manifest Tracking Number Source	Generator signature	Transporter signature	Receiving Facility signature upon receipt	Receiving Facility sign data submission to e-Manifest
Hybrid	e-Manifest System	Paper	Paper and Electronic	Electronic	N/A
Electronic	e-Manifest System	Electronic	Electronic	Electronic	N/A
Image + Data	Paper manifest	Paper	Paper	Paper	Electronic
Image Only	Paper manifest	Paper	Paper	Paper	Electronic
Mailed Paper	Paper manifest	Paper	Paper	Paper	N/A

System currently requires registration and login for signature

White Paper: Section 5.2, e-Manifest Signature Requirements
Charge Question 1: Identifying Pain Points Preventing Wider Adoption of Electronic Manifests

E-MANIFEST SIGNATURE REQUIREMENTS

e-*Manifest*

- CROMERR establishes technology-neutral performance standards for systems that collect electronic documents as part of an authorized, delegated, or approved EPA program
- For the most part, CROMERR does not impose requirements directly on the regulated community – it requires electronic systems to meet certain standards:
  - It must be possible to detect if an electronic document has been modified after signature
  - The system must collect legally dependable information about the identity of the person who has signed an electronic document

CHALLENGES WITH EXECUTING CROMERR-COMPLIANT SIGNATURES IN E-MANIFEST

e-*Manifest*

- Based on extensive outreach within our regulated community, EPA has received comments and suggestions for electronic signature and user registration that is outside of the CDX CROMERR electronic signature method currently in use

	User Registration	Biometrics/3rd Party Applications	External System Authorization	Off-line Signature
Generators	x	x		x
Transporters	x	x		x
Receiving Facilities	x	x	x	x
Rail			x	x

White Paper: Section 6, Challenges with Executing Signatures in e-Manifest
Charge Question 1: Identifying Pain Points Preventing Wider Adoption of Electronic Manifests

CLARIFYING REQUIREMENTS

e-*Manifest*

- There has been some confusion from the user community related to e-Manifest signature requirements
  - Can sites register and keep registration records for signers?
  - Must all signers register in order to sign a manifest?
  - Must users be identity proofed before signing a manifest?

USER REGISTRATION

USER REGISTRATION (INDUSTRY REQUEST) e-*Manifest*

- Allow users to sign manifests electronically without performing the standard CDX account creation
- This is of particular interest to the generator and transporter communities, who prior to e-Manifest launch, were not fully engaged in the RCRAInfo Industry Application

White Paper: Section 6.1, User Registration
Charge Question 2: Modifying User Registration to Encourage Use of Electronic Manifesting

USER REGISTRATION – CURRENT FUNCTIONS

e-*Manifest*

- Associates the name of the user with their signature credentials
- Provides evidence that they have signed a signature-holder agreement
- Establishes and validates method for out-of-band notification when their signature credentials are used

USER REGISTRATION (EPA ANALYSIS)

e-*Manifest*

- Possible alternatives to registration:
  - System associates the named user, device, or biometric with validated email address such that future instances of signature with the same credential or device are reported to that same email address
  - Require that users enter and validate anew with each signature the information that they have entered and validated before
  - Create an account from information that users have previously entered
- Offline User Registration
  - A user would create an account in an area with no Internet connectivity, be permitted to sign electronically using biometrics, and when the Internet connection is available, that information would be submitted to the e-Manifest system

White Paper: Section 6.1, User Registration
Charge Question 2: Modifying User Registration to Encourage Use of Electronic Manifesting

3RD PARTY APPLICATIONS AND BIOMETRICS

3RD PARTY APPLICATIONS AND BIOMETRICS (INDUSTRY REQUEST)

e-Manifest

- Use 3rd party applications (specifically those that leverage biometrics) to electronically certify a manifest in shipment, particularly during the handoff from the generator to the transporter
  - A smartphone application and/or compatible device that can seamlessly integrate with e-Manifest reporting requirements and be used in manifest transactions, while forgoing the user registration, connectivity and signature steps that are a part of the e-Manifest application
  - An application or device with an "off-line" signature capability, where the electronic signature is captured at the time of receipt and communicated once a connection is available

White Paper: Section 6.2, 3rd Party Applications and Biometrics
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

3RD PARTY APPLICATIONS AND BIOMETRICS (EPA ANALYSIS)

e-Manifest

- EPA has begun to consider the conditions under which a biometric scan can meet the requirements articulated in CROMERR and expects to evaluate biometric options to ascertain whether:
  1. The biometric information is truly unique to a specific individual and sufficiently stable
  2. The device proposed can reliably and with adequate accuracy scan the biometric proposed for use
  3. Other features of system design adequately protect the biometric information collected from misuse
  4. If biometric information is validated but not actually collected, how the system demonstrates the true identity of the individual who executed the electronic signature
  5. How the system demonstrates that the validation event pertained to a particular electronic document
  6. Whether biometric information can be misappropriated and used to "spoof" the biometric reader proposed for use

White Paper: Section 6.2, 3rd Party Applications and Biometrics
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

3RD PARTY APPLICATIONS AND BIOMETRICS (EPA ANALYSIS)

e-Manifest

- Biometric approaches that warrant consideration
  - Digital signature pads
  - Fingerprint scanners
  - Photographs/video
  - Other biometrics
- Second factors
  - ID scanning
  - Preregistered/id-proofed digital signature certificates

White Paper: Section 6.2, 3rd Party Applications and Biometrics
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

EXTERNAL SYSTEM AUTHORIZATION

EXTERNAL SYSTEM AUTHORIZATION (INDUSTRY REQUEST)

e-Manifest

- Most manifests coming into the system are from receiving facilities who utilize our system-to-system API data services to send a PDF of an individual manifest in a zip file along with the corresponding data file
- This system-to-system process allows industry to interact with the e-manifest system without needing to log into our web application and enter data twice
- At present, the receiving facility user must log into the application to sign the manifests and users have described that process as time-consuming
- In addition, stakeholders in the rail industry have expressed their desire for their system to integrate into the e-Manifest application to electronically sign manifests shipped over rail

White Paper: Section 6.3, External System Authorization
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

EXTERNAL SYSTEM AUTHORIZATION (EPA ANALYSIS)

e-Manifest

- There have been numerous applications which have been approved for external submissions to the EPA. These include EPA-developed solutions, commercially developed solutions, and custom-built solutions.
- Theoretically possible to approve an industry-controlled system but technically challenging because system function would require monitoring/integration.
  - Display of document available for signature
  - Out-of-band notification
  - Identity-proofing, user name de-confliction, role assignment, in e-Manifest, etc.
- Relatively easy ways exist to reduce registration/signature burden
  - Biometric signature
  - Log-in-free signature

White Paper: Section 6.3, External System Authorization
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

EXTERNAL SYSTEM AUTHORIZATION (EPA ANALYSIS)

e-Manifest

Key challenge is to ensure the system and user are ID-proofed, credentials not spoof-able, and user may sign in a way so EPA may detect alteration.

- Full system integration - Industry signs manifest in their own system via API
  - Resource intensive for industry, EPA approval as well as e-Manifest to ingest, store and distribute signature information
  - Time intensive – approximately 2 years
  - Major hurdle – approval of system credential process (sending the appropriate signature data to e-Manifest)
  - e-Manifest burden – security updates (new Authority to Operate)

White Paper: Section 6.3, External System Authorization
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

EXTERNAL SYSTEM AUTHORIZATION (EPA ANALYSIS)

e-Manifest

Key challenge is to ensure the system and user are ID-proofed, credentials not spoof-able, and user may sign in a way so EPA may detect alteration.

- System integration with Shared CROMERR Services (SCS) – industry signs using SCS services
  - Resource intensive for industry, EPA approval as well as e-Manifest to ingest, store and distribute signature information
  - Industry approval – approximately 6 months
  - e-Manifest burden – first time implementation updates to e-Manifest CROMERR, e-Manifest would need to be modified to accept another user account.

White Paper: Section 6.3, External System Authorization
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

EXTERNAL SYSTEM AUTHORIZATION (EPA ANALYSIS)

e-Manifest

Key challenge is to ensure the system and user are ID-proofed, credentials not spoof-able, and user may sign in a way so EPA may detect alteration.

- System integration with Enterprise Federated Identity Management (EFIM) – CROMERR eSignature that works from any approved Identity Provider (IdP)
  - Industry process would change to make the 2 calls and then send e-Manifest the data required
  - Resource intensive for industry, EPA approval as well as e-Manifest to ingest, store and distribute signature information
  - Time intensive – TBD this is still several months away and may still require some industry verification and manifest raw data retrofit
  - Major hurdle – approval of system credential process (sending the appropriate signature data to e-Manifest)

White Paper: Section 6.3, External System Authorization
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

CROMERR APPLICATION REVIEW PROCESS

CROMERR APPLICATION REVIEW PROCESS

e-*Manifest*

- To better serve the user community, EPA has created a website that provides substantial resources on both CROMERR and its performance-based, technology neutral standards
- Of particular importance is the guidance on the CROMERR application review process, which provides a step-by-step guide on creating and submitting a successful CROMERR application

White Paper: Section 7, CROMERR Application Review Process
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

CROMERR APPLICATION REVIEW PROCESS (REGARDING E-MANIFEST)

e-Manifest

- Under 40 CFR, programs must be reviewed and approved for CROMERR compliance before receiving electronic reports
- e-Manifest is CROMERR-approved
  - Current e-Manifest users need only follow the approved CROMERR-compliant e-Manifest business processes in place
  - CROMERR approval only needed for:
    - New signature, identity management, or record-keeping functions (e.g., biometrics)
    - Industry users that want to use their own systems
  - Once a solution is approved, other systems integrated with e-Manifest can follow the same model

White Paper: Section 7, CROMERR Application Review Process
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

CROMERR APPLICATION REVIEW PROCESS – EPA REVIEWS ENTIRE SYSTEM

e-Manifest

- EPA reviews entire systems
  - 3rd party signature services might be part of overall system
  - CROMERR review of 3rd party services independent of overall system, such as signature services and identity proofing
  - CROMERR review and approval only for overall systems, which may include third party services
  - When new third-party services are added to CROMERR-approved systems, the changes must be reviewed for CROMERR compliance
  - EPA allows solutions to be reused for faster CROMERR review and approval
- Submit your CROMERR application to Shirley Miller at Miller.Shirley@epa.gov

White Paper: Section 7, CROMERR Application Review Process
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

CROMERR APPLICATION REVIEW PROCESS: TRADITIONAL VS. EXPEDITED REVIEW

e-Manifest

- Changes in program processes as well as an increase in off-the-shelf and shared services options facilitate CROMERR compliance and approval
- The result is two paths to CROMERR approval: Expedited and Traditional
  - Expedited leverages Shared CROMERR Services (SCS) or pre-vetted commercial off-the-shelf (COTS) solutions
  - Traditional relies on the ability of descriptions that an applicant provides for each of the 20 checklist requirements to reflect how the applicant's approach will meet the CROMERR §3.2000(a) and (b) requirements

White Paper: Section 7, CROMERR Application Review Process
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

CROMERR APPLICATION REVIEW PROCESS

e-*Manifest*

Process steps

1. Submit to EPA
   a. CROMERR application tools and templates https://www.epa.gov/cromerr/cromerr-application-tools-and-templates
2. EPA reviews, asks questions
3. Submitter responds (potentially multiple rounds) – time required for review, discussion with submitter, submitter response with updated application
4. Approval

White Paper: Section 7, CROMERR Application Review Process
Charge Question 3: Third-party Applications and Biometrics to Encourage Electronic Manifesting

CROMERR APPLICATION REVIEW PROCESS *e-Manifest*

- CROMERR Contacts
  - Wendy Blake-Coleman, Branch Chief
  - Shirley M. Miller, Program Manager
  - Erin McGown, Salesforce
  - Shane Knipschild, Contracts

CROMERR ADVOCATE CASE STUDY *e-Manifest*

- EPA's Office of Enforcement and Compliance Assurance (OECA) operates and maintains a data system called the Integrated Compliance Information System (ICIS) which manages all federal enforcement and compliance monitoring data, as well as state data for certain programs like the Clean Water Act (CWA) National Pollutant Discharge Elimination System (NPDES).
- In 2009, OECA put into production an electronic reporting tool called NetDMR for the reporting of Discharge Monitoring Reports (DMRs), which is a mandatory report required under the NPDES program. DMR reporting at that time was commonly referred to as the "second highest reporting burden" next to taxes for the IRS.
- In 2015, the EPA published the NPDES Electronic Reporting Rule which required EPA and states to implement electronic reporting over a period of five years for all DMRs, general permits and associated reports, and compliance monitoring and enforcement data. This rule covered a very large universe, every authorized agency, and a very large data set.

White Paper: Section 7.2, OECA CROMERR Advocate Case Study

CROMERR ADVOCATE CASE STUDY *e-Manifest*

- Users were concerned about the barriers to electronic reporting created by the CROMERR requirements. There were several areas of concern expressed by states, such as:
  - The internal administrative processes needed to get approval for CROMERR (e.g., obtaining the Attorney General's certification for the legal authority to accept electronic reporting under their statutes and regulations);
  - Obtaining the certification for their existing e-reporting system via EPA's governance process;
  - Making any technical enhancements that may be needed for their existing e-reporting system to comply with the CROMERR requirements; and
  - Concerns that their regulated universe would have a difficult time with e-reporting given the CROMERR requirements – especially their smaller facilities (e.g., small wastewater treatment facilities, transient contractors for construction stormwater reporting).

White Paper: Section 7.2, OECA CROMERR Advocate Case Study

CROMERR ADVOCATE CASE STUDY

e-Manifest

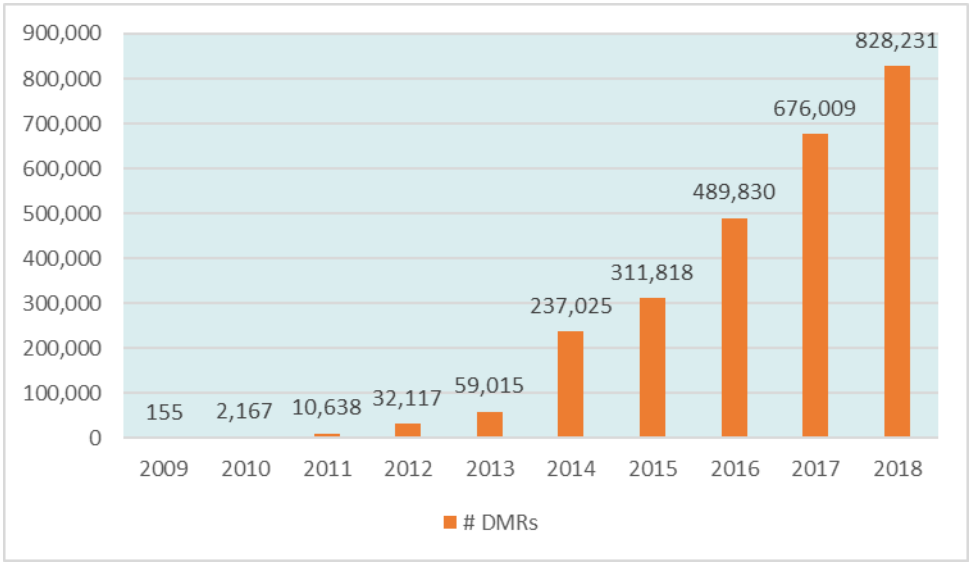
- OECA concluded that the states would greatly benefit from having an advocate from within EPA to work directly with each state to individually oversee their specific issues and make sure they are addressed.
- OECA hired a "CROMERR Advocate" to work directly with states to resolve their issues in implementing the CROMERR requirements as they related to NPDES e-reporting.
- Through outreach and communication, the CROMERR Advocate initially facilitated the submission of nine CROMERR applications through the governance process, increasing the number of states that were prepared to implement the NPDES e-reporting rule.
- Two years after the CROMERR advocate program began, over 100 applications have been received and approved. More than 80 percent of current applicants pursue COTS solutions or use EPA's CDX Shared CROMERR Services.

White Paper: Section 7.2, OECA CROMERR Advocate Case Study

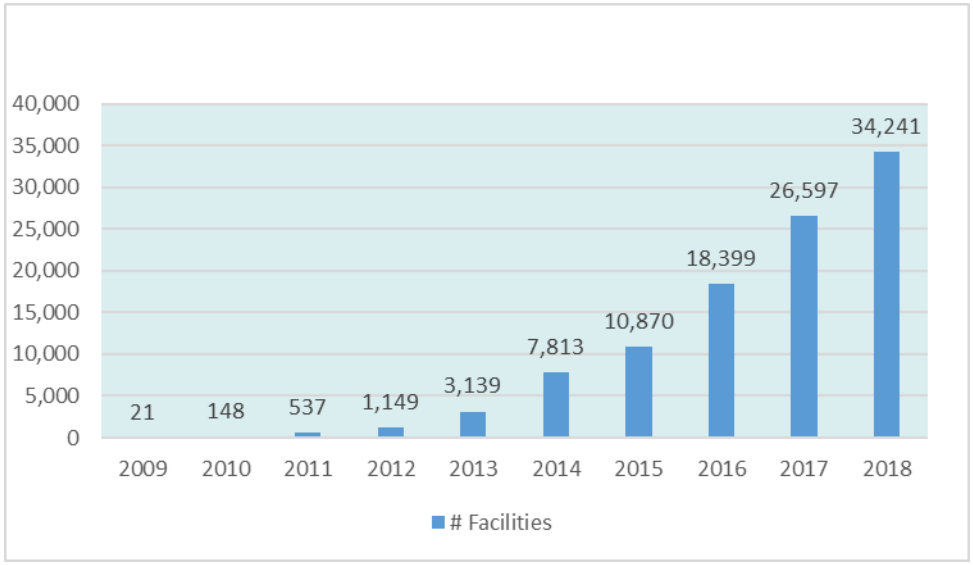
CROMERR ADVOCATE CASE STUDY

e-Manifest

- OECA's CROMERR Advocate has made a positive contribution toward the growth of the NPDES e-reporting program.



Number of DMRs Submitted through NetDMR



Facilities with DMRs Submitted through NetDMR

White Paper: Section 7.2, OECA CROMERR Advocate Case Study

THE PATH FORWARD: COLLABORATION & UPDATES AND TESTING E-MANIFEST

e-Manifest

- Registration-based approaches
  - Outreach/training to users who have not registered
  - Signatures for individuals without ID
- Biometric approaches
  - New technology, not proven to be enforceable, some of which require online access
  - Limited approved approaches
  - Hardware and devices may pose challenges
- External system authorization
  - Successful implementation of CROMERR checklist
- Create CROMERR Advocate
- Other options for encouraging electronic manifesting, such as regulatory or policy changes.

Charge Questions 1-4

END EPA PRESENTATIONS

CHARGE QUESTIONS

CHARGE QUESTION:
(1) IDENTIFYING PAIN POINTS

e-Manifest

a. What are the main challenges <u>generators</u> face with using fully electronic manifests?

CHARGE QUESTION:
(1) IDENTIFYING PAIN POINTS

e-*Manifest*

b. What are the main challenges <u>transporters</u> face with using fully electronic manifests?

CHARGE QUESTION:
(1) IDENTIFYING PAIN POINTS

e-*Manifest*

c. What are the main challenges receiving facilities face with using fully electronic manifests?

CHARGE QUESTION:
(2) MODIFYING USER REGISTRATION

e-*Manifest*

a. What is the feasibility and the likelihood of generators and transporters adopting the electronic manifest if they could, for example, in lieu of user registration:

- **Handler creates an electronic manifest and sends a link to the generator or transporter;**
- **Generator/transporter opens the link to the manifest and adds their email address or personal cell phone number to the manifest;**
- **e-Manifest sends a unique code to the generator/transporter's email/phone;**
- **Generator/transporter then signs the document, using the unique code as a one-time signature credential.**

CHARGE QUESTION:
(2) MODIFYING USER REGISTRATION

e-*Manifest*

b. Assuming that a phone number and/or email address are not, by themselves, sufficient proof of identity, what strategies short of biometry can be employed to link the delivered code to an individual of known or ascertainable identity?

CHARGE QUESTION:
(2) MODIFYING USER REGISTRATION

e-*Manifest*

c. How best can EPA provide customer service to those entities that would utilize this solution (i.e., use of an email or text message notification to validate their signature) and steer them through this process?

CHARGE QUESTION:
(2) MODIFYING USER REGISTRATION

e-*Manifest*

d. Are there any drawbacks or concerns related to a "no-user registration" process?

CHARGE QUESTION:
(3) THIRD-PARTY APPLICATIONS/BIOMETRICS

e-*Manifest*

a. Assuming a waste handler invests in a device by which to execute biometric signatures, what obstacles could a third-party application, particularly one that leverages biometrics, present to the user community? Are there things EPA can do to minimize integration/implementation hurdles?

CHARGE QUESTION:
(3) THIRD-PARTY APPLICATIONS/BIOMETRICS

e-*Manifest*

b. How best could EPA's e-Manifest program promote and support implementation of these solutions with industry and states?

CHARGE QUESTION:
(3) THIRD-PARTY APPLICATIONS/BIOMETRICS

e-*Manifest*

c. In terms of a recommended configuration for deploying a third-party application, we ask the Board members to please comment on the importance of each of its components, including:

i. **The form factor – e.g., cell phone, tablet, or laptop PC – for the portable device on which electronic manifests will be displayed and presented to users.**

CHARGE QUESTION:
(3) THIRD-PARTY APPLICATIONS/BIOMETRICS

e-Manifest

c. ii. Discuss advantages and drawbacks of each of the aforementioned form factors, considering the following:

A. **Display area required to show manifest data to users comfortably, clearly, and in a human readable format as required by Cross Media Electronic Reporting Rule (CROMERR);**

B. **Cost of deploying devices in the field;**

C. **Durability of the device over time and in the settings (e.g., outdoors) where it will be used;**

D. **Availability of a reliable power source for the device while in the field;**

E. **Need for access to a network connection at the time of signature;**

F. **Suitability for connecting to appropriate peripherals, e.g., signature pads, printers, power supplies; and**

G. **Ease of use in entering, displaying, and correcting data.**

CHARGE QUESTION:
(3) THIRD-PARTY APPLICATIONS/BIOMETRICS

e-*Manifest*

d. What are the primary factors governing whether or not the service industries are willing to make investments in such devices? Are there particular device/system features that would decisively foreclose adoption?

CHARGE QUESTION:
(3) THIRD-PARTY APPLICATIONS/BIOMETRICS

e-*Manifest*

e. Is the stakeholder community widely aware that EPA has evaluated and approved an approach that relies on digitized signatures and which would, thereby, work offline and without prior registration? If so, are there features of this approach that make it unattractive?

CHARGE QUESTION:
(3) THIRD-PARTY APPLICATIONS/BIOMETRICS e-*Manifest*

f. Is a biometric signature tool that requires network connection at the time of signature worth pursuing, or is biometry worth pursuing only if it can eliminate the need for a network connection at the time of signature?

CHARGE QUESTION:
(3) THIRD-PARTY APPLICATIONS/BIOMETRICS

e-*Manifest*

g. How useful would it be for EPA to provision a web-based signature tool (that also works on a smartphone) that, for any user already registered to the e-Manifest system, can be called without login from anywhere that has a network connection (such as an industry-owned system or smartphone application) to present all documents awaiting signature by that user and, then, permit individual or bulk signature of those document by a single application of the user's signature credentials?

CHARGE QUESTION:
(3) THIRD-PARTY APPLICATIONS/BIOMETRICS

e-*Manifest*

h. Should EPA, in consultation with the Advisory Board, select one technology for use in e-Manifest or should we allow multiple technologies to be used provided they are subject to the same performance standards?

CHARGE QUESTION (4) OTHER OPTIONS

e-*Manifest*

a. Are there other options that EPA should explore, such as regulatory or policy changes, that would facilitate greater use of electronic?